

Laboratory Products



2011



- ⌘ Laboratory equipment
- ⌘ Analytical equipment
- ⌘ Incubators/ovens/furnaces
- ⌘ Microscopes
- ⌘ Balances
- ⌘ Measuring meters
- ⌘ Material testing
- ⌘ Medical Equipment

2011 Catalog is PARTIAL Only : expanded as needed
see Chromalytic web page or TABLE of CONTENTS

HA-17600, 2 Counting Channels Hematology Analyzer With Touch Screen



HA-17600

Model	HA-17600
Parameters	WBC, LYM#, MID#, GRA#, LYM%, MID%, GRA%, RBC, HGB, MCHC, MCH, MCV, RDW-CV, RDW-SD, HCT, PLT, MPV, PDW, PCT, P-LCR and Histograms for WBC, RBC and PLT
Principles	Electrical resistance for counting WBC, RBC and PLT
Performance	Parameter Precision (CV %): WBC (109/L) 2.0(7.0-15.0) RBC (1012/L) 1.5(3.50-6.00), HGB (g/L) 1.5(110 - 180) MCV (fL) 0.4(80.0 - 110.0), PLT (109/L) 4(100 - 500)
Sample Volume	Prediluted: 20μL, Whole Blood: 9.8μL
Aperture Diameter	WBC 80μm; RBC 50μm
Throughput	60 samples per hour
Display	10.4" TFT Color LCD with touch screen, Resolution: 800×600
Alarms	Error messages
Carryover	WBC/RBC/HGB<0.5%, PLT<1.0%
Input/Output	RS-232, USB, LAN, keyboard and mouse interface
Printout	Thermal printer, 55mm width paper, various printout formats, external printer optional
Operating Environment	Temperature: 15°C~35°C; Humidity: 10%~90%
Power Requirement	AC 110-220V, 50/60Hz
Dimension(mm)	L436×W363×H367
Weight	18Kg

Features:

- 20 parameters+3 histograms.
- 2 counting channels, 3-part differentiation of WBC.
- 2 Counting mode: whole blood and pre diluted.
- 60 samples per hour.
- Up to 50000 sample results (including histograms) can be stored
- 10.4" TFT color LCD with touch screen
- Built-in thermal printer, optional external printer
- External AC adapter avoids electronic noises, enhancing accuracy
- Multi-language software available on request.

SACA-11904C, High Quality Chemistry Analyzer With 7 Filters, Color LCD



SACA-11904C

Model	SACA-11904C
Principle	Absorbance
Photometric range	-0.500~3.000Abs
Resolution	0.001Abs(displayed), 0.0001Abs(calculated)
Light Source	Halogen lamp
Wavelengths	340, 405, 500, 546, 578, 620, 670nm, 1 more filter optional
Wavelength Accuracy	±1nm
Band Width	8nm
Aspirate Volume	100~300μL
Carryover	<0.1%
Memory	160 test protocols, minimum 500 test result
Interface	RS-232, USB, SD card interface
Flow Cell	25μL Metal-quartz flow cell
Cuvette Mode	12.5mm*12.5mm cuvette optional
Temperature Control	25°C, 30°C, 37°C, ±0.1°C
Display	7" color LCD
Input	USB mouse and external keyboard
Output	Build-in printer or external printer (optional)
Net Weight	8KG
Dimensions(mm)	L460×W330×H140
Power supply	AC 110-220V±10%, 50~60Hz

Features:

- Easy Windows operation system with mouse, large color LCD display.
- Reagent open system supports flow cell and cuvette mode, close system on request
- Analytical modes include kinetic, fixed time, bichromatic end point with/without reagent blank or sample blank, linear or

non-linear calibration curves • Real-time curve monitoring enhances the reliability of result • Large memory, up to 160 test protocols can be programmed • Powerful QC function: Westguard Multi-rule, Levey Jennings plot, 2 controls per test • Auto self-check when power on • With lamp sleeping and wake-up function • Easy software upgrade by SD card, support USB mouse and keyboard • Multiform result output including patient comprehensive report • Compact design enables USER-DIY maintenance • Multi-language software available on request.

SACA-11904CV, Semi-Auto Chemistry, High Quality Analyzer Special For Veterinary Use



SACA-11904CV

Features:

- Easy Windows operation system with mouse, large color LCD display.
- Support up to 12 kinds of animal: 8 kinds fixed, 4 kinds open.
- 34 most common tests fixed, 20 more can be defined by user.
- Reagent open system supports flow cell and cuvette mode, close system on request.

Model	SACA-11904CV
Principle	Absorbance
Photometric range	-0.500~3.000Abs
Resolution	0.001Abs(displayed), 0.0001Abs(calculated)
Light Source	Halogen lamp
Wavelengths	340, 405, 500, 546, 578, 620, 670nm, 1 more filter optional
Wavelength Accuracy	±1nm
Band Width	8nm
Aspirate Volume	100~300μL
Carryover	<0.1%
Memory	54 test parameters, up to 500 sample results
Interface	RS-232, USB, SD card interface
Flow Cell	25μL Metal-quartz flow cell
Cuvette Mode	12.5mm*12.5mm cuvette optional
Temperature Control	25°C, 30°C, 37°C, ±0.1°C and ambient temperature
Display	7" color LCD(640 x240 discernibility, 256 colors)
Input	USB mouse and external keyboard
Output	Build-in printer or external printer (optional)
Net Weight	8KG
Dimensions(mm)	L460×W330×H140
Power supply	AC 110-220V±10%, 50~60Hz

- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration curves
- Real-time curve monitoring enhances the reliability of result
- Powerful QC function: Westguard Multi-rule, Levey Jennings plot, 2 controls per test
- Auto self-check when power on
- With lamp sleeping and wake-up function
- Easy software upgrade by SD card, support USB mouse and keyboard
- Compact design enables USER-DIY maintenance
- Multi-language software available on request

SACA-19100, Semi-Auto Chemistry, Grating Inside, PC Controlled



SACA-19100

Features:

- PC controlled system, Windows XP, displays the reaction curve in real-time.
- Continuously adjustable grating, enhances the stability and reliability of result.

Model	SACA-19100
Principle	Absorbance
Absorbance Range	-0.500 ~ 3.500Abs
Resolution	0.001 Abs (displayed), 0.0001Abs (calculated)
Light Source	Halogen lamp
Wavelengths	Continuously adjusted grating, wavelength range is 330 - 800nm, 1nm by step adjustment
Wavelength Accuracy	± 1nm
Band Width	< 6nm
Flow cell	Metal - quartz flow cell
Temperature Control	25°C, 30°C, 37°C, ±0.1°C and ambient temperature
Carryover	< 1%
Memory	300 test protocols, up to 10000 test results, support SD to expand memory
Printer	All printers compatible with Windows
Interface	RS-232, USB
Power Supply	AC 100V - 240V ± 10%, 50-60Hz
Net Weight	9KG
Dimensions (mm)	L368xW192xH266

- Reagent-open system supports flow cell & cuvette mode, close system on request
- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration
- Powerful QC program: Westguard multi-rule, Levey-Jennings plots, 2 controls per test
- Large memory, up to 300 test protocols can be stored
- Multifunction result output including patient comprehensive report
- Compatible with all popular external printers connected to PC
- Easy communication with PC
- Powerful internet connection enables remote data sharing and OS update
- Compact design enables USER-DIY maintenance
- Multi-language software available on request.

SACA-19200, Semi-Auto Chemistry, Low Level Photometer Provides Basic Solution



SACA-19200

Model	SACA-19200
Principle	Absorbance
Absorbance Range	-0.500 ~ 3.500Abs
Resolution	0.001 Abs (displayed), 0.0001Abs (calculated)
Light Source	Halogen lamp
Wavelengths	340, 405, 500, 546, 620nm, 3 more filters optional
Wavelength Accuracy	± 1nm
Band Width	< 8nm
Flow cell	Metal - quartz flow cell
Temperature Control	25°C,30°C,37°C,±0.1°C and ambient temperature
Carryover	< 1%
Display	LCD display
Interface	RS-232 serial cable
Output	Internal and external printer (optional)
Power Supply	AC 100V - 240V ± 10%, 50-60Hz
Net Weight	7KG
Dimensions (mm)	L370xW284xH318

Features:

- Easy keypad operation with LCD display.
- Wavelengths range is 330-800nm, 5 standard filters, 3 more filters optional.
- Reagent open system supports flow cell and cuvette mode, close system on request
- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration curves
- Up to 60 programs and 2200 test results can be stored
- Excellent QC function, 2 controls per test
- Internal thermal-sensitive printer
- Compact design enables USER-DIY maintenance
- Multi-language software available on request.

SACA-19600, Semi-Auto Chemistry, Grating Inside, Touch Screen And USB



SACA-19600

Model	SACA-19600
Principle	Absorbance
Absorbance Range	-0.500 ~ 3.500Abs
Resolution	0.001 Abs (displayed), 0.0001Abs (calculated)
Light Source	Halogen lamp
Wavelengths	Continuously adjusted grating, wavelength range is 330 - 800nm, 1nm by step adjustment
Wavelength Accuracy	± 1nm
Band Width	< 6nm
Flow cell	Metal - quartz flow cell
Temperature Control	25°C,30°C,37°C,±0.1°C and ambient temperature
Carryover	< 1%
Memory	200 test protocols, up to 10000 test results, support SD to expand memory
Display	6.4" color/mono LCD
Interface	RS-232,support VGA,2 USB, SD, Ethernet
Output	Built-in printer, or external printer (optional)
Input	Touch screen, USB mouse and keyboard optional
Power Supply	AC 100V - 240V ± 10%,50-60Hz
Net Weight	11KG
Dimensions (mm)	L370xW284xH318

Features:

- Easy Windows operation system with large touch-screen.
- Displays the reaction curve in real-time.
- Continuously adjustable grating, enhances the stability and reliability of result
- Reagent-open system supports flow cell and cuvette mode, close system on request
- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration
- Powerful QC program: Westguard multi-rule, Levey-Jennings plots, 2 controls per test
- Large memory, up to 200 test protocols and 10000 results can be stored, compatible with SD card
- Multiform result output including patient comprehensive report
- Multi-interface support RS-232,VGA,USB,SD and Ethernet
- Easy communication with PC
- Powerful internet connection enables remote data sharing and OS update
- Compact design enables USER-DIY maintenance
- Multi-language software available on request.

SACA-19900, Semi-Auto Chemistry, Grating Inside, Easy Keypad Operation With LCD Display



SACA-19900

Model	SACA-19900
Principle	Absorbance
Absorbance Range	-0.500 ~ 3.500Abs
Resolution	0.001 Abs (displayed), 0.0001Abs (calculated)
Light Source	Halogen lamp
Wavelengths	Continuously adjusted grating, wavelength range is 330 - 800nm, 1nm by step adjustment
Wavelength Accuracy	± 1nm
Band Width	< 6nm
Flow cell	Metal - quartz flow cell
Temperature Control	25°C, 30°C, 37°C, ±0.1°C and ambient temperature
Aspirate Volume	0~3000µl
Carryover	< 1%
Memory	Up to 204 protocols and 5400 results can be stored
Display	LCD display
Interface	RS-232
Output	Built-in printer, or external printer (optional)
Power Supply	AC 110V - 220V ± 10%, 50-60Hz
Net Weight	8KG
Dimensions (mm)	L360xW318xH185

Features:

- Easy keypad operation with LCD display
- Continuously adjustable grating, enhances the stability and reliability of result.
- Reagent open system supports flow cell and cuvette mode, close system on request.
- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration curves
- Powerful QC program: Westgard multi-rule, Levey-Jennings plots, 2 controls per test
- Large memory, up to 204 protocols and 5400 results can be stored
- Additional recloser design with lamp saving
- Powerful internet connection enables remote data sharing & OS update
- Compact design enables USER-DIY maintenance
- Multi-language software available on request.

FACA-1240, Fully Automated Chemistry, Discrete, Constant Throughput 120 Test/Hours, Random Access



FACA-1240

System Function

Automatic, Random Access, STAT sampling priority, Barcode-Reading support (optional)

Model	FACA-1240
Throughput	200 tests/hour, Constant throughput around 120 tests/hour
Contents of the testing	Clinical chemistry, Immunoturbidimetric
Analytical modes	End-point, Two-point, Kinetic
Programming	Open system with user defined programs and calculation

Sample/Reagent Handling

Sample/Reagent tray	40 positions for samples and 40 positions for reagents in refrigerated compartment
Refrigerated temp.	4 ~ 15°C
Reagent volume	R1: 180 ~ 450 µL, 1 µL adjustable R2: 30 ~ 250 µL, 1 µL adjustable
Sample volume	3 ~ 45 µL, 0.5 µL adjustable
Sample & Reagent probe	Collision protection, Liquid level detection & Inventory checking
Probe cleaning	Automatic washing both inside and outside, carry over <0.1%

Pre-heating for reagent

Reaction System

Reaction positions	81 cuvettes, 9 cuvettes/strip
Cuvette	Optical length 5mm
Reaction volume	180 ~ 500ul
Reaction temp.	37°C, fluctuation ±0.1°C

Independent mixing probe, Automatic washing system

Measuring and Optic System

Lamp	Halogen lamp
Absorbance range	0 ~ 3.500Abs±1%
Wavelengths	8 wavelengths, including 340nm, 405nm, 450nm, 510nm, 546nm, 578nm, 630nm, 670nm
Resolution	0.0001ABS

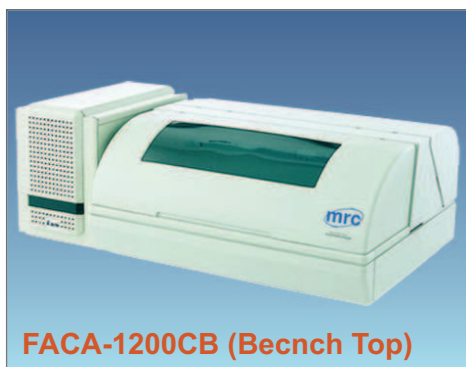
Working Condition

Power supply	AC 100/240V 50/60 Hz
Temperature	10 ~ 35°C
Humidity	35 ~ 80%
Water consumption	Max 2.5 L/hour
Dimention(cm)	L800xW600xH650
Gross weight	80KG

Features:

- Automatic, Random Access.
- Up to 240 tests per hour.
- Reagent pre-heating, liquid level detection.
- Automatic 10 steps washing system (optional), Low carry-over.
- Labor saving. Simple programming and real walk-away operation.
- 24 hours non-stop Reagent cooling compartment.
- Reagent open system, close system on request.
- Micro-volume for sample and reagent.
- User-friendly software based on Windows XP.

FACA-1200CB, Fully Automated Chemistry, Flow Cell, Stable Throughput, Bench Top



FACA-1200CB (Bench Top)

Features:

- Simplicity of operation and flexibility with user friendly software under Windows OS.
- Reagent open system, close system on request.
- Stable throughput with reliable results, cost effective.
- STAT sample priority enabled.
- Liquid level detection for sample and reagent probes.
- Dual reagent assay supported with mixer.
- Air/Water rinse flow cell, auto/manual rinse, low carryover.
- Analytical modes including Multi-stand, Fixed time, End-point and Kinetic.
- Built-in QC Management and Multi-form report output.
- Large memory, up to 1 million patients' data can be stored and unlimited programs defined.
- Compact design gives ease in maintenance.
- Slave analyzer available to get higher throughput.
- Multi-language software available on request.

Model	FACA-1200CB
General Descriptions	Automatic, STAT Available
Principle	Absorbance photometry
Programming	User defined
Throughput	Up to 80 tests/hour
Method	End-point, Kinetic, Fixed time, Single/Dual Reagent, Monochromatic, Bichromatic, Linear / non-linear multipoint calibration
Quality control	QC calculation monthly
Calibration mode	One point/ multi-point, log, exponential, polynomial, parabola
Memory	80G
Report	Multi-forms in result output including patient comprehensive report automatically

Optical Assembly

Light Source	Halogen lamp
Wavelength	8 filters including 340nm, 405nm, 492nm, 510nm, 535nm, 546nm, 578nm, 620nm
Measuring Range	0-3.000Abs \pm 1%
Sensitivity	0.0005Abs

Operation Overview

Operation system	Windows
Display	15" color LCD or CRT
Interface	RS-232

Sample & Reagent Handling

Sample position	60 positions
Sample volume	3-500 μ l (>5 μ l is recommended), 1 μ l increment
Sample probe	Liquid level detection
Reagent position	36 positions, refrigerated
Reagent volume	200-500 μ l, 1 μ l increment
Reagent probe	liquid level detection
Reaction position	120 positions
Reaction volume	300-500 μ l
Operation temperature	25°C, 30°C, 37°C, Room temperature
Temperature regulation	\pm 0.1°C
Rinse	Auto/manual rinse, air/water rinse

Power Supply	AC 200V - 240V \pm 10%, 50-60Hz
Working Temperature	\pm 0.1°C
Working Humidity	40-80%
Analytical unit Dimension	1177mm x 1025mm x 638mm
Control unit Dimension	1125mm x 731mm x 710mm
Net Weight	90KG



**FACA-1200CF
(Floor Standing)**

FACA-1200CF, Fully Automated Chemistry

Features:

- Simplicity of operation and flexibility with user friendly software under Windows OS.
- Reagent open system, close system on request.
- Stable throughput with reliable results, cost effective.
- STAT sample priority enabled.
- Liquid level detection for sample and reagent probes.
- Dual reagent assay supported with mixer.
- Air/Water rinse flow cell, auto/manual rinse, low carryover.
- Analytical modes including Multi-stand, Fixed time, End-point and Kinetic.
- Built-in QC Management and Multi-form report output.
- Large memory, up to 1 million patients' data can be stored and unlimited programs defined.
- Compact design gives ease in maintenance.
- Slave analyzer available to get higher throughput.
- Multi-language software available on request.

Model	FACA-1200CF
General Descriptions	Automatic, STAT Available
Principle	Absorbance photometry
Programming	User defined
Throughput	Up to 80 tests/hour
Method	End-point, Kinetic, Fixed time, Single/Dual Reagent, Monochromatic, Bichromatic, Linear / non-linear multipoint calibration
Quality control	QC calculation monthly
Calibration mode	One point/ multi-point, log, exponential, polynomial, parabola
Memory	80G
Report	Multi-forms in result output including patient comprehensive report automatically

Optical Assembly

Light Source	Halogen lamp
Wavelength	8 filters including 340nm,405nm,492nm,510nm,535nm,546nm,578nm,620nm
Measuring Range	0-3.000Abs \pm 1%
Sensitivity	0.0005Abs

Operation Overview

Operation system	Windows
Display	15" color LCD or CRT
Interface	RS-232

Sample & Reagent Handling

Sample position	60 positions
Sample volume	3-500 μ l (>5 μ l is recommended), 1 μ l increment
Sample probe	Liquid level detection
Reagent position	36 positions, refrigerated
Reagent volume	200-500 μ l, 1 μ l increment
Reagent probe	liquid level detection
Reaction position	120 positions
Reaction volume	300-500 μ l
Operation temperature	25°C,30°C,37°C, Room temperature
Temperature regulation	\pm 0.1°C
Rinse	Auto/manual rinse, air/water rinse

Power Supply	AC 200V - 240V \pm 10%,50-60Hz
Temperature Regulation	\pm 0.1°C
Humidity	40-80%
Dimensions(Floor standing) (mm)	L872×W720×H1069
Gross Weight	180KG
Net Weight	90KG



STE-TEN

STE-TEN, 1 Liter Autoclave

It adopts B-wclass (prED-13060), with 3-times pre-vacuum preceding vacuum drying. Residual humidity is <0.2, vacuum measurement reaches -0.7bar.

It sterilizes and sanitizes miscellaneous packed or unpacked medical instruments, whether solid or A-type hollow, whether with multi-apertures or inset pipes. It efficiently rid air from every hollow area of any hollow instrument, such as hand-piece, making sure that water steam reaches every corner. It is installed with BOWIC & DICK which measures the penetration of water steam. Mini printer can be attached to record the process of sterilization.



Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size(mm)	Weight (kg)
STE-TEN	220/50	1100	1	Ø90x160mm	W200xH385xD450	30 (Net:28)



STE-TAN-8L

STE-TAN-8L, 8 Liter Autoclave

Adopting European N standard, with thermal vacuuming and drying function, it can be used for A type hollow instruments and solid instruments

Technical feature:

- Sterilization temperature: 121, 134 Cent degrees
- Drying Program: Thermal Vacuum drying
- Digital display
- Sterilization record: mini external printer is available
- Safety: safety valve, temperature control, pressure protection system, temperature protector of chamber wall
- Sterilization and drying time adjustable help you to get the best sterilization effect
- Open type water storage tank
- Quick drain connector
- Optional type B: STE-8L(B).



Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber Size (mm)	Outside size (mm)	Weight (kg)
STE-8LN	AC220V/50Hz	1100W	8L	Φ170x320mm	W345xH530xD340	34 (Net:29)
STE-8LB		1300W				37 (Net:32)



STE-TAN

STE-TAN, 16 Liter Autoclave

Adopting N-wclass (prED-13060), with thermal vacuumizing & drying function, it can be used for A-type hollow instruments & solid instruments. Thermodynamic vacuum guarantees elimination of cold air from the cavity and makes sure of perfect saturation of water steam. Three sterilizing water quantity selections are respectively for different material, which embodies the individualized service. Automatic malfunction detecting system makes easy maintaining.

- * Liquid Sterilizing option
- * Optional Printer



Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size (mm)	Weight (kg)
STE-TAN	220/50	1800	16	Ø230x360mm	W440xH400xD560	64 (Net:52)



STE-TIN

STE-TIN, 16 Liter Vacuum Autoclave

It adopts B-wclass(prED-13060), with 3-times pre-vacuum preceding vacuum drying. Residual humidity is <0.2: vacuum measurement reaches-0.7bar.

It sterilizes and sanitizes miscellaneous packed or unpacked medical instruments, whether solid or A-type hollow, whether with multi- apertures or inset pipes. It efficiently rid air from every hollow area of any hollow instrument, such as hand-piece, making sure that water steam reaches every corner. It is installed with BOWIC & DICK which measures the penetration of water steam. Mini printer can be attached to record the process of sterilization.

Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size (mm)	Type	Weight (kg)
STE-TIN	220/50	1800	16	Ø240x360mm	W440xH400xD560	B	64 (Net:52)



STE-18L/B

STE-18L, 18 Liter Autoclave

Technical features:

- According to EN13060 standard completely
- Manual door locking system
- Sterilization temperature: 121, 134 Cent degrees
- Programs: 10 programs (Including test programs)
- Test program; Helix test, B&D test, Vacuum test
- Drying Program: Vacuum drying
- LCD display
- Sterilization record: mini external printer is available
- Safety: safety valve, temperature control, pressure protection system, temperature protector of chamber wall
- Independent steam generator inside
- Sterilization and drying time adjustable help you to get the best sterilization effect
- Open type water storage tank
- Quick drain connector.

Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size (mm)	Type	Weight (kg)
STE-TIN-18L	220/50	1800	18	Ø247x350mm	W480xH590xD455	B	50 (Net:44)
STE-TAN-18L		1750				N	



STE-TIN-23

STE-23L, 23 Liter Autoclaves

It adopts B-wclass (prED-13060), with 3-times pre-vacuum preceding vacuum drying. Residual humidity is <0.2, vacuum measurement reaches -0.7bar.

It sterilizes & sanitizes miscellaneous packed or unpacked medical instruments, whether solid or A-type hollow, whether with multi-apertures or inset pipes.

It efficiently rid air from every hollow area of any hollow instrument, such as hand piece, making sure that water steam reaches every corner.

It is installed with BOWIC & DICK which measures the penetration of water steam. Mini printer can be attached to record the process of sterilization. Optional type N: with liuqid sterilization.



Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size(mm)	Type	Weight (kg)
STE-TIN-23	220/50	2300	23	Ø247x450mm	W480xH699xD455	B	55 (Net:48)
STE-TAN-23		1850				N	



Safety Devices

- Auto protection device against over temperature: This system cuts off power automatically if the designed temperature is surpassed.
- Door safety interlock: The door cannot be opened until there is no pressure in the chamber and power for heating cannot be switched on until the door is firmly closed.
- Safety valve of auto release against overpressure: It opens when the designed pressure is surpassed.
- The program will be stopped if water level lower than the low limit. alarm with sound and light.
- Electronic circuits safety device: direct current control loop and has protection against overload and voltage surpassed, alternating current main loop has short-circuit protection device.

Option Pulse Vacuum

- Pulsant final vacuum drying system ensures the best drying effect of package.
- B-O test and vacuum test programs.

STE-H-60/80, 60 liter or 80 liter Automated Water filling Horizontal Autoclave

- Steam and water circulation system. no external water source. not exhaust steam outside. environment is dean and dryness.
- Micro-computer control, touch-key.
- Automatic control over the processes of heating, sterilization. steam exhaust. filling water and dryness.
- Process. temperature. time dynamic LCD displayed.
- Positive pressure pulse function exhaust cool air of sterilizing chamber thoroughly and ensure the steam saturation.
- There are equipped with instrument. instrument bags. dressing. rubber sterilization programs for customer's choice.
- Self-failure test system capable of displaying failure on the LCD.
- Printer is available for optional.
- The buzzer alarms when a cycle of operation is completed.

Main Technical Parameters

- Designed pressure: 0.26Mpa.
- Designed temperature: 150°C.
- Rated working pressure: 0.22Mpa.
- Sterilization temperature, 105°C~136°C.
- Precision of temp. displayed: 0.1°C.
- Temp. degree of uniformity: $\pm 0.5^{\circ}\text{C}$.
- Material of chamber:
SUS 304
stainless steel.



Model	Voltage	Power	Capacity	Chamber Size	Outside size (mm)	Net weight
STE-H-60	220V/ 50Hz	3.6Kw	60L	Ø380x500mm	W730xH540xD840	85kg
STE-H-80	380V/ 50Hz	5.7Kw	80L	Ø380x700mm	W730xH540xD1040	100kg



DIST, 1.5 liter/hour Distillator

Autoclave must adopt distilled water as operation medium. Even Purified water has various minerals, & can produce furring scale after evaporation at high temperature, which, after a period of time, can lead to leaking of steam due to improper closure. It can also lead to the clog in the narrow pipes and pressure sensor, to the malfunction of temperature sensor and to other failures.

Once the furring scale enters handpiece and other instrument which are hollow inside or has apertures, it will clog the narrow pipes and axis, lowering the turning speed of handpiece, thus reducing its life span. Therefore, using distilled water is necessary.

Model	Voltage V/Hz	Power (W)	Distilled water L/h	Chamber size	Outside size	Weight	Packing size
DIST	220/50	750	1.5	Ø180x200mm	290x290x390mm	3.5kg	245x285x510mm

Internal Calibration

- Filling
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- GLP procedures
- Infrared sensors
- Comparative weighing

1µg
MGB-Series



MGB Microbalances, 0.001mg

MGB series of microbalances series Y have been designed to meet the high requirements of mass measurements with the highest precision. Measurement reliability and accuracy is ensured by internal calibration. Microbalances consist of 2 major parts (an electronic system & a precise mechanical measurement system in a separate enclosure). This solution eliminates the temperature influence & separates from shocks & vibrations caused by users operating software. All the elements of the balance are made of glass and steel which eliminates the influence of electrostatics on the weighing process.

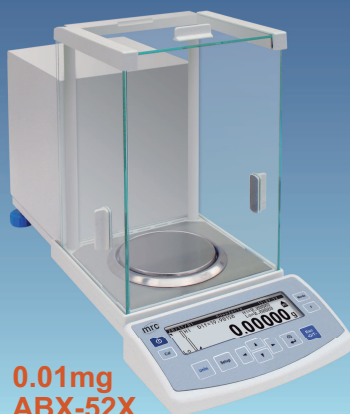
Additional equipment: Anti-vibration table • Thermal printer • Set for the determination of air • Foot tare & print buttons • Additional attachment for pipettes calibration • Professional weighing table • Ultrasonic air ionizer with humidifier • Standard mass • Computer software.

	MGB-5	MGB-11	MGB-21	MGB-31
Max capacity	5g	11g	21g	31g
Readability	1µg			
Repeatability	2µg	3µg	5µg	
Linearity	±3µg	±5µg	±10µg	
Pan size	ø30mm			
Weighing chamber dimen.	ø90×90mm			
Stabilization time	10s			
Calibration	automatic (internal)			
Working temperature	+18 ° - +30 °C			
Interface	RS 232, 2×USB, Ethernet			
Power supply	230V / 11V AC			
Display	5,7" touch screen			

Internal Calibration

- Counting pieces
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy cor.
- Under-hook weighing
- GLP procedures
- Infrared sensors
- Pipette calibration

0.01mg
ABX-52X



ABX Professional Level Analytical Balances, 0.01mg

ABX balances are equipped with big backlit graphic display with extended menu, 12-keys membrane keyboard, big weighing chamber with sliding upper glass door and side glass door.

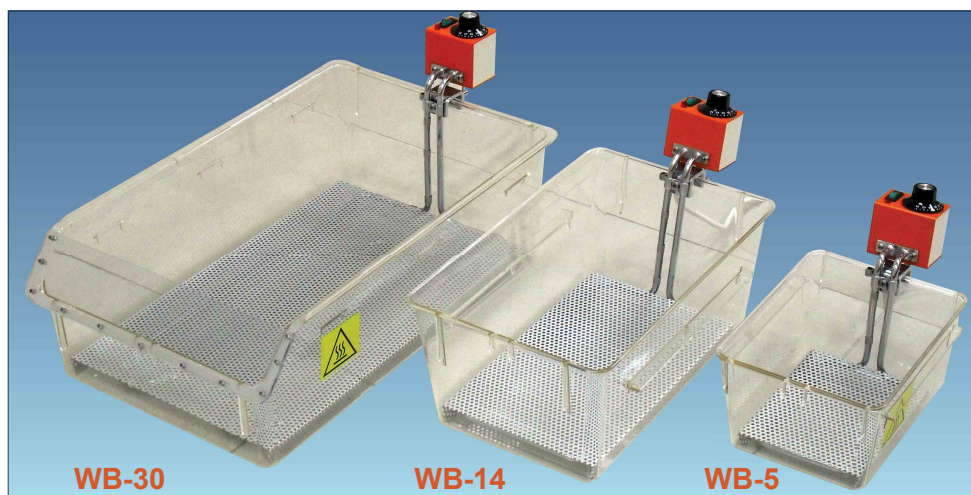
Balance accuracy is guaranteed by automatic internal calibration dependant on time and temperature changes. Balances have possibility of disconnecting the head from weighing chamber.

This solution considerably reduces vibrations transferred to weighing chamber and decreases dimensions of device. ABX balances enable to generate GLP procedures, these balances have RS 232 socket, PS/2, possibility of connecting additional display and possibility of weighing loads outside the main weighing platform (so called under-hook weighing).

- New electronics and technological solutions!
- New intuitive operation & user friendly software of balances!

MODEL	ABX-52X	ABX-110X	ABX-210X	ABX-60-220X	ABX-100X	ABX-160X	ABX-220X	ABX-310X
Max capacity	52g	100g	210g	60/220g	100g	160g	220g	310g
Minimal load	1mg				10mg			
Readability	0.01mg			0.01/0.1mg	0.1mg			
Tare range	-52g	-100g	-210g	-220g	-100g	-160g	-220g	-310g
Working temp.	+50°C - +10°							
Repeatability	0.01mg	0.025mg	0.03mg	0.02/0.1mg	0.01mg			0.02mg
Linearity	±0.02mg	±0.05mg	±0.1mg	±0.05/0.2mg	±0.2mg			±0.3mg
Sensitivity drift	2ppm/°C in temperature +18 ° - +30 °C							
Stabilization time	5s			5s/3s	3s			
Power supply	230V / 11V AC or 120V / 11V AC							
Calibration	internal (automatic)							
Pan size	Ø85mm				Ø100mm			

WB-Series, For Full Visibility Of Samples



Transparent Polycarbonate Thermostatic Bath

Ideal for sample pre treatment in QC, pathology & educational purposes, routine laboratory purposes, procedures requiring visibility of reactions inside the vessels & as a 'personal' water bath for scientists needing only a small working area with a compact footprint.

Accessories:



Features:

- Low-cost fully compatible substitute for expensive Water Bath.
- Seamless transparent polycarbonate tank-withstands 120°C.
- Fast-Acting thermostat also serves as low-water-level protector, preventing heating-element burn-out and fire hazard.
- Temp. range: from slightly above ambient tp +100°C (with cover). Accuracy: approx $\pm 0.3^{\circ}\text{C}$ at 37°C (depending on operating conditions).
- Robust and reliable - designed for years of trouble-free service.
- S - Optional Safety thermostat.
- Voltage: 230V, 50Hz (or 120V, 50/60Hz).

Multi Purpose Extraction Water Bath, 4 or 6 Places, up to 100°C



- Concentric ring cover sets make effective steaming work
- Ideal for gentle extraction, soxhlet extraction and determination of COD

Standard model	With safety thermostat model	Digital model	Bath capacity (liters)	Inside dim's (cm) W1xD1xH1	Outside dim's (cm) W2xD2xH2	Watts	Bath cover model	Floating balls model	Evap. lid model
WB-3	WBS-3	WBS-3D	2.7	10 17 10	15 31 24	500	C-3	FB-3	-
WB-4	WBS-4	WBS-4D	4.5	10 27 10	16 41 24	600	C-4	FB-4	-
WB-5	WBS-5	WBS-5D	5.5	16 20 11	22 34 24	750	C-5	FB-5	EL-5
WB-7	WBS-7	WBS-7D	7.0	16 3 11	22 44 24	1000	C-7	FB-7	-
WB-8	WBS-8	WBS-8D	8.5	21 35 12	28 50 26	1000	C-8	FB-8	-
WB-11	WBS-11	WBS-11D	11.0	18 27 16	24 43 30	1200	C-11	FB-11	-
WB-14	WBS-14	WBS-14D	14.0	21 35 16	28 50 30	1500	C-14	FB-14	EL-14
WB-30	WBS-30	WBS-30D	30	32 51 18	38 66 24	*2000	C-30	FB-30	EL-30

*1500W at 120V

B WATER BATHS

Unstirred



WBO-Series, Unstirred Up To 80°C Water Bath

The MRC stainless steel water bath are available in 2 sizes: 10 & 20 liters. Model WBO-100 and WBO-200 unstirred bath are used for general applications in laboratories. They provide excellent temperature uniformity of the liquid. A PID temperature controller provides instant and accurate temperature. The tank of the bath is made of corrosion resistant stainless steel with round corners for easy cleaning. Include hood cover.

Features:

Ideal for biotechnology, clinical, environmental, medical, petroleum, food industry • Stainless steel lid prevents evaporation & keeps constant temperature • Excellent uniformity & stability • Seamless, corrosion-resistant, stainless steel chamber • Available in 10, 20 Liters • Gable cover included.

Applications:

Incubate cultures • Warm bacteriological media • Perform chemical reactions • Thaw samples.

Model	WBO-100	WBO-200
Temp. range	Room temperature ~ +5°C to 80°C	
Temp. constancy	±0.1	
Temp. control	PID	
Heater	300W	600W
Safety devices	Short circuit, over head protector, sensor abnormality	
Bath opening (mm)	W295xD235xH150	W495xD295xH150
Inside dimensions (mm)	W295xD235xH150	W495xD295xH150
Outside dimensions (mm)	W235xD135xH150	W620xD340xH185
Volume	10L	20L
Weight	6.5 kg	9 kg



WHT-Serie, Unstirred High Temperature Baths

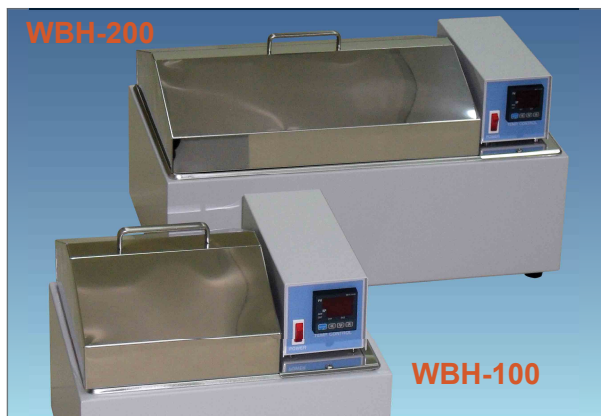
- Drip Free Cover Holder
- Easy-to-Clean Stainless Steel Tank
- Pocket Handles for Easy Lifting
- Recessed Heating Element Prevents "Burnout"
- Air-Jacket Design Eliminates Hot Spots

MRC digital water baths are durable and dependable. five different models are available, each with a variety of safety and convenience features.

The MRC high-performance water baths are accurate, easy to use, safe and durable. The water bath design incorporates the attractive MRC appearance, a drip free cover holster, and pocket handles so users can easily move the water bath's location. A microprocessor achieves precise temperature control regardless of how the unit is loaded. Calibration is performed directly from the front panel.

WHT-Serie are for high temp. applications, look to MRC high temperature boiling baths wht6m, wht14m, and wht20m. these baths are designed to reach 100°C.

Model	WHT-6M / WHT-6M-2*	WHT-14M / WHT-14M-2*	WHT-20M / WHT-20M-2*
Exterior Dimensions(cm)	W42xD35.6xH34.3	W42xD54xH34.3	W42xD70xH34.3
Interior Dimensions(cm)	W30xD15.2xH15.3	W30.5xD33xH15.3	W30.5xD49.5xH15.3
Tank Capacity	6 Liters	14 Liters	20 Liters
Temperature Range	Ambient +5 to 100°C		
Temperature Control	Microprocessor		
Temperature Uniformity	+/-0.2° at 37°C		
Electrical Requirements Watts/Amps/Cycle Phase-120V Watts/Amps/Cycle Phase-220V	750W / 7 .0A /50/60Hz 750W /3.5A /50/60Hz	750W / 7.0A / 50/60Hz 750W /3.5A /50/60Hz	750W / 7.0A /50/60Hz 750W /3.5A /50/60Hz

**WBH-Series, Digital Precise Circulation Water Bath**

There are 2 models with internal circulation pump, 10 & 20 liters. The immersion circulator bridge can easily remove for easy cleaning of the tank.

Features: Ideal for Biotechnology, Clinical, Environmental, Medical, Petroleum, Food Industry, Pharmaceutical or Industrial Applications • Powerful Circulation Pump Assures Temp. Uniformity.: Internal and optional external Circulation • Stainless Steel Bath(#304) for Superior Durability & High Thermal Efficiency • Stainless Steel lid Prevents Evaporation and keeps Constant Temperature.

**External Circulation Option**

Model	WBH-100	WBH-200
Temp. range	Ambient +5°C to 100°C	
Temp. constancy	±0.1	
Temp. control	PID	
Internal circulating pump	Yes	
External circulating pump		Yes(WBH-200I)
Heater	800W	1000W
Safety devices	Short circuit, over head protector, sensor abnormality	
Bath opening (mm)	W200xD235xH150	W400xD295xH150
Inside dimensions (mm)	W295xD235xH150	W495xD295xH150
Outside dimensions (mm)	W340xD280xH320	W540xD340xH320
Volume	10L	20L
Weight	7kg	10kg

**WPC65, Circulating Water Bath**

Circulating Water Baths are an excellent choice for research and quality control applications. They are highly accurate, easy-to-use, rugged and safe.

WPC85, Fecal Coliform Incubation Circulating Water Bath

Fecal coliform incubation circulating water baths meet APHA and EPA test specifications, and are designed especially for fecal coliform testing and other applications where circulation provides extra temperature control. These units are highly accurate, easy-to-use, rugged and safe.

WPC95, Deep Chamber Water Bath

Deep chamber water baths are designed to accommodate large volumetric samples. These units are highly accurate, easy-to-use, rugged and safe

Features: Microprocessor Control • Easy-To-Clean Polymer-Coated Tanks • Air Jacket Heating Eliminates Hot Spots • Recessed Heating Element Prevents Burnout.

Model	WPC-65/WPC-65-2	WPC-85/WPC-85-2	WPC-95/ WPC-95-2
Weight	18 kg	22 kg	17 kg
Interior dimensions (mm)	W290xD495xH153	W304xD355xH280	W304xD355xH280
Exterior dimensions (mm)	W356xD724xH240	W406xD610xH390	W406xD470xH394
Tank capacity (liter)	22	34	30
Airlock Volume (liter)	37.8	-	-
Temperature range	5°C above ambient to 80°C		
Temperature uniformity	±0.2°C at 37°C		
Electrical specification	120V 50/60Hz 500W 6.0A 220V 50/60Hz 500W 3.0A	120V 50/60Hz 750W 6.5A 220V 50/60Hz 750W 3.5A	120V 50/60Hz 750W 7.0A 220V 50/60Hz 750W 3.5A
Temperature control	Microprocessor		

WBL-Series, Digital Precise Refrigerated Bath, Internal & External Circulator



Refrigerated Circulating Baths

- Compact design.
- For external & internal temperature applications.
- Low noise level.
- Rapid cool down and heating time.
- Water drain for easy cleaning of the inner tank.
- Models WBL-200 has casters.
- Water level protector.
- Ideal for direct immersion of samples or external circulating system in the field of biotechnology and laboratories.
- Powerful circulation pump ensures temp. uniformity: internal and external circulation.
- Connection with evaporator or viscometer is applicable.

Options:

Display resolution to 0.01°C • Build in RS-232/485 • PT-100Ω temperature probe for direct measurements & control of external systems • Analog inputs and outputs for external programmer & temperature recorder.

Model	WBL-100	WBL-101	WBL-200
Temperature range	-30°C~100°C		
Temp. constancy	±0.1°C		
Temp. control	PID		
Temp. sensor	PT-100Ω		
Circulation pump	9L/min. max. head 2m	18L/min. max. head 7m	27L/min. max. head 7m
Heater	1600W		2500W
Refrigerator	1/3HP		1 HP
Safety devices	Short circuit breaker, over heat protector, sensor abnormality, overload protector		
Bath opening (mm)	W200xD150xH150		W300xD210xH180
Bath dimension	W200xD300xH150		W300xD360xH180
Outside dimensions	W200xD450xH630		W420xD530xH800
Volume	9.0L		19.4L
In/Output	9.5mm		12.5mm
Weight	35kg		63kg

WBH-060, Internal & External Circulation Bath

The MRC WBH-060, 6 liter heating bath, is the most user-friendly baths available.

This heating circulator is mainly used for temperature



controlling larger external systems such as heating plates, autoclaves or reaction vessels. Combined powerful pressure/suction pumps provide a good heat exchange and optimum temperature accuracy; robust design using high grade stainless steel inside and outside the bath.

MRC heating circulator with stainless steel bath tank is mainly used for internal and external temperature tasks. simultaneous temperature applications of smaller objects can also be carried out directly in the internal bath of the circulator.

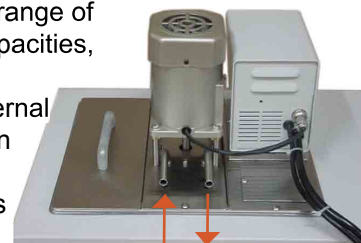
Model	WBH-060
Working range	Ambient +5°C~100°C
Volume	6 Liter
Stability	±0.05°C
Setting&Readout	Digital
Heater	500W
Pumping flow	7L/min, 0.2kg/cm ²
Reservoir(mm)	W150xD255xH150
Overall(mm)	W210xD315xH330
Power source	110/220V 60/50Hz 5/2.5A

OBH-Serie, High Temperature Bath Circulator, 7 & 18 Liter, Digital Control, Powerful Circulation Pump, Up To 200°C/300°C



Powerful Circulation Pump Ensures Temp. Uniformity: Internal & External Circulation (optional)

Robust design using high grade stainless steel inside and outside the bath. Heating Circulators with stainless steel bath tanks are mainly used for internal and external temperature tasks. The range of these models have 2 capacities, allowing for temperature application of larger external systems, as well as open systems. Simultaneous temperature applications of smaller objects can also be carried out



External Circulation Option directly in the internal bath of the circulator.

Features:

- 3 Models with choice of temperature range and bath capacity
- Stainless steel bath and lid for superior durability and high thermal efficiency.
- Over heating safety device is equipped.
- Wide range of temperature control.
- Digital temperature setting & readout.
- External circulating pump is available on special order.

Model	OBH-070	OBH-180	OBH-183
Model (External Circulation)	OBH-071	OBH-181	OBH-184
Working range	Ambient +5°C~200°C		Ambient +5°C~300°C
Stability	±0.1°C		
Setting/Readout	Digital		
Heater	1.2KW		
Stirring	By built-in circulation pump		
Volume	7 Liter	18 Liter	12 Liter
Operations	W19.5xD23.5xH15cm	W39.5xD29.5xH15cm	W30xD30xH20cm
Overall	W54xD34.5xH38cm	W73xD39xH36cm	W66xD40xH42cm
Power source	110/220V 50/60Hz 13A/6.5A		



VBH-Serie, Kinematic Viscometer Bath

Digital Precise Viscosity Bath, 16liter.
With Transparent Window, Stainless Steel Lid for Viscometer Holder, Digital PID Control System, up to 100°C, ±0.1°C.

Used for Precise Measurement with Capillary Viscometers • Innovative Easy-to-use Digital Controller PID • Powerful Circulation Pump ensures Highest Uniformity of Temperature • Stainless Steel (#304) made inner bath.

Model	VBH-150	VBH-151
Control range	-20°C~180°C	5.00°C~99.99°C
Working range	Ambient +5°C~180°C	Ambient +5.00°C~99.99°C
Temp controller	P I D control	
Stability	±0.1°C	±0.01°C~±0.02°C
Timer delay on/off	0~9999 min or 0~9999 hr	
Reservoir (mm)	W330xD150xH320	
Overall (mm)	W460xD250xDH580	
Operation (mm)	W200xD140	
Window (mm)	W160xD250	
Power source	110V 60Hz 220V 50Hz	

B WATER BATHS

Reciprocal Shaking

WBT-200/400/401, Digital Precise Shaking Water Bath, 22 & 38 Liter, & Digital PID Control, Reciprocating Motion, 20~200rpm, to 100°C, $\pm 0.1^\circ\text{C}$, up to 1 Liter Flask



These reciprocating water bath shakers are available in three models.

Model WBT-200 small platform 250x300mm, Model WBT-400 large platform 300x400mm & Model WBT-401 refrigerated to 0°C .

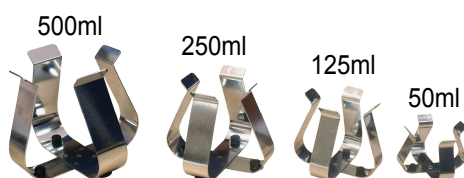
Temperature control is precise, temp. range of 5°C above ambient to 100°C , speed range 20 - 200 rpm, heat loss and evaporation minimized with use of stainless steel hood cover. Easy emptying through a drain at the lowest point.

Micro processor temperature PID controller with dual display of measured temperature and set temperature.

Electronically Controlled Shaking Mechanism Provides Quiet Reciprocating Motion and Precise Speed Control.



Universal Spring Racks



Flask Holders

Options:

- Water level protector.
- Universal platform.
- Digital speed control.

Features:

Stainless Steel Bath for Superior Durability & High Thermal Efficiency • Innovative Easy-to-Use Digital PID Controller • Electronically Controlled Shaking Mechanism Provides Quiet Reciprocating Motion and Precise Speed Control • Universal Stainless Steel Spring Rack (Optional): for various kind of Flasks dishes and Tubes (optional) • Patent shaking mechanism: minimum noise and vibration.

Model	WBT-200	WBT-400	WBT-401
System	Reciprocation shaking circulation		
Temp. range	Room temperature - 100℃		0℃-100℃
Temp. constancy	±0.1℃		
Temp. control	PID		
Temp sensor	PT-100Ω		
Inside material	SUS304		
Rate of shaking	20~200 rpm		
Shaking width	20 and 40 mm variable		
Shaking plate (mm)	W300xD250xH130	W400xD300xH160	
Refrigerator			1/4HP
Heater	1.0KW	1.6KW	
Safety devices	Short circuit breaker, over heat protector, sensor abnormality, refrigerator over protector		
Inside dimensions (mm)	W500xD300xH150	W600xD350xH180	
Outside dimensions (mm)	W700xD350xH300	W830xD415xH350	W980xD415xH430
Volume (liters)	22.5	37.8	
Weight	25kg	30kg	53kg

capacity of flasks	50 ml	125 ml	250 ml	500 ml	1000 ml
WBT-200 number of flasks	20	12	6	4	2
WBT-400/401 number of flasks	35	20	12	6	4

WBT-450/550, Digital Precise Shaking Water Bath, 45 Liter, Digital PID Control, Orbital Motion, 20~250 or 400 rpm, to 75°C or 100°C, $\pm 0.1^\circ\text{C}$, up to 3 Liter Flask



WBT-450

Electronically Controlled Shaking Mechanism Provides Quiet Reciprocating Motion and Precise Speed Control.

Features:

- Stainless Steel Bath for Superior Durability & High Thermal Efficiency.
- Innovative Easy-to-Use Digital PID Controller.
- Electronically Controlled Shaking Mechanism Provides Quiet Reciprocating Motion & Precise Speed Control.
- Patent shaking mechanism: minimum noise and vibration.

Ideal for a wide range of laboratory applications requiring controlled temp. with orbital shaking motion. Suitable for long time operation up to weeks and months.

Separate switches for speed ON/OFF & heater ON/OFF.

Individual readout for RPM & digital readout for temp.

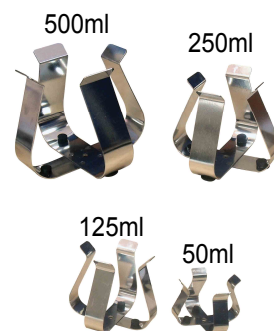
All stainless steel inner tank, platform & clamps.

Maintenance-free induction brushless motor. Differential clamps available.

Microprocessor based on PID temperature control. Speed and temperature adjustable.



Back



Flask Holders

Model	WBT-450	WBT-550
Speed	10-250 rpm	20-400 rpm
Orbit diameter	25 mm	12.5 mm
Speed readout	Tachometer	Digital
Temperature control	PID	PID
Temperature readout	Digital	Digital
Working temperature range	Ambient +5°C~75°C	Ambient +5°C~100°C
Stability	$\pm 0.2^\circ\text{C}$	$\pm 0.2^\circ\text{C}$
Power watts	1200W	1200W
Optional accessory	Gable cover	Gable cover
Timer	No	999min / 999hr
Platform	450x290	485x320
Inner tank size (mm)	560x405x200	600x420x200
Size (mm)	740x530x450	725x565x530

Capacity of flask	50ml	125ml	250ml	500ml	1000ml	2000ml	3000ml
WBT-450/550 number of flasks	35	24	15	12	6	2	1

B WATER BATHS

Immersion Heater Circulators



ICB-12, Immersion Circulator - Basic Model

Features:

- Temperature range: ambient to 100°C (with cooling +10 to 100°C).
- Accuracy: approx. ± 0.3 to $\pm 1^\circ\text{C}$.
- Pumping capacity: up to 12 l/min.
- Safety Cut Off.
- 12L/min max. head 2m.
- Optional: External circulation.

ICD-12, Digital Immersion Circulator

Features:

- Digital set and display of actual operating temperatures.
- PID controller provides very precise temperature control.
- Adapts to many different containers.
- Temperature range: ambient +5°C to 100°C (with cooling -10°C to 100°C).
- Accuracy: approx. $\pm 0.1^\circ\text{C}$.
- Pumping capacity: up to 12 l/min.
- Immersion depth: minimum 6 cm, maximum 15.5 cm.
- Safety Cut Off.

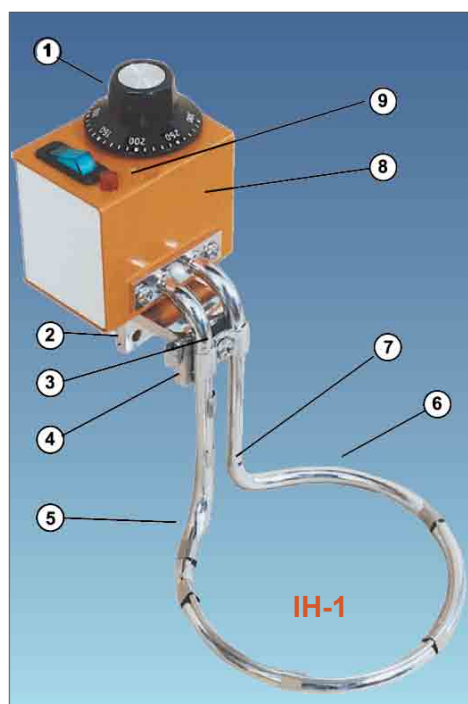
Model	ICB-12	ICD-12
Temperature range	up to 100°C	
Temperature stability	$\pm 0.3^\circ\text{C}$ to 1°C	$\pm 0.1^\circ\text{C}$
Controller	Basic analog	PID Digital
Readout	Thermometer	Digital °C/°F
Pumping flow	12 Liter/min	
Immersion	Minimum 6cm, Maximum 155mm	
Heater	1000Watt	
Over temp. safety	Adjustable	
Dimensions (mm)	W200xD240xH90	
Weight	2kg	23kg



TB-Series, Polycarbonate Tank TB Type For Immersion Thermostat / Circulator

PC Tank with bridge for fixing immersion circulator ICB/ICD-12, Seamless Transparent Polycarbonate Tank - withstands 120°C. Heating circulators are commonly used for cell cultures, enzyme assays, coliform testing, DNA incubation & procedures.

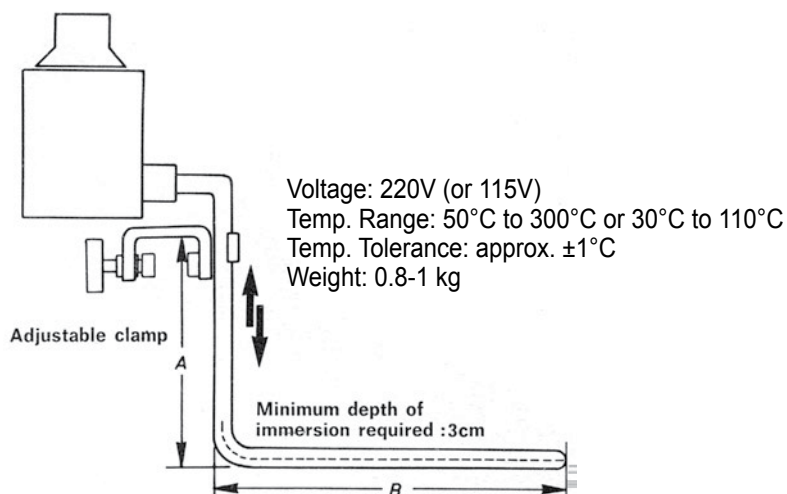
TB-7	16x30x13cm Height, 7 Liter
TB-8	21x35x14cm Height, 8.5 Liter
TB-11	18x27x18cm Height, 11 Liter
TB-14	21x35x18cm Height, 14 Liter
TB-30	32x51x20cm Height, 30 Liter



IH-Series, Thermostatic Controlled Immersion Heaters

Immersoheat: Thermostatically Controlled Immersion Heaters.

Reliable element for accurately heating liquids to temperatures of up to 300°C with a tolerance of approx. $\pm 1^\circ\text{C}$. Designed for trouble-free application. Suitable for use in science and industry for: Distillation, evaporation, sterilization, rotary evaporation, ultrasonic cleaning, photographic bath etc.



Immersoheat Features:

- Easily converts any container into a thermostatically controlled bath from ambient to 300C.
- Rugged, reliable, convenient, maintenance-free, energy-saving & reasonable priced.
- Fully valid substitute for expensive water and oil baths.
- Permits utilization of the entire contents of the container, without effecting the functioning of stirrers.
- Heat is applied directly to the liquid, ensuring rapid rise of temperature.
- Safe - fast acting thermostat server as low-level cut out.
- You get the temperature you set.
- Control box is located on the outside and is unaffected by vaporous and temperature effects.

IMMERSOHEAT IH-1

- 1- Temperature setting in $^\circ\text{C}$
- 2- Threaded hole for attachment to stand
- 3- Height adjustment permits wide range of application
- 4- Mounting bracket (patented design) with teflon-tipped disc premitting secure clamping to all surfaces, including glass
- 5- Heating element chromium-plated copper sheath: also available in stainless steel on special order
- 6- Fast-acting thermostat also serves as low-level cut-out, preventing element burn-out and fire hazard
- 7- Shallow immersion depth (3 cm)
- 8- The control housing is located outside the vessel and thus protected against vapors and temperature effects
- 9- Indicator light

Model 50-300°C	Model 50-110°C	Watts	"A" mm	"B" mmØ
IH3/13	IH1/13	500	100	130
IH3/15	IH1/15	750	110	150
IH3/17	IH1/17	750	120	170
IH3/19	IH1/19	1000	130	190
IH3/21	IH1/21	1000	150	210
IH3/23	IH1/23	1250	180	230
IH3/25	IH1/25	1500	200	250
IH3/27	IH1/27	1500	200	270

CP-13/17, Circulation Pump

Pumping Capacity up to 13 liter/minute.

Model CP-13:

Max. Immersion Depth 13 cm.

Model CP-17:

Max. Immersion depth 17 cm.



B WATER BATHS

Immersion Coolers



FIGR-Series, Immersion Coolers

The Immersion cooler can be used with open bath circulators to provide a reliable and flexible alternative to tap water cooling.

This immersion cooler also provides a simple solution for direct cooling of small samples.

- Wide operating temperature range to meet application needs (down to -30°C).
- Eliminates the inconvenience of handling dry ice or liquid nitrogen, saving both time and money.

Used together with open-water bath circulators, this cooler provides an alternative to tap water cooling.

this cooler is equipped with an air-cooled cooling circuit and is suitable for individual cooling applications like cooling smaller volumes, removing reaction heat or replacing tap water cooling. temperature range: -30 to 100°C .

the HC series is a cost effective alternative to dry ice.

Adding one of our Immersion Coolers or Cold Baths to your laboratory is a wise investment.

Both are designed to eliminate the use of dry ice or liquid nitrogen, and feature durable, heavy-duty refrigeration systems that can operate continuously without trouble.

If you calculate the cost of buying a year's worth of dry ice or LN 2 and compare it with the cost of running either, you'll be pleasantly surprised.

3 available to meet your application needs.

See the specification table below for cooling probe options. Immersion Coolers are primarily used for counter-cooling when connected to a heating circulator, or for rapidly cooling fluids down to low temperatures.

Take advantage of the space-saving design.

Immersion Coolers represent an economical alternative to conventional tap water cooling.

Ease of operation make this model series the ideal instruments for a variety of cooling applications.

Advantages: Rapid cooling of liquids to low temperatures • Counter cooling of liquids in combination with open bath circulators • Preventing the use of precious tap water for cooling • Ease of operation • Compact design, small footprint • Much safer and consistent than dry-ice.

Model	FIGR-001	FIGR-002	FIGR-003
Working range	Ambient ~ -20°C	Ambient ~ -30°C	Ambient ~ -30°C
Cooling capacity (at 20°C)	750Kcal/hr	1000Kcal/hr	1500Kcal/hr
Probe	$\Phi 5.1 \times 13.2\text{cm}$	$\Phi 5.1 \times 20\text{cm}$	$\Phi 5.1 \times 20\text{cm}$
Case (mm)	W230xD305xH450	W230xD320xH500	W230xD320xH500
Power source	110/220V 60/50Hz 3/1.5A	110/220V 60/50Hz 3.5S/2A	110/220V 60/50Hz 4A/2A

BLENDERS

BagMixer is the most effective lab blender for microbiological analyses. It guarantees optimal bacterial extraction of solid samples. Thanks to the unique adjustable paddle system, the blending chamber adapts perfectly to the size of the sample.



BagMixer 400W, Lab Blender

World best seller, BagMixer® 400 is a powerful & easy-to-use lab blender. In use with a filter-bag, there is no risk of cross-contamination: the blending is accurate, reliable and quick. Adapted to any kind of application, it is the perfect tool for microbiological analysis.

Performance: Window door • Fixed blending speed (8 strokes/sec.) • Variable blending time (30-210 secs. or open-running) • Security drip tray.

Features: Silent • Optimum extraction • Unbreakable window door • Life-time guarantee on shock-absorbers • All stainless steel • 270° retractable door • Easy cleaning.

Specifications:

- Useful volume: 50-400ml.
- Size (LxDxH): 39x26x29cm.
- Power: 220/110V-50/60Hz.
- Weight: 16.5kg.

B WATER BATHS

Immersion Coolers



FIGR-Series, Immersion Coolers

The Immersion cooler can be used with open bath circulators to provide a reliable and flexible alternative to tap water cooling.

This immersion cooler also provides a simple solution for direct cooling of small samples.

- Wide operating temperature range to meet application needs (down to -30°C).
- Eliminates the inconvenience of handling dry ice or liquid nitrogen, saving both time and money.

Used together with open-water bath circulators, this cooler provides an alternative to tap water cooling.

this cooler is equipped with an air-cooled cooling circuit and is suitable for individual cooling applications like cooling smaller volumes, removing reaction heat or replacing tap water cooling. temperature range: -30 to 100°C .

the HC series is a cost effective alternative to dry ice.

Adding one of our Immersion Coolers or Cold Baths to your laboratory is a wise investment.

Both are designed to eliminate the use of dry ice or liquid nitrogen, and feature durable, heavy-duty refrigeration systems that can operate continuously without trouble.

If you calculate the cost of buying a year's worth of dry ice or LN 2 and compare it with the cost of running either, you'll be pleasantly surprised.

3 available to meet your application needs.

See the specification table below for cooling probe options.

Immersion Coolers are primarily used for counter-cooling when connected to a heating circulator, or for rapidly cooling fluids down to low temperatures.

Take advantage of the space-saving design.

Immersion Coolers represent an economical alternative to conventional tap water cooling.

Ease of operation make this model series the ideal instruments for a variety of cooling applications.

Advantages: Rapid cooling of liquids to low temperatures • Counter cooling of liquids in combination with open bath circulators • Preventing the use of precious tap water for cooling • Ease of operation • Compact design, small footprint • Much safer and consistent than dry-ice.

Model	FIGR-001	FIGR-002	FIGR-003
Working range	Ambient ~ -20°C	Ambient ~ -30°C	Ambient ~ -30°C
Cooling capacity (at 20°C)	750Kcal/hr	1000Kcal/hr	1500Kcal/hr
Probe	$\Phi 5.1 \times 13.2\text{cm}$	$\Phi 5.1 \times 20\text{cm}$	$\Phi 5.1 \times 20\text{cm}$
Case (mm)	W230xD305xH450	W230xD320xH500	W230xD320xH500
Power source	110/220V 60/50Hz 3/1.5A	110/220V 60/50Hz 3.5S/2A	110/220V 60/50Hz 4A/2A

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Features: Silent • Optimum extraction • Unbreakable window door • Life-time guarantee on shock-absorbers • All stainless steel • 270° retractable door • Easy cleaning.

Specifications:

- Useful volume: 50-400ml.
- Size (LxDxH): 39x26x29cm.
- Power: 220/110V-50/60Hz.
- Weight: 16.5kg.

B WATER BATHS

Immersion Coolers



FIGR-Series, Immersion Coolers

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Case (mm)	W230xD305xH450	W230xD320xH500	W230xD320xH500
Power source	110/220V 60/50Hz 3/1.5A	110/220V 60/50Hz 3.5S/2A	110/220V 60/50Hz 4A/2A

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Specifications:

- Useful volume: 50-400ml.
- Size (LxDxH): 39x26x29cm.
- Power: 220/110V-50/60Hz.
- Weight: 16.5kg.

Our Laboratory Blenders are powerful and durable for grinding, blending, chopping, and processing. Designed specifically with the daily requirements of a lab in mind, our blenders are available in either stainless steel or glass. And laboratory professionals know that MRC is the name to trust. Safe and easy to clean, these laboratory blenders are used with both wet and dry ingredients, and are available in various sizes with varying speeds. With all these benefits, a blender is truly the best choice for the lab.

1 & 1.2 Liters Blenders For Mixing, Stirring, Blending Or Homogenizing

Base: Epoxy coated motor housing. **Capacity:** 1 Liter/1.2 Liter

Container: S: 1 liter, Stainless steel with handle & two piece vinyl & styrene lid.

G: 1.2 liter, Heat resistant glass with handle & two piece vinyl and styrene lid.



800G/S - Heavy duty blender, One speed 22,000 rpm, Epoxy coated motor housing, container with handle & 2 piece vinyl and styrene lid.

8011G/S - Heavy duty blender, 2 speed 22,000rpm & 18,000rpm, Epoxy coated motor housing, Container with handle & two piece vinyl & styrene lid.

8010G/S - Heavy duty blender, 2 speed 22,000rpm & 18,000rpm, Epoxy coated motor housing, Container with handle & two piece vinyl and styrene lid.

LB20G/S - Heavy duty blender, Variable speed 0-20,000rpm, Epoxy coated motor housing, container with handle & 2 piece vinyl and styrene lid.

HGBSS/LBC10, 2/4 Liter Blenders



HGBSS

LBC10

HGBSS, 2 Liter Blender

Mid-size Blender Convenience.

MRC offers a blender specifically designed to process up to two liters of free-flowing material with high liquid content.

Big Blender Toughness.

Powerful, 2-speed: Low-19,000rpm,

High-23,000rpm

1-HP motor will emulsify, homogenize, grind, shred, disintegrate and mix a wide spectrum of materials in seconds.

LBC10, 4 Liter Blender

The Standard in Handling. Provides two handles for safer, easier lifting, pouring and carrying.

The Standard in Long Service Life. Sealed, precision, hi-tech ball bearing system extends the life of our blenders.

The Standard in Design and Control. Ergonomic chassis design makes the unit easier to lift & clean. Control panel with Pulse Mode provides precision operation.

The Standard in Quiet Operation. Encases its industry-leading 3-HP motor for quiet operation.

The Standard in Stability. Deeper, wider, full traction rubber non-skid feet keep the blender stable.

Speed: Off-Low-Med-Hi-Pulse 16,000-18,000-20,000rpm.



BHL-240

BHL-240, Hazardous location Blender Motor

Capacity: 1 litre. **Switch Settings:** Two speed switch available as an accessory - BHLSW. **Base:** Natural finished aluminum and steel housing. **Container:** One litre stainless steel with stainless steel lid available separately - HL515.

Cord: not included. Must be hard-wired via explosion-proof conduit. **Overall height:** 14-3/4 inches (37.5 cm).

Weight: 19 lbs. (8.62k)

The Standard in Safety. Depend on this MRC blender to provide optimum safety and reliable performance when working with heat and/or highly volatile substances. The Hazardous Location Blender. (BHL240) Heat is generated within motor housings during normal operation. This blender is designed to prevent the electrical arcing and generated heat from igniting ambient atmospheres.



8020 container

8017

8017/8018, 4 Liter Explosion Proof Blender

MRC's Explosion-Proof Blender 8017 is designed for laboratory situations made hazardous by the blending of mixtures containing volatile solvents. Unit features a 1.5 hp explosion-proof motor with automatic reset thermal protection. The 8017 is designed to accommodate a MRC 4-Liter blending container (#8020 not included). The explosion-proof motor is UL approved (applies to motor only) for Class I, Group C and D and Class II, Group F and G operation. Model 8017 is a single-speed blender operating at 11,500 rpm. Model 8018 is a variable-speed version of the 8017. It will provide constant torque in a speed range from 1,150 to 11,500 rpm. Blender is powered by a PWM scalar drive and speed is monitored by a digital display. Although both blenders are designed to use a 4-Liter container, you can adapt unit to fit all Eberbach blending containers with the use of a Model 8051 adapter. Both Model 8017 and 8018 must be installed by a qualified electrician to preserve their explosionproof capability. Units are supplied without container, power switch or adapter.

Features:

- Blending speed - 8017: fixed@11500rpm
8018: variable between 1150-11500rpm, displayed by digital output
- Optional power requirements - 8017: 230/460V, 50/60Hz three phase
8018: 230V, 50/60 Hz, three phase
- Power requirements - 8017: 115/230V, 60Hz, 16.4/8.3Amps.
8018: 230V, 50/60Hz, 16.4 Amps
- Blender motor - 8018/8017: explosion-proof single phase UL approved for Class I, Group D and Class II
Group, F and G. Rated 1.5 hp
- Dimensions - Height: 18 in without container (45cm)
Width: 10.4 in (26cm)
Length: 20.4 in (52cm)
- Weight - 90 lbs (40kg)

Accessories:

CAC-33

CAC-32

CAC-32

1.2 liter Glass Container Complete with Blade and Lid.

CAC-33

1 liter stainless steel Container Complete with Blade and Lid.



MC-2

MC-1

3 sizes:

- MC-1** (12-37ml)
- MC-2** (37-110ml)
- MC-3** (50-250ml)

Stainless steel containers and base for processing small quantities. Stainless steel base Standard blending assembly with stainless steel blade Snap fit lid.
3 sizes: MC1 (12-37 ml), MC2 (37-110 ml), MC3 (50-250ml)

Our Laboratory Blenders are powerful and durable for grinding, blending, chopping, and processing. Designed specifically with the daily requirements of a lab in mind, our blenders are available in either stainless steel or glass. And laboratory professionals know that MRC is the name to trust. Safe and easy to clean, these laboratory blenders are used with both wet and dry ingredients, and are available in various sizes with varying speeds. With all these benefits, a blender is truly the best choice for the lab.

1 & 1.2 Liters Blenders For Mixing, Stirring, Blending Or Homogenizing

Base: Epoxy coated motor housing. **Capacity:** 1 Liter/1.2 Liter

Container: S: 1 liter, Stainless steel with handle & two piece vinyl & styrene lid.

G: 1.2 liter, Heat resistant glass with handle & two piece vinyl and styrene lid.



800G/S - Heavy duty blender, One speed 22,000 rpm, Epoxy coated motor housing, container with handle & 2 piece vinyl and styrene lid.

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8010G/S - Heavy duty blender, 2 speed 22,000rpm & 18,000rpm, Epoxy coated motor housing, Container with handle & two piece vinyl and styrene lid.

LB20G/S - Heavy duty blender, Variable speed 0-20,000rpm, Epoxy coated motor housing, container with handle & 2 piece vinyl and styrene lid.

HGBSS/LBC10, 2/4 Liter Blenders



HGBSS

LBC10

HGBSS, 2 Liter Blender

Mid-size Blender Convenience.

MRC offers a blender specifically designed to process up to two liters of free-flowing material with high liquid content.

Big Blender Toughness.

Powerful, 2-speed: Low-19,000rpm,

High-23,000rpm

1-HP motor will emulsify, homogenize, grind, shred, disintegrate and mix a wide spectrum of materials in seconds.

LBC10, 4 Liter Blender

The Standard in Handling. Provides two handles for safer, easier lifting, pouring and carrying.

The Standard in Long Service Life. Sealed, precision, hi-tech ball bearing system extends the life of our blenders.

The Standard in Design and Control. Ergonomic chassis design makes the unit easier to lift & clean. Control panel with Pulse Mode provides precision operation.

The Standard in Quiet Operation. Encases its industry-leading 3-HP motor for quiet operation.

The Standard in Stability. Deeper, wider, full traction rubber non-skid feet keep the blender stable.

Speed: Off-Low-Med-Hi-Pulse 16,000-18,000-20,000rpm.



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BHL-240, Hazardous location Blender Motor

Capacity: 1 litre. **Switch Settings:** Two speed switch available as an accessory - BHLSW. **Base:** Natural finished aluminum and steel housing. **Container:** One litre stainless steel with stainless steel lid available separately - HL515.

Cord: not included. Must be hard-wired via explosion-proof conduit. **Overall height:** 14-3/4 inches (37.5 cm).

Weight: 19 lbs. (8.62k)

The Standard in Safety. Depend on this MRC blender to provide optimum safety and reliable performance when working with heat and/or highly volatile substances. The Hazardous Location Blender. (BHL240) Heat is generated within motor housings during normal operation. This blender is designed to prevent the electrical arcing and generated heat from igniting ambient atmospheres.



8020 container

8017

8017/8018, 4 Liter Explosion Proof Blender

MRC's Explosion-Proof Blender 8017 is designed for laboratory situations made hazardous by the blending of mixtures containing volatile solvents. Unit features a 1.5 hp explosion-proof motor with automatic reset thermal protection. The 8017 is designed to accommodate a MRC 4-Liter blending container (#8020 not included). The explosion-proof motor is UL approved (applies to motor only) for Class I, Group C and D and Class II, Group F and G operation. Model 8017 is a single-speed blender operating at 11,500 rpm. Model 8018 is a variable-speed version of the 8017. It will provide constant torque in a speed range from 1,150 to 11,500 rpm. Blender is powered by a PWM scalar drive and speed is monitored by a digital display. Although both blenders are designed to use a 4-Liter container, you can adapt unit to fit all Eberbach blending containers with the use of a Model 8051 adapter. Both Model 8017 and 8018 must be installed by a qualified electrician to preserve their explosionproof capability. Units are supplied without container, power switch or adapter.

Features:

- Blending speed - 8017: fixed@11500rpm
8018: variable between 1150-11500rpm, displayed by digital output
- Optional power requirements - 8017: 230/460V, 50/60Hz three phase
8018: 230V, 50/60 Hz, three phase
- Power requirements - 8017: 115/230V, 60Hz, 16.4/8.3Amps.
8018: 230V, 50/60Hz, 16.4 Amps
- Blender motor - 8018/8017: explosion-proof single phase UL approved for Class I, Group D and Class II
Group, F and G. Rated 1.5 hp
- Dimensions - Height: 18 in without container (45cm)
Width: 10.4 in (26cm)
Length: 20.4 in (52cm)
- Weight - 90 lbs (40kg)

Accessories:

CAC-33

CAC-32

CAC-32

1.2 liter Glass Container Complete with Blade and Lid.

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1 liter stainless steel Container Complete with Blade and Lid.



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3 sizes:

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Stainless steel containers and base for processing small quantities. Stainless steel base Standard blending assembly with stainless steel blade Snap fit lid.
3 sizes: MC1 (12-37 ml), MC2 (37-110 ml), MC3 (50-250ml)



GasProfi 1-Micro

Model: GasProfi1, Micro

Today there is the gasprofi 1 edition burner for optimal safety in the chemistry laboratory.

The gasprofi 1 safety burner meets maximum safety standards for working with flames. In a chemistry lab in particular, safety is a crucial factor when working with a flame. Bunsen burners were standard equipment in laboratories for many years but they were the cause of many accidents and fires.

Gasprofi 1 edition changes all this!

This safe gas burner for sterilizing, heating and other flame related applications combines all the functional advantages needed in modern laboratories.

Flame monitor for more safety

The flame is re-ignited automatically if it goes out inadvertently. For example, if the flame is extinguished due to over-boiling of liquids and cannot be re-ignited, the burner automatically shuts the gas supply off for safety.

Simple and safe operation

Switch flame on and off at the touch of a button – no matches needed.

Energy-saving consumption

The flame burns only as long as it is required. The strength of the flame can be adjusted by an air regulator.

Robust

All external components are made of stainless steel for maximum sterility. If liquids are spilled, they can flow out through a drain. The burner head can be removed for thorough cleaning.

Flexible use

Gasprofi 1 can be used with natural gas or propane/butane gas. Special safety adapters are available for use with different gas cylinders.



FUEGO SCS BASIC

Model: FUEGO SCS Basic/Digital Safety Enhanced Laboratory Gas Burner With Stainless Steel Foot Pedal And Button Function.

The Fuego SCS basic represents a new standard among laboratory gas burners. With its innovative design this laboratory gas burner is suitable for all flame related applications in the laboratory.

Safety Enhanced Laboratory Gas Burner With Touch Free IR-Sensor And Button Function.

The Fuego SCS Digital represents a new status among laboratory gas burners. With its innovative design and the extensive standard features this laboratory gas burner is suitable for all flame related applications in the laboratory.

Features:

- With stainless steel foot pedal and button function (Digital: With IR-Sensor, LC-Display and Button function).
- 3 standard-programs for foot pedal and button function (Digital: 5 standard- programs for IR-Sensor).
- Adjustable IR-Sensor reaction distance (Digital model only).
- Double Click IR-Sensor (connectable) (Digital model only).
- SCS (Safety Control System) with BHC (Burner Head Control).
- Removable and decomposable burner head.
- Tilt mechanism, right / left.
- Holding device for 3 inoculation loop holders.
- Nozzles for natural gas, propane / butane gas.
- Turbo flame.
- Wrench 17 mm for gas connection.
- Screwdriver for burner head and cover of burner shaft.
- Tubing connector with swivel nut.
- Switching power supply (global).



FUEGO SCS DIGITAL

Model	GasProfi 1-Micro	Fuego SCS Basic	Fuego SCS Digital
Technology	Microprocessor		Microprocessor, LC-display
IR-Sensor		Start-stop with timer~2h, auto-off with timer~2h	
Foot pedal	Standard (flame during pressed foot pedal)		
Button	start-stop timer - 60min,		start-stop timer ~2h
Safety control system (SCS) with gas safety cut off	Ignition and flame control, temperature monitor, burner head clogging and assembly monitor (BHC), automatic unit switch off, 4h residual heat display		Ignition and flame control, temperature monitor, burner head clogging and assembly monitor (BHC), automatic unit switch off, 1-2h residual heat display
Gas connection	1/4" left with gas filter		
Gas types	I12ELL3B/P, nature gas E/LL 18-25 mbar, liquid gas, 20-50 mbar		
Connected load	70 g/h liquid gas		
Continuous cartridge operation	CV360 - 40min, Express 444 - 50min, CG1750 - 150min, C206 - 170min, CP250 - 210min, CV470 - 370min		
Flame temperature	1350°C on liquid gas, 1300°C on natural gas (E)		
Temperature threshold level	1kw liquid gas, 1kw natural gas		
IR-Sensor coverage			5-50mm, Adjustable
Power consumption	2 VA		
Power connection	100-240V 50/60Hz max. 0.3A 9V DC/1A		
Casing & operating controls	Stainless steel/glass, UV and solvent resistant		
Burner head	removable and decomposable, stainless steel		
Cover of burner shaft	Ø23 mm, with drains		
Measurements (mm)	W85xD49x86	W103xD49xH130	
Weight	700g		



STER-815, Bacti-Cinerator Sterilizer

The Bacti-Cinerator sterilizer sterilizes microorganisms utilizing infrared heat produced by a ceramic core element. The ceramic element contains no asbestos and ensures maximum sterility without splatter across the work surface area. Complete sterilization occurs within 5-7 seconds at optimum sterilizing temperature of 1500°F (815.6°C). The small footprint makes the Bacti-Cinerator sterilizer an ideal instrument for anaerobic and aerobic chambers alike. Several user friendly accessories are also available for the Bacti-Cinerator sterilizer

Features: Sterilizes needles, loops, and culture tube mouths in five to seven seconds at optimum sterilizing temperature of 815.6°C (1500°F) • Ceramic funnel tube enclosed in stainless-steel perforated guard and stainless-steel support stand • For AC220V 50/60Hz.

Specification: The center high-temperature: 815±50°C • The Max-diameter of sterilizer goods: φ14mm • The length of sterilizer: 140mm • 4.Net weigh: 1.3Kg.



STER-101, Boiling Sterilizer

Specifications:

- Timer: 0-60 min. mechanical timer with bell.
- Heater: 1500 watts.
- Thermostat: Temp. over to 150°C auto cut-off power.
- Body material: 18.8 stainless steel.
- Tray Dimen.: W350xD165xH30(mm)
- Overall Dimension: W525xD190xH170(mm)
- Net/Gross Weight: 3.5/4.0Kgs
- Power Supply: 220V/50-60Hz/7Amp

Features: All hydraulically pressed 18.8 stainless steel, can withstand electrolysis without corrosion • Long life immersion stainless nickel pipe heater & corrosion proof • Precision mechanical timer with bell switch control • Waterless overheating prevention system with auto power cut-off • Build-in low level cut-off device.



FLAME-100

FLAME-100, Safety Bunsen

Model	FLAME-100
Technology	Microprocessor
Programs	Button: Start-Stop mit Ubertwachungstimer, 60 min Foot pedal: Standard (Flame during pressed foot pedal, Foot pedal optional)
Safety features	Safety Control System (SCS) with gas safety cut off: ignition & flame control temp. monitor, burner head clogging monitor (BHC) automatic unit switch off, 4 h
Gas supply & consumption	Gas connection: 1/4" left with Gas filter Gas types: "2ELL3B/P: natural gas E/LL, 18 - 25mbar. liquid gas, 20 - 50mbar Connected load: 48 g/h liquid gas Continuous cartridge operation: CV360-65min, CG1750-210min, (approx.) C206-230min, CP250-305min, CV470-550min, CV270-280min
Temperature	Flame temperature: 1200°C liquid gas, 1170°C on natural gas (E) Temp. threshold level: 0.66 kW liquid gas, 0.66 kW natural gas
Electrical	Power consumption: 2VA. Power connection: 100-240 V / 50/60 Hz / max. 0.3 A, 9V DC / 1 A
Mechanical	Burner tube: removable, stainless steel. Measurements (WXHxD): 89x34x88mm. Height with burner tube: 94mm. Weight: 385g.



STER-100



STER-200



STER-220

STER-series, Gas Burners

Features:

- Electronic instant ignition
- High temp. attainable: 1300°C
- Safety, clearing
- Adjustable flame
- Refillable butane fuel tank

Applications:

- Sterilizing • Welding • Heating
- Brazing • Digestion • Cooking

Model	STER-100	STER-200	STER-220
Max. temperature	1300°C	1300°C	1300°C
Fuel capacity (g)	45	45	45
Working time (min)	60	60	60
Safety lock	YES	-	-
Dimensions (mm)	H161xW137xD79	H92xW115xD79	H94xW115xD78
Dry weight (g)	380	407	425



AutoLoop

Model: AutoLoop, Carrousel For Flame Sterilizing Inoculation Loops

The inoculation loop carrousel Autoloop PRO, which is suitable for up to 4 inoculation loops, was developed to comply with current requirements in microbiological, cellbiological and biotechnological laboratories.

Model	AutoLoop
Technology	Microprocessor
Display	fully graphic dot-matrix
Rotational direction	left / right, depends on removed holder
Inoculation loop holder	1 - 4, with optical holder detection
Time of flame sterilizing	1 - 15 sec
Time for cool-down period	1 - 45 sec
Safety features	temperature control, flame activation warning, indicator of remaining cool-down, tilt sensor, residual heat display
Adjustable sterilization monitor	1 - Off, 2 - low intensity, 3 - middle intensity, 4 - high intensity
Stand by	automatic unit switch off: 1 h (or with stand-by time of the burner)
Operating voltage	via Fuego (foot pedal socket)
Casing	stainless steel & aluminum, UV and solvent resistant
IR-Sensor coverage	5-50mm, Adjustable
Measurements(mm)	W135xD180 Height Autoloop: 305
Weight	1200 g



CALI-350

Model	CALI-350
Range	35°C to 300°C
Accuracy	±1°C
Stability	±0.3°C
Heating times	15 ± inutes
Well depth	100mm
Power	230V/60Hz
Size (mm)	H57x3 125x6 150
Weight	3 kg

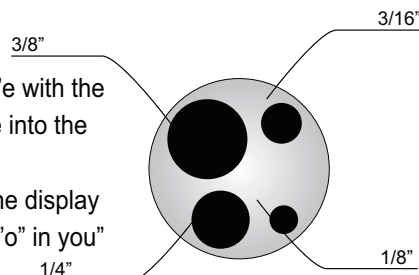
CALI-350, Portable Dry-Well Calibration, Up To 300°C

They're the smallest, lightest & most portable dry-wells in the world. It's convenient. It has a range to 300°C and is perfect for checking RT6's, thermocouples and bi-metal thermometers in the field.

Plug it in, switch it on, set the temperature with the front panel buttons and insert your probe into the properly sized well.

Compare the reading on your device to the display temperature, and the difference is the error in your device.

The Cali 350 has a display resolution of 0.1 degrees, an accuracy of ±1°C, a stability of ±0.3°C.



CALI-1200

CALI-1200, Thermocouple Calibration Furnace 400÷1200°C

Model	CALI-1200
Max. temperature (°C)	1200
Continuous temperature (°C)	1150
Temperature range (°C)	400-1200
Stability	Better than +1°C
Overall dimensions (mm)	3 310x6 225xH399
Heated length (mm)	150
Controller	eu"othe"m 2132
Indicator	eu"othe"m 2132
Heating rate	20 mins (to 1150°C)
Cavity diameter (mm)	20
Weight (kg)	8.8
Furnace voltage	120/240 exte"nally selectable
Max. power (W)	1100
Thermocouple type	N

The portable thermocouple calibration furnace is a high stability heat source designed for the calibration of thermocouples up to 7.5mm, with a maximum operating temperature of 1200°C. The thermocouples are inserted into the work tube through an insulation plug

& can be compared with the temperature indicator. It is portable and self contained, with built in PID microprocessor controller & separate digital temperature indicator giving 1°C resolution. The special work tube design results in a much higher temperature uniformity than is normally associated with a furnace of this size. The metallic work tube is heated safely when used with metal sheathed mineral insulated thermocouples. The CALI-1200 can be used in a laboratory or in site as its rapid heat up and stabilization make it ideal for quick set up. With optional RS-232 communication to control the bath from a PC.



WBL-102

WBL-102, Temperature Calibration Water Bath -30÷100°C

± 0.1°C Temperature Calibration Benchtop Bath covers a range from -30°C to 100°C with stability & uniformity of ± 0.1°C. tank volume is nine litre - large enough to test many sensors at once. Bath opening is 200 x 150 mm, and 150 mm deep.

Using high precision 1/16 microprocessor controlled Eurotherm model 3216 with high stability RT6 sensors.

With optional RS-232 communication to control the bath from a PC.

OBH-183, Temp. Calibration Oil Bath Up To 300°C



Model	OBH-183
Temp. range	Room temp. +5°C to 300°C
Stability	±0.1°C
Setting/readout	6 digital
Heater	1.2K3
Stirring	By built-in circulation pump
Inside dimen.	3 30x6 30xH20cm
Outside dimen.	3 66x6 40xH39.5cm
Volume	18L
Power source	110/220V 50/60Hz, 13A/6.5A



CWA-12

CWA-Series, Medium/Large Chillers**Application:**

- UV printing machine and cooling for ink roller
- High-cycle machine
- PU foam machine
- Injection molding machine
- Blow molding machine
- Ultrasonic cleaning equipment
- All kind of industrial equipment.



CWA-8 Back

Feature:

1. Using the heat exchanger of plate type and shell-and-tube evaporator is to increase the heat exchange.
2. It's easy to install and maintain. Water tower is not required.
3. Advanced electrical components, energy saving and increasing deadline.
4. Digital control panel with precision $\pm 0.5^{\circ}\text{C} \sim \pm 1.0^{\circ}\text{C}$.
5. The temperature range is $15^{\circ}\text{C} \sim 30^{\circ}\text{C}$ and can set arbitrarily.
6. Filling the high-efficiency environmental refrigerant is without pollution.

Model		CWA-01	CWA-04	CWA-08	CWA-12	CWA-24	CWA-36	CWA-60	CWA-90	CWA-120
Cooling capacity	BTU/HR	1000	4000	8000	12000	24000	36000	60000	90000	120000
	KCAL/HR	250	1000	2000	3000	6000	9000	15000	22500	30000
Power source	V	1Ø AC220V 50/60Hz or 3Ø AC220V 50/60Hz								
Total overburdening current consumption	A	3.6	5.6	6.8	7.2	11.7	20	27	44.5	52
Water pump horsepower	HP	1/3	1/3	1/2	1/2	1	1.7	1.8	3	4
Water pump discharge rate	l/min	20	20	30	30	30	50	60	90	120
Water tank	liter	7	10	26	26	45	65	90	100	130
Lnlet and outlet pipe-diameter	inch	1/2"x1/2"		3/4"x3/4"		1"x1"			1-1/4"x1-1/4"	
CWA Dimen.	D W H	mm	366 444 526.5	366 444 879	518 506 969	675 545 1265	926 606 1247	1105 705 1347	956 1306 1892	
Refrigerant	gas	R134A/R407c								
CWA Weight	kg	44	70	90	94	141	182	310	440	570
CWW Weight	kg	44	68	88	91	145	172	298	410	550



SCF-Series

SCF-Series, Refrigerated Chillers

• Compact size • Bench Top • Digital setting & readout • Designed and constructed for continuous operation Coolflow SCFs are closed loop refrigerated recirculator designed to replace tap water in water cooled applications, Ideal for: Lasers, GC/MS's, NMR's, Condensers, Power supply, Ultra-centrifuge, Diffusion pump, SEM's-TEM's.

Model	SCF-25	SCF-35	SCF-75
Temp. Working range	+5°C~35°C		
Stability	±0.1°C		
Setting & readout	Digital		
Cooling capacity at 20°C Watts BTU/hr Kcal/hr	560 1910 482	950 3060 860	2100 7150 1806
Pump	5L/min 3kg/cm ² (Optional: 18L/min, 4.8kg/cm ²)		
Reservoir	Ø10.0xL23cm		Ø19.5xL35cm
Capacity	1.8L		10L
Overall	W30xD55xH59cm		W42xD62xH67cm
Power source	110/220V 60/50Hz 4A/2A	110/220V 60/50Hz 4.5A/2.25A	110/220V 60/50Hz 5A/2.5A

ICE MAKER



XB-Series

XB-Series, Ice Machine Flakes

Our XB-series automatic flake ice makers are designed in cubic shape with the curved front panel and curved door (or stainless steel flat front panel & flat door) for nice appearance.

Many advantages of the ice maker are available.

such as ice making quickly, great ice making capacity, nice ice shape and ice dropping quickly.

Tap water inlet->water incoming-> ice making-> crush ice-> ice dropping-> ice storing.

all these processes are automatically controlled for ice making continuously. In case of water shortage or ice full In cabinet, the indicator on the operation board will light on accordingly and the ice maker will stop operation automatically.

The ice storage cabinet is PU formed, so it is insulated well and it could prevent the ice made from melting. Also, the remaining water after ice made each time is used recycling, So not only the water is saved, but also the ice making

efficiency is enhanced and the energy consumption is reduced, & the customer's ice making cost is also reduced much Either purified water or the tap water could be used for ice making.

Model	XB-40	XB-70	XB-85	XB-100	XB-150
MaxProd/24H	50kg	70kg	85kg	100kg	150kg
Bin capacity	15kg	25kg	25kg	25kg	25kg
Rated power	280W	420W	420W	420W	960W
Machine size	722x543x380	883x611x548	883x611x548	883x611x548	883x611x548
Package size	770x621x457	932x690x625	932x690x625	932x690x625	932x690x625
Net/gross weight	40/45kg	57/62kg	57/62kg	58/64kg	62/70kg

CRYC-Series, Liquid Nitrogen Container With Racks

The series products are designed for storing biological samples in vials, especially suitable for the fields of medical treatment and biological science and research. They feature in storing large capacity of biological samples and low liquid nitrogen consumption, which are the most economical choice.

Main Features:

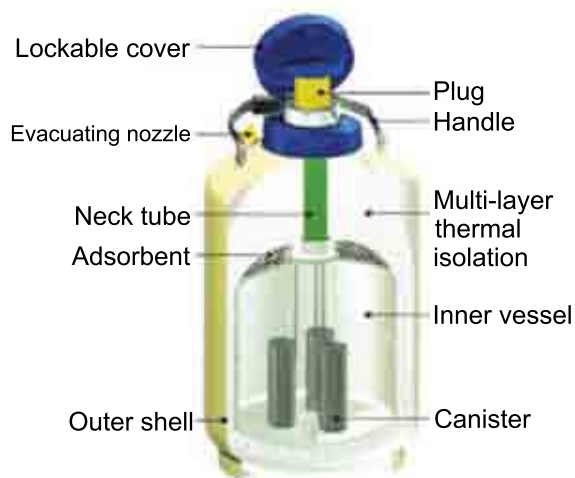
- Unique hanging rack and grided box design, allows for easy tracking and retrieval of samples.
- Advanced vacuum insulation minimizes liquid nitrogen evaporation and reduces operating costs.
- Durable aluminium construction provides years of trouble free service.
- Compact size allows system to easily fit into any lab.
- An optional sturdy 4 wheels cart provides easy movement within the laboratory.
- Super vacuum insulation offers unbeatable liquid nitrogen efficiency.
- Level measuring scale (optional), for measuring the capacity of liquid nitrogen.
- Lockable cover (optional), prevent unauthorized entry.
- Plastic box, for storing in vials.
- Narrow neck design.



Model	Unit	CRYC-47	CRYC-65	CRYC-120	CRYC-175
Capacity	L	47.0	65.0	121.0	175.0
Empty Weight	kg	19.0	27.5	43.0	54.5
Neck diameter	mm	127	216	216	216
Outer diameter	mm	500	573	573	676
Height	mm	675	710	1000	1020
Static evaporation loss mass	L/d	0.33	0.79	0.87	0.87
Static holding time (days)	d	142	82	139	202
Numbers of racks	n	7	5	5	7
Box per rack	n	5	5	10	10
Measurement of rack	mm	82x84	142x144	142x144	142x144
Measurement of box	mm	76x76	134x134	134x134	134x134
Box needed for system	n	35	25	50	70
Number of vials	n	875	2025	4050	5670



CRY-Series, Liquid Nitrogen Biological Container for Storage(I)



Sketch of Product Structure

Applications:

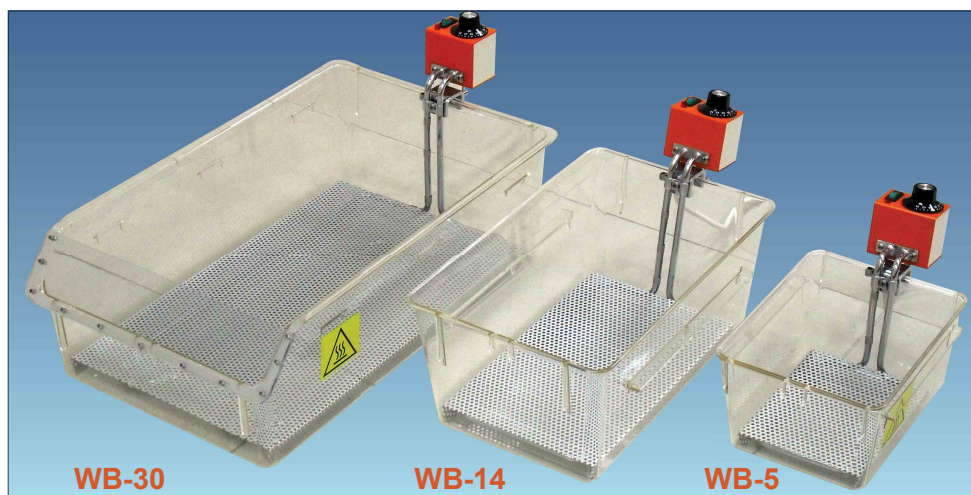
- Available in 6 sizes, to fit the requirements and space limitations of research or clinical laboratories.
- Super vacuum insulation, durable construction provide years of trouble-free service.
- Secure locking hasp prevents unauthorized entry.
- Uniform temperature environment for specimen storage.
- Every vessel includes six cans to accommodate ampules.

Features:

- High-strength aluminum alloy structure, light empty weight.
- Hinged handle, portable.
- Encoding canisters, for easy recognition and convenient accessing of samples.
- Protecting jacket, portable and preventing collision.
- Lockable cover (optional), protecting biological samples stored (except 30mm caliber).
- Multi-layer thermal isolation design, more than five-year vacuum quality guarantee.

Model	Unit	CRY-1	CRY-2	CRY-3	CRY-6	CRY-10	CRY-20	CRY-35
Capacity	L	1.0	2.2	3.15	6.0	10.0	20.0	35.5
Empty weight	kg	2.0	2.9	3.4	5.0	6.2	11.2	15.1
Neck diameter	mm	30	30	50	50	50	50	125
Outer diameter	mm	180	217	224	287	303	409	473
Height	mm	320	365	425	445	530	655	690
Static evaporation loss mass	L/d	0.06	0.06	0.10	0.10	0.10	0.10	0.29
Static holding time	d	16	32	31	63	101	202	123
Canister outer diameter	mm	26	19	38	38	38	38	97
Canister height	mm	120	120	120	120	120	120/276	120/276
Numbers of canisters	n	1	3	6	6	6	6	6
Straw holding capacity (single level)	0.5ml	60	90	792	792	792	792	5124
	0.25ml	120	204	1788	1788	1788	1788	11952
Straw holding capacity (double level)	0.5ml	-	-	-	-	-	1284	9048
	0.25ml	-	-	-	-	-	2832	19944
Number of canes	n	-	-	-	-	-	24	198
Number of vials	n	-	-	-	-	-	120	990

WB-Series, For Full Visibility Of Samples



Transparent Polycarbonate Thermostatic Bath

Ideal for sample pre treatment in QC, pathology & educational purposes, routine laboratory purposes, procedures requiring visibility of reactions inside the vessels & as a 'personal' water bath for scientists needing only a small working area with a compact footprint.

Accessories:



Features:

- Low-cost fully compatible substitute for expensive Water Bath.
- Seamless transparent polycarbonate tank-withstands 120°C.
- Fast-Acting thermostat also serves as low-water-level protector, preventing heating-element burn-out and fire hazard.
- Temp. range: from slightly above ambient tp +100°C (with cover). Accuracy: approx $\pm 0.3^{\circ}\text{C}$ at 37°C (depending on operating conditions).
- Robust and reliable - designed for years of trouble-free service.
- S - Optional Safety thermostat.
- Voltage: 230V, 50Hz (or 120V, 50/60Hz).

Multi Purpose Extraction Water Bath, 4 or 6 Places, up to 100°C



- Concentric ring cover sets make effective steaming work
- Ideal for gentle extraction, soxhlet extraction and determination of COD

Standard model	With safety thermostat model	Digital model	Bath capacity (liters)	Inside dim's (cm) W1xD1xH1	Outside dim's (cm) W2xD2xH2	Watts	Bath cover model	Floating balls model	Evap. lid model
WB-3	WBS-3	WBS-3D	2.7	10 17 10	15 31 24	500	C-3	FB-3	-
WB-4	WBS-4	WBS-4D	4.5	10 27 10	16 41 24	600	C-4	FB-4	-
WB-5	WBS-5	WBS-5D	5.5	16 20 11	22 34 24	750	C-5	FB-5	EL-5
WB-7	WBS-7	WBS-7D	7.0	16 3 11	22 44 24	1000	C-7	FB-7	-
WB-8	WBS-8	WBS-8D	8.5	21 35 12	28 50 26	1000	C-8	FB-8	-
WB-11	WBS-11	WBS-11D	11.0	18 27 16	24 43 30	1200	C-11	FB-11	-
WB-14	WBS-14	WBS-14D	14.0	21 35 16	28 50 30	1500	C-14	FB-14	EL-14
WB-30	WBS-30	WBS-30D	30	32 51 18	38 66 24	*2000	C-30	FB-30	EL-30

*1500W at 120V

B WATER BATHS

Unstirred



WBO-Series, Unstirred Up To 80°C Water Bath

The MRC stainless steel water bath are available in 2 sizes: 10 & 20 liters. Model WBO-100 and WBO-200 unstirred bath are used for general applications in laboratories. They provide excellent temperature uniformity of the liquid. A PID temperature controller provides instant and accurate temperature. The tank of the bath is made of corrosion resistant stainless steel with round corners for easy cleaning. Include hood cover.

Features:

Ideal for biotechnology, clinical, environmental, medical, petroleum, food industry • Stainless steel lid prevents evaporation & keeps constant temperature • Excellent uniformity & stability • Seamless, corrosion-resistant, stainless steel chamber • Available in 10, 20 Liters • Gable cover included.

Applications:

Incubate cultures • Warm bacteriological media • Perform chemical reactions • Thaw samples.

Model	WBO-100	WBO-200
Temp. range	Room temperature ~ +5°C to 80°C	
Temp. constancy	±0.1	
Temp. control	PID	
Heater	300W	600W
Safety devices	Short circuit, over head protector, sensor abnormality	
Bath opening (mm)	W295xD235xH150	W495xD295xH150
Inside dimensions (mm)	W295xD235xH150	W495xD295xH150
Outside dimensions (mm)	W235xD135xH150	W620xD340xH185
Volume	10L	20L
Weight	6.5 kg	9 kg



WHT-Series, Unstirred High Temperature Baths

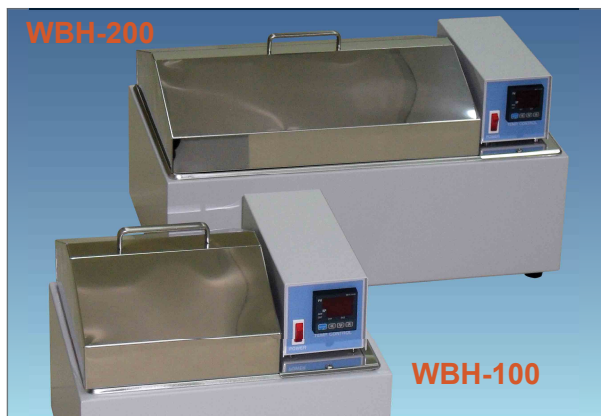
- Drip Free Cover Holder
- Easy-to-Clean Stainless Steel Tank
- Pocket Handles for Easy Lifting
- Recessed Heating Element Prevents "Burnout"
- Air-Jacket Design Eliminates Hot Spots

MRC digital water baths are durable and dependable. five different models are available, each with a variety of safety and convenience features.

The MRC high-performance water baths are accurate, easy to use, safe and durable. The water bath design incorporates the attractive MRC appearance, a drip free cover holster, and pocket handles so users can easily move the water bath's location. A microprocessor achieves precise temperature control regardless of how the unit is loaded. Calibration is performed directly from the front panel.

WHT-Series are for high temp. applications, look to MRC high temperature boiling baths wht6m, wht14m, and wht20m. these baths are designed to reach 100°C.

Model	WHT-6M / WHT-6M-2*	WHT-14M / WHT-14M-2*	WHT-20M / WHT-20M-2*
Exterior Dimensions(cm)	W42xD35.6xH34.3	W42xD54xH34.3	W42xD70xH34.3
Interior Dimensions(cm)	W30xD15.2xH15.3	W30.5xD33xH15.3	W30.5xD49.5xH15.3
Tank Capacity	6 Liters	14 Liters	20 Liters
Temperature Range	Ambient +5 to 100°C		
Temperature Control	Microprocessor		
Temperature Uniformity	+/-0.2° at 37°C		
Electrical Requirements Watts/Amps/Cycle Phase-120V Watts/Amps/Cycle Phase-220V	750W / 7 .0A /50/60Hz 750W /3.5A /50/60Hz	750W / 7.0A / 50/60Hz 750W /3.5A /50/60Hz	750W / 7.0A /50/60Hz 750W /3.5A /50/60Hz

**WBH-Series, Digital Precise Circulation Water Bath**

There are 2 models with internal circulation pump, 10 & 20 liters. The immersion circulator bridge can easily remove for easy cleaning of the tank.

Features: Ideal for Biotechnology, Clinical, Environmental, Medical, Petroleum, Food Industry, Pharmaceutical or Industrial Applications • Powerful Circulation Pump Assures Temp. Uniformity.: Internal and optional external Circulation • Stainless Steel Bath(#304) for Superior Durability & High Thermal Efficiency • Stainless Steel lid Prevents Evaporation and keeps Constant Temperature.

**External Circulation Option**

Model	WBH-100	WBH-200
Temp. range	Ambient +5°C to 100°C	
Temp. constancy	±0.1	
Temp. control	PID	
Internal circulating pump	Yes	
External circulating pump		Yes(WBH-200I)
Heater	800W	1000W
Safety devices	Short circuit, over head protector, sensor abnormality	
Bath opening (mm)	W200xD235xH150	W400xD295xH150
Inside dimensions (mm)	W295xD235xH150	W495xD295xH150
Outside dimensions (mm)	W340xD280xH320	W540xD340xH320
Volume	10L	20L
Weight	7kg	10kg

**WPC65, Circulating Water Bath**

Circulating Water Baths are an excellent choice for research and quality control applications. They are highly accurate, easy-to-use, rugged and safe.

WPC85, Fecal Coliform Incubation Circulating Water Bath

Fecal coliform incubation circulating water baths meet APHA and EPA test specifications, and are designed especially for fecal coliform testing and other applications where circulation provides extra temperature control. These units are highly accurate, easy-to-use, rugged and safe.

WPC95, Deep Chamber Water Bath

Deep chamber water baths are designed to accommodate large volumetric samples. These units are highly accurate, easy-to-use, rugged and safe

Features: Microprocessor Control • Easy-To-Clean Polymer-Coated Tanks • Air Jacket Heating Eliminates Hot Spots • Recessed Heating Element Prevents Burnout.

Model	WPC-65/WPC-65-2	WPC-85/WPC-85-2	WPC-95/ WPC-95-2
Weight	18 kg	22 kg	17 kg
Interior dimensions (mm)	W290xD495xH153	W304xD355xH280	W304xD355xH280
Exterior dimensions (mm)	W356xD724xH240	W406xD610xH390	W406xD470xH394
Tank capacity (liter)	22	34	30
Airlock Volume (liter)	37.8	-	-
Temperature range	5°C above ambient to 80°C		
Temperature uniformity	±0.2°C at 37°C		
Electrical specification	120V 50/60Hz 500W 6.0A 220V 50/60Hz 500W 3.0A	120V 50/60Hz 750W 6.5A 220V 50/60Hz 750W 3.5A	120V 50/60Hz 750W 7.0A 220V 50/60Hz 750W 3.5A
Temperature control	Microprocessor		

B WATER BATHS

Refrigerating/Heating Circulator

WBL-Series, Digital Precise Refrigerated Bath, Internal & External Circulator



Refrigerated Circulating Baths

- Compact design.
- For external & internal temperature applications.
- Low noise level.
- Rapid cool down and heating time.
- Water drain for easy cleaning of the inner tank.
- Models WBL-200 has casters.
- Water level protector.
- Ideal for direct immersion of samples or external circulating system in the field of biotechnology and laboratories.
- Powerful circulation pump ensures temp. uniformity: internal and external circulation.
- Connection with evaporator or viscometer is applicable.

Options:

Display resolution to 0.01°C • Build in RS-232/485 • PT-100Ω temperature probe for direct measurements & control of external systems • Analog inputs and outputs for external programmer & temperature recorder.

Model	WBL-100	WBL-101	WBL-200
Temperature range	-30°C~100°C		
Temp. constancy	±0.1°C		
Temp. control	PID		
Temp. sensor	PT-100Ω		
Circulation pump	9L/min. max. head 2m	18L/min. max. head 7m	27L/min. max. head 7m
Heater	1600W		2500W
Refrigerator	1/3HP		1 HP
Safety devices	Short circuit breaker, over heat protector, sensor abnormality, overload protector		
Bath opening (mm)	W200xD150xH150		W300xD210xH180
Bath dimension	W200xD300xH150		W300xD360xH180
Outside dimensions	W200xD450xH630		W420xD530xH800
Volume	9.0L		19.4L
In/Output	9.5mm		12.5mm
Weight	35kg		63kg

WBH-060, Internal & External Circulation Bath

The MRC WBH-060, 6 liter heating bath, is the most user-friendly baths available.

This heating circulator is mainly used for temperature



controlling larger external systems such as heating plates, autoclaves or reaction vessels. Combined powerful pressure/suction pumps provide a good heat exchange and optimum temperature accuracy; robust design using high grade stainless steel inside and outside the bath.

MRC heating circulator with stainless steel bath tank is mainly used for internal and external temperature tasks. simultaneous temperature applications of smaller objects can also be carried out directly in the internal bath of the circulator.

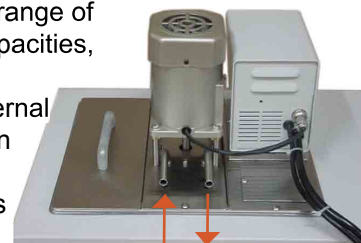
Model	WBH-060
Working range	Ambient +5°C~100°C
Volume	6 Liter
Stability	±0.05°C
Setting&Readout	Digital
Heater	500W
Pumping flow	7L/min, 0.2kg/cm ²
Reservoir(mm)	W150xD255xH150
Overall(mm)	W210xD315xH330
Power source	110/220V 60/50Hz 5/2.5A

OBH-Serie, High Temperature Bath Circulator, 7 & 18 Liter, Digital Control, Powerful Circulation Pump, Up To 200°C/300°C



Powerful Circulation Pump Ensures Temp. Uniformity: Internal & External Circulation (optional)

Robust design using high grade stainless steel inside and outside the bath. Heating Circulators with stainless steel bath tanks are mainly used for internal and external temperature tasks. The range of these models have 2 capacities, allowing for temperature application of larger external systems, as well as open systems. Simultaneous temperature applications of smaller objects can also be carried out



External Circulation Option directly in the internal bath of the circulator.

Features:

- 3 Models with choice of temperature range and bath capacity
- Stainless steel bath and lid for superior durability and high thermal efficiency.
- Over heating safety device is equipped.
- Wide range of temperature control.
- Digital temperature setting & readout.
- External circulating pump is available on special order.

Model	OBH-070	OBH-180	OBH-183
Model (External Circulation)	OBH-071	OBH-181	OBH-184
Working range	Ambient +5°C~200°C		Ambient +5°C~300°C
Stability	±0.1°C		
Setting/Readout	Digital		
Heater	1.2KW		
Stirring	By built-in circulation pump		
Volume	7 Liter	18 Liter	12 Liter
Operations	W19.5xD23.5xH15cm	W39.5xD29.5xH15cm	W30xD30xH20cm
Overall	W54xD34.5xH38cm	W73xD39xH36cm	W66xD40xH42cm
Power source	110/220V 50/60Hz 13A/6.5A		



VBH-Serie, Kinematic Viscometer Bath

Digital Precise Viscosity Bath, 16liter.
With Transparent Window, Stainless Steel Lid for Viscometer Holder, Digital PID Control System, up to 100°C, ±0.1°C.

Used for Precise Measurement with Capillary Viscometers • Innovative Easy-to-use Digital Controller PID • Powerful Circulation Pump ensures Highest Uniformity of Temperature • Stainless Steel (#304) made inner bath.

Model	VBH-150	VBH-151
Control range	-20°C~180°C	5.00°C~99.99°C
Working range	Ambient +5°C~180°C	Ambient +5.00°C~99.99°C
Temp controller	P I D control	
Stability	±0.1°C	±0.01°C~±0.02°C
Timer delay on/off	0~9999 min or 0~9999 hr	
Reservoir (mm)	W330xD150xH320	
Overall (mm)	W460xD250xDH580	
Operation (mm)	W200xD140	
Window (mm)	W160xD250	
Power source	110V 60Hz 220V 50Hz	

B WATER BATHS

Reciprocal Shaking

WBT-200/400/401, Digital Precise Shaking Water Bath, 22 & 38 Liter, & Digital PID Control, Reciprocating Motion, 20~200rpm, to 100°C, $\pm 0.1^\circ\text{C}$, up to 1 Liter Flask



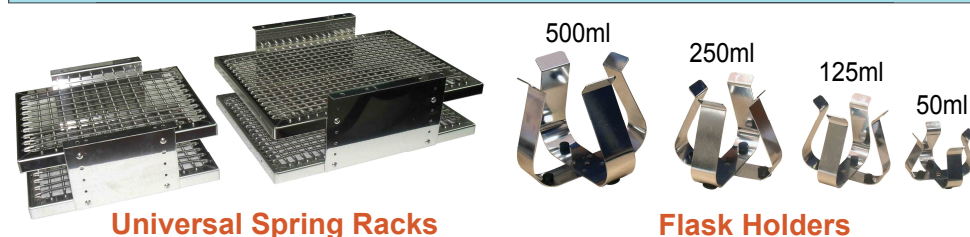
These reciprocating water bath shakers are available in three models.

Model WBT-200 small platform 250x300mm, Model WBT-400 large platform 300x400mm & Model WBT-401 refrigerated to 0°C .

Temperature control is precise, temp. range of 5°C above ambient to 100°C , speed range 20 - 200 rpm, heat loss and evaporation minimized with use of stainless steel hood cover. Easy emptying through a drain at the lowest point.

Micro processor temperature PID controller with dual display of measured temperature and set temperature.

Electronically Controlled Shaking Mechanism Provides Quiet Reciprocating Motion and Precise Speed Control.



Universal Spring Racks

Flask Holders

Features:

Stainless Steel Bath for Superior Durability & High Thermal Efficiency • Innovative Easy-to-Use Digital PID Controller • Electronically Controlled Shaking Mechanism Provides Quiet Reciprocating Motion and Precise Speed Control • Universal Stainless Steel Spring Rack (Optional): for various kind of Flasks dishes and Tubes (optional) • Patent shaking mechanism: minimum noise and vibration.

Options:

- Water level protector.
- Universal platform.
- Digital speed control.

Model	WBT-200	WBT-400	WBT-401
System	Reciprocation shaking circulation		
Temp. range	Room temperature - 100°C		0°C-100°C
Temp. constancy	±0.1°C		
Temp. control	PID		
Temp sensor	PT-100Ω		
Inside material	SUS304		
Rate of shaking	20~200 rpm		
Shaking width	20 and 40 mm variable		
Shaking plate (mm)	W300xD250xH130	W400xD300xH160	
Refrigerator			1/4HP
Heater	1.0KW	1.6KW	
Safety devices	Short circuit breaker, over heat protector, sensor abnormality, refrigerator over protector		
Inside dimensions (mm)	W500xD300xH150	W600xD350xH180	
Outside dimensions (mm)	W700xD350xH300	W830xD415xH350	W980xD415xH430
Volume (liters)	22.5	37.8	
Weight	25kg	30kg	53kg

capacity of flasks	50 ml	125 ml	250 ml	500 ml	1000 ml
WBT-200 number of flasks	20	12	6	4	2
WBT-400/401 number of flasks	35	20	12	6	4

WBT-450/550, Digital Precise Shaking Water Bath, 45 Liter, Digital PID Control, Orbital Motion, 20~250 or 400 rpm, to 75°C or 100°C, $\pm 0.1^\circ\text{C}$, up to 3 Liter Flask



WBT-450

Electronically Controlled Shaking Mechanism Provides Quiet Reciprocating Motion and Precise Speed Control.

Features:

- Stainless Steel Bath for Superior Durability & High Thermal Efficiency.
- Innovative Easy-to-Use Digital PID Controller.
- Electronically Controlled Shaking Mechanism Provides Quiet Reciprocating Motion & Precise Speed Control.
- Patent shaking mechanism: minimum noise and vibration.

Ideal for a wide range of laboratory applications requiring controlled temp. with orbital shaking motion.

Suitable for long time operation up to weeks and months.

Separate switches for speed ON/OFF & heater ON/OFF.

Individual readout for RPM & digital readout for temp.

All stainless steel inner tank, platform & clamps.

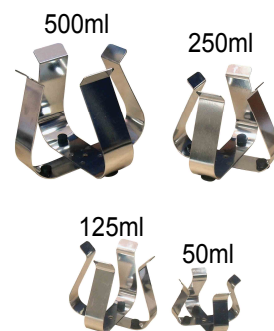
Maintenance-free induction brushless motor.

Differential clamps available.

Microprocessor based on PID temperature control. Speed and temperature adjustable.



Back



Flask Holders

Model	WBT-450	WBT-550
Speed	10-250 rpm	20-400 rpm
Orbit diameter	25 mm	12.5 mm
Speed readout	Tachometer	Digital
Temperature control	PID	PID
Temperature readout	Digital	Digital
Working temperature range	Ambient +5°C~75°C	Ambient +5°C~100°C
Stability	$\pm 0.2^\circ\text{C}$	$\pm 0.2^\circ\text{C}$
Power watts	1200W	1200W
Optional accessory	Gable cover	Gable cover
Timer	No	999min / 999hr
Platform	450x290	485x320
Inner tank size (mm)	560x405x200	600x420x200
Size (mm)	740x530x450	725x565x530

Capacity of flask	50ml	125ml	250ml	500ml	1000ml	2000ml	3000ml
WBT-450/550 number of flasks	35	24	15	12	6	2	1

B WATER BATHS

Immersion Heater Circulators



ICB-12, Immersion Circulator - Basic Model

Features:

- Temperature range: ambient to 100°C (with cooling +10 to 100°C).
- Accuracy: approx. ± 0.3 to $\pm 1^\circ\text{C}$.
- Pumping capacity: up to 12 l/min.
- Safety Cut Off.
- 12L/min max. head 2m.
- Optional: External circulation.

ICD-12, Digital Immersion Circulator

Features:

- Digital set and display of actual operating temperatures.
- PID controller provides very precise temperature control.
- Adapts to many different containers.
- Temperature range: ambient +5°C to 100°C (with cooling -10°C to 100°C).
- Accuracy: approx. $\pm 0.1^\circ\text{C}$.
- Pumping capacity: up to 12 l/min.
- Immersion depth: minimum 6 cm, maximum 15.5 cm.
- Safety Cut Off.

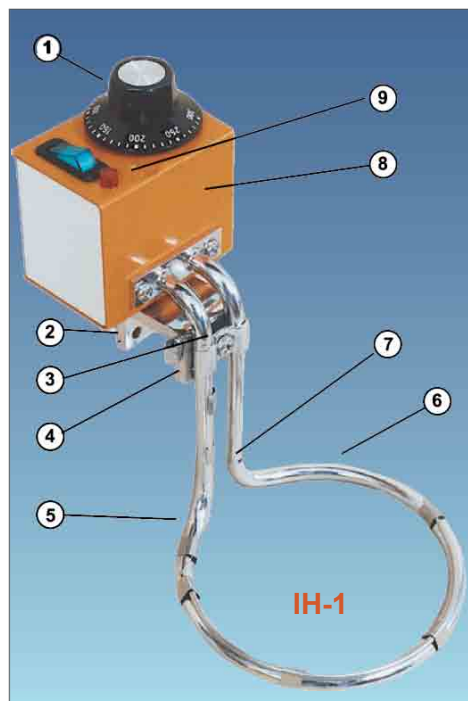
Model	ICB-12	ICD-12
Temperature range	up to 100°C	
Temperature stability	$\pm 0.3^\circ\text{C}$ to 1°C	$\pm 0.1^\circ\text{C}$
Controller	Basic analog	PID Digital
Readout	Thermometer	Digital °C/°F
Pumping flow	12 Liter/min	
Immersion	Minimum 6cm, Maximum 155mm	
Heater	1000Watt	
Over temp. safety	Adjustable	
Dimensions (mm)	W200xD240xH90	
Weight	2kg	23kg



TB-Series, Polycarbonate Tank TB Type For Immersion Thermostat / Circulator

PC Tank with bridge for fixing immersion circulator ICB/ICD-12, Seamless Transparent Polycarbonate Tank - withstands 120°C. Heating circulators are commonly used for cell cultures, enzyme assays, coliform testing, DNA incubation & procedures.

TB-7	16x30x13cm Height, 7 Liter
TB-8	21x35x14cm Height, 8.5 Liter
TB-11	18x27x18cm Height, 11 Liter
TB-14	21x35x18cm Height, 14 Liter
TB-30	32x51x20cm Height, 30 Liter



IH-1

Immersoheat Features:

- Easily converts any container into a thermostatically controlled bath from ambient to 300°C.
- Rugged, reliable, convenient, maintenance-free, energy-saving & reasonable priced.
- Fully valid substitute for expensive water and oil baths.
- Permits utilization of the entire contents of the container, without effecting the functioning of stirrers.
- Heat is applied directly to the liquid, ensuring rapid rise of temperature.
- Safe - fast acting thermostat serves as low-level cut out.
- You get the temperature you set.
- Control box is located on the outside and is unaffected by vaporous and temperature effects.

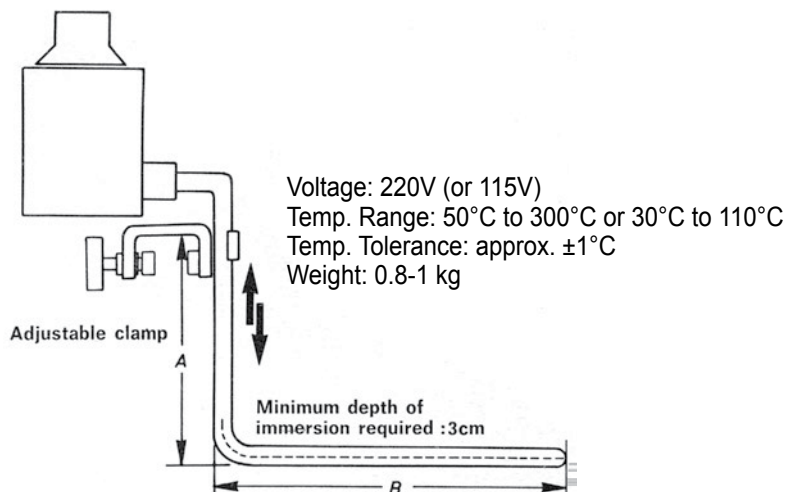
IMMERSOHEAT IH-1

- 1- Temperature setting in °C
- 2- Threaded hole for attachment to stand
- 3- Height adjustment permits wide range of application
- 4- Mounting bracket (patented design) with teflon-tipped disc premitting secure clamping to all surfaces, including glass
- 5- Heating element chromium-plated copper sheath: also available in stainless steel on special order
- 6- Fast-acting thermostat also serves as low-level cut-out, preventing element burn-out and fire hazard
- 7- Shallow immersion depth (3 cm)
- 8- The control housing is located outside the vessel and thus protected against vapors and temperature effects
- 9- Indicator light

IH-Series, Thermostatic Controlled Immersion Heaters

Immersoheat: Thermostatically Controlled Immersion Heaters.

Reliable element for accurately heating liquids to temperatures of up to 300°C with a tolerance of approx. $\pm 1^\circ\text{C}$. Designed for trouble-free application. Suitable for use in science and industry for: Distillation, evaporation, sterilization, rotary evaporation, ultrasonic cleaning, photographic bath etc.



Model 50-300°C	Model 50-110°C	Watts	"A" mm	"B" mmØ
IH3/13	IH1/13	500	100	130
IH3/15	IH1/15	750	110	150
IH3/17	IH1/17	750	120	170
IH3/19	IH1/19	1000	130	190
IH3/21	IH1/21	1000	150	210
IH3/23	IH1/23	1250	180	230
IH3/25	IH1/25	1500	200	250
IH3/27	IH1/27	1500	200	270

CP-13/17, Circulation Pump

Pumping Capacity up to 13 liter/minute.

Model CP-13:

Max. Immersion Depth 13 cm.

Model CP-17:

Max. Immersion depth 17 cm.



B WATER BATHS

Immersion Coolers



FIGR-Series, Immersion Coolers

The Immersion cooler can be used with open bath circulators to provide a reliable and flexible alternative to tap water cooling.

This immersion cooler also provides a simple solution for direct cooling of small samples.

- Wide operating temperature range to meet application needs (down to -30°C).
- Eliminates the inconvenience of handling dry ice or liquid nitrogen, saving both time and money.

Used together with open-water bath circulators, this cooler provides an alternative to tap water cooling.

this cooler is equipped with an air-cooled cooling circuit and is suitable for individual cooling applications like cooling smaller volumes, removing reaction heat or replacing tap water cooling. temperature range: -30 to 100°C .

the HC series is a cost effective alternative to dry ice.

Adding one of our Immersion Coolers or Cold Baths to your laboratory is a wise investment.

Both are designed to eliminate the use of dry ice or liquid nitrogen, and feature durable, heavy-duty refrigeration systems that can operate continuously without trouble.

If you calculate the cost of buying a year's worth of dry ice or LN 2 and compare it with the cost of running either, you'll be pleasantly surprised.

3 available to meet your application needs.

See the specification table below for cooling probe options.

Immersion Coolers are primarily used for counter-cooling when connected to a heating circulator, or for rapidly cooling fluids down to low temperatures.

Take advantage of the space-saving design.

Immersion Coolers represent an economical alternative to conventional tap water cooling.

Ease of operation make this model series the ideal instruments for a variety of cooling applications.

Advantages: Rapid cooling of liquids to low temperatures • Counter cooling of liquids in combination with open bath circulators • Preventing the use of precious tap water for cooling • Ease of operation • Compact design, small footprint • Much safer and consistent than dry-ice.

Model	FIGR-001	FIGR-002	FIGR-003
Working range	Ambient ~ -20°C	Ambient ~ -30°C	Ambient ~ -30°C
Cooling capacity (at 20°C)	750Kcal/hr	1000Kcal/hr	1500Kcal/hr
Probe	$\Phi 5.1 \times 13.2\text{cm}$	$\Phi 5.1 \times 20\text{cm}$	$\Phi 5.1 \times 20\text{cm}$
Case (mm)	W230xD305xH450	W230xD320xH500	W230xD320xH500
Power source	110/220V 60/50Hz 3/1.5A	110/220V 60/50Hz 3.5S/2A	110/220V 60/50Hz 4A/2A

BLENDERS

BagMixer is the most effective lab blender for microbiological analyses. It guarantees optimal bacterial extraction of solid samples. Thanks to the unique adjustable paddle system, the blending chamber adapts perfectly to the size of the sample.



BagMixer 400W, Lab Blender

World best seller, BagMixer® 400 is a powerful & easy-to-use lab blender. In use with a filter-bag, there is no risk of cross-contamination: the blending is accurate, reliable and quick. Adapted to any kind of application, it is the perfect tool for microbiological analysis.

Performance: Window door • Fixed blending speed (8 strokes/sec.) • Variable blending time (30-210 secs. or open-running) • Security drip tray.

Features: Silent • Optimum extraction • Unbreakable window door • Life-time guarantee on shock-absorbers • All stainless steel • 270° retractable door • Easy cleaning.

Specifications:

- Useful volume: 50-400ml.
- Size (LxDxH): 39x26x29cm.
- Power: 220/110V-50/60Hz.
- Weight: 16.5kg.

B WATER BATHS

Immersion Coolers



FIGR-Series, Immersion Coolers

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Case (mm)	W230xD305xH450	W230xD320xH500	W230xD320xH500
Power source	110/220V 60/50Hz 3/1.5A	110/220V 60/50Hz 3.5S/2A	110/220V 60/50Hz 4A/2A

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Features: Silent • Optimum extraction • Unbreakable window door • Life-time guarantee on shock-absorbers • All stainless steel • 270° retractable door • Easy cleaning.

Specifications:

- Useful volume: 50-400ml.
- Size (LxDxH): 39x26x29cm.
- Power: 220/110V-50/60Hz.
- Weight: 16.5kg.

Our Laboratory Blenders are powerful and durable for grinding, blending, chopping, and processing. Designed specifically with the daily requirements of a lab in mind, our blenders are available in either stainless steel or glass. And laboratory professionals know that MRC is the name to trust. Safe and easy to clean, these laboratory blenders are used with both wet and dry ingredients, and are available in various sizes with varying speeds. With all these benefits, a blender is truly the best choice for the lab.

1 & 1.2 Liters Blenders For Mixing, Stirring, Blending Or Homogenizing

Base: Epoxy coated motor housing. **Capacity:** 1 Liter/1.2 Liter

Container: S: 1 liter, Stainless steel with handle & two piece vinyl & styrene lid.

G: 1.2 liter, Heat resistant glass with handle & two piece vinyl and styrene lid.



800G/S - Heavy duty blender, One speed 22,000 rpm, Epoxy coated motor housing, container with handle & 2 piece vinyl and styrene lid.

8011G/S - Heavy duty blender, 2 speed 22,000rpm & 18,000rpm, Epoxy coated motor housing, Container with handle & two piece vinyl & styrene lid.

8010G/S - Heavy duty blender, 2 speed 22,000rpm & 18,000rpm, Epoxy coated motor housing, Container with handle & two piece vinyl and styrene lid.

LB20G/S - Heavy duty blender, Variable speed 0-20,000rpm, Epoxy coated motor housing, container with handle & 2 piece vinyl and styrene lid.

HGBSS/LBC10, 2/4 Liter Blenders



HGBSS

LBC10

HGBSS, 2 Liter Blender

Mid-size Blender Convenience.

MRC offers a blender specifically designed to process up to two liters of free-flowing material with high liquid content.

Big Blender Toughness.

Powerful, 2-speed: Low-19,000rpm,

High-23,000rpm

1-HP motor will emulsify, homogenize, grind, shred, disintegrate and mix a wide spectrum of materials in seconds.

LBC10, 4 Liter Blender

The Standard in Handling. Provides two handles for safer, easier lifting, pouring and carrying.

The Standard in Long Service Life. Sealed, precision, hi-tech ball bearing system extends the life of our blenders.

The Standard in Design and Control. Ergonomic chassis design makes the unit easier to lift & clean. Control panel with Pulse Mode provides precision operation.

The Standard in Quiet Operation. Encases its industry-leading 3-HP motor for quiet operation.

The Standard in Stability. Deeper, wider, full traction rubber non-skid feet keep the blender stable.

Speed: Off-Low-Med-Hi-Pulse 16,000-18,000-20,000rpm.



BHL-240

BHL-240, Hazardous location Blender Motor

Capacity: 1 litre. **Switch Settings:** Two speed switch available as an accessory - BHLSW. **Base:** Natural finished aluminum and steel housing. **Container:** One litre stainless steel with stainless steel lid available separately - HL515.

Cord: not included. Must be hard-wired via explosion-proof conduit. **Overall height:** 14-3/4 inches (37.5 cm).

Weight: 19 lbs. (8.62k)

The Standard in Safety. Depend on this MRC blender to provide optimum safety and reliable performance when working with heat and/or highly volatile substances. The Hazardous Location Blender. (BHL240) Heat is generated within motor housings during normal operation. This blender is designed to prevent the electrical arcing and generated heat from igniting ambient atmospheres.



8020 container

8017

8017/8018, 4 Liter Explosion Proof Blender

MRC's Explosion-Proof Blender 8017 is designed for laboratory situations made hazardous by the blending of mixtures containing volatile solvents. Unit features a 1.5 hp explosion-proof motor with automatic reset thermal protection. The 8017 is designed to accommodate a MRC 4-Liter blending container (#8020 not included). The explosion-proof motor is UL approved (applies to motor only) for Class I, Group C and D and Class II, Group F and G operation. Model 8017 is a single-speed blender operating at 11,500 rpm. Model 8018 is a variable-speed version of the 8017. It will provide constant torque in a speed range from 1,150 to 11,500 rpm. Blender is powered by a PWM scalar drive and speed is monitored by a digital display. Although both blenders are designed to use a 4-Liter container, you can adapt unit to fit all Eberbach blending containers with the use of a Model 8051 adapter. Both Model 8017 and 8018 must be installed by a qualified electrician to preserve their explosionproof capability. Units are supplied without container, power switch or adapter.

Features:

- Blending speed - 8017: fixed@11500rpm
8018: variable between 1150-11500rpm, displayed by digital output
- Optional power requirements - 8017: 230/460V, 50/60Hz three phase
8018: 230V, 50/60 Hz, three phase
- Power requirements - 8017: 115/230V, 60Hz, 16.4/8.3Amps.
8018: 230V, 50/60Hz, 16.4 Amps
- Blender motor - 8018/8017: explosion-proof single phase UL approved for Class I, Group D and Class II
Group, F and G. Rated 1.5 hp
- Dimensions - Height: 18 in without container (45cm)
Width: 10.4 in (26cm)
Length: 20.4 in (52cm)
- Weight - 90 lbs (40kg)

Accessories:

CAC-33

CAC-32

CAC-32

1.2 liter Glass Container Complete with Blade and Lid.

CAC-33

1 liter stainless steel Container Complete with Blade and Lid.



MC-1

MC-2

3 sizes:

- MC-1** (12-37ml)
- MC-2** (37-110ml)
- MC-3** (50-250ml)

Stainless steel containers and base for processing small quantities. Stainless steel base Standard blending assembly with stainless steel blade Snap fit lid.
3 sizes: MC1 (12-37 ml), MC2 (37-110 ml), MC3 (50-250ml)



GasProfi 1-Micro

Model: GasProfi1, Micro

Today there is the gasprofi 1 edition burner for optimal safety in the chemistry laboratory.

The gasprofi 1 safety burner meets maximum safety standards for working with flames. In a chemistry lab in particular, safety is a crucial factor when working with a flame. Bunsen burners were standard equipment in laboratories for many years but they were the cause of many accidents and fires.

Gasprofi 1 edition changes all this!

This safe gas burner for sterilizing, heating and other flame related applications combines all the functional advantages needed in modern laboratories.

Flame monitor for more safety

The flame is re-ignited automatically if it goes out inadvertently. For example, if the flame is extinguished due to over-boiling of liquids and cannot be re-ignited, the burner automatically shuts the gas supply off for safety.

Simple and safe operation

Switch flame on and off at the touch of a button – no matches needed.

Energy-saving consumption

The flame burns only as long as it is required. The strength of the flame can be adjusted by an air regulator.

Robust

All external components are made of stainless steel for maximum sterility. If liquids are spilled, they can flow out through a drain. The burner head can be removed for thorough cleaning.

Flexible use

Gasprofi 1 can be used with natural gas or propane/butane gas. Special safety adapters are available for use with different gas cylinders.



FUEGO SCS BASIC

Model: FUEGO SCS Basic/Digital Safety Enhanced Laboratory Gas Burner With Stainless Steel Foot Pedal And Button Function.

The Fuego SCS basic represents a new standard among laboratory gas burners. With its innovative design this laboratory gas burner is suitable for all flame related applications in the laboratory.

Safety Enhanced Laboratory Gas Burner With Touch Free IR-Sensor And Button Function.

The Fuego SCS Digital represents a new status among laboratory gas burners. With its innovative design and the extensive standard features this laboratory gas burner is suitable for all flame related applications in the laboratory.

Features:

- With stainless steel foot pedal and button function (Digital: With IR-Sensor, LC-Display and Button function).
- 3 standard-programs for foot pedal and button function (Digital: 5 standard- programs for IR-Sensor).
- Adjustable IR-Sensor reaction distance (Digital model only).
- Double Click IR-Sensor (connectable) (Digital model only).
- SCS (Safety Control System) with BHC (Burner Head Control).
- Removable and decomposable burner head.
- Tilt mechanism, right / left.
- Holding device for 3 inoculation loop holders.
- Nozzles for natural gas, propane / butane gas.
- Turbo flame.
- Wrench 17 mm for gas connection.
- Screwdriver for burner head and cover of burner shaft.
- Tubing connector with swivel nut.
- Switching power supply (global).



FUEGO SCS DIGITAL

Model	GasProfi 1-Micro	Fuego SCS Basic	Fuego SCS Digital
Technology	Microprocessor		Microprocessor, LC-display
IR-Sensor		Start-stop with timer~2h, auto-off with timer~2h	
Foot pedal	Standard (flame during pressed foot pedal)		
Button	start-stop timer - 60min,		start-stop timer ~2h
Safety control system (SCS) with gas safety cut off	Ignition and flame control, temperature monitor, burner head clogging and assembly monitor (BHC), automatic unit switch off, 4h residual heat display		Ignition and flame control, temperature monitor, burner head clogging and assembly monitor (BHC), automatic unit switch off, 1-2h residual heat display
Gas connection	1/4" left with gas filter		
Gas types	I12ELL3B/P, nature gas E/LL 18-25 mbar, liquid gas, 20-50 mbar		
Connected load	70 g/h liquid gas		
Continuous cartridge operation	CV360 - 40min, Express 444 - 50min, CG1750 - 150min, C206 - 170min, CP250 - 210min, CV470 - 370min		
Flame temperature	1350°C on liquid gas, 1300°C on natural gas (E)		
Temperature threshold level	1kw liquid gas, 1kw natural gas		
IR-Sensor coverage			5-50mm, Adjustable
Power consumption	2 VA		
Power connection	100-240V 50/60Hz max. 0.3A 9V DC/1A		
Casing & operating controls	Stainless steel/glass, UV and solvent resistant		
Burner head	removable and decomposable, stainless steel		
Cover of burner shaft	Ø23 mm, with drains		
Measurements (mm)	W85xD49x86	W103xD49xH130	
Weight	700g		



STER-815, Bacti-Cinerator Sterilizer

The Bacti-Cinerator sterilizer sterilizes microorganisms utilizing infrared heat produced by a ceramic core element. The ceramic element contains no asbestos and ensures maximum sterility without splatter across the work surface area. Complete sterilization occurs within 5-7 seconds at optimum sterilizing temperature of 1500°F (815.6°C). The small footprint makes the Bacti-Cinerator sterilizer an ideal instrument for anaerobic and aerobic chambers alike. Several user friendly accessories are also available for the Bacti-Cinerator sterilizer

Features: Sterilizes needles, loops, and culture tube mouths in five to seven seconds at optimum sterilizing temperature of 815.6°C (1500°F) • Ceramic funnel tube enclosed in stainless-steel perforated guard and stainless-steel support stand • For AC220V 50/60Hz.

Specification: The center high-temperature: 815±50°C • The Max-diameter of sterilizer goods: φ14mm • The length of sterilizer: 140mm • 4.Net weigh: 1.3Kg.



STER-101, Boiling Sterilizer

Specifications:

- Timer: 0-60 min. mechanical timer with bell.
- Heater: 1500 watts.
- Thermostat: Temp. over to 150°C auto cut-off power.
- Body material: 18.8 stainless steel.
- Tray Dimen.: W350xD165xH30(mm)
- Overall Dimension: W525xD190xH170(mm)
- Net/Gross Weight: 3.5/4.0Kgs
- Power Supply: 220V/50-60Hz/7Amp

Features: All hydraulically pressed 18.8 stainless steel, can withstand electrolysis without corrosion • Long life immersion stainless nickel pipe heater & corrosion proof • Precision mechanical timer with bell switch control • Waterless overheating prevention system with auto power cut-off • Build-in low level cut-off device.



FLAME-100, Safety Bunsen

Model	FLAME-100
Technology	Microprocessor
Programs	Button: Start-Stop mit Ubertwachungstimer, 60 min Foot pedal: Standard (Flame during pressed foot pedal, Foot pedal optional)
Safety features	Safety Control System (SCS) with gas safety cut off: ignition & flame control temp. monitor, burner head clogging monitor (BHC) automatic unit switch off, 4 h
Gas supply & consumption	Gas connection: 1/4" left with Gas filter Gas types: "2ELL3B/P: natural gas E/LL, 18 - 25mbar. liquid gas, 20 - 50mbar Connected load: 48 g/h liquid gas Continuous cartridge operation: CV360-65min, CG1750-210min, (approx.) C206-230min, CP250-305min, CV470-550min, CV270-280min
Temperature	Flame temperature: 1200°C liquid gas, 1170°C on natural gas (E) Temp. threshold level: 0.66 kW liquid gas, 0.66 kW natural gas
Electrical	Power consumption: 2VA. Power connection: 100-240 V / 50/60 Hz / max. 0.3 A, 9V DC / 1 A
Mechanical	Burner tube: removable, stainless steel. Measurements (WXHxD): 89x34x88mm. Height with burner tube: 94mm. Weight: 385g.



STER-100



STER-200



STER-220

STER-series, Gas Burners

Features:

- Electronic instant ignition
- High temp. attainable: 1300°C
- Safety, clearing
- Adjustable flame
- Refillable butane fuel tank

Applications:

- Sterilizing • Welding • Heating
- Brazing • Digestion • Cooking

Model	STER-100	STER-200	STER-220
Max. temperature	1300°C	1300°C	1300°C
Fuel capacity (g)	45	45	45
Working time (min)	60	60	60
Safety lock	YES	-	-
Dimensions (mm)	H161xW137xD79	H92xW115xD79	H94xW115xD78
Dry weight (g)	380	407	425



AutoLoop

Model: AutoLoop, Carrousel For Flame Sterilizing Inoculation Loops

The inoculation loop carrousel Autoloop PRO, which is suitable for up to 4 inoculation loops, was developed to comply with current requirements in microbiological, cellbiological and biotechnological laboratories.

Model	AutoLoop
Technology	Microprocessor
Display	fully graphic dot-matrix
Rotational direction	left / right, depends on removed holder
Inoculation loop holder	1 - 4, with optical holder detection
Time of flame sterilizing	1 - 15 sec
Time for cool-down period	1 - 45 sec
Safety features	temperature control, flame activation warning, indicator of remaining cool-down, tilt sensor, residual heat display
Adjustable sterilization monitor	1 - Off, 2 - low intensity, 3 - middle intensity, 4 - high intensity
Stand by	automatic unit switch off: 1 h (or with stand-by time of the burner)
Operating voltage	via Fuego (foot pedal socket)
Casing	stainless steel & aluminum, UV and solvent resistant
IR-Sensor coverage	5-50mm, Adjustable
Measurements(mm)	W135xD180 Height Autoloop: 305
Weight	1200 g



CALI-R40

CALI-R40, Sub-Zero Low Temp. Dry Block Calibrator

Testing and Calibration of Temperature Sensors | Switches, RTDs, Thermistors (%TCINTC) | 616 The Thermometers | The mostats.

- Range: -35°C above ambient to 123°C
- Accuracy: $\pm 0.5^\circ\text{C}$. Resolution: 0.1°C .
- Compact Size: 3160xH350x6300mm. Weight: 8kg.
- Stability: $\pm 0.05^\circ\text{C}$, 3 ell 616/6 eph 19/100mm, Single/ \pm ulti-hole Inse"ts.
- Portable - Field & Lab use.
- Cost Effective.
- Fast Heating & Cooling.
- Switch Test Facility.



CALI-250

CALI-250, Micro Oil Bath

Portability of Dry Block & Precision of Oil Bath

- Range: RT+20°C to 250°C.
- Stability: $\pm 0.1^\circ\text{C}$.
- Accuracy: $\pm 0.6^\circ\text{C}$. Resolution: 0.1°C .
- Compact Size: 3155xH355x6295mm. Weight: 10kg.
- 3 o"king Area: 3 ell 616 19mm/170mm
- Auto-tune %6 Temperature Control.
- St"ie" to ensue Temperature OniX"mity.
- (Oil) Spill %ooX"anspo"t Lid.
- Optional: RS 232.



CALI-650H1/2

CALI-650H1/2, Temperature Calibrator

\pm edium Temperature 6"y Block Calib"ato".

- Range: RT+20°C to 650°C.
- Stability: $\pm 0.1^\circ\text{C}$.
- Accuracy: $\pm 1.5^\circ\text{C}$. Resolution: 0.1°C .
- Size X" H1: 3160xH280x6325mm. X" H2: 3160xH350x6325mm. Weight: 8.5/11kg.
- 3 o"king Area: 6 eph - 110/190mm
- Heavy Duty Bench Top \pm odel with ca"ying Handle.
- Auto Tune %6 Control action. Switch test Capability.
- Fast and Reliable.
- Inte"changeable Thermowell Inse"ts, Single/ \pm ulti-hole.
- Switch Test Capability.



CALI-600

CALI-600, Temperature Economy Calibrator

%table Bench-Top 6"y Block. \pm edium Temperature Calib"ato"s.

- Range: RT+50°C to 600°C.
- Stability: $\pm 0.05^\circ\text{C}$.
- Accuracy: $\pm 0.1^\circ\text{C}$. Resolution: 1°C .
- Size: 3270xL124xH240mm. Weight: 7kg.
- 3 ell - 120mm (200mm optional).
- Analog Output. %ovision X" Thermostat Switch Testing.
- Inte"changeable Thermowell Inse"ts, Single/ \pm ulti-hole.



CALI-D350

CALI-D350, Temperature Calibrator

6ual 6"y Block (Hot Cold), Temperature Calib"ato"

- Truly Portable - for Field & Lab use.
- \pm ost Cost Effective \pm odel in the Inte"national \pm a"ket to Calib"ate ove" a wide "ange: -35°C Xom Ambient to 350°C.
- Stability: $\pm 0.05^\circ\text{C}$.
- Accuracy: $\pm 0.5^\circ\text{C}$. Resolution: 0.1°C .
- Size: 3244xH430x6341mm. Weight: 8kg.
- 3 ell - Cold 100mm, Hot 120mm.
- Common Display & Dual PO Control Function - for simultaneous Control &
- Calibration time "educed by 50%.
- Housed in elegant stu"dy Case.



CALI-1200HN

CALI-1200HN, High Temperature Calibrator

High Temperature Ceramic 6"y Block: Calibrated. Stable High (1200°C) Temp. Source X Calibration oX multiple Sensors (upto 6) at High Temperature.

- Range: 300°C above ambient to 1200°C.
- Stability: Better than $\pm 0.5^\circ\text{C}$ (below 600°C).
- Accuracy: Better than $\pm 3^\circ\text{C}$. Resolution: 1°C .
- Size: 3205x6365xH480mm. Weight: 13kg.
- 3 cell depth - 150mm.
- High Stability.
- RS - 232 Interface.
- Multi-Hole 1 Interchangeable (The mowell) Inserts - to suit.
- High Accuracy.
- Auto - Tune & Control. Semi portable.



CALI-1500HN

CALI-1500HN, Very High Temperature Calibrator

Very High Temperature Ceramic 6"y Block: Calibrated

- Temperature Range: 500 to 1500°C.
- Stability: $\pm 2^\circ\text{C}$.
- Accuracy: $\pm 0.5\%$ oX Span. Resolution: 1°C .
- Size: 3345x6510xH830mm (with wheel).
- Fast, Stable & Accurate. Autotune PID Controller.
- Heating Element: Silicon Carbide.
- 6"y Block: - High Alumina Ceramic
- Single (Interchangeable) & Multi Hole (Fixed).
- Immersion depth - 250mm.
- Interchangeable Single Hole Thermowells-ID 7/11 & 15 mm*.
- Semi portable - Castor 3 wheels. RS-232 Computer Interface.



CALI-FB600L

CALI-FB600L, Temperature Calibrator

Fluidised bath switch test facility.

- Ideal X calibration oX all Type standard sensors.
- Temperature Range: RT+20 to 600°C.
- Stability: $\pm 0.5^\circ\text{C}$.
- Accuracy: $\pm 1.5^\circ\text{C}$. Resolution: 1°C .
- Size: 3730x6470xH780mm.
- Fast, Stable & Accurate.
- Immersion depth - 250mm/400mm.
- Semi portable - Castor 3 wheels optional.
- RS-232 Computer Interface.



CALI-PP

CALI-PP/PPH, Semi-Portable Pressure Calibrators

Pressure Ranges: -0.85 to 27/10/20 Bar Pressure H: Ranges: -0 to 200/400 Bar

- Temperature Range: 0 to 50°C (Automatic).
- Accuracy: $\pm 0.05\%$ F.S. + 1 digit. Pressure ($\pm 0.025\%$ F.S. + 1 digit)
- Size: L330xB230xH125mm X 27/10 bar. L330xB230xH175mm X 20 bar.
- Advanced microprocessor Based. Light 3 1/2 inch 1 Compact.
- Trendy, Elegant 'Rugged' Case - Truly portable.
- Resolution: \pm minimum 5 digits. Large Graphic display.
- Touch sensitive Keypad with 15 Selectable pressure units eg mbar, bar, Kg/cm², psi, in Hg, mm Hg, mm H₂O, cm H₂O, m H₂O, in H₂O, X H₂O, Pa, \pm Pa, KPa, atm.
- 6 Channel \pm measurement: Active Loop: 50 mA, Passive Loop: 25 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- NI- \pm H Rechargeable Batteries with Low Battery Indication.

- Pressure Transducer - All media Compatible with SS316.
- Integral 1 In-Built Vacuum & Pressure Hand Pump, Vernier Adjustment & Release Valve.

**ECENR-210, Micro Size Refrigerated Centrifuge****Features:**

- LCD, temperature, speed and RCF setting also display.
- Temperature range: 0°C~40°C.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- Overheat and overload safety protection.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- Low noise.

Refrigerated



REA-1518 (Included)
1.5/2.0ml x 18 places

Specifications:

Model	Speed(rpm)	Rotor	Max. RCF (g)	Max. capacity (ml x pcs)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
ECENR-210	1000~14,000	REA-1518	16,000	1.5/2.0 x 18	99:59	35	55x42x28

**HSCEN-204, Basic Type High-Speed Centrifuge****Features:**

- LED speed and time display.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Auto accelerating & decelerating functions.
- Auto cover lock with motor running.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- ABS hard shell and see-through window.
- Auto-cooling air circulation.
- Include the stainless steel adapter, sterilizable.
- Max. capacity: 300ml, Timer: 99min 59sec.
- Optional rotor selections for various tube size.

**Specifications for Rotors:**

Optional Rotors		Speed (rpm)	Max. RCF (g)	Capacity (ml x pcs)	Tube size (Ø x L) mm	
					Max.	Min.
RA-1508		10,000	10,950	15x8	17x122	16x90
RA-1512S		9,000	8,900	15x12	17x122	16x90
RA-5004		8,000	7,000	50x4	29.5x117	27.5x90
RA-5006		7,000	5,400	50x6	29.5x117	27.5x90

AC110/220V, 50/60Hz, Tubes not included. Size: W290xD320xH245(mm) / N.W: 10KG

CENTRIFUGES

High Speed



HSCEN-300

HSCEN-300, High Speed Centrifuges

Features:

- LED speed & time display.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- High torque motor.
- Overheat and overload safety protection.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.









- See-through window
- Optional rotor selections for various tube size
- Low noise.

Specifications:

Model	Speed (rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
HSCEN-300	1000~10,000	10,950	400	99:59	17	36x42x29

Optional Rotors and Adaptors for HSCEN-300:

Optional Rotors		Max. speed (rpm)	Max. RCF (xg)	Capacity (ml x pcs)	Tube size (φx1) mm		Cat. No.
					Max.	Min.	
RS-50		4,500	3,290	50x4TC	29x120	26.5x90	2-3400-23
				50x4	35x117	32x90	2-3400-22
		3,800	2,340	15x16	16.7x115	13.5x86	2-3400-32
<div><div> 2-3400-32</div><div> 2-3400-22</div><div> 2-3400-23</div></div>							
RA-1508		10,000	10,950	15x8	16.7x122	15x90	2-5052-31
RA-1512H		9,000	10,130	15x12	16.7x122	15x90	2-3000-31
RA-5004		8,000	7,080	50x4	29.5x130	27.5x94	2-5052-12
RA-5006		7,000	5,400	50x6	29.5x130	27.5x90	2-5052-22
RA-5008		6,500	5,280	50x8	29.5x117	27.5x90	2-1000-12

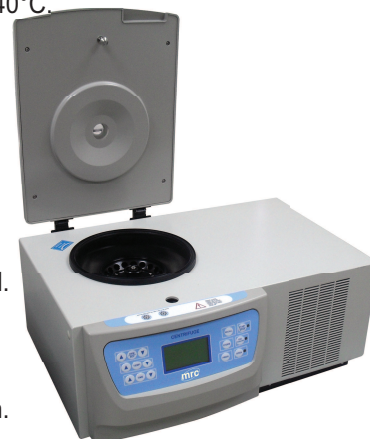


MDCENR-301

Refrigerated

MDCENR-301, Universal Refrigerated Centrifuge**Features:**

- LCD, temperature, speed and RCF setting also display.
- Temperature range: 0°C~40°C.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- Overheat and overload safety protection.
- Stainless steel inside bowl.
- Breakdown indication & fuse safety device.
- Auto accelerating & decelerating functions.
- Auto-cooling air circulation.
- Low noise.

**Specifications:**

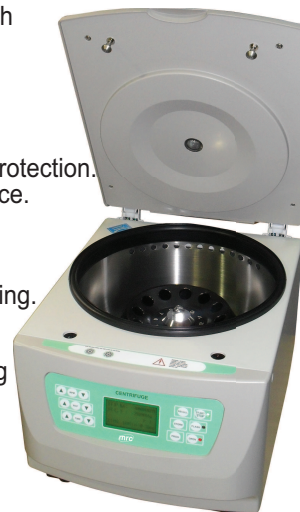
Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
MDCENR-301	500~6,500	4,500	400	99:59	52	65x53x34



MDCEN-302

MDCEN-302, 10 Memory Program Brushless Centrifuge**Features:**

- LCD speed and time display with RCF setting.
- Quiet brushless motor.
- microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light & fuse safety device.
- Auto accelerating & decelerating functions.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

**Specifications:**

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size(cm)
MDCEN-302	500~6,500	4,500	400	99:59	20.5	36x48x34

MDCEN-306, 10 Memory Programs Centrifuge**Features:**

- LED Speed and time display.
- Quiet brushless motor.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size(cm)
MDCEN-306	500~6,000	4,500	400	99:59	17	36x42x29

The speed & RCF are different from the sort of rotors



MDCEN-303

MDCEN-303, Universal Centrifuge, Low Cost

Features:

- LED speed display.
- Change in speed stepless: stable speed.
- Auto current-restarting function.
- Overheat & overload safety devices.
- With safety door lock, hidden auto-balance & imbalance device.
- Safety door lock & cover open indication.
- Stainless steel inner, erosion-proof & anti-lash.
- Breakdown indication & fuse safety device.
- Auto accelerating & decelerating function.
- Air auto-cooling circulation.
- See-through window.
- Optional rotors for various tube size.
- Low noise design.

Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size(cm)
MDCEN-303	0~5,500	3,780	400	0-30 or "ON"	18	36x42x29



MDCEN-304

MDCEN-304, General Purpose Centrifuge

Features:

- LED speed display .
- Regressive timer: 30min, or continuous operation.
- Stable and stepless speed change.
- Overheat and overload safety protection.
- Hidden auto-balance device.
- Safety door lock and cover open indication.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size (cm)
MDCEN-304	500~5,500	3,790	400	0~30 or "ON"	18	36x48x34

MDCEN-305, Brushless General Purpose Centrifuge

Features:

- LED speed display .
- Regressive timer: 30min, or continuous operation.
- Stable and stepless speed change.
- Quiet brushless motor.
- Overheat and overload safety protection.
- Hidden auto-balance device.
- Safety door lock and cover open indication.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

MDCEN-305

Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size (cm)
MDCEN-305	500~6,500	4,500	400	0~30 or "ON"	18	36x48x34

Optional Rotors & Adapter For Centrifuge MDCEN-301/302/303/304/305/306

Rotor		Max. speed (rpm)	Max. RCF (x g)	Capacity (ml x pcs)	Tube size (x1) max Max. Min.		Cat. No.
RS-50		3500	1990	100x4	45x112	42x95	2-3400-21
		4000	2600	50x4	35x117	32x90	2-3400-22
		4000	2600	50x4TC	29.5x120	26.5x90	2-3400-23
		3500	1990	15x16	16.7x115	13.5x86	2-3400-32
		3500	1990	15x12TC	17x120	15x85	2-3400-24
		3500	1990	10x24	15.5x113	14x85	2-3400-25
		3500	1700	6x40	12.7x88	11x63	2-3400-26
		3500	1700	6x36	12x106	11x85	2-3400-27
		3500	1330	1.5x48	11x56	10x36	2-3400-28
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RS-1508		3500	1990	15x8	17x122	15x90	2-300-14
RA-1508		6000	3940	15x8	16.7x122	15x90	2-5052-11
RA-1512H		6000	4500	15x12	16.7x122	15x90	2-6000-15
RA-1516		4000	2250	15x16	16.7x115	15x90	2-3000-12
RA-1024		3500	1840	10x24	16.7x107	15x90	2-3000-13
RA-5004		6000	3980	50X4	29.5x130	27.5x94	2-5052-12
RA-5006		6000	3980	50x6	29.5x130	27.5x90	2-5052-22
RA-5008		6000	4500	50x8	29.5x117	27.5x90	2-1000-12
REA-1520		6000	3140	1.5x20	11x56	10x36	2-5052-13

Tubes not included. The speed & RCF are different from the sort of rotors



LGCEN-307

LGCEN-307, Economy Centrifuge

Features:

- LED speed and time display.
- Quiet brushless motor.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size (cm)
LGCEN-307	500~5,500	4,640	480	0~30 or "ON"	38	45x56x38



LGCEN-402

LGCEN-402, Brushless Centrifuge

Features:

- LED speed display .
- Regressive timer: 30min, or continuous operation.
- Stable and stepless speed change.
- Quiet brushless motor.
- Overheat and overload safety protection.
- Hidden auto-balance device.
- Safety door lock and cover open indication.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size (cm)
LGCEN-402	500~6,500	4,900	1000	0~30 or "ON"	38	45x56x38



LGCEN-403

LGCEN-403, 10 Memory Programs Centrifuge

Features:

- LED speed and time display.
- Quiet brushless motor.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
LGCEN-403	500~6,000	4,900	1000	99:59	40	45x53x34

The speed & RCF are different from the sort of rotors



LGCENR-400

LGCENR-400, Large Size Refrigerated Centrifuge

Features:

- LCD, temperature, speed & RCF setting also display.
- Temperature range: 0°C~40°C.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function & high effective control system.
- Overheat and overload safety protection.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- Low noise.



Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
LGCENR-400	500~6,500	4,900	1000	99:59	112	52x58x90



LGCENR-401

LGCENR-401, Bench Top Refrigerated Centrifuge

Features:

- LCD, temperature, speed and RCF setting also display.
- Temperature range: 0°C~40°C.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- Overheat and overload safety protection.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- Low noise.



Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer(min:sec)	Weight (kg)	WxDxH Size (cm)
LGCENR-401	500~6,500	4,900	1000	99:59	75	80x56x38



LGCEN-404

LGCEN-404, Large Size Centrifuge



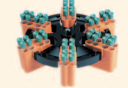

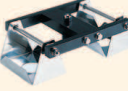



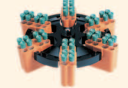

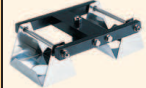
Features:

- LCD speed and time display with RCF setting.
- Quiet brushless motor.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

Specifications:

Model	Speed(rpm)	Max. RCF(g)	Max. capacity(ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
LGCEN-404	500~6,500	4,900	1000	99:59	40	45x56x38

Optional Rotors & Adapters for Centrifuges LGCENR-400/401, LGCEN-402/403/404/307

Applicable model	Rotor		Max. speed (rpm)	Max. RCF (xg)	Capacity (ml x pcs)	Tube size (φx1) mm Max. Min.		Cat. No.
LGCENR-400 LGCENR-401 LGCEN-404 LGCEN-402 LGCEN-403	RS-250		3500	2250	1.5x96	10.7x100	8x41	2-6000-21
					6x112	12x110	8.5x60	2-6000-22
					10x80	15.8x100	12x60	2-6000-23
					15x40TC	16.5x122	14x60	2-6000-25
					15x48	17.2x122	14.5x60	2-6000-24
					50x16TC	29.5x125	27.5x50	2-6000-26
					250x4	62x130	58x70	2-6000-27
	 2-6000-21 2-6000-22 2-6000-23 2-6000-25 2-6000-24 2-6000-26 2-6000-27							
	RS-1548		3500	2430	15x48	17.5x107	14x80	2-6000-12
	RS-2504		3500	2480	250x4	65.5x130	61x90	2-6000-13
LGCENR-400 LGCENR-401 LGCEN-404 LGCEN-307 LGCEN-402 LGCEN-403	RS-9602		2500	1060	96micro x4	129x86	126x83	2-6000-14
	RS-100		3500	2090	6x56	13x105	10x50	2-5400-21
			3500	2150	10x48	16x107	13x50	2-5400-22
			3500	2150	15x16TC	16.7x135	13.5x86	2-3400-32
			3500	2150	15x32	17.5x115	14x80	2-5400-23
			4000	2770	50x4	35x135	32x90	2-3400-22
			5000	4640	50x4TC	29.5x137	26.5x90	2-3400-23
			3500	2120	50x8	35x120	32x90	2-5400-24
			3500	2120	50x8TC	29.5x127	26.5x90	2-5400-25
			4000	2930	100x4	45.5x130	42x95	2-3400-21
	 2-5400-21 2-5400-22 2-3400-32 2-5400-23 2-3400-23 2-5400-24 2-5400-25 2-3400-21							
	RS-50		4500	3280	15x16	16.7x115	13.5x86	2-3400-32
			4000	2600	50x4	35x117	32x90	2-3400-22
			5500	4900	50x4TC	29.5x120	26.5x90	2-3400-23
			5000	4050	100x4	45x112	42x95	2-3400-21
	 2-3400-32 2-3400-22 2-3400-23 2-3400-21							
	RA-5008		6000	4500	50x8	29.5x118	27.5x90	2-6000-16
	RA-1512H		6000	4500	15x12	16.7x130	13.5x86	2-6000-15

LCEN-100 Series, Clinical Centrifuges, Eight Places Rotor Of 15ml Tubes, 2500rpm Or 6000rpm



These centrifuges are widely used in many fields such as biology, medicine, pharmacology, veterinary laboratory & other regions.

They are small, compact, strong & easy & safe for operation. The centrifuge operate smoothly & steadily. The design is up to date, beautiful outlook & durable.

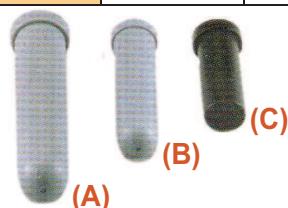
ABS outer shell can resist collision.

It could accommodate 7ml, 10ml and 15ml centrifuge tubes without changing the rotor. With safety lock, when cover is opened, the motor can be stopped.

Precision mechanical timer with bell can be set from 0 to 30 minutes. Speed is linear and stable. Auto balancing system. Vacuum rubber feet provide stable: "not walking" unit.

Specifications:

Model	Power Supply	Speed range	Rotor angle	Max. RCF(xG)	Dimensions Weight	Timer	Max. Capacity
LCEN-100	220V/50Hz or 110/60Hz	up to 2500rpm or up to 3200rpm	45°	1210xG	(HxWxDmm) 220x255x255 3kg	0-30min	15ml x 8 Optional adaptors for 7ml and 10ml
LCEN-101	110V/60Hz or 220/60Hz	300-6000rpm	45°	4100xG	(HxWxDmm) 270x255x255 5kg	0-30min	15ml x 8 Optional adaptors for 7ml and 10ml
LCEN-102 with tachometer	110V/60Hz or 220/60Hz	300-6000rpm	45°	4100xG	(HxWxDmm) 270x255x255 5kg	0-30min	15ml x 8 Optional adaptors for 7ml and 10ml



Options: Adaptors for tubes

(A) Standard 10~15ml tube holder; inner size: Ø17.5mm x L98mm (included).

(B) Optional 5~7ml tube holder; inner size: Ø13.5mm x L69mm.

(C) Optional 0.5~2.0ml tube holder; inner size: Ø11.0mm x L42mm.



LCEN-200/201, Clinical Centrifuges, 8 Places Or 12 Places Of 15ml Tubes

Features:

- Free change of carbon brush motor, stepless speed change.
- Auto power off when open & auto-balance device.
- For angle rotor.
- Power pilot light and fuse safety device.
- ABS hard shell and see-through window.
- Auto-cooling air circulation & manual cover lock.
- **Optional:** 6 ml adapter can be replaced.

Rotor Included



R-8
LCEN-200
Max. 3,500rpm



R-12
LCEN-201
Max. 3,500rpm



Specifications:

Model	Power Supply	Speed(rpm) (50/60Hz)	Max. RCF (50/60Hz)	Max. capacity (ml x pcs)	Dimensions Weight	Timer (min)
LCEN-200	AC110/220V, 50/60Hz	0~3,000/0~3,500	1,050/1,430	15x8	(WDHmm) 290x320x245 8kg	0~30 or "ON"
LCEN-201	AC110/220V, 50/60Hz	0~3,000/0~3,500	1,050/1,430	15x12		

Rotors Specifications:

Model	Max. Capacity	Tube size (Ø x L) mm	Max.Speed (rpm)	Max.RCF (xg)
LCEN-200	15mlx8	12~16.5x70~117	3,500	1,360
LCEN-201	15mlx12	12~16.5x70~100		



CALI-PPD

CALI-PPD, Portable Precision Pressure Calibrator (DUAL) (Pneumatic & Hydraulic)

- Ranges: Pneumatic: -0.85 to 20 Ba, Hydraulic: 0 to 400 Ba
- Accuracy: $\pm 0.05\%$ F.S. + 1 digit.
- Size: L420xW335xH195mm. Weight: 9.5kg.
- Unique Combo 2-in-1 model.
- Advanced microprocessor Based. Light weight / Compact.
- Tardy, Elegant 'Rugged' Case - Truly portable.
- Resolution: minimum 5 digits. Large Graphic display.
- Touch sensitive Keypad with 15 Selectable units eg mba, ba, Kg/cm², psi, in Hg, mm Hg, mm H₂O, cm H₂O, m H₂O, in H₂O...
- 6 Current easurement: Active Loop: 50 mA. Passive Loop: 25 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- NI - High Rechargeable Batteries with Low Battery Indication.
- Pressure Transducer - All media Compatible with SS316

- 2 independent integral built-in pumps (Pneumatic (Vacuum / Pressure) and Hydraulic) with Verniers.
- Automatic Temperature Compensation (0 to 50°C).



CALI-PPE

CALI-PPE, Economy Pressure Calibrator (Pneumatic)

- Pneumatic Seal - Ranges: -0.85 to 2 / 10 / 25 / 40 ba. Hydraulic 0-700ba.
- Accuracy: $\pm 0.1\%$ F.S.
- 2 line alpha - numeric display.
- Touch sensitive Keypad with Selectable units eg mba, ba, Kg/cm², psi, in Hg, mm Hg, mm H₂O, cm H₂O, m H₂O, in H₂O, X H₂O, μ a, \pm μ a, K μ a, atm.
- 6 Current easurement: 0 to 50 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- Pressure Transducer - All media Compatible with SS316.
- 9V Battery operated with Low Battery indication.
- 6 digital Pressure Indicator with attaching Pneumatic Hand pumps with vernier.



CALI-PPC

CALI-PPC, Smart Pressure Calibrator (Pneumatic)

- Advanced microprocessor based.
- Pneumatic - Seal Ranges -0.85 to 2 / 10 / 25 / 40 Ba. Hydraulic 0-700ba.
- Accuracy: $\pm 0.05\%$ ES.
- Size: 170x100x60mm.
- Automatic Temperature Compensation (0 to 50°C).
- 2 line alpha - numeric display.
- Touch sensitive Keypad with 15 Selectable units eg mba, ba, Kg/cm², psi, in Hg, mm Hg, mm H₂O, cm H₂O, m H₂O, in H₂O, X H₂O, μ a, \pm μ a, K μ a, atm.
- 6 Current easurement: 0 to 50 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- Pressure Transducer - All media Compatible with SS316.
- 9V Battery operated with Low Battery indication.
- 6 digital Pressure Indicator with attaching Pneumatic Hand pumps with verniers.



CALI-6600/6900

CALI-6600/6900, High Precision Dead Weight Testers (Hydraulic)

- Ranges: upto 700 ba.
- Standard Accuracies: 0.1% / $\pm 0.05\%$ / $\pm 0.025\%$ / $\pm 0.015\%$ oXRdg.
- Size: L530xW325xH230mm.
- Oil Operated. Single & Dual Piston. Bench/Table Top.
- 4 levels oXAccuracy: $\pm 0.015\%$ oXRdg. (ØIt'a High), $\pm 0.025\%$ oXRdg. (Very High), $\pm 0.05\%$ oXRdg. (High), $\pm 0.1\%$ oXRdg. (Medium).
- Adjustable feet & Spirit Level.
- Calibrated to Standard Gravity (to use specified Gravity on request).
- Piston Calibrated thru "Cross Floating" Techniques.
- Accuracies Traceable to International Standards.



CWA-12

Feature:

1. Using the heat exchanger of plate type and shell-and-tube evaporator is to increase the heat exchange.
2. It's easy to install and maintain. Water tower is not required.
3. Advanced electrical components, energy saving and increasing deadline.
4. Digital control panel with precision $\pm 0.5^{\circ}\text{C} \sim \pm 1.0^{\circ}\text{C}$.
5. The temperature range is $15^{\circ}\text{C} \sim 30^{\circ}\text{C}$ and can set arbitrarily.
6. Filling the high-efficiency environmental refrigerant is without pollution.

CWA-Series, Medium/Large Chillers**Application:**

- UV printing machine and cooling for ink roller
- High-cycle machine
- PU foam machine
- Injection molding machine
- Blow molding machine
- Ultrasonic cleaning equipment
- All kind of industrial equipment.



CWA-8 Back

Model		CWA-01	CWA-04	CWA-08	CWA-12	CWA-24	CWA-36	CWA-60	CWA-90	CWA-120
Cooling capacity	BTU/HR	1000	4000	8000	12000	24000	36000	60000	90000	120000
	KCAL/HR	250	1000	2000	3000	6000	9000	15000	22500	30000
Power source	V	1Ø AC220V 50/60Hz or 3Ø AC220V 50/60Hz								
Total overburdening current consumption	A	3.6	5.6	6.8	7.2	11.7	20	27	44.5	52
Water pump horsepower	HP	1/3	1/3	1/2	1/2	1	1.7	1.8	3	4
Water pump discharge rate	l/min	20	20	30	30	30	50	60	90	120
Water tank	liter	7	10	26	26	45	65	90	100	130
Lnlet and outlet pipe-diameter	inch	1/2"x1/2"		3/4"x3/4"		1"x1"			1-1/4"x1-1/4"	
CWA Dimen. D W H	mm	366 444 526.5	366 444 879	518 506 969		675 545 1265	926 606 1247	1105 705 1347	956 1306 1892	
Refrarigerant	gas	R134A/R407c								
CWA Weight	kg	44	70	90	94	141	182	310	440	570
CWW Weight	kg	44	68	88	91	145	172	298	410	550



SCF-Series

SCF-Series, Refrigerated Chillers

• Compact size • Bench Top • Digital setting & readout • Designed and constructed for continuous operation Coolflow SCFs are closed loop refrigerated recirculator designed to replace tap water in water cooled applications, Ideal for: Lasers, GC/MS's, NMR's, Condensers, Power supply, Ultra-centrifuge, Diffusion pump, SEM's-TEM's.

Model	SCF-25	SCF-35	SCF-75
Temp. Working range	+5°C~35°C		
Stability	±0.1°C		
Setting & readout	Digital		
Cooling capacity at 20°C Watts BTU/hr Kcal/hr	560 1910 482	950 3060 860	2100 7150 1806
Pump	5L/min 3kg/cm ² (Optional: 18L/min, 4.8kg/cm ²)		
Reservoir	Ø10.0xL23cm		Ø19.5xL35cm
Capacity	1.8L		10L
Overall	W30xD55xH59cm		W42xD62xH67cm
Power source	110/220V 60/50Hz 4A/2A	110/220V 60/50Hz 4.5A/2.25A	110/220V 60/50Hz 5A/2.5A

ICE MAKER



XB-Series

XB-Series, Ice Machine Flakes

Our XB-series automatic flake ice makers are designed in cubic shape with the curved front panel and curved door (or stainless steel flat front panel & flat door) for nice appearance.

Many advantages of the ice maker are available.

such as ice making quickly, great ice making capacity, nice ice shape and ice dropping quickly.

Tap water inlet->water incoming-> ice making-> crush ice-> ice dropping-> ice storing.

all these processes are automatically controlled for ice making continuously. In case of water shortage or ice full In cabinet, the indicator on the operation board will light on accordingly and the ice maker will stop operation automatically.

The ice storage cabinet is PU formed, so it is insulated well and it could prevent the ice made from melting. Also, the remaining water after ice made each time is used recycling, So not only the water is saved, but also the ice making

efficiency is enhanced and the energy consumption is reduced, & the customer's ice making cost is also reduced much Either purified water or the tap water could be used for ice making.

Model	XB-40	XB-70	XB-85	XB-100	XB-150
MaxProd/24H	50kg	70kg	85kg	100kg	150kg
Bin capacity	15kg	25kg	25kg	25kg	25kg
Rated power	280W	420W	420W	420W	960W
Machine size	722x543x380	883x611x548	883x611x548	883x611x548	883x611x548
Package size	770x621x457	932x690x625	932x690x625	932x690x625	932x690x625
Net/gross weight	40/45kg	57/62kg	57/62kg	58/64kg	62/70kg



CLC-570

Standard accessories:

- 1.5x auxiliary - 1pc
- Adjustable focusing arm - 1pc
- Marking pen - 1pc
- Power cord - 1pc

Optional accessories:

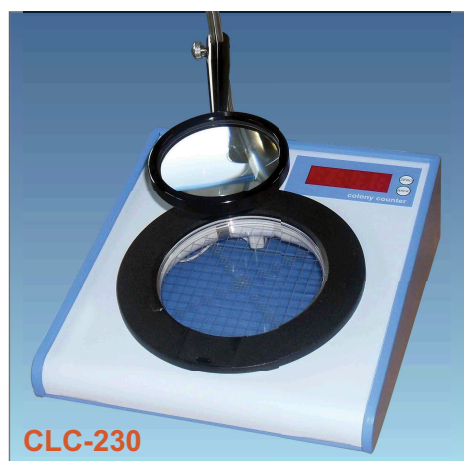
- Switch pen 8-02-1

CLC-570, Colony Counter With Electronic Register

Colony counter 570 is designed with all solid state circuitry, & the pressure sensor system provides uniform sensitivity over the whole of working field; suitable for counting bacteria growing on all agar contained in different size of petri dishes. The model has adapted the latest electronic type ring-shaped lamp for its illuminating device. At a touch, the fluorescent tube lights up directly or indirectly over the entire petri plate surface for a steady, non-glare and quiet illumination; providing the operator the most comfortable working environment. The number of counts is capable of being registered to maximum of 4-digits, i.e. 9999, & displayed on bright red LED. The adjustable focusing arm enables the magnifying glass to be placed at various angles of working position. The focusing arm can also accommodate lens of various magnitude. Intelligent counting technology enables the Model 570 to count with any kind of marking pen. Every time a count is registered, & the beeper gives an audible signal to verify entry.

Features: Built-in electronic register on deluxe model-operated by any pen • Pressure sensor system provides uniform sensitivity over the whole of the working field • A reset button provides immediate zeroing of the 4-digit counter • Flexible adjuster accepts 10 cm to 15 cm petri dishes • Adjustable focusing arm allows 1.5x standard lens to be raised or lowered up to your preference • Lens can be rotated 360° for ready access to petri plates • Background plate can be changed to white or black for easy counting.

Model	CLC-570
Working principle	Pressure sensor system provides uniform sensitivity over the whole of the working field
Readout	4-Digit bright red, 0.6" LED display
Petri dish holder	Accept 10 cm to 15 cm dish using flexible adjuster
Illumination	Ring-shaped lamp provides direct or indirect illumination
Zero reset button	Yes
Modes of counting	Marking pen counting (any pen), switch pen counting
Dimension(mm)	W300xD330xH100
Power	115/230 VAC, 50/60Hz
Net weight	5 kgs



CLC-230

Model: CLC-230, Colony Counter With RS-232 Communication & SoftWare**Features:**

CLC-230 is designed for counting bacterial colonies growing on nutrient agar in Petri-dishes with a wide range of dish diameter from 90 to 150mm and 60mm. Innovative PC software enables you to record, trace, or report sample No., data, user's name, row count, dilution factor, total count etc. Pressure sensor design makes the counter to be operated by any marking pen. Ring-shaped illumination lamp with electronic ballast results in glare-free light without blinding or noise and makes operator working comfortable without eyestrain. Unique "BACK" button allows you to deduct data when over counting. Contrast-plate with white and black side is supplied for using dark or clear agar.

Applications:

- Total bacteria
- Total coliform

Model	CLC-230
Display	4-Digit (0-9999) bright red 0.6" LED display
Magnification	2~3x
Petri dish size	60mm and 90-150mm diameter, adjustable
Zero reset	YES
Count back	YES
Illumination	Glare-free ring-shaped lamp
Pressure sensitivity	Adjustable
Acoustical counting signal	Adjustable
Output	RS232
Dimensions (mm)	W313xH360xD346
Weight	Net: 5.2kg Shipping: 6.4kg

CRYC-Series, Liquid Nitrogen Container With Racks

The series products are designed for storing biological samples in vials, especially suitable for the fields of medical treatment and biological science and research. They feature in storing large capacity of biological samples and low liquid nitrogen consumption, which are the most economical choice.

Main Features:

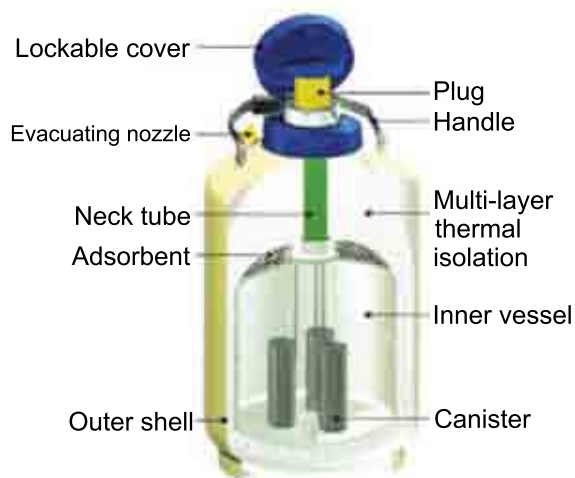
- Unique hanging rack and grided box design, allows for easy tracking and retrieval of samples.
- Advanced vacuum insulation minimizes liquid nitrogen evaporation and reduces operating costs.
- Durable aluminium construction provides years of trouble free service.
- Compact size allows system to easily fit into any lab.
- An optional sturdy 4 wheels cart provides easy movement within the laboratory.
- Super vacuum insulation offers unbeatable liquid nitrogen efficiency.
- Level measuring scale (optional), for measuring the capacity of liquid nitrogen.
- Lockable cover (optional), prevent unauthorized entry.
- Plastic box, for storing in vials.
- Narrow neck design.



Model	Unit	CRYC-47	CRYC-65	CRYC-120	CRYC-175
Capacity	L	47.0	65.0	121.0	175.0
Empty Weight	kg	19.0	27.5	43.0	54.5
Neck diameter	mm	127	216	216	216
Outer diameter	mm	500	573	573	676
Height	mm	675	710	1000	1020
Static evaporation loss mass	L/d	0.33	0.79	0.87	0.87
Static holding time (days)	d	142	82	139	202
Numbers of racks	n	7	5	5	7
Box per rack	n	5	5	10	10
Measurement of rack	mm	82x84	142x144	142x144	142x144
Measurement of box	mm	76x76	134x134	134x134	134x134
Box needed for system	n	35	25	50	70
Number of vials	n	875	2025	4050	5670



CRY-Series, Liquid Nitrogen Biological Container for Storage(I)



Sketch of Product Structure

Applications:

- Available in 6 sizes, to fit the requirements and space limitations of research or clinical laboratories.
- Super vacuum insulation, durable construction provide years of trouble-free service.
- Secure locking hasp prevents unauthorized entry.
- Uniform temperature environment for specimen storage.
- Every vessel includes six cans to accommodate ampules.

Features:

- High-strength aluminum alloy structure, light empty weight.
- Hinged handle, portable.
- Encoding canisters, for easy recognition and convenient accessing of samples.
- Protecting jacket, portable and preventing collision.
- Lockable cover (optional), protecting biological samples stored (except 30mm caliber).
- Multi-layer thermal isolation design, more than five-year vacuum quality guarantee.

Model	Unit	CRY-1	CRY-2	CRY-3	CRY-6	CRY-10	CRY-20	CRY-35
Capacity	L	1.0	2.2	3.15	6.0	10.0	20.0	35.5
Empty weight	kg	2.0	2.9	3.4	5.0	6.2	11.2	15.1
Neck diameter	mm	30	30	50	50	50	50	125
Outer diameter	mm	180	217	224	287	303	409	473
Height	mm	320	365	425	445	530	655	690
Static evaporation loss mass	L/d	0.06	0.06	0.10	0.10	0.10	0.10	0.29
Static holding time	d	16	32	31	63	101	202	123
Canister outer diameter	mm	26	19	38	38	38	38	97
Canister height	mm	120	120	120	120	120	120/276	120/276
Numbers of canisters	n	1	3	6	6	6	6	6
Straw holding capacity (single level)	0.5ml	60	90	792	792	792	792	5124
	0.25ml	120	204	1788	1788	1788	1788	11952
Straw holding capacity (double level)	0.5ml	-	-	-	-	-	1284	9048
	0.25ml	-	-	-	-	-	2832	19944
Number of canes	n	-	-	-	-	-	24	198
Number of vials	n	-	-	-	-	-	120	990

DISS-06, 6 Station Online Automation System With Syringe Pump & UV Spectrophotometer



DISS-06

It is used to test the dissolution condition of chemicals under the set temperature. its rotary speed is non-limetary variation and can be adjusted at any required speed. the digital readout provides a continuously updated accurate reading of shaft rpm. the temperature of water-baths can be set to a need one, in special, it can keep up the set temperature automatically. the circuit breaker device can prevent from leakage current. thus it can provide safety when use. the paddle shafts are made of SUS 316.

Applications:

The MRC Pharmaceuticals Advanced Dissolution Testing System for all Dissolution Testing in the tablets, capsules, pills, pellets, solid dosage forms and various type of pharmaceuticals products for the quality control, research and developments. Also most suitable for Pharmacy Laboratories in University & Educational Institutes.

Descriptions:

The tablet dissolution testing is one of the most important test during the method developments and manufacturing of solid dosage forms in the pharmaceutical industries, Universities & Educational institutes in Pharmacy research laboratories. All international Pharmacopoeias require a dissolution test apparatus at least 6 samples should be tested & test vessels, rotation speed, temperatures rages, accuracy & stirrer tolerance are clearly described & specified

Model	DISS-06
Speed (rpm)	10-250
Power	AC110V/60Hz, 220V/50/60Hz
Electric control	Stepless speed control
Safety device	Low water/over heat, safety break for leakage of electricity
Temperature	Digital control system
Heater	900W
Constant temp. in water tank	Water circulation type
Fuse	10A/6A
Weight (kg)	62

DINT-02, Disintegration Tester

Disintegration tester, Two basket, Include full accessories: Basket, beaker, thermometer, granual cylinder disc It is used to test the disintegration condition of chemicals under the set temperature. It's shaking speed is non-limetary variation. The temperature of water baths can be set to a need one, in special, it can keep up the set temperature automatically and the circuit breaker device can prevent from leakage current. Thus, it can provide safety when use. The basket are made of SUS 316.

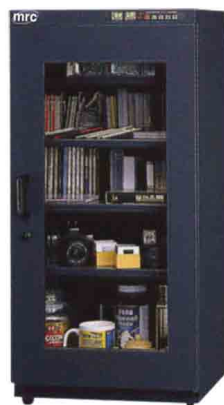


DINT-02

Model	DINT-02
Basket	2
Description	Cumulative time counter provide
Movement of basket	Amplitude 55mm, vertical agitation 5~40 times/min
Driving motor	8W
Heater	600W
Dimension (mm)	W470xD325xH555
Weight	22kg
Power	AC110/220V

DYC-Serie, Dry Cabinets

These dry cabinets with the thermoelectric dehumidifying system are used to store the materials and objects that required low humidity. It is used in the electric and semiconductor industry to store IC wafers, electronic components. Also in the pharmaceutical laboratories it is used to store reagents, specimens, chemicals standards and medicines. As well it is used to store optical instruments: cameras, lenses, microscopes and optical products: films, video tapes, slides, microfilms, CD, DVD, X-ray films. These are 11 models with 5 choices: standard-20% RH and Super dry-10% RH, Super super dry-5% RH, Ultra super dry-2% & Nitrogen supply-1%, 1mm electro galvanized steel housing, 5mm tempered foggy glass door, plastic frame with lock and key.

**DYC-68****DYC-82****DYC-116****DYC-141****DYC-228**

Model	External dimensions	Internal dimensions	Capacity	Shelf	Weight	Power
DYC-68	W400xD430xH560mm	W398xD375xH480mm	68L	2pcs	15kgs	12W
DYC-82	W400xD430xH660mm	W398xD375xH580mm	82L	2pcs	17kgs	12W
DYC-116	W400xD430xH890mm	W398xD375xH820mm	116L	3pcs	20kgs	13W
DYC-141	W400xD440xH980mm	W438xD385xH900mm	141L	3pcs	25kgs	13W
DYC-228	W400xD530xH1290mm	W398xD475xH1210mm	228L	5pcs	30kgs	25W
DYC-230	W600xD480xH970mm	W598xD425xH900mm	230L	3pcs	30kgs	25W
DYC-320	W890xD480xH980mm	W888xD430xH900mm	320L	3pcs	43kgs	25W
DYC-450	W1200xD480xH1055mm	W1198xD425xH900mm	450L	3pcs	55kgs	31W
DYC-560	W890xD810xH980mm	W888xD755xH900mm	560L	3pcs	50kgs	31W
DYC-545	W1200xD570xH1055mm	W1198xD515xH900mm	545L	3pcs	60kgs	31W
DYC-646	W1400xD600xH1055mm	W1398xD545xH900mm	646L	3pcs	68kgs	31W

**DYC-230****DYC-320/DYC-560****DYC-450/DYC-545/DYC-646**

Photographic Instrument
Camera, Lenses, Films, Binocular, Color slide, Micro film



Office&Homeuse
LD, CD, Video tape, Paintings, Stamps, Dry foods, Antiques



Computers Industry
PC Board, IC, SMD, Floppy disc, Electronic chip



Hospital&Medical
Reagent, X Ray film, Herb, Medicine, Medical equipment



School&Laboratory
Microscope, Precision instrument, Educational equipments

Large Dry Cabinets


DYC-478

EX: W600xD750xH1353mm
IN: W598xD695xH1190mm
Capacity: 478L Shelf: 3Pcs
Weight: 60Kgs Cons: 31W
With Caster

DYC-748

EX: W600xD750xH1980mm
IN: W598xD695xH1810mm
Capacity: 748L Shelf: 5Pcs
Weight: 75Kgs Cons: 31W
With Caster

DYC-1500

EX: W1200xD750xH1980mm
IN: W1198x0695xH1810mm
Capacity: 1500L Shelf: 5Pcs
Weight: 120Kgs Cons: 57W
With Caster

DYC-1518

EX: W1200xD750xH1990mm
IN: W1198xD695xH1830mm
Capacity: 1518L Shelf: 5PCS
Weight: 125Kgs Cons: 57W
With Caster

- DYC 20%RH:** Suitable for: Optics, Old Books, Stamps, Paintings.
DYC-S 10%RH: Suitable for: Chemical, Petrochemical, Pharmaceutical, Metal & Food industries & Research institutes.
DYC-SS 5%RH: Suitable for: Food, Wafer & Chemical industry, Electronic manufacturers, Research institutes & Any companies need to comply with IPC/JEDEC J-STD-033 regulation.
DYC-US 2%RH: Suitable for: Semiconducting, Wafer & Chemical industry, Electronic manufacturers, Research institutes & Any companies need to comply with IPC/JEDEC J-STD-033 regulation.
DYC-NS 1%RH: Suitable for: Food, Wafer & Chemical industry, Electronic manufacturers & Factories with nitrogen supply system.

DYC-313Series/DYD-950, Classic Wood Series


DYC-313W

DYC-313W
EX: W912xD538xH915mm
IN: W860xD440xH830mm
Capacity: 313L Shelf: 3Pcs
Weight: 45Kgs Max/avg 60W/22W


DYC-313GW

DYC-313GW
EX: W912xD538xH915mm
IN: W865xD440xH790mm
Capacity: 313L Shelf: 3Pcs
Weight: 50Kgs Max/avg 60W/22

Specimen Drawers Cabinet


DYD-950

DYD-950
EX: W1200xD600xH1800mm
IN: W560xD500xH1720mm x2
Incl: 30 Pcs specimen box
Capacity: 950L Max/avg 90W/29W

Digital Dry Cabinet-Drawers

Model DYD-150, DYD-200, DYD-250, DYD-500, DYD-720,

1 mm Electro-galvanized steel housing, steel ball slide drawer, capable to load 30 kgs.

Model DYD-160, DYD-240, DYD-320,

1 mm Electro-galvanized steel housing, 10 roller slide drawer, capable to load 50 kgs.



DYD-150



DYD-160



DYD-200



DYD-240

DYD-150

Ex: W460xD660xH710mm
In: W388xD540xH150mm x3
Capacity: 150L
Drawer: 3 Pcs
Weight: 40Kgs
Cons: 25W

DYD-160

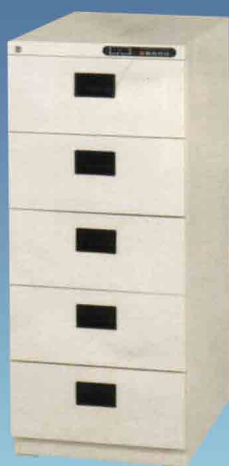
Ex: W460xD660xH778mm
In: W383xD540xH280mm x2
Capacity: 160L
Drawer: 2 Pcs
Weight: 38Kgs
Cons: 13W

DYD-200

Ex: W460xD660xH908mm
In: W388xD540xH150mm x4
Capacity: 200L
Drawer: 4 Pcs
Weight: 50Kgs
Cons: 25W

DYD-240

Ex: W460xD660xH1108mm
In: W383xD540xH280mm x3
Capacity: 240L
Drawer: 3 Pcs
Weight: 50Kgs
Cons: 25W



DYD-250



DYD-320



DYD-500



DYD-720

DYD-250

Ex: W460xD660xH1110mm
In: W388xD540xH150mm x5
Capacity: 250L
Drawer: 5 Pcs
Weight: 60Kgs
Cons: 25W

DYD-320

Ex: W460xD660xH1530mm
In: W383xD540xH280mm x4
Capacity: 320L
Drawer: 4 Pcs
Weight: 68Kgs
Cons: 25W
With caster

DYD-500

Ex: W890xD660xH1190mm
In: W818xD540xH150mm x5
Capacity: 500L
Drawer: 5 Pcs
Weight: 70Kgs
Cons: 31W
With caster

DYD-720

Ex: W1000xD750xH1190mm
In: W928xD640xH150mm x5
Capacity: 720L
Drawer: 5 Pcs
Weight: 80Kgs
Cons: 31W
With caster

D DRY CABINETS

Pharmaceutical/Hepa Filter



Pharmaceutical Cabinet With HEPA N-99 & Activated Charcoal Filter

Features:

- 1 mm galvanized steel housing with powder coating.
- Equipped with HEPA N-99 filter to take off particles and active charcoal for eliminate VOC (ie. Toluene, acetone, oxybenzene etc.) and corrosiveness gas (ie. NO_x, SO₂, CO, HCl, NH₃, H₂S etc.).
- Filter timer can show the life time of filters.
- Shelves: retractable shelves with height adjust interval of 5cm and 5cm deep of over-flow proof edges.

Applications:

- Chemical industry
- Petrochemical industry
- Pharmaceutical industry
- Food industry
- Research institutes

Model		PCH-574	PCH-1188	PCH-1196
Power Supply		100~120 VAC 1 phase 50/60 Hz; 200~240 VAC 1 (or 3) phase 50 (or 60) Hz;		
Max Current (A)	100~120V	1.2A	2.0A	2.0A
	200~240V	0.6A	1.0A	1.0A
Humidity Control System		Microcomputer P.I.D control with automatic crash release device (watch dog) in case of system down.		
Ambient Temperature		+5 ~ +40°C		
Performance	Humidity Range	20~60%RH		
	Humidity Fluctuation	±2%RH		
	Humidity Method	Physical semiconductor cooling chip		
	Humidity Draw Down Rate	40%RH within 3 hours; 20%RH within 24 hours (free load)		
Chamber Structure	Material	1 mm thick galvanized steel plate with powder coating, 5mm tempered glass front panel		
	Chamber Air Circulator	Propeller impeller		
Shelves		Drawer type with 10 cm fringe at each side (front side 5 cm) and adjustable height of 5 cm interval		
Filters		Conform with BP/USP Standard: HEPA N99 filter (for particle); Activated charcoal (for odor elimination)		
Control Panel		19x219mm 5 keys membrane touch key pad. 5 LED indicators. Dual 3 digits temperature display for setup and current temperature value.		
Programable Control		99 batches (repeatable up to 999 times)		
Data Logger		Built-in 8192 sets of parameter (unlimited when connect to computer), Recording interval: 30 sec ~ 24 hrs		
Computer Connection		RS-232; RS-485 (remote controllable); RJ-45 (control & monitor via internet) (OPTIONAL)		
Safety Devices		Timer for fan control; alarm buzzing and display flashing when humidity level exceed or less than preset %RH over predefined lasting time.		
Fittings		Viewing window (5mm glass), Power cord, Handle, Lock		
Accessories		Caster wheels, Stabilizers, Key, Instruction manual, Warranty		
Inside Capacity (Liter)		574	1188	1196
Dimensions	Inside Dimensions (mm)	W618 D600 H1400	W1278 D600 H1400	W1278 D600 H1410
	Outside Dimensions (mm)	W620 D750 H2000	W1280 D750 H2000	W1280 D750 H2010
Weight (Kg)		80	130	125

UT-2100C, Microplate Reader



UT-2100C

Features:

- Easy Windows operation system with touch screen or mouse, large LCD display.
- B-channel optical fiber system enables 5 secs' reading for the whole plate.
- Bichromatic measurement. calculation modes including ABS, Cut-off, Curve, Linear-Log and Exponential regression.
- Large memory, up to 100 test protocols and 10,000 can be stored.

- Auto self-check when power on
- With lamp sleeping and wake-up function
- Random positive and negative control setting
- Multi-assay enables up to 12 different assays on one plate
- Plate shaking function
- Powerful QC function: Grubs, Westguard
- Multi-rule, Levey jennings plot (optional)
- Easy software upgrade by SO card, support USB mouse & keyboard
- Multiform result output including patient comprehensive report
- Ability to communicate with PC for data management(optional).

Model	UT-2100C
Absorbance range	0.000-4.000Abs
Resolution	0.001Abs(display), 0.0001Abs(calculation)
Accuracy	±0.1% or ±0.005Abs (calculation)
Type of microplate	Standard with 96-well or other kind of microplate and strip
Wavelength	405,450,492,630nm, 4 more filters optional (from 400-700nm available on special order)
Optic system	8 channel optic fiber system
Light source	Halogen lamp
Wavelength accuracy	±1nm
Band witch	<8nm
Calculation method	ABS, Cut-off, single standard, curve, multi-percent, percent log, linear, exponential, power, 4PL regression
Reading speed	5 second for 96 well plate (single wavelength)
Shaking plate	Shaking time and speed adjustment
Memory	More than 100 programs, up to 100,000 test results
Interface	RS-232, USB,SD card interface
Display	6" LCD (with touch screen function)
Input	Touch panel or mouse
Output	External printer (optional)
Power supply	AC 110V-220V ±10%, 50/60Hz
Net weight	9kg
Dimensions (mm)	L460xW330xH200

UT-6100, Auto Microplate Reader



UT-6100

Features:

- PC controlled system, Windows XP.
- 8-channel optical fiber system enables 5 secs' reading for 96-well plate.
- Calculation modes include ABS, Cut-Off, Curve, Linear, Log, Exponential, Power and 4PL regression.
- Up to 12 different tests can be performed in one plate.
- Powerful laboratory management software, more than 100 programs and 100,000 results can be stored.
- Powerful QC programs including Westguard Multi-rule and Instant method, automatic alarm.
- Multiform test reports output.
- Lamp saving and plate shaking.

- Save data automatically when power off unexpectedly
- Compatible with all popular external printers
- Powerful internet connection enables remote data sharing and OS update
- Multi-language software available on request.

Model	UT-6100
Absorbance Range	0.000-4.000Abs
Resolution	0.001Abs(display),0.0001Abs(calculation)
Accuracy	±0.5% or ±0.005Abs
Type of Microplate	Standard with 96-well or other kind of microplate and strip
Wavelength	405, 450, 492, 630nm, 4 more filters optional (from 400-700nm available on special order)
Measurement range	0.000-2.500Abs
Optic System	8-channel optic fiber system
Light Source	Halogen lamp
Wavelengths	405, 450, 492, 630nm, 4 more filters optional
Wavelength Accuracy	± 1nm
Band width	<8nm
Methodologies	End Point, fixed time, Kinetic
Calculation Method	ABS, Cut-Off, Single Standard, Curve, Multi-Percent, Percent Log, Linear, Exponential, Power, 4PL Regression
Reading Speed	5 seconds for 96 well plate (single wavelength)
Shaking Plate	Shaking time and speed adjustable
Operation	PC operation, bidirectional communications
Memory	More than 100 programs, up to 100,000 test results
Printer	All printers compatible with Windows
Interface	RS-232, USB
Power supply	AC 110V - 240V ± 10%, 50-60Hz
Net Weight	7KG
Dimensions (mm)	L454xW295xH146

UT-6500, Microplate Reader**UT-6500****Features:**

- UV wavelength available, including 340nm.
- End Point, Fixed time, Kinetic.
- Temperature control(optional), incubation time and temperature adjustable.
- PC controlled system, windows XP.
- 8-channel optical fiber system enables 5 secs' reading for the whole plate.
- More than 500 Programs and minimum 100,000 results can be stored.
- Powerful QC programs including Westguard Multi-rule and Instant method, automatic alarm.
- Calculation modes include ABS, cut-off, curve, linear, log. Exponential, Power and 4PL regression.
- Auto self-check when power on, with lamp saving and plate shaking.
- Random positive and negative control setting.
- Multi-assay enables up to 12 different assays on one plate.

Model	UT-6500
Absorbance range	0.000-4000 Abs
Resolution	0.001 Abs (display), 0.0001 Abs (calculated)
Wavelengths	340,405,450,492,630nm,3 more filters optional
Wavelength accuracy	±1nm
Band width	<8nm
Methodologies	End point, fixed time, Kinetic
Calculation method	ABS, cut-off, single standard, curve, multi-percent, percent log, linear, exponential, power, 4PL regression
Reading speed	5 Seconds for 96 well plate (single wavelength)
Shaking plate	Shaking time and speed adjustable
Plate incubation	Ambient temperature +4~45°C, adjustable
Optic system	8-channel optic fiber system
Light source	Halogen lamp
Operation	PC operation, bidirectional communications
Memory	More than 500 programs, up to 100,000 test result
Printer	All printers compatible with windows
Interface	RS-232
Power requirement	AC 110V/240V ±10%, 50/60 ±1Hz
Net weight	9 kg
Dimensions (mm)	L186xW440xH220

Standard Filters: 405nm, 450nm, 492nm, 630nm.

Special Filters: 412nm, 420nm, 490nm, 505nm, 540nm, 550nm, 545nm, 546nm, 578nm, 595nm, 590nm, 570nm, 690nm, 650nm, 655nm, 600nm, 690nm, 530nm, 562nm, 620nm, 675nm, 685nm, 660nm.

FSA-1510, Food Safety Analyzer**FSA-1510****Features:**

- Multiple tests on one analyzer, includes Food Safety Analyze, Pesticide Residues, Veterinary Drug Residues. Antibiotic Residues, Determination of Organic Pollutants, Natural Toxins. Safety of Aquatic Products. Analysis of Biological Pollutants etc.
- Widely applied. not only in labs, but also in On-site Screening, like Food & Drug Administration, Inspection & Quarantine Bureau. Center for Disease Control & Prevention, etc.
- Multi-assay enables up to 96 tests and 12 different assays on one plate, 5 seconds for 96 well plate (single wavelength). fast and accurate.

Model	FSA-1510
Absorbance Range	0 - 4,500Abs
Resolution	0.001Abs(Displayed). 0.0001Abs (Calculated)
Accuracy	±0.1%or ±0.005Abs
Type of Microplate	Standard with96-wellor other kind of microplate & strip
Wavelength	410, 450, 492, 630nm, 4 more filters optional
Wavelength Accuracy	±1nm
Band Width	8nm
Calculation Method	ABS, %ABS, Cut-Off, Single Standard, Curve, Multi-Percent, Percent Log, Linear, Exponential, Power, 4PL Regression
Reading Speed	5 seconds for 96 well plate (single wavelength)
Shaking Plate	Shaking time & speed adjustable
Memory	>100 programs, 100,000test results
Interface	RS-232, USB, SO card & LAN interface
Display	6" LCD, Touch panel
Power Supply	AC 110V - 220V ±10%, 50-60Hz
Net Weight	8kg
Dimensions (mm)	L460xW330xH190

- Variety tests and calculation methods, meeting the requirements from different areas of Food Safety
- Easy Windows operation system with touch screen Or mouse, large LCD display
- 22 preprogrammed tests, covers area in Pesticide Residues, Aquatic Pollution. Natural Toxins, Animal Diseases
- Powerful QC function: Grubs, Westguard Multi-rule, Levey Jennings Plot
- Professional software design, sample in two different tests, dilution ratio adjustable
- Multifunction result output including patient comprehensive report.



UT-3100-5

Features:

- Fully automatic.
- User friendly operation system with large LCD display.
- Washes flat, U and V-bottom strips and plate.
- 12-way or 8-way manifold, automatic and manual positioning.
- Large memory, up to 100 wash protocols can be programmed.
- Multi-channel, 1 or 3 (optional) for wash, 1 for rinse and 1 for waste.
- Plate shaking function, time and speed are adjustable.
- Two 96-well plate incubation positions (optional)
- Liquid level detection and alert function.
- Easy maintenance.

UT-3100-5, Microplate Washer, 5 Channels, Build-In Incubator

Model	UT-3100-5
Plate Mode	96-/48-well plate or strip
Residual Volume	<1µl
Washing Volume	10~3000µl/well, 1µl by step
Washing Cycle	Maximum 99 cycles
Strip Washing	1 to 12 strips programmable
Soaking Time	0~24hours
Shaking Time	0~24hours
Display	Large LCD
Wash Channels	5 channel bottles, 1 or 3 (optional) for wash, 1 for water(rinse) and 1 for waste
Bottles Capacity	2 Liters each bottle
Memory	100 washing protocols
Interface	RS-232
Power Supply	AC 110/220V±10%, 50~60HZ
Net Weight	13 KG
Dimension (mm)	L450xW390xH190



UT-2600C

Features:

- Fully automatic.
- Easy Windows operation system, large LCD display.
- Washes flat, U and V-bottom strips and plates.
- 12-way or 8-way manifold, automatic and manual positioning.
- Large memory, up to 50 wash protocols can be programmed.
- Automatic monitoring for vacuum and pressure, automatic rinse cycle.
- Washing pressure volume and time adjustable.
- Liquid level detection and alert function
- No special airtight bottle required for wash bottle.
- Easy maintenance.

UT-2600C, Microplate Washer

Model	UT-2600C
Plate Mode	96-/48-well plate or strip
Dispense Precision	CV<2.0%
Residual Volume	<1µl
Washing Volume	50~3000µL for 8-way manifold 50~2000µL for 12-way manifold
Washing Cycle	Maximum 99 cycles
Strip Washing	1 to 12 strips programmable
Soaking Time	0~24hours
Shaking Time	0~24hours
Display	5" LCD
Wash Channels	3 channel bottles, 1 for wash, 1 for water(rinse) and 1 for waste
Bottles Capacity	2 Liters each bottle
Memory	50 washing protocols
Interface	RS-232
Power Supply	AC 110/220V±10%, 50~60HZ
Net Weight	8KG
Dimension (mm)	L390xW340xH180

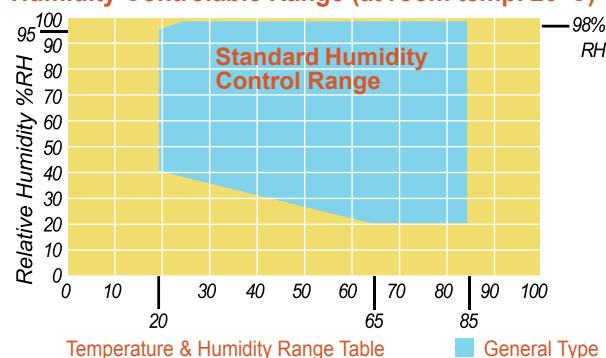
CCG/PCG-Series, (Programmable) Bench Top Constant Temperature & Humidity Chamber, 80 or 120 Liter

Benchtop Temperature & Humidity Test Chambers offer flexibility, uniformity and control accuracy required for cost effective testing for a variety of products. Ideal for testing smaller products such as computer components, automobile sensors or cellular phones, these chambers combine superior performance with compact design that is perfect for research and development or personal point-of-use testing. Available in two sizes, the Benchtop serie chambers allow you to cost effectively select the exact chamber that best meets your environmental test criteria. These chambers can be mounted in an instrument rack or will easily sit on a laboratory benchtop. This humidity chambers include an removable water storage tank, avoiding the need for water hook-ups.



PCG-80 PROGRAMER

Humidity Controlable Range (at room temp. 20°C)



CCG-80: Fix point PID control LED display.
PCG-80: 5 Programs. 50 steps. 999 cycles. LCD display

Features:

- Viewing window with interior light.
- Stainless steel access port with plug, for convenient access to test items.
- Easily accessible service areas.
- Stainless steel internal and external chamber.
- Solid state heating switching.
- Refrigeration system: high efficiency, maximum reliability and low vibration and low noise. The air cooled refrigeration is working with CFC free refrigerant. The total cooling circuits is working with solenoid valve bypass technique ensuring that the compressor will only be disconnected if cooling capacity has not been required for a prolonged period.
- Heating system: low mass electric resistance heater is located directly in front of the recirculating air blower.
- The PID microprocessor controllers with the solid state relays allows extremely precise & constant control.
- Adjustable stainless steel shelves.
- Optional 100mm chart recorder.



CCG-80 CONTROLLER

Model Controller	CCG-80	CCG-120
Model Programmer	PCG-80	PCG-120
Temp. range	-20°C~100°C	
Humid. range	20%~98% R.H	
Temp&Humid. constancy	±0.5°C±2.5% R.H	
Temp&Humid. uniformity	±1°C±3%R.H	
Heating up time	20°C~100°C within 30 min	
Pull down time	20°C~-20°C within 60 min	
Volume (Liter)	80liter	120liter
Interior dimensions(mm)	W400xD400xH500	W500xD400xH600
Exterior dimensions(mm)	W860xD810xH810	W960xD810xH970
Interior/Exterior material	Stainless steel plate (SUS304)/(SUS304) tough powder-coated	
Insulation	Rigid polyurethane foam	
Refrigeration system	Single stage refrigeration	
Safety devices	Refrigerator overload relay, refrigeration high pressure switch, protection relay protection fuse, boil dry protector, overheat protector, alarm viewing window	
Accessories	Shelves (freely adjustable) 2pcs. Chamber lamp	
Power source	AC220V 50/60Hz 1Φ	



LG-60

Features: Adjustable stainless steel shelves • Optional 100mm chart recorder • Over / under temp. protection devices • Automatic water level control • Volumes from 36 litre up to 800 litres • Viewing window with interior light • Stainless steel access ports with plug, for convenient access to test items • Swivel casters for mobility • Easily accessible service areas • Stainless steel internal and external chamber • Solid state heating and humidity switching • Stainless steel humidity generator with viewing window • Low water level humidity heater protection • Wet Dry bulb humidity sensor • Refrigeration system: high efficiency, maximum • reliability and low vibration & low noise. The air cooled refrigeration is working with CFC free refrigerant. The total cooling circuits is working with

Temp.&Humidity Environmental Chamber

Temperature and Temperature/Humidity test chambers provide superior performance over a wide range of applications.

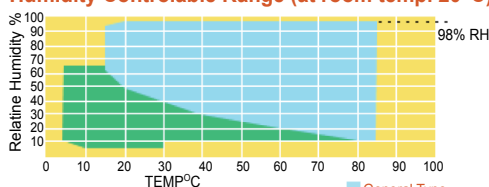
From prototyping to durability to product component screening tests, the chambers has been designed to meet quality standards while still offering flexibility uniformity and control accuracy for cost-effective testing.

Available in a multitude of chamber sizes, MRC is sure to have the exact chamber that best meets your environmental test criteria. For testing smaller products or for customers with limited space, MRC offers chambers starting at 36liter capacity up to 800 liters. MRC Test Chambers are able to perform both high and low temperature tests. Many of these chambers have a temperature range of -70°C to +150°C.

Hermetically sealed compressors provide moderate temperature change rates while allowing the chamber to consume less power than comparable chambers.

Temperature/Humidity models are equipped with a reliable, accurate and efficient full range humidity system capable of simulating conditions from 20 to 98% RH.

Humidity Controlable Range (at room temp. 20°C)



CONTROL PANEL

Temperature & Humidity Range Table

■ General Type
■ Low Humidity Type

solenoid valve bypass technique ensuring that the compressor will only be disconnected if cooling capacity has not been required for a prolonged period • Heating system: low mass electric resistance heater is located directly in front of the recirculating air blower. The PID microprocessor controllers with the solid state relays allows extremely precise and constant control.

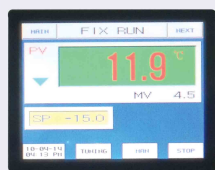
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TC-80

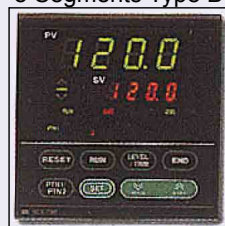
Option: Programmable Temperature Chamber's & Recorder

16 Programs of
16 Segments Type C



TYPE C

2 Programs of
8 Segments Type B



TYPE B



High/Low Constant Temperature Chamber

Viewing window with interior light • Stainless steel access ports with plug, for convenient access to test items • Swivel casters for mobility • Easily accessible service areas • Stainless steel internal and external chamber • Solid state heating switching • Refrigeration system: high efficiency, maximum reliability & low vibration and low noise. The air cooled refrigeration is working with CFC free refrigerant. The total cooling circuits is working with solenoid valve bypass technique ensuring that the compressor will only be disconnected if cooling capacity has not been required for a prolonged period • Heating system: low mass electric resistance heater is located directly in front of the recirculating air blower. The PID microprocessor controllers with the solid state relays allows extremely precise and constant control • Adjustable stainless steel shelves • Optional 100mm chart recorder • Over / under temperature protection devices • Volumes from 36 litre up to 800 litres.

Model		HC-30	HC-40	HC-50	HC-60	HC-80	FC-40	FC-50	FC-60	FC-80	LC-40	LC-50	LC-60	LC-80	TC-50	TC-60	TC-80	
Internal Dimensions (mm)	W	300	400	500	700	1000	400	500	700	1000	400	500	700	1000	500	700	1000	
	H	400	500	600	850	1000	500	600	850	1000	500	600	850	1000	600	850	1000	
	D	300	400	500	700	800	400	500	700	800	400	500	700	800	500	700	800	
External Dimensions (mm)	W	720	930	1030	1230	1530	930	1030	1230	1530	930	1030	1230	1530	1030	1230	1530	
	H	1060	1310	1410	1660	1810	1310	1410	1660	1810	1310	1410	1660	1810	1410	1660	1810	
	D	620	810	910	1210	1310	810	910	1210	1310	810	910	1210	1310	910	1210	1310	
Volume (liters)		36	80	150	416	800	80	150	416	800	80	150	416	800	150	416	800	
Temperature Range		0°C~100°C(150°)					-20°C~100°C(150°)					-40°C~100°C(150°)					-70°C~100°C(150°)	
Temperature Uniformity		±0.5°C				±1°C	±0.5°C				±1°C	±0.5°C				±1°C	±0.5°C	±1°C
Temp. Rising Speed		0°C~100°C about 20min					-20°C~100°C about 35min					-40°C~100°C about 40min					-70°C~100°C about 60min	
Cooling Speed		20°C~100°C about 20min					20°C~-20°C about 45min					20°C~-40°C about 60min					20°C~-70°C about 90min	
Temperature Stability		±0.2°C																
Freezing System		Simoleon type full airtight air-cooled refrigeration system									Binary full airtight air-cooled refrigeration system							
Internal Material		SUS304#Stainless steel																
External Material		SUS304#Stainless steel																
Temp. Preservation		Material rock wool hard PU polyurethane foams																
Circulation System		Fan forced recycling convection																
Temp. Preservation Heating System		Stainless steel heating type humidifier																
Safety Device		Power leakage & overload protective device, compressor overload protective device, over-temperature & over-humidity circuit breaker protection, water shortage protection, humidifier over-heating protection, temperature limit protective device.																
Standard Accessory		2 x Stainless steel adjustable shelves, vacuum glass perspective window, testing aperture, operating room light, motion wheel, control indicator																
Optional Accessory		Recorder																
Power		AC220V, 1PH, 50/60Hz																

Entry-level Fermentor Bioreactor, 4 - 13.4 liters

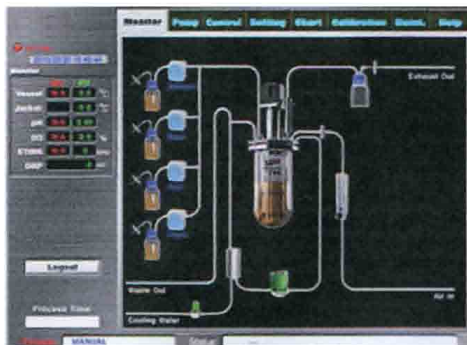
Easy-to-use, entry-level system, with built-in controls for operation as a microbial fermentor as well as mammalian/animal cell culture bioreactor. This versatility, coupled with its ability to control up to three independent reactors from a single control station, makes it ideally suited to use in R&D labs, universities, teaching facilities, testing labs, and more.

Applications: Microbes, yeast, insect, plant or mammalian cells, in batch, fed-batch and continuous culture.

Optional Item:

1. Oxygen Enrichment Device
2. One external pump
3. Fluorescent Lamp On/Off control - Included 4 sets of T5 Fluorescent Lamp and a external Timer on/off control (24hr).


SoftWare:



	Jacket vessel (Dish bottom)	Single wall with blanket	Single wall (Plain bottom)	Single wall (Dish bottom)	Air lifter
Mammalian Cell Culture	○	○	●	●	●
Aerobic Microorganism Culture	○	○	○	○	■
Micro-aerobic Microorganism	○	○	○	○	●
Anaerobic Microorganism	○	○	○	○	●
To culture Fragile Cell	■	■	●	●	○
Photosynthesis Culture	●	●	■	○	○
Plant Cell Culture	○	○	●	○	○
Insect Cell Culture	○	○	●	■	●

○: Excellent ■: Well ●: Not Recommended

Field	Products
Medicine Products	Antibiotics; Hormones; Vaccine; Immune Modulators; Blood Proteins etc.,
Agriculture Products	Veterinary Medicine; Biotech Fertilizer; Microbial Insecticides etc.,
Food Additive Products	Amino Acids ; Vitamins ; Organic Acids etc.,
Chemical & Energy Products	Ethanol; Glycerol; Methane etc.,
For Environment Products	Digest Waste Microorganism
Other Product	Bioleaching Of Metals; Genetically Engineered Spiders; Silk Proteins
Biomass Products	Baker's Yeast; Mushrooms; Algae; Single-Cell Proteins etc.,
Enzyme	Amylases; Celluloses; Proteases; Microbial Rennin; Lipases; Glucose Isomerase; Penicillin Acylase; Cholesterol Oxidase etc.,
Metabolism Products	- Fermentation Products – Ethanol; Lacto Acid; Butanol; Acetone - Growth Factors –Amino Acid; Vitamins; Citric Acid etc., - Secondary Metabolites – Antibiotics; Alkaloids etc., - Gene Products: Insulin; Human Growth Hormone; Interferons; Interleukins; Blood-Clotting Factors; Serum Albumin; Hepatitis B Vaccine; Rabies Vaccine And Diarrhea Vaccine For Pigs; Monoclonal Antibodies etc.,

Thermostat system					
Vessel	Jacket vessel (Dish bottom)				
		3L	5L	7L	10L
	Total volume(Liter)	4	7	9.3	13.4
	Material	Borosilicate glass / 316L ss for headplate and all fittings			
Control unit	Control panel	10.4" Color Touch screen Interface			
	Communication port	Remote control through Ethernet(SCADA)			
	Storage Program	Up to 59,994 program for different kinds of condition			
	Data storage	Up to 10 data files			
	Data storage interface	USB port			
	Cabinet material	ABS front panel and iron painted housing			
	Dimension	Footprint: 400 x 500 mm (W x D) ; Height: 735 mm			
	Rated voltage	110V or 220V ; 50/60 Hz			
Aeration	Inlet Gas Flow-meter	1 – 10 LPM		2 – 20 LPM	
	Impeller	Two different type of impeller – a. 3 pcs of adjustable Rushton-type impeller b. 2 pcs of adjustable Pitched-blade impeller note: 1. Rushton-type impeller is for cell line that are not considered shear-sensitive 2. Pitched-blade impeller for shear-sensitive cell line 3. The standard system includes one type impeller. It is option for another type. It is available for customer-made impeller).			
	Sparger	Orifice ring			
	Baffle	Removable 316L stainless steel baffles			
Temperature	Control system	Thermostat system; Built-in heat exchanger (400 W heater/water circulation pump); Automatic cooling water valve			
	Range	5°C above coolant up to 60°C			
	Probe	Platinum RTD probe (Pt 100)			
	Control mode	Programmable 15 steps PID controller			
Agitation	Drive	Removable Top brushless motor			
	Speed Range	Two type of agitation motor: a. 30 – 1200 rpm is for general fermenter; b. 5 – 300 rpm is for shear-sensitive cell line (The standard system includes one type of agitation motor. It is option for another type.)			
	Control mode	Programmable 15 steps PID controller			
pH	Range	2-12 pH			
	Probe	Gel-filled electrode; Autoclavable			
	Control mode	PID			
DO	Range	0 – 200%			
	Probe	Polarographic DO sensor; Autoclavable			
	Control mode	PID; Cascade function to response to a. Stepping increasing or decreasing agitation speed b. Oxygen Enrichment Device (optional item) c. To start substrate feeding program.			
Foam	Probe	316L stainless steel protector with insulated Teflon tube; On/Off controller			
Peristaltic pump	Built-in 4 sets of pumps; One external pump (optional)				
	Precise Stepping motor; min. speed is 1 rpm				
	Speed range	0 – 100 rpm			
	Control mode	Programmable 15 steps feeding control; Pump can be assigned for Acid, Base, Antifoam and Substrate			
Exhaust	316L Stainless steel condenser				

Model: DW-YW110A/166A/196A/226A/358A/508A, Chest Type Freezer**Effective capacity: 110/166/196/226/358/505 Liters. Temperature range: -10°C ~ -25°C****-25°C****DW-25YW****Features:**

- Chest type.
- Inside temperature from -10°C to -25°C, can be set freely.
- Digital temperature display.
- Round corner design of doors, with lock.
- Outer body is painted steel board, inside is aluminum.
- 40mm foaming insulation.
- China good quality compressor(1 unit).
- 1 unit basket made of steel wire are convenient to store articles.
- Delayed start and safe stop interval between restart and being terminated.
- Quick freezing function, 2-3 hours come to -25°C very fast.
- 4 units Casters for easy handling.
- Refrigerant as R134a, CFC free.
- Certificate: ISO9001, ISO14001, ISO13485.
- Power supply: 220V/150Hz 1 phase, can change as 220V/60Hz or 110V/50Hz or 110V/60Hz.
- **Optional: Basket.**

Model	Capacity	External size(mm)	Inside size(mm)	Input power	Weight (N.T/G.T)
DW-25YW110A	110 Liters	W549xD549xH845	W410xD410xH654	145W	31Kg/46Kg
DW-25YW166A	166 Liters	W556xD906xH937	W430xD780xH480	160W	46Kg/71Kg
DW-25YW196A	196 Liters	W556xD1056xH937	W430xD930xH480	180W	51Kg/67Kg
DW-25YW226A	226 Liters	W556xD1206xH937	W430xD1080xH480	207W	56Kg/71Kg
DW-25YW358A	358 Liters	W730xD1204xH968	W530xD1080xH625	320W	82Kg/97Kg
DW-25YW508A	508 Liters	W730xD1554xH968	W530xD1400xH685	375W	100Kg/115Kg

Model: DW-40FL531, Upright Type Freezer**Effective Capacity: 531 Liter. Temperature range: -10°C ~ -40°C****-40°C****DW-40FL531****Features:**

- Upright type.
- Inside temperature ranging from -10°C ~ -40°C can be set freely, controlling precision is 1°C.
- Stainless steel interior, Outer is painted steel panel.
- Front opening lockable door with full height handle.
- 110mm foaming insulation Vacuum release port.
- Inner 3 shelves Stainless steel with inner door.
- Imported Danfoss compressor, 2-4hours cooling temperature come to -40°C steady.
- Fan electromotor with internationally famous of Germany EBM.
- Microprocessor-based temperature control system, Digital temperature display.
- Keyboard lock and password protected configuration page.
- Audible and visual alarm: High or low temperature alarm, Power failure alarm, Low battery alarm, Door ajar alarm, Filter blocking alarm, system failure alarm.
- With temperature printer, record 7days data.
- 72 hour battery back up for printer and controller display.
- 4units Casters for easy handling.
- Mixture gas with R134a, R404a, R23, R24, N2, R600a and more, CFC free.
- Certificate: ISO9001, ISO14001, ISO13485.
- Power supply: 220V/150Hz 1 phase, can change as 220V/60Hz or 110V/50Hz or 110V/60Hz
- **Optional: Chart recorder, CO2 back-up, storage racks, boxes**

Model	Capacity	External size (mm)	Inside size (mm)	Input power	Weight (N.T/G.T)
DW-40FL531	531 Liters	W940xD840xH1999	W650xD600xH1345	1000W	235Kg/250Kg



DW-40FL

Model: DW-40FL90/135/270, Upright Type Freezer**Effective Capacity: 90/135/270 Liter.****Temperature range: -10°C ~ -40°C****-40°C****Features:**

- Vertical cabinet (upright).
- Temperature range: from -10°C.to -40°C. can be set freely.
- Microprocessor temperature controller.
- LCD display, to make clear the temperature information.
- Elegant orange plastic coating.
- ABS interior.
- The safety lock on the door.
- Rotatable sure-grip door handle.
- Perfect audible/visual alarm: High or low temp. alarm, system failure alarm.
- 90 mm extra thick insulation.
- The Danfoss compressor (1unit) and EBM fan motor.
- Password protected configuration page.
- 4 Casters provided for easy handing.
- 4units drawers(plastic) for DW-FL90, 5units drawers for DW-FL135, 7units drawers for DW-FL270.
- Refrigerant as R507, CFC free.
- Power supply: 220V/50Hz 1 phase, can change as 220V/60Hz or 110V/50Hz or 110V/60Hz.
- Certificate: CE mark for DW-FL90/270, ISO9001, ISO14001, ISO13485.
- Optional: chart recorder, Italy Carel controller.

Model	Capacity (liter)	External size(mm)	Inside size(mm)	Input power	Weight (N.T/G.T)
DW-40FL90	90	W623xD544xH842	W438xD388xH539	280W	44Kg/48Kg
DW-40FL135	135	W623xD544xH1123	W438xD388xH794	280W	54Kg/60Kg
DW-40FL270	270	W623xD544xH1680	W438xD388xH1580	370W	65Kg/70Kg



DW-40FL262/362

Model: DW-40FL262/362, Upright Type Freezer**Effective Capacity: 262/362 Liter.****Temperature range: -10°C ~ -40°C****-40°C****Features:**

- Vertical cabinet (upright).
- Temperature range from -10°C.to -40°C. can be set freely.
- Microprocessor-based temperature controller.
- LCD display.
- Elegant orange plastic coating, Outer is steel board, Inside is stainless steel.
- Door with safety lock.
- Rotatable sure-grip door handle.
- Audible/visual alarm for high or low temperature alarm.
- 110 mm extra thick insulation.
- 1 unit Danfoss compressor and EBM fan motor.
- Password protected configuration page.
- 4 Casters provided for easy handing.
- Inside is 4 units shelves (wire steel).
- Refrigerant as R507, CFC free.
- Certificate: ISO9001, ISO14001, ISO13485.
- Power supply: 220V /50Hz 1 phase, can change as 220V/60Hz or 110V/50Hz or 110V/60Hz.
- Optional: chart recorder.

Model	Capacity (liter)	External size(mm)	Inside size(mm)	Input power	Weight (N.T/G.T)
DW-40FL262	262	W930xD731xH1227	W580xD426xH1036	300W	86Kg/92Kg
DW-40FL362	362	W930xD731xH1627	W658xD426xH1290	400W	102Kg/110Kg



DW-HL

Model: DW-65/86HL218/328/388/538/828, Upright Type Freezer

Effective Capacity: 218/328/388/538/828 Liter

Temperature range: -10°C ~ -65°C/-86°C (limit temp. is -90°C)

Features:

Upright type • Inside temperature ranging from -10°C~-86°C can be set freely, controlling precision is 1°C • Stainless steel interior, Outer is painted steel panel • Front opening lockable door with full height handle • Vacuum release port • Inner 3 shelves Stainless steel with inner door (218liter is 2 shelves) • Imported Danfoss compressor, Two compressors parallel connection, low noise level • 2-4 hours come to -86°C • Microprocessor-based temperature control system, platinum resistance sensors • Digital temperature display • Keyboard lock and password protected configuration page • Audible and visual alarm: • High or low temp. alarm, Power failure alarm, Low battery alarm, Door ajar alarm, Filter blocking alarm, system failure alarm • With temperature printer, record 7 days data • 72 hour battery back up for printer and controller display • 4 units Casters for easy handling • Mixture gas with R134a, R404a, R23, R24, N2, R600a and more, CFC free • Certificate: CE mark, ISO14001, ISO13485 • Power supply: 220V/50Hz 1 phase, can change as 220V/60Hz or 110V/50Hz or 110V/60Hz •

Optional: chart recorder, CO² back up, storage racks, boxes.

-86°C

Model	Capacity	Temp. range	External size(mm)	Inside size(mm)	Input power	Weight (N.T/G.T)
DW-65GL218 DW-86HL218	218 Liters	-10°C ~ -65°C -10°C ~ -86°C	W940xD840xH1552	W582xD470xH768	1000W	225Kg/250Kg
DW-65GL328 DW-86HL328	328 Liters	-10°C ~ -65°C -10°C ~ -86°C	W940xD840xH1999	W582xD470xH1200	1500W	320Kg/350Kg
DW-65GL388 DW-86HL388	388 Liters	-10°C ~ -65°C -10°C ~ -86°C	W940xD840xH1999	W600xD538xH1200	1800W	330Kg/360Kg
DW-65GL538 DW-86HL538	538 Liters	-10°C ~ -65°C -10°C ~ -86°C	W940xD840xH1999	W650xD600xH1345	2000W	360Kg/380Kg
DW-65GL828 DW-86HL828	828 Liters	-10°C ~ -65°C -10°C ~ -86°C	W1230xD996xH2056	W930xD710xH1323	3200W	420Kg/450Kg



DW-86HL100

Model: DW-86HL100, Upright Type Freezer

Effective Capacity: 100 Liter

Temperature range: -10°C to -86°C (limit temp. is -90°C)

Features:

Upright type • Inside temperature ranging from -10°C~-86°C can be set freely, controlling precision is 1°C, with printer • Outer steel board, Stainless steel interior • Front opening lockable door with full height handle • 120mm foaming insulation • Vacuum release port • Inner 2 shelves Stainless steel with inner door • Imported Danfoss compressor, One compressors work, 3-4 hours come to -86°C • Fan electromotor with Germany EBM • Microprocessor-based temp. control system, platinum resistance sensors • Digital temperature display • Keyboard lock and password protected configuration page • Audible and

-86°C

visual alarm: • High or low temperature alarm, Power failure alarm, Low battery alarm, Door ajar alarm, Filter blocking alarm, system failure alarm • With temperature printer, record 7 days data • 72 hour battery back up for printer and controller display • 4 units Casters for easy handling • Mixture gas with R134a, R404a, R23, R24, N2, R600a and more, CFC free • Certificate: ISO9001, ISO14001, ISO13485 • Power supply: 220V/50Hz 1 phase, can change as 220V/60Hz or 110V/50Hz or 110V/60Hz • **Optional: chart recorder, CO² back up, storage racks, boxes.**

Model	Capacity	External size (mm)	Inside size (mm)	Input power	Weight (N.T/G.T)
DW-86HL100	100 Liters	W720xD1000xH793	W684xD800xH598	1000W	225Kg/250Kg

**Model: DW-164ZW128/258, Chest Type Freezer****Effective capacity: 128/138/258/328/400L****Temperature range: -120°C/-110°C/-10°C ~ -65°C/-86°C/-105°C/-135°C/-152°C/-164°C****-164°C****Features:**

Chest type • Inside temperature ranging from -120°C~-164°C can be set freely , controlling precision is 1°C • Stainless steel interior, outer is painted steel panel • Rotatable assistant door handle, door with key lock • 150mm extra thick heat insulating layer (155mm: DW-MW/HW/GW) • Imported Danfoss compressor (1 unit), 4-6 hours come to -164°C • Fan electromotor with famous brand of Germany EBM • Digital temperature display • Keyboard lock and password protected configuration page • Audible & visual alarm: High or low temperature alarm, Power failure alarm, Low battery alarm, Door ajar alarm, Filter blocking alarm, system failure alarm • With temperature printer, record 7days data. 72 hour battery back up for printer and controller display • 4 units Casters for easy handling • Power supply: 380V/50Hz 3 phase, can change as 220V/60Hz (220V/50Hz 1 phase: DW-MW/HW/GW) • Standard as 1 unit basket (DW-ZW/LW/UW/MW) • Mixture gas with R134a, R404a, R23, R24, N2, R600a and more, CFC free • Certificate: CE mark, ISO9001, ISO14001, ISO13485 • **Optional: chart recorder, CO² back up, storage racks, boxes.**

-10°C ~ -65°C Freezer**-65°C**

Model	Capacity	Temp. range	External size(mm)	Inside size (mm)	Input power	Weight (N.T/G.T)
DW-65GW138	138 Liters	-10°C ~ -65°C	W890xD1320xH1009	W1404xD914xH1215	800W	215Kg/250Kg
DW-65GW328	328 Liters	-10°C ~ -65°C	W890xD2005xH1009	W2114xD914xH1215	1500W	260Kg/330Kg

-10°C ~ -86°C Freezer**-86°C**

Model	Capacity	Temp. range	External size(mm)	Inside size (mm)	Input power	Weight (N.T/G.T)
DW-86HW138	138 Liters	-10°C ~ -86°C	W890xD1320xH1009	W470xD570xH490	800W	215Kg/250Kg
DW-86HW328	328 Liters	-10°C ~ -86°C	W890xD2005xH1009	W470xD1200xH582	1500W	260Kg/330Kg
DW-86HW400	400 Liters	-10°C ~ -86°C	W890xD2005xH1009	W490xD1400xH590	1500W	260Kg/330Kg

-10°C ~ -105°C Freezer**-105°C**

Model	Capacity	Temp. range	External size(mm)	Inside size (mm)	Input power	Weight (N.T/G.T)
DW-105MW138	138 Liters	-10°C ~ -105°C	W890xD1320xH1009	W470xD570xH490	1000W	215Kg/250Kg
DW-105MW328	328 Liters	-10°C ~ -105°C	W890xD2005xH1009	W470xD1200xH582	1800W	330Kg/360Kg

-10°C ~ -135°C Freezer**-135°C**

Model	Capacity	Temp. range	External size(mm)	Inside size (mm)	Input power	Weight (N.T/G.T)
DW-135LW128	128 Liters	-10°C ~ -135°C	W880xD1590xH1040	W370xD600xH550	215W	215Kg/250Kg
DW-135LW258	258 Liters	-10°C ~ -135°C	W890xD2085xH1009	W410xD1140xH552	330W	330Kg/360Kg

-110°C ~ -152°C Freezer**-152°C**

Model	Capacity	Temp. range	External size(mm)	Inside size (mm)	Input power	Weight (N.T/G.T)
DW-152UW128	128 Liters	-110°C ~ -152°C	W880xD1590xH1040	W370xD600xH550	2600W	215Kg/250Kg
DW-152UW258	258 Liters	-110°C ~ -152°C	W890xD2085xH1009	W410xD1140xH552	5000W	330Kg/360Kg

-120°C ~ -164°C Freezer**-164°C**

Model	Capacity	Temp. range	External size (mm)	Inside size (mm)	Input power	Weight (N.T/G.T)
DW-164ZW128	128 Liters	-110°C~-164°C	W880xD1590xH1040	W370xD600xH550	3600W	215Kg/250Kg

FH/DFH Series, Fume Hood

It is the new technical instrument in air condition workshop and clean workshop. And it is widely applicable in electronics, mechanics, medical, and university labs.

Fume hood can be used in operation of potential risk or unknown infected factors, and the experiment of flammability, explosive volatilization and narcotics. It can protect operator and samples.

**FH/DFH****FH/DFH
With Stand**

Model	FH10 DFH10 (Ductless)	FH12 DFH12 (Ductless)	FH15 DFH15 (Ductless)
External size (mm)	1000x750x2200	1200x750x2200	1500x750x2200
Internal size (mm)	900x570x745	1100x570x745	1320x745x800
Application	Provide protection to the operator		
Material	Work surface: solid chemical-resistant laminate		
	Exterior: epoxy coated cold-rolled steel		
Relative humidity	≤75%		
Ambient temperature	15°C~35°C		
Control	Microprocessor control with touch buttons		
Front sash	Sliding tempered glass, thickness no less than 5mm		
Duct length	4m		
Duct collar size	10 inch		
Inflow velocity	Average 0.5m/s		
Vibration	≤5μm (rms) between the frequency of 10Hz and 10K Hz		
Noise level	≤60db		
Lightning	≥680lux		
Fan	Centrifugal, adjustable speed		
Power	≤800W		
Power supply	220V, 50Hz		
Option	Water tap, gas tap, cup sink, etc.		
Compliance	CE		

**BSC11A****BSC11A, Class I**

The Class I Biological Safety Cabinet is a negative-pressure, ventilated cabinet usually operated with an open front and a minimum face velocity at the work opening of at least 75 linear feet per minute (lfpm). All of the air from the cabinet is sent through a HEPA filter, either into the laboratory or to the outside.

Model	BSC11A
Overall dimension (mm)	680x400x1160
Operation are dimension (mm)	630x375x615
Filter dimension	305x610x69
Filter efficiency	For 0.3 μ m particulates, filter efficiency>99.99%

**BYKG-I-II****BYKG-I-II & BYKG-III-IV-V Class I**

The Class I Biological Safety Cabinet is a negative-pressure, ventilated cabinet usually operated with an open front and a minimum face velocity at the work opening of at least 75 linear feet per minute (lfpm). All of the air from the cabinet is sent through a HEPA filter, either into the laboratory or to the outside.

Operating Range

- Running conditions 220V~240V / 50Hz ~ 60Hz
- Operating temperature range: 15-35°C
- Operating humidity range $\leq 85\%$

Parameter and Function

- Configuration for BYKG-I-II: constituted of light-permeable(visible) PMMA.
- Configuration for BYKG-III-IV-V: Constituted of cold steel finished with electrostatic coating.
- Work desk: Stainless steel.
- Main units connected flexibly with features of small tremble & low noise.
- The whole configuration more reasonable and ergonomic.
- One HEPA filter.
- Filter efficiency: 99.999%(0.3 μ m).
- Display the pressure differential in HEPA filter, audible & visible.
- Blower fan bearing unlimited speed gear.
- Centrifugal fan, low noise and energy consumption, capable of functioning without maintenance.
- Air velocity: 0.75 m /s ~ 1.0m/s.
- Air dust blowing vertical.
- Air velocity of blower: adjustable.
- Workroom Interior.
- Lighting: For BYK-I-II >500lux, For BYK-III-IV-V >650lux.
- UV Lamp: Sterilizing by UV lamp. It adopts High-intensity, long life, Ozone-free UV lamp.
- External size(LxWxH): BYKG-I: 550x465x780mm, BYKG-II: 700x550x900mm, BYKG-III: 900x695x1000mm, BYKG-IV: 1000x695x1720mm, BYKG-V: 1100x695x1924mm.
- Internal size(LxWxH): BYKG-I: 540x385x400mm, BYKG-II: 680x450x500mm, BYKG-III: 768x690x580mm, BYKG-IV: 868x690x630mm, BYKG-V: 968x695x630mm.
- Noise: For BYK-I-II <55 dB, For BYK-III-IV-V <67 dB
- Stability: The core part of work surface can stand more than 23kg pressure without permanent distortion.

**BYKG-III-IV-V**



BBS-13

BBS-13HGS/BBS13VGS, Laminar Airflow Cabinets

Model	BBS13HGS	BBS13VGS
External Dimen.(mm)	L1300xW750xH2000	L1310xW825xH2000 including the base stand
Working zone size(mm)	L1200xW645xH610	L1200xW500xH570
HEPA Filter dimen.(mm)	L1223xW570xH69	
Display	Digital airflow display	
Hepa filter	Hepa filter with 99.997% efficiency at 0.3 micros	HEPA filter, the filtration performance: 99.99% to 0.5 um
Dust	≤3.5 Granule/L for ≥0.5um	
Noise level	≤60db	
Airflow	Horizontal, 0.3-0.5m/s	Vertical, 0.3-0.5m/s
Vibration level	XYZ direct <5um	
UV lamp	30W x 1	
Light	28W x 1	
Worktable material	304 Stainless steel	
Consumption	600W	
Power supply	AC 220V, 50Hz	
Certification	CE, ISO13485, ISO9001, ISO14001	



BBS-SDS

BBS-DDS/BBS-SDS, Horizontal Laminar Airflow Cabinets

Model	BBS-DDS	BBS-SDS
Protection	Sample	
External dimen.(mm)	L1060xW800xH1690	L1460xW800xH1690
Internal dimen.(mm)	L980xW500xH600	L1400xW500xH600
Dust	≥0.5um≤3.5 granule/L	
Clean rate	>99.995% (for 0.3 um)	
Air velocity	0.3-0.5m/s	
Noise	<60dB(A)	
Vibration	XYZ direct<2 um	
Worktable material	304 Stainless steel	
Consumption	340W	400W
Light	20Wx1	28Wx1
UV lamp	20Wx1	30Wx1
Net Weight	103kg	133kg
Gross Weight	143kg	183kg



BBS-DDC

BBS-DDC/BBS-SDC, Vertical Laminar Airflow Cabinets

Model	BBS-DDC	BBS-SDC
External dimen.(mm)	L1100xW740xH1740	L1500xW740xH1740
Internal dimen.(mm)	L940xW540xH630	L1340xW540xH630
Dust	≥0.5um≤3.5 granule/L	
Clean rate	>99.95% (for 0.5 um)	
Air velocity	0.3-0.5m/s	
Noise	<60dB(A)	
Vibration	XYZ direct<2 um	
Front windows	Tempered glass, no less than 5mm	
Worktable material	Stainless steel	
Consumption	340W	380W
Light	20Wx2	
UV lamp	20Wx1	30Wx1



BSC11A Class I



BYKG-I-II Class I



BYKG-II-IV-V Class I



BSC13IIA2X Class II



BSC7IIA2 Class II



BSC15IIIX Class III

Material

- Operation interior surface is made of 300 series stainless steel.
- Front panel is made of toughened glass, which won't be negative effected by cleaning and sterilization. Thickness of front panel is no less than 5mm.
- For 0.3 μ m particulate, the filter efficiency is $\geq 99.999\%$, which meet the demand of temperature, humidity, corrosion proof and mechanical strength.
- Filter material is made of superfine fiberglass, which will not cause adverse impact on personnel, environment and facility.

Front Operation Area

- The structure of front panel avoids danger to operator when sliding system can't work correctly.
- Alarm device assure the safety of experiments in the specialized range.

HEPA Filter Leak Proof

- The filterability of every point measuring the filterable substance that can be scanned and detected is no more than 0.01 %.
- The filterability of every point measuring the filterable substance that can't be scanned and detected is no more than 0.005%.

Biological Safety Cabinets

- Each cabinet is tested by college of military science.
- Environment test: cabinets are tested under the cruel environment range from -40°C - 50°C , and humidity range from 5%-100%.

Exclusive Four Patents

- New appearance.
- Remote control.
- Reserve timing.
- High light VFD display.

Biosafety Performance

- Biosafety, and operators safety: impact sampling colony number $\leq 10\text{CUF/time}$.
- Slit sampling colony number $\leq 5\text{CUF/time}$.
- Product safety: colony number $\leq 5\text{CUF/time}$.
- Cross contamination: colony number $\leq 2\text{CUF/time}$.

Motor

- Thermal protection device assure the steady in 1.15 times of voltage rating.
- Actiyator is installed behind the demountable or locktabe control panel.

**BSC13IIA2X/BSC18IIA2X/ BSC11IIA2X/BSC11IIB2X, Class II**

The Class II Biological Safety Cabinet is designed with inward air flow at a velocity to protect personnel, HEPA-filtered vertical laminar airflow for product protection, and HEPA-filtered exhausted air for environmental protection.

**CE, ISO13485
ISO9001, ISO14001**

Model	BSC13IIA2X	BSC18IIA2X	BSC11IIA2X	BSC11IIB2X
External size(mm)	W1300xD850xH2200	W1800xD850xH2200	W1100xD850xH2200	W1100xD850xH2200
Internal size(mm)	W1100xD600xH660	W1600xD600xH660	W970xD600xH660	W970xD600xH660
Material	Work zone interior is made of 304 stainless steel expoxy coated cold rolled steel			
Control system	Microprocessor			
Display	LED display			
Main filter	Hepa filter with 99.999% efficiency at 0.3 micros			
Exhaust filter	Hepa filter with 99.999% efficiency at 0.3 micros			
Intake airflow velocity	0.53m/s		0.65m/s±0.015m/s	0.65m/s±0.015m/s
Exhaust airflow velocity	0.33m/s		0.37m/s±0.015m/s	0.37m/s±0.015m/s
Air circulation	70%		30%	0
Air exhaust	30%		70%	100%
Front Panel	Sliding by electronic control, double layer toughened glass			
Clean level	Class 100			
Noise level	≤65db			
Lightning	≥680Lux		800Lux ~ 1100Lux	
UV lamp	15W x 1			
Collecting tank	≥4000ml, fitted with draining valve			
Power	220V, 50Hz ±10%		110V~ 240V/50Hz~60Hz (optional)	
Class	II, A2			II, B2



BSC7IIA2

BSC7IIA2, Class II

The Class II Biological Safety Cabinet is designed with inward air flow at a velocity to protect personnel, HEPA-filtered vertical laminar airflow for product protection, and HEPA-filtered exhausted air for environmental protection.

Model	BSC7IIA2
External size (mm)	700x500x1200 (WxDxH)
Internal size (mm)	600x400x580 (WxDxH)
Material	Work zone interior is made of 304 stainless steel epoxy coated cold rolled steel
Control system	Microprocessor
Display	LED display
Main filter	Hepa filter with 99.999% efficiency at 0.3 micros
Exhaust filter	Hepa filter with 99.999% efficiency at 0.3 micros
Intake airflow velocity	0.53m/s
Exhaust airflow velocity	0.33m/s
Air circulation	70%
Air exhaust	30%
Front sash	Sliding by electronic control, double layer toughened glass
Clean level	Class 100
Noise level	≤65db
Lightning	≥680Lux
UV lamp	15W x 1
Power	220V, 50Hz ±10%
Compliance	CE, ISO13485, ISO9001, ISO14001



BSC15IIIX

BSC15IIIX/ZX/KX, Class III

Complete sealed

Front window is sealed, and with pairs of gloves connecting to the operation area, product is transferred by the delivery window. And there is no out-connected valve.

100% exhaust

100% air exhaust, no air recirculation, and air is exhausted by three ULPA filters and to the room directly. If the air needs to be exhausted to outdoors, another out connected duct need to be ordered, and extra duct and motor are required.

Complete negative pressure

The two motors design makes interior of cabinet is complete negative pressure, and can reach -274pa, triple layers filter film, ensures operation's security, neither substance nor polluted air will leak out.

Model	BSC15IIIX	BSC15IIIZX	BSC15IIIKX
External Dimensions (mm)	L1340xW850xH2250	L1645xW850xH2250	L1950xW850xH2250
Internal Dimension (mm)	L1240xW650xH650	L1545xW650xH650	L1850xW650xH650
No. of gloves	2	4	4
Delivery window dimension(mm)	L480xW400xH400		
Interception efficiency	99.999% (for 0.12μm particulates)		
Noise level	<60dBA		



MSF 12/6

MSF 11/4

Model: MSF-Series, 1050°C, 1200°C, Chamber Furnaces

The MSF multi purpose furnace is bench mounted with a maximum temperature of 1200°C. It is available with chamber size of 3.6 litre or 6.2 litre.

MRC's multipurpose furnaces with stainless-steel cabinet, are suitable for every laboratory application, including burnout preheating, tempering casting and metallurgical process. For dental laboratory. The drop down door can be used as a shelf when loading and unloading samples. A chimney is fitted for ventilation of the chamber.

Double security: hardware and software over temperature protection to prevent exceeding maximum allowable temperature.

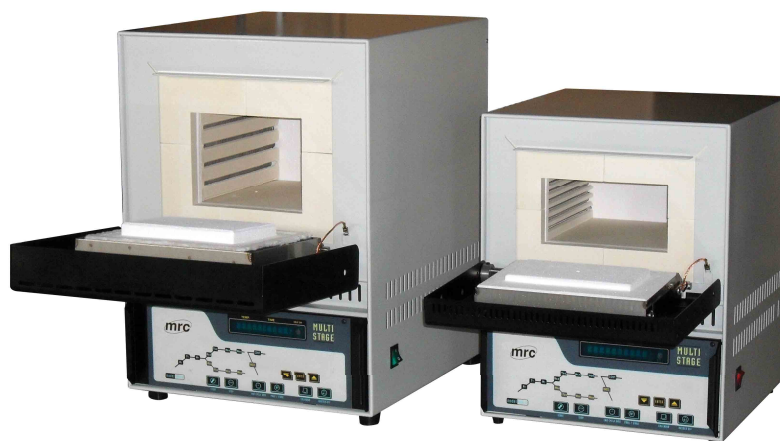
Advanced PID temperature programmer suite variety of applications. The advanced set point programming temperature controller contains 15 separate programmes each with 8 stages. Optional gas inlet available.

MSF 11/4

- Max temperature: 1050°C
- Inner dimensions: W180xD205xH95mm
- Outside dimensions: W350xD380xH440mm
- Power: 220V/50Hz, 110V/60Hz, 1500Watt
- Net weigh: 23Kg

MSF 12/6

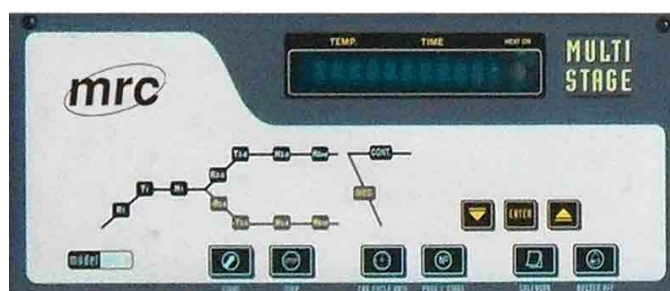
- Max temperature: 1200°C
- Inner dimensions: W180xD250xH135mm
- Outside dimensions: W400xD490xH530mm
- Power: 220V/50Hz, 2700 Watt
- Net weight: 41Kg



MSF 12/6

MSF 11/4

- 15 programs-up to 8 stages.
- Bright VFD alpha-numeric display
- End cycle date real time programming
- Advanced keyboard, 9 key-pads only
- Heat up or cool down rates
- Calendar and time display
- Temperature and time override
- Fault and error automatic diagnostic messages:
 - Thermocouple brake - No current
 - Temperature fault - Date error
 - Over temperature - EE error
- Selectable language for messages: English, German, French, Italian.
- Celsius or Fahrenheit
- Automatically restart, the program will restart after a power failure during a burning cycle. The controller will recall the last temperature and resume program operation.



Advanced PID Programmer

Unique Chamber Dimensions for dental laboratory

MRC burnout furnaces are designed for maximum efficiency and provide a generous internal capacity despite modest overall size. Although the volume of the muffle is relatively small. This furnace enables to cast in one burnout.

MSF 11/4: Accept 4 rings x 9 - 4 rings x 2

MSF 12/6: Accept 12 rings x 9 double layer.

This advantage is very important, as it enables to gain maximum use of muffles volume.



ELF 11/14B

ELF 11/6B

ELF Chamber Furnace 1100°C. 6, 14 Or 23 Liter

An economical furnace designed for light duty and general laboratory work. Low thermal mass insulation and multiple semi-embedded, free radiating wire wound elements in the chamber sides provide efficient heating. Ventilation is via a top-mounted ceramic chimney, but if toxic or corrosive fumes are likely, use of one of our dedicated ashing furnaces or a retort should be considered

Standard Features:

- 1100°C maximum operating temp.
- 6, 14 or 23 litre chamber volumes
- Tilt forward, drop down door, with air gap to minimise external temperature.
- Controller, PID with single



ramp to set-point facility • Delayed start & process timer function as standard
 • Vacuum formed, low thermal mass insulation • Hard ceramic hearth fitted as standard • Ventilated, via top mounted ceramic chimney • Thermocouple type K.

Model	Max. temp (°C)	Heat up time (min)	Dimensions		Temp. uniformity of 5°C within (mm)	Volume (litres)	Max power (W)		Weight (kg)
			Inside (mm)	Outside (mm)			Holding power (W)		
ELF 11/6B	1100	35	H165xW180xD210	H580xW410xD420	H115xW130xD130	6	2000 900		24
ELF 11/14B	1100	40	H210xW220xD310	H630xW450xD520	H130xW140xD220	14	2600 1300		31
ELF 11/23B	1100	29	H235xW255xD400	H715xW505xD690	H665xW455xD610	23	5000 1500		52

CWF Chamber Furnace 1100°C, 1200°C, 1300°C. 5, 13 Or 23 Liter

A modern design is combined with traditional know-how & technology, to provide a robust & reliable furnace. Easy to access replaceable heating modules makes maintenance simple

Standard Features:

- 1100°C, 1200°C or 1300°C maximum operating temperature
- 5, 13 or 23 litre chamber volumes
- Up & away door, keeps heated surface away from the user
- PID controller, with single ramp to set-point facility
- Delayed start & process timer function
- Hard wearing alumina element carriers, entrance & hearth
- Energy efficient low thermal mass insulation
- Free radiating wire wound elements, pitched for optimum uniformity
- Easy access to elements & controls, simplifies maintenance & servicing.

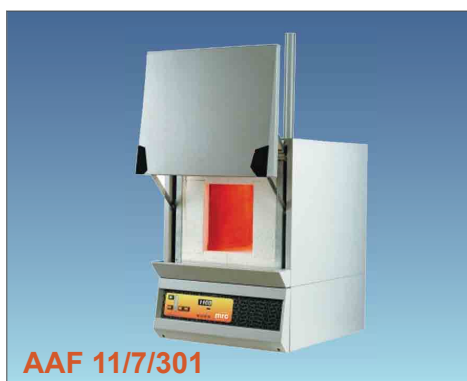
CWF
12/13/301

Model	Max temp (°C)	Heat up time (mins)	Dimension		Temp. uniformity of 5°C within (mm)	Volume (litres)	Max power (W)		Thermocouple type	Weight (kg)
			Inside (mm)	Outside (mm)			Holding power (W)			
CWF 11/5	1100	30	H135xW140xD250	H585xW375xD485	H85xW90xD110	5	2400 790		K	30
CWF 11/13	1100	80	H200xW200xD325	H655xW435xD610	H120xW120xD185	13	3100 1500		K	47
CWF 11/23	1100	40	H235xW245xD400	H705xW505xD675	H155xW165xD285	23	7000 1900		K	68
CWF 12/5	1200	35	H135xW140xD250	H585xW375xD485	H85xW90xD125	5	2400 850		R	30
CWF 12/13	1200	65	H200xW200xD325	H655xW435xD610	H120xW120xD200	13	3100 1550		R	47
CWF 12/23	1200	45	H235xW245xD400	H705xW505xD675	H155xW165xD325	23	7000 2550		R	68
CWF 13/5	1300	40	H135xW140xD250	H585xW375xD485	H85xW90xD150	5	2400 1000		R	30
CWF 13/13	1300	80	H200xW200xD325	H655xW435xD610	H120xW120xD225	13	3100 1800		R	47
CWF 13/23	1300	55	H235xW245xD400	H705xW505xD675	H155xW165xD340	23	7000 2550		R	68

**RHF Series, 1400°C, 1500°C, 1600°C, High Temp Furnaces**

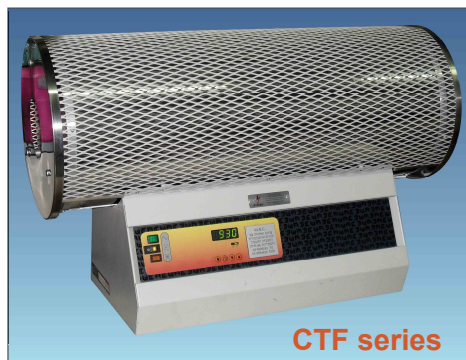
- 1400°C, 1500°C or 1600°C maximum operating temperature.
- 3, 8, 15 or 35 litre chamber volumes.
- Silicon carbide heating elements, providing long life at elevated temperatures & able to with stand the stresses of intermittent operation.
- PID controller, with single ramp to set-point & process timer.
- Controllers extend heating performance by compensating for the effects of element ageing.
- Hard wearing refractory brick hearth and door surrounds.
- Low thermal mass chamber insulation for energy efficiency & rapid heating & cooling.
- Thermocouple type R.

Model	Max temp (°C)	Heat up time (mins)	Dimension		Volume (litres)	Max power (W)	Weight (kg)
			Inside (mm)	Outside (mm)		Holding power (W)	
RHF 14/3	1400	33	H120xW120xD205	H655xW435xD610	2.9	4500 1900	42
RHF 14/8	1400	22	H170xW170xD270	H705xW505xD675	7.8	8000 3200	64
RHF 14/15	1400	35	H220xD220xD310	H810xW690xD780	15	10000 2900	125
RHF 14/35	1400	38	H250xW300xD465	H885xW780xD945	35	16000 6000	179
RHF 15/3	1500	45	H120xW120xD205	H655xW435xD610	2.9	4500 2000	46
RHF 15/8	1500	40	H170xW170xD270	H705xW505xD675	7.8	8000 3500	61
RHF 15/15	1500	46	H220xW220xD310	H810xW690xD780	15	10000 3000	125
RHF 15/35	1500	46	H250xW300xD465	H885xW780xD945	35	16000 6200	178
RHF 16/3	1600	42	H120xW120xD205	H655xW435xD610	2.9	4500 2300	42
RHF 16/8	1600	35	H170xW170xD270	H705xW505xD675	7.8	8000 4000	61
RHF 16/15	1600	58	H220xW220xD310	H810xW690xD780	15	10000 3500	140
RHF 16/35	1600	56	H250xW300xD465	H885xW780xD945	35	16000 1100	179

**AAF Series, 1100°C Ashing Furnaces. 3, 7 Or 18 Liter**

- 1100°C maximum operating temperature • Ideal for ashing foods, plastics, coal & other hydrocarbon materials • Designed to comply with BS 1016-104.4:1998, ISO 1171 :1997, ASTM 02361-02, & ASTM 03174-04 • Wire elements are protected from chemical & mechanical damage by a hard wearing alumina based liner • AAF 11/18 offers increased protection of the elements from carbon & corrosive atmospheres using silicon carbide tiles • Air inlet & tall chimney give airflow from 4 to 5 changes per minute • Powerful elements with graded winding compensate for heat loss due to high airflow • Preheating of air before it enters the chamber gives excellent uniformity • Large floor area allows for large number of samples • AAF 11/18 has two tier shelf doubling sample capacity • Low chamber height holds airflow close to samples for optimum combustion • T/C type K.

Model	Max temp (°C)	Heat up time (mins)	Dimensions		Volume (liters)	Max power (W)	Weight (kg)
			Inside (mm)	Outside (mm)		Holding power (W)	
AAF 11/3	1100	140	H90xW150xD250	H585xW375xD485 780 height to top of chimney	3	2100 1270	22
AAF 11/7	1100	155	H90xW170xD455	H650xW430xD740 1060 height to top of chimney	7	4000 2300	63
AAF 11/18	1100	70	H235xW196xD400	H705xW505xD675 1015 height to top of chimney	18	7080 3500	70



CTF series

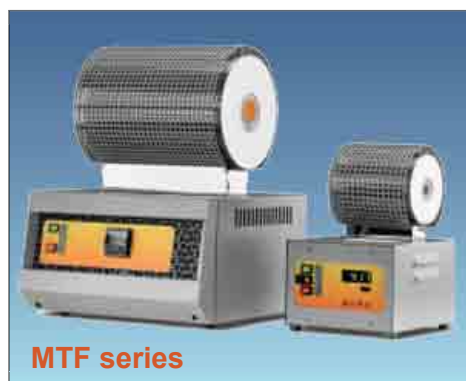
CTF Series, 900°C, 1000°C & 1200°C Horizontal And Vertical Tube Furnaces

Features:

Maximum operating temperature of 1200°C • Tube diameters of 65, 75 and 100mm • Heated lengths of 550, 700 & 900mm • These models utilise a resistance wire heating element wound around a ceramic worktube, forming an integral part of the heating element to ensure excellent thermal uniformity • Rapid heat up to operating temperature • Can be adapted to allow a non-oxidising atmosphere or vacuum, by fitting an additional worktube and end seals • The thermocouple is located in a protected position between the outside of the worktube and heating element, allowing the full worktube diameter to be used • Normally built on the horizontal base pictured left, this furnace range can optionally be mounted

vertically with a separate control box • Applications in materials research include testing of novel materials under strict temp. & varying atmosphere conditions • Applications in the electronics industry include testing electronic components & semiconductor materials under inert atmospheres or vacuum • Applications in instrumentation include testing of temperature sensors such as thermocouples and PT100's, which may require enhanced thermal uniformity

Model	CTF-12/65/550	CTF-12/75/700	CTF-12/100/900
Maximum temperature (°C)	1200	1200	1200
Tube length (mm)	600	750	950
Heated length (mm)	550	700	900
Uniform length (mm - $\pm 5^\circ\text{C}$)	230	265	640
Tube inner diameter (mm)	65	75	100
Power rating (kW)	2	3	4.5
Outer measurements excluding tube (mm - HxWxD)	525x626x360	525x775x360	525x975x360
Thermocouple	Type N		
Weight (kg)	25	35	45



MTF series

MTF Series, Small Tube Furnaces, 900°C, 1000°C & 1200°C

Features:

Maximum operating temperatures of 900°C, 1000°C and 1200°C • Tube diameters range from 15 - 38mm • Heated lengths from 130 - 400mm • These models utilise a resistance wire heating element wound around a ceramic worktube, forming an integral part of the heating element to ensure excellent thermal uniformity • Rapid heat up to operating temperature • Can be adapted to allow a non-oxidising atmosphere or vacuum, by fitting an additional worktube and end seals • The thermocouple is located in a protected position between the outside of the worktube & heating element, allowing the full worktube diameter to be used • Normally built on the horizontal base pictured left, this furnace range can optionally be mounted vertically with a separate control box •

Applications in materials research include testing of novel materials under strict temperature and varying atmosphere conditions.

Model	MTF-9/15/130	MTF-10/15/130	MTF-10/25/130	MTF-12/25/250	MTF-12/25/400	MTF-12/38/250	MTF-12/38/400	MTF-12/38/850
Max. temp. (°C)	900	1000	1000	1200	1200	1200	1200	1200
Tube length (mm)	180	150	150	300	450	300	450	900
Heated length (mm)	130	130	130	250	400	250	400	850
Tube inside diameter (mm)	15	15	35	25	25	38	38	38
Power rating (kW)	0.25	0.4	0.4	0.7	1	1	1.5	2.6
Outer measurements excluding tube (mm - HxWxD)	180x90x180	265x150x175	265x150x175	375x370x375	375x450x375	430x370x375	430x450x375	430x900x375
Heat up time	7	5	10	15	25	30	25	-
Weight (kg)	2	5	6	10	15	10	15	-



FUR-8

FUR-8-80 Series, Universal Electrical Furnaces

- Universal electrical furnaces are designed for burning of ceramics, china and stone mass, thermal processing of small metal particles in the ambience at the maximum temperature of 900°C, 1260°C, and 1340°C.
- Furnaces are used in laboratories, educational institutions, ceramics and jewellery workshops, dentists offices, and metal thermal processing shops.



Model	FUR-8	FUR-25	FUR-50	FUR-80
Dimen.(mm)	190x160x260	250x250x400	400x300x400	400x600x400
Power kW	2.5	3.4	4.2	6
Volume L	8	25	50	100
Temperature °C	1260			
Voltage V	220	20	220	400



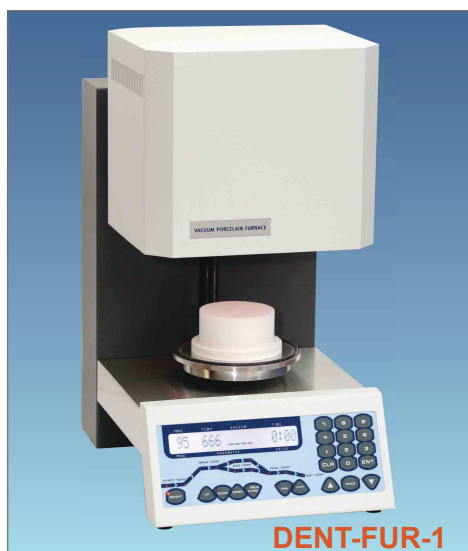
FUR-100

FUR-100-1500 Series, Chamber Furnaces

- Furnaces of this type are designed for industrial burning of clay, stone mass and china in the ambience of air at the maximum temperature of 900°C, 1280°C and 1340°C. These furnaces are also used for glazing of ceramic products and firing of ornaments.
- Chamber type furnaces are used for thermal processing of metal parts of large dimensions



Model	FUR-100	FUR-150	FUR-200	FUR-300	FUR-500	FUR-750	FUR-1000	FUR-1500
Chamber dimen. (mm)	400x500x400	500x600x500	500x700x600	600x850x600	600x900x900	900x900x900	900x1200x900	1000x1200x1300
Power kW	9	12	15	18	36	45	57	75
Volume L	80	150	200	300	500	750	1000	1500
Temp. °C	1260							
Voltage V	400							



DENT-FUR-1

DENT-FUR-1, Vacuum Porcelain Furnace For Dental

Top of the line High Temperature model • Alumina/Zirconia baking • User friendly interface • Excellent temperature stability • Perfect heat distribution • 2 stage baking • Extreme program flexibility • Postfiring programs • Automatic night program • Advanced electronics • Extra smooth lift movement • 200 fully adjustable baking programs.

Model	DENT-FUR-1
Programs	200
Temperature	300°C to 1200°C
Heat Rate	10°C/min to 150°C/min
Vacuum Level	100mm/Hg to 760mm/Hg
Dimensions (mm)	W270xD380xH520
Weight	16Kg
Electrical	220-240V / 50Hz, 2000W 100-120V / 60Hz, 2000W

H HEATING MANTLES Digital & Analog

MN-C/MN-D Serie, Metal Case Mantles, Analog/Digital Control



Model Manual Control	Model Digital Control	Capacity	Power
MN-50C	MN-50D	50ml	60W
MN-100C	MN-100D	100ml	80W
MN-250C	MN-250D	250ml	200W
MN-500C	MN-500D	500ml	300W
MN-1000C	MN-1000D	1000ml	400W
MN-2000C	MN-2000D	2000ml	500W
MN-3000C	MN-3000D	3000ml	600W
MN-5000C	MN-5000D	5000ml	700W
MN-10LC	MN-10LD	10L	1300W

Features:

Aluminum housing is chemical resistant, tough, lightweight and easy to clean • Built-in controller regulated element temperature to 450°C • 10 series mantles sizes available from 50 to 12liter • Unique air flow through ventilation slots beneath & around the rim & case keeps the exterior safe to touch • Flexible coiled heating element provides good heat transfer while absorbing shock minimizing risk of flask breakage • Heating element and insulation form an easily replaceable heating cartridge • A “Heater On” light indicates when power is being supplied to the heaters • Aluminium housed case, rigid housing to support the weight of the vessel • Provide uniform heating of vessel without the danger of open frame • Covering only the bottom half of the vessels & provide full view of the contents of the vessel • Fabric mantles for effective heating & protection of glass vessels from thermal shock • MN-C series manual control-proportional voltage control from 0-100% • MN-D Series with external probe for precise control of the sample.



MNS Serie, Heat And Stir Cool Case Heating Mantle



Model	Capacity	Speed range	Power
MNS-250	250ml	0-1200rpm	200W
MNS-500	500ml	0-1200rpm	300W
MNS-1000	1000ml	0-1200rpm	400W
MNS-2000	2000ml	0-1200rpm	500W
MNS-5000	5000ml	0-1200rpm	700W

Features:

Built-in electronic controller • Designed for stirring and heating of liquid • Heating cartridge can be quickly and easily replaced in the event of failure. • Stirring is Independently controlled with a variable speed control up to 1200rpm • Built-in temperature control maintains element temperature from ambient to 450°C • Combines the traditional Electrothermal heating element with easily controlled solid state stirring • Vented case creates a unique air flow which allows housing to be safe to the touch when in use.

Specialty Heating Mantles



KJL-2000

KJL-1000



KJLS-2000

KJLS-1000

Built-in electronic controller regulates heating element from ambient to 750°C, 2 ranges: low & high

- Durable housing is chemically resistant
- Accept a large range of flasks
- For maximum operator protection, models are grounded should spillage or flask breakage occur
- Units are designed with a built-in stainless steel liner that gives electrical & mechanical protection against spillage & enables easy cleaning
- All models include support rod holder.

Three Flask Size In One Mantle

Model KJL-1000

- For flasks up to 1000ml.
- Stepless heat control.
- Operating temperature up to 750°C.

Model KJL-2000 for flasks up to 2000ml

Features:

- Three in one design accommodates 250, 500 or 1000ml round bottom flasks (KJL-1000, KJLS-1000).
- Three in one design accommodates 500, 1000 or 2000ml round bottom flasks (KJL-2000, KJLS-2000).
- Different vessel sizes, spill proof heater.
- Includes rear bracket for support rod.
- Stepless heat control up to 750°C (650°C with stirrer)
- Variable speed control up to 1800rpm (KJLS-1000, KJLS-2000).
- Heater on light.
- Element temperature range of ambient to 750°C.

Heating Mantle With Magnetic Stirrers

Model KJLS-1000/KJLS-2000

- Steeples heat control up to 650°C
- Variable speed control up to 1800 RPM

Specifications:

Model	Temp. range	Capacity	Stirring	Dimensions	Weight	Watt
KJL-1000	up to 750°C	250-1000ml	-	W12xD17xD18cm	1.2kg	550
KJL-2000	up to 750°C	500-2000ml	-	W21xD20xD24cm	1.4kg	750
KJLS-1000	up to 650°C	250-1000ml	up to 1600rpm	W16xD17xD23cm	2.3kg	550
KJLS-2000	up to 650°C	500-2000ml	up to 1600rpm	W21xD20xD24cm	2.5kg	750

BMN-C Serie, Heating Mantles For Beakers



Model	Capacity	Power
BMN-250C	250ml	200W
BMN-500C	500ml	300W
BMN-1000C	1000ml	400W
BMN-2000C	2000ml	500W
BMN-3000C	3000ml	600W
BMN-5000C	5000ml	700W

Features:

Maximum 450°C operating temperature • Aluminium housed case, rigid housing to support the weight of the beaker • Provide uniform heating of beaker without the danger of open frame • For beaker capacity: 250ml, 500ml, 1 litre, 2 litre, 3 litre, 5 litre • Fabric mantles for effective heating & protection of glass beaker from thermal shock • Manual control- proportional voltage control from 0-100%.

Specialty Heating Mantles



KJL-2000

KJL-1000



KJLS-2000

KJLS-1000

Built-in electronic controller regulates heating element from ambient to 750°C, 2 ranges: low & high

- Durable housing is chemically resistant
- Accept a large range of flasks
- For maximum operator protection, models are grounded should spillage or flask breakage occur
- Units are designed with a built-in stainless steel liner that gives electrical & mechanical protection against spillage & enables easy cleaning
- All models include support rod holder.

Three Flask Size In One Mantle

Model KJL-1000

- For flasks up to 1000ml.
- Stepless heat control.
- Operating temperature up to 750°C.

Model KJL-2000 for flasks up to 2000ml

Features:

- Three in one design accommodates 250, 500 or 1000ml round bottom flasks (KJL-1000, KJLS-1000).
- Three in one design accommodates 500, 1000 or 2000ml round bottom flasks (KJL-2000, KJLS-2000).
- Different vessel sizes, spill proof heater.
- Includes rear bracket for support rod.
- Stepless heat control up to 750°C (650°C with stirrer)
- Variable speed control up to 1800rpm (KJLS-1000, KJLS-2000).
- Heater on light.
- Element temperature range of ambient to 750°C.

Heating Mantle With Magnetic Stirrers

Model KJLS-1000/KJLS-2000

- Steeples heat control up to 650°C
- Variable speed control up to 1800 RPM

Specifications:

Model	Temp. range	Capacity	Stirring	Dimensions	Weight	Watt
KJL-1000	up to 750°C	250-1000ml	-	W12xD17xD18cm	1.2kg	550
KJL-2000	up to 750°C	500-2000ml	-	W21xD20xD24cm	1.4kg	750
KJLS-1000	up to 650°C	250-1000ml	up to 1600rpm	W16xD17xD23cm	2.3kg	550
KJLS-2000	up to 650°C	500-2000ml	up to 1600rpm	W21xD20xD24cm	2.5kg	750

BMN-C Serie, Heating Mantles For Beakers



Model	Capacity	Power
BMN-250C	250ml	200W
BMN-500C	500ml	300W
BMN-1000C	1000ml	400W
BMN-2000C	2000ml	500W
BMN-3000C	3000ml	600W
BMN-5000C	5000ml	700W

Features:

Maximum 450°C operating temperature • Aluminium housed case, rigid housing to support the weight of the beaker • Provide uniform heating of beaker without the danger of open frame • For beaker capacity: 250ml, 500ml, 1 litre, 2 litre, 3 litre, 5 litre • Fabric mantles for effective heating & protection of glass beaker from thermal shock • Manual control- proportional voltage control from 0-100%.

Power Wattage Control

For control of heating tapes, max. watt - 2000 watt. Power regulator: 0-100%

- Solid state electronics make this variac the perfect instrument for research & especially teaching labs.
- Safety features include sparkless solid state regulation of voltage output to oil baths, heat lamps, heating mantles, or virtually any heater.



MS-C



MS-C Back

Precise Digital Temperature Controller For Control Of Heating Tapes, Heating Mantles, Hotplates, Ovens, Water Baths, Immersion Heaters, incubators etc.

- Wide range of temperature controls to match most heating applications: mantles, hotplates, heating tapes, small ovens & other resistive heating loads up to 3500 Watt.
- Quick connections for load and temperature sensor.
- Digital dual display for set point and process temp. indication.
- Automatic tuning feature ensures temperature accuracy with minimum overshoot.
- Easy to operate.
- In instances where the thermocouple cannot be placed precisely where temperature sensing is needed, a temp. offset can be introduced to make the control's temperature readout more meaningful.
- If the control loop is broken, Set-Temp Digital automatically shuts off heater power to reduce the likelihood of thermal runaway.
- Non-volatile memory retains temperature settings during power interruptions.
- Models are available for use with Type-K, or type-T
- Optional Stainless steel probe, thermocouple K.
- Optional RS-232 communication.
- Optional over temperature protection.
- Optional four files/16 steps program capability (2416P4)

Features:

- Digital set and read of actual temperature up to 450°C (option: up to 1200°C).
- PID microprocessor controller provides precise temperature regulation.
- Supplied with Thermocouple Probe, made of St. St., 25 cm long, 3mm dia. and 2 meter extension cable.
- 230 V, 50 Hz, 2000 Watt.

Heating Tapes Width 1" up to 450°C

This unit can be round to pipe column, tube or curved material for insulation arming & heating. These element are knitted together then bridged material to form on insulated flat tape. Should be used with controller. Flexibility provides excellent heat transfer: can be tightly rapped on to your vessel. Withstand 450°C internal max. temp.



HT1-1 & HT1-2

Model	Width (") x Length(m)	Wattage
HT 1-1	1"x1m	200 W
HT 1-1.5	1"x1.5m	250 W
HT 1-2	1"x2m	300 W
HT 1-2.5	1"x2.5m	350 W
HT 1-3	1"x3m	400 W
HT 1-4	1"x4m	460 W



Box-3216



FRONT PANEL



BACK PANEL

Model	Function	Thermocouple	Temperature range	Power output
Box-3216	Control with ramp to set point & 100 hrs timer	K	-50~1200°C	3500 watt 230V/50Hz
		T	-20~400°C	
Box-2416P4	Programmer with 4 programs of 8 segment	K	-50~1200°C	3500 watt 230V/50Hz
		T	-20~400°C	

Options:

- Over temperature protection
- PC Control & data reading, RS-232/RS-485 communication



HOG-010



HOG-020+STAND

Features:

- Unique ergonomic and user friendly design.
- Hand held and bench top use (HOG-020).
- For small & medium sizes applications in the range of approximately 0.3ml up to 3000ml.
- Samples can optimally be homogenized, dispersed and mixed with the four available and exchangeable dispensing generators.
- 250 Watt powerful motor.
- Rotor speed range up to 26000rpm (HOG-020).
- Top speed up to approximately 12 m/s.
- Integrated electronic speed regulation/stabilization with control knob and speed digital display (HOG-020D, HOG-010).
- Soft start.
- Quick coupling for dispersing generators.
- 4 Different exchangeable dispersing generators in easy clean design.
- Universal plate stand.
- Sample volumes 0.3ml-3000ml.
- Dispersing, homogenizing, extractions, cell disruption, mixing, suspending.
- Various container can be used.
- The impeller can be separated completely and it is easy to clean and be sterilized.
- Spring hoisted for easy operation (HOG-010).
- Over current, overheat, protection, and fuse safety device.

Applications:

- It can be widely used in dispersing various kinds of materials.
- It can also apply to the biology and medical research for skin tissue, cells and so on.
- Fibers, papers, cloth, cosmetic, dye & ink can be applied.
- Water and oil mixing and emulsifying.
- Digital speed meter display.
- Spring elevator for easy positioning the pole.
- With an overheat protection and fuse safety device.



HOG-020 HAND HELD

Model	HOG-020	HOG-020D	HOG-010
Digital	NO	YES	YES
Motor	DC 250W		
Speed (rpm)	26,000		20,000
Size (mm)	W200xD315xH500		W310xD270xH690
Weight (kg)	7		10
Power	AC110/220V, 50/60Hz		

	Model	Capacity(ml)	Dimension(mm)	Application
	GEN-0010	0.3~10	Ø7x130	To homogenized and mix cell tissue in small amount
	GEN-0250	2~250	Ø12x170	To disperse plant and animal tissue, To dispose suspensions and emulsions for homogenizing, mixing and extraction
	GEN-2000	2~2000	Ø20x200	To disperse plant and animal tissue, To dispose suspensions and emulsions for homogenizing, mixing and extraction
	GEN-3000	100~3000	Ø30x250	To disperse organic and inorganic matters for homogenizing, mixing and extraction

H Homogenizers

HOG-08/09/10, Homogenizers Spin-Mix

Homogenizer can be widely used in mixing and dispersing, emulsifying for Medicine, foods, Cosmetics, Industrial products.



HOG-08

HOG-09

HOG-011

Features:

There are many uses for homogenizer as following different fields:

- Chemical: Dyestuff, pigment, additive .. etc.
- Medical: Biochemistry, virus, bacteria, yeast .. etc.
- Pharmacy: Medicine test, vakzin, syrup .. etc.
- Food: Trial, study check.
- Others: Magneted chemical tape analysis, silicone .. etc.

Optional Tank Sets:



COTR-100
30~100ml



COTR-200
60~200ml



COTR-500
100~500ml



COTR-1000
500~1000ml

Model	HOG-08	HOG-09	HOG-011
Motor	100W	250W	150W High Frequency Motor
Max. Rotational Speed	18,000rpm	15,000rpm	18,000rpm
Capacity	30~1,000ml	30~1,000ml	30~1,000ml
Timer	15 min or Continuous running	15 min or Continuous running	1~60min or Continuous running
Dimensions(mm)	W250×D250×H396	W250×D250×H396	W250×D250×H413
Weight	6kg	8kg	8kg
Control System	Thyristor Control System	Thyristor Control System	Inverter Control System
Power Source	AC100V 50/60Hz 3A	AC100V 50/60Hz 6A	AC100V 50/60Hz 5A

DNI Series, 10 Liter, 30 Liter, 50 Liter, 80 Liter, 150 Liter, 300 Liter Incubators



Lab incubators are specially designed for long-term and stable continuous operation. Ideal for gentle incubation of organisms, such as on agar plates, and also for conditioning of heat sensitive media. **Lab Incubators** are ideal for cultures, eggs, microbiology, and other biology in hospitals, industries, and laboratories. **PID Temp. Control** provides automatic compensation after load changes, setting changes or door opening for excellent accuracy.

Natural convection heat distribution combines with the adjustable air vents to provide excellent uniformity.

Double wall construction, **fiberglass** insulation provided on 5 sides as well as between inner and outer walls, and **silicon rubber** door sealing reduce heat loss and power drain. **Stainless steel** interior chamber and shelves are corrosion resistant, durable and easy to clean. **Powder coating exterior** is beautiful, durable, and corrosion resistant. Internal transparent door to facilitate product inspection.

Features

- Simple keypad input allows easy temperature setting.
- LED digital display enable users to monitor the chamber temperature at any given time.
- Visual alarm indicator alerts users of abnormal conditions if the chamber temperature exceeds the setting point by 10°C.
- The temperature can be controlled and maintained to 70°C.
- Double doors allow samples viewing from the inner door.
- Shelves can be adjustable.
- The temperature stability is $\pm 0.3^{\circ}\text{C}$ at 37°C ; $\pm 0.4^{\circ}\text{C}$ at 70°C .
- DNI-10 incubator: a reliable efficient and compact chamber in a sturdy design at a very favourable price. Units are stackable.



DNI-80

Specifications:

Model	DNI-10	DNI-30	DNI-50
Convection	Natural convection		
Temperature Range	Ambient +5°C ~ 70°C		
Volume (liters)	10	30	50
Inside Dimensions (mm)	W282xD200xH190	W325xD310xH315	W380xD365xH390
Heater: Incubator	150W	300W	500W
Outside Dimensions (mm)	W500xD270xH300	W425xD420xH610	W480xD475xH695
Shelves	1 Shelf	2 Shelves	
Power supply	AC220V 50/60Hz (110V 60Hz available)		

Model	DNI-80	DNI-150	DNI-300
Convection	Natural convection		
Temperature Range	Ambient +5°C ~ 70°C		
Volume (liters)	80	150	300
Inside Dimensions (mm)	W420xD450xH463	W625xD510xH500	W625xD510xH1000
Heater: Incubator	700W	800W	1000W
Outside Dimensions (mm)	W522xD560xH770	W725xD620xH795	W725xD620xH1465
Shelves	2 Shelves		
Power supply	AC220V 50/60Hz (110V 60Hz available)		

INCUBATORS

Forced Convection

DFI Series, 36 Liter, 80 Liter, 150 Liter, 240 Liter Incubators



DFI-36

DFI-80

DFI-150

DFI-240

Microbiological Incubator With Forced Convection

Premium equipment for all gentle incubation applications, including processing large numbers of samples at high throughput. Outstanding dynamics keep the required temperature virtually stable with homogenous distribution, irrespective of how many times the door is opened. The modern range of incubators is available in 4 sizes.

DFI series offers excellent uniformity and stability & are used for many applications as incubation of culture test, drying sileds, microbiological incubation, bacteriological test and more. The inner case is constructed from polished stainless steel.

Internal glass door for incubator. All units are provided with wire plated shelves with multi position settings.

All models are with fans assisted air circulation.

The chamber ventilation and exhaust vent are easily adjustable.

Wide choice of control options is available.

PID controller is fitted as standard with dual display of measured value and setpoint.

Options:

- 38mm cable port
- Gas inlet
- 5 programs of 8 segments model: 3216CP
- 4 programs of 16 segments model: 2416P4
- RS-232/485 communication model: 3216E
- Datalogger



DFI-36

Model	DFI-36	DFI-80	DFI-150	DFI-240
Temp. range	Room temperature - 80°C			
Temp. constancy	±0.1°C			
Temp. uniformity	±1°C at 100°C			
Temp. control	PID			
Temp. sensor	Thermo couple K			
Heater: Incubator	400W	400W	600W	800W
Inside Material	SUS -304			
Timer	99hr 59min			
Safety devices	Short circuit breaker, over heat protector, sensor abnormality			
Inside dimensions (mm)	W400xD300xH300	W500xD400xH400	W600xD500xH500	W600xD500xH800
Outside dimensions (mm)	W525xD420xH595	W620xD520xH620	W720xD620xH720	W720xD620xH1020
Volume (liters)	36	80	150	240
Shelves	2	2	2	3
Weight	34kg	47kg	60kg	76kg



BOD-150

Refrigerated Incubator 150 Liter

The MRC model BOD-150

cooled incubator designed to obtain freezing, incubating, drying & test temperatures between -10°C and $+60^{\circ}\text{C}$. It has stainless steel chamber and two doors, when the outer metallic door is opened there is inner glass door. Very good uniformity is achieved by forced air circulation. A PID temperature controller provides constant and accurate temperature. Inside power socket enable the use of the shaker rotator or other instrument inside. Cable port with cup is available upon request.



BOD-500

Large 487 Liter Refrigerated Incubator-BOD Incubator

The MRC model BOD-500

is ideal for BIOCHEMICAL OXYGEN DEMAND of sewage and waste water. Internal power socket. Other applications includes fermentation studies, drug stability tests. Excellent temperature uniformity is obtained by forced air circulation. A PID microprocessor temperature controller provide accurate and constant temperature. Dual display of setpoint and chamber temperature. Hermetically sealed compressor and automatic defrost.

Options:

- 38 mm cable port
- Gas inlet
- Day/Night Light+Timer



Specifications:

Model	BOD-150	BOD-500
System	Forced air circulation	
Temp. range	$-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$	$0^{\circ}\text{C} \sim +60^{\circ}\text{C}$
Temp. constancy	$\pm 0.1^{\circ}\text{C}$	
Temp. uniformity	1°C (at 37°C)	$\pm 1.5^{\circ}\text{C}$ (at 37°C)
Inside material	SUS-304	
Temp. control	PID	
Temp. sensor	PT-100 Ω	
Temp. heat-up rate	$25^{\circ}\text{C} \sim 60^{\circ}\text{C}$ (within 15 min)	
Temp. cool-down rate	$25^{\circ}\text{C} \sim 0^{\circ}\text{C}$ (within 15 min)	
Heater: Incubator	500W	1000W
Refrigerator	1/5 HP	1/3 HP
Safety devices	Short circuit breaker, overheat protector refrigerator overload protector, sensor abnormality, over low protector	
Inside dimensions (mm)	W600 x D500 x H500	W700 x D580 x H1200
Outside dimensions (mm)	W680 x D760 x H890	W790xD860xH1770(with casters)
Volume (liters)	150	487
Shelf	2	5
Power supply	110/220V (8A)	110/220V (12A)
Weight	77kg	220kg



PGI-500V - Vertical Light



PGI-500H - Horizontal Light

Plant Growth Incubator 487 Liter

The MRC models PGI-500V/500H:

Illuminated growth 2 chamber features Controllers, allowing control of two temp. conditions day & night & an On/Off illumination cycle relative to the program selected. Timers can be set to adjust cycles from 10 minutes up to 24 hours. Each system operates independently allowing for simulation of a diurnal cycle, such as an eight hour day cycle of 30°C with light followed by a sixteen hour night cycle of 18°C without light.

Forced air circulation ensures the most reproducible test conditions. The chamber air is gently & continuously circulated at a rate that ensures temp. uniformity of all test samples. The unit is equipped with a hermetically-sealed compressor & an independent over temp. safety controller. It also includes a circuit breaker to protect from electrical overload, 5 shelves, adjustable leveling feet, a steel exterior with welded seams & corners, & a double-coated, baked enamel finish. MRC Diurnal growth chambers are designed for studies requiring day and nighttime simulation.



Vertical Light



Horizontal Light

Features:

- Day/Night Light & Temp. Control
- Microprocessor Control
- Display of Set point & Chamber Temp.
- High & Low Limit Temp. Protection
- Fan Assisted/Forced-Air Circulation
- Hermetically Sealed Compressor

Specifications:

Model	PGI-500V	PGI-500H
System	Forced air circulation	
Temp. range	0°C~+60°C	
Temp. constancy	±0.1°C	
Temp. uniformity	±1.5°C (at 37°C)	
Inside material	SUS-304	
Temp. control	PID	
Temp. sensor	PT-100Ω	
Temp. heat-up rate	25°C~60°C (within 15 min)	
Temp. cool-down rate	25°C~0°C (within 40 min)	
Heater: Incubator	1000W	
Refrigerator	1/3 HP	
Illumination time	10 min~24 Hr	
Illumination	40W x 5 tube	20W x 9 tube
Safety devices	Short circuit breaker, over heat protector, refrigerator overload protector, sensor abnormality, over low protector	
Inside dimensions (mm)	W700xD580xH1200	
Outside dimensions (mm)	W790xD860xH1770 (with casters)	
Volume (liters)	487	
Shelf	5	
Power supply	110/220V (13A)	
Weight	225kg	



LE-101

LE-Series, Diurnal Plant Growth Or Seed Germination Chambers, Tissue Culture & Plants Studying

Developed with Mother Nature in mind, these chambers offer digitally controlled temperature and lighting day/night cycles to simulate the nurturing environment seeds and plants need for successful growth. The standard models shown below feature clock controlled temperature (hi/low) and lighting (on/off) suitable for studying many plant species. These chambers have humidity range of 50% to 90% RH & a temperature range of 5-40°C, $\pm 1^\circ\text{C}$ at the sensor, and failsafes may be set to protect plants from freezing or excessive heat.

Application include plant breeding and genetic research, photosynthesis, nutrition, and other aspects of plants physiology.

Suitable for Plant Growth, Stability and Product Self-life QC Testing.



LE-102/LE-103

Model	LE-101H	LE-102H	LE-103H
Temperature range	5~40°C (w/o illumination) 10~40°C (illumination)		
Accuracy	±0.5	±0.15	
Setting/readout	Digital		
Humidity range	50%~90%RH		
Humidity accuracy	±2%RH		
Humidity setting/readout	Digital		
Timer	Digital		
Illumination	3 Shelves		Every side
Humidifier	Ultrasonic type		
Shelves	4 shelves		
Chamber (cm)	W66xD58xH142	W125xD58xH142	W124.5xD60xH130.5
Overall (cm)	W75xD95.5xH200	W134xD95xH200	W145xD86xH204
Power source	110/220V 60/50Hz		



DHI-37

DHI-22

The MRC model DHI-22 hybridization incubator offers high performance with precise temperature control, safety and convenience. It is small and space saving incubator. The bottle carousel is easily removable for easy cleaning of the chamber. The bottle carousel accept up to eight bottles (300mm). Very homogeneous temperature distribution in the chamber is obtained by airforced ventilation. This airflow system also ensure fast recover of chamber temperature after door opening. A PID temperature controller provide constant & no temperature overshoot. Dual display of actual chamber temperature & set point temp. Tempered glass viewing window provides clear chamber visibility without opening the door. Simple operation of speed by means of rotary switch & the speed display is by analog tachometer.

**DHI-37 Includes
Orbital Shaker
310x210mm**

Features:

- Requires less probe to produce consistent films with sharp bands.
- Forced air convection provides excellent temperature uniformity.
- Compact design saves bench space.
- Broad temperature range from ambient +5°C to 70°C.
- Precise microprocessor-based PID temperature control from 5°C above ambient to 70°C in 0.1°C increments.
- Forced air circulation maintains temperature uniformity of $\pm 0.5^\circ\text{C}$.
- Variable speed models provide consistent speed even at low rpms for uniform distribution of solutions and complete wetting of membrane.

Applications:

- Northern (RNA) blot hybridizations
- Southern (DNA) blot hybridizations
- Western (Protein) blot hybridizations

**Optional
Bottles**



DHI-37

Model	DHI-22	DHI-37
System	Forced air circulation	
Shaking	Rotation	Rotation+Orbital
Rotation speed	5-50 rpm	
Rotation width	0-20 Variable	
Orbital speed		5-120 rpm
Shaking width		25 mm
Shaking plate		W310xD210
Temp. range	Room temperature - 70°C	
Temp. constancy	$\pm 0.1^\circ\text{C}$	
Temp. uniformity	$\pm 1^\circ\text{C}$ (at 37°C)	
Heater	300W	
Temp. control	PID	
Temp. heat-up rate	25°C-70°C within 20 min	
Bottle capacity	Standard 4 bottle, maximum 8 bottle	
Standard bottles	A-35 x 150mm B-35 x 200mm C-35 x 300mm	
Inside material	SUS-304	
Safety devices	Short circuit breaker, over heat protector, sensor abnormality	
Inside dimensions (mm)	W350xD250xH250	W350xD250xH425
Outside dimensions	W440xD430xH430	W440xD430xH650
Power supply	110/220V (3A)	110/220V (4A)
Weight	28 kg	44 kg



MOB-04

Features:

- Temp. range: from +5°C over room temp. to 60°C.
- Convenient upward opening door.
- Microprocessor controlled time, speed & temp.
- Accurately control & display time, temp. & speed.
- Heating platform for standard microtitre plates.
- Soft start, easy to setup & use.
- Audible signal to indicate end of shaking motion after program completion.
- LCD display.

Model: MOB-04, 4 MicroPlate Incubator Mixer Shaker

Thermo-shaker is designed for shaking 2-4 standard 96-well microtitre plates in the heating mode.



MOB-04

Temperature range	RT+5°C~60°C
Uniformity over the platform	±0.5°C
Display accuracy	0.1°C
Shaking speed	100-1200 rpm (increment: 1 rpm)
Orbit	2mm (rotation)
Independent timer	0-100 hrs (increment 1 min)
Power supply	AC220V or AC120V 50/60Hz 250W
Platform capacity	4 microtitre plates
Platform dimension	215x300mm
Dimensions	385x395x190mm
Weight	9.5kg



MOB-64

Model: MOB-64, Incubated Mixer Shaker For 0.5/1.5 Tubes & Microplates**Compact mixer with incubation**

- Well designed air mixing system provides accurate temp. control.
- Digital microprocessor control [PID] ; Digital display
- Variable speed from 0 to 2,000 rpm
- Continuous or timed operation
- 4 different tube - racks for tubes
- MPLII, rack for both micro well plate and centrifuge tube
- Safety features: Flashing alarm lamp to warn over - temp.
Over - temperature cut-out
Over - temperature safety thermostat
Door electronic safe switch & Door stopper

**Accessories:**

Model Number	Description
T0.5	Tube rack/0.5ml centrifuge tube-capacity : 64ea
T1.5	Tube rack/1.5ml centrifuge tube-capacity : 64ea
T0.5/1.5	Tube rack/0.5ml centrifuge tube-capacity : 32ea 1.5ml centrifuge tube-capacity : 32ea
T1.5-N	Tube rack/0.5ml centrifuge tube-capacity : 64ea no silicon ring, used as a cell disrupter with glass bead
micro-MPL II	Micro well plate-capacity: 2ea 1.5 ml centrifuge tube-capacity: 30ea

Model	MOB-64
Temp. range	Ambient +5°C ~ 95°C
Temp. Accuracy	±0.5°C
Orbit range	3mm
Speed range	0 ~ 2000 rpm
Timer	60 min
Weight	14kg
Dimen.(mm)	W327xD300xH220
Wattage	400W
Power	AC110/220/230V, 50/60Hz
Unit	Thermo Mixer (with tube rack)

SHAKER INCUBATORS

Benchtop

TOU-50/120-Series, Small & Medium Size Bench Top Incubator Shaker, Temperature Range Of 5°C Above Ambient To 70°C, Speed Range 20-250 RPM Or 30-400RPM.



TOU-120

TOU-50

Applications

- Areas of application: cultivation of cell & tissue cultures or micro organisms. molecular biology, cell and insect culture, and entomology studies.
- Production of secondary natural substances and biogenetic pharmaceutic etc.



TOU-120



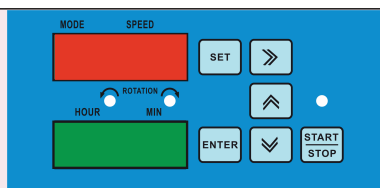
TOU-50

Features:

- Space saving with transparent window in the front which provide good visibility that minimize the need to open the chamber, automatic cutout of shaker when lid is open to protect operator.
- Platform 300 x 400 mm or 450 x 450mm accept flasks up to 2 litre, test tubes racks and gel trays.
- Shakers feature a triple eccentric drive that handles heavy workloads, provides uniform agitation & enables continuous 24-hour operation even at high speeds.
- Precisely monitor and control chamber temperature over complete range with $\pm 0.1^{\circ}\text{C}$ accuracy at 37°C with PID temperature controller • DC motor & variable speed control from 40 to 400rpm, controlled by a rotary dial • Integrated tachometer monitors & displays speed in rpm to guarantee an accurate setting • Easy-to-read digital display shows temperature • Advanced shaking mechanism provides quiet shaking & precise speed control • Minimum noise & no vibration • Automatic stop of shaking, when the door is opened
- Accommodate flasks up to 2000ml • Universal spring rack for various shapes/sizes of flasks is available (optional).

Specifications:

Model	TOU-50	TOU-50-2	TOU-120	TOU-120-2
System	Forced air circulation			
Shaking system	Orbital			
Temp. range	Room temp. $+5^{\circ}\text{C}$ - 70°C			
Temp. constancy	$\pm 0.1^{\circ}\text{C}$			
Temp. uniformity	$\pm 1^{\circ}\text{C}$ (at 37°C)			
Temp. control	PID			
Rate of shaking	20-250 rpm	30-400 rpm	30-300 rpm	30-400 rpm
Shaking width	25 mm			
Shaking plate size	W400xD300mm	W400xD300mm	W450xD450mm	W450xD450mm
Maximum load	20kg			
Inside dimensions	W450xD380xH260mm	W450xD380xH260mm	W510xD540xH430mm	W510xD540xH430mm
Outside dimensions	W460xD490xH430	W460xD490xH430	W520xD650xH500	W520xD650xH500



Optional: Digital Speed Control



111-1-111145
UNIVERSAL
PLATFORM
FOR TOU-120



FLASK HOLDERS

Capacity for flasks:

Model	111-1-110050	111-1-110125	111-1-110250	111-1-110500	111-1-111000	111-1-112000
Flask Clamp	50ml	125ml	250ml	500ml	1000ml	2000ml
TOU-120/120-2-Capacity	64	36	25	16	9	5
TOU-50/50-2-Capacity	35	20	12	6	4	2



LOM-150

LOM-150-Series, 150liter Shaking Incubator, Orbital Motion

This multipurpose model can shake, incubate and refrigerate. The 480x380mm platform accepts flasks up to 6 litre.

Large viewing window and internal light provide clear chamber visibility, with moveable window blind.

One stationary shelf for incubating added samples with a front opening door, the LOM-570 can be used on the bench or on the floor, wide temp. range 0°C to 60°C.

Model LOM-150D: two stage shaker enable to shake two platform simultaneously.

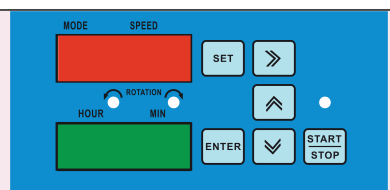
Useful for biological culture under various temperature.



Double Platform, LOM-150D

Application & Features: Useful for biological cultures under various temp. • Minimum noise & no vibration • Advanced shaking mechanism provides quiet shaking & precise speed control • Automatic stop of shaking, when the door is opened • Day/night light

Model	LOM-150	LOM-150-2	LOM-150D
System	Forced air circulation		
Shaking system	Orbital		
Temp. range	0°C~60°C		
Temp. constancy	±0.1°C		
Temp. uniformity	±1°C (at 37)		
Temp. control	PID		
Temp. sensor	PT-100Ω		
Inside material	SUS-304		
Rate of shaking	20~250 rpm	30~400 rpm	20~250 rpm
Shaking width	25 mm		
Shaking plate	W480xD380		W480xD380 Double platform
Refrigerator	1/5 HP		
Heater: Incubator	500W		
Safety devices	Short circuit breaker, over heat protector, refrigerator over load protector, sensor abnormality, over low protector		
Inside dimensions (mm)	W600xD500xH500		
Outside dimensions (mm)	W680xD760xH890		
Volume (liter)	150		
Shelves	1		
Power supply	110/220V, (8.5A)		
Weight	75Kg		80Kg



Optional: Digital Speed Control

111-1-111143
UNIVERSAL
RACK FOR
LOM-150FLASK
HOLDERS**Capacity of flasks holders:**

Model	111-1-110050	111-1-110125	111-1-110250	111-1-110500	111-1-111000	111-1-112000	111-1-113000	111-1-114000	111-1-115000	111-1-116000
Flask clamps	50ml	125ml	250ml	500ml	1000ml	2000ml	3liter	4liter	5liter	6liter
LOM-150/ LOM-150-2	48	30	20	12	6	4	2	2	1	1
LOM-150D	96	60	40	24	12	-	-	-	-	-

SHAKER INCUBATORS

Large Capacity, Refrigerated

LOM-200/400-Series, Precise Shaking Incubator, Top Door, Orbital Motion With Digital PID Control Up To 60°C



LOM-400-2

The large capacity incubator shakers are available in 2 sizes & four models. Large capacity platforms 600x480mm or 960x600mm accepts flasks up to 6 litre. Wide temperature range 0-60°C & two choices of agitation 20-250rpm or 30-400rpm in a 25mm or 50mm circular orbit. Large viewing window & internal light provides clear chamber visibility without opening the door, with moveable window blind. Inside air circulation provide equal temperature & quick restore of temp. after opening the door. Hydraulic opening door control & casters.

Specifications:

Model	LOM-200-2	LOM-200-5	LOM-400-2	LOM-400-5
System	Forced air circulation			
Shaking system	Orbital			
Temp. range	0°C~60°C			
Temp. constancy	±0.1°C			
Temp. uniformity	±1°C (at 37)			
Temp. head up rate	25°C~60°C within 15 min			
Temp. cool down rate	25°C~0°C within 40 min			
Temp. control	PID			
Temp. sensor	PT-100			
Inside material	SUS-304			
Rate of shaking	30~400 rpm	20~250	30~400 rpm	20~250
Shaking width	25 mm	50 mm	25 mm	50 mm
Shaking plate	W600xD480		W960xD600	
Refrigerator	1/4 HP		1/3 HP	
Heater: Incubator	600W		800W	
Safety devices	Short circuit breaker, over heat protector, refrigerator over load protector, sensor abnormality, over low protector			
Inside dimensions (mm)	W690xD570xH530		W1050xD690xH530	
Outside dimensions (mm)	W1010xD760xH955		W1370xD880xH955	
Volume (liters)	208		383	
Power supply	110/220V, 50/60Hz, (8.5A)		110/220V, 50/60Hz, (14A)	
Weight	183Kg		216Kg	

Capacity of flask holders

Model	111-1-110050	111-1-110125	111-1-110250	111-1-110500	111-1-111000	111-1-112000	111-1-113000	111-1-114000	111-1-115000	111-1-116000
Flask clamps	50ml	125ml	250ml	500ml	1000ml	2000ml	3liter	4liter	5liter	6liter
LOM-200 Capacity	80	48	30	20	12	6	6	4	2	2
LOM-400 Capacity	160	96	60	40	24	15	8	8	6	6

Useful for biological culture under various temperature.

Application & Features: Minimum noise & no vibration • Advanced shaking mechanism provides quiet shaking & precise speed control • Automatic stop of shaking, when the door is opened • Optional: Digital speed control • Optional: day/night light.



LOM-400-2



LOM-500

Large 487Liter Refrigerated Shaking Incubator

Front opening door provided easy access to all glassware in the chamber. These large capacity incubator shakers are available in single platform or double platform and in two choices of speed 20-250 or 30-400 rpm.

Large viewing window and internal light provides clear chamber visibility without opening door, moveable window blind.

Large capacity accessory platform 600x480mm accepts flasks up to 6 litre.

Two adjustable height, stationary shelves provide additional storage for incubating other experiments. Optional: day/night light.

Application & Features:

Excellent for multi-use & wide range of sample testing under various temperature • Advanced shaking mechanism provides quiet shakig & precise speed control • Space saving design for large quantity samples • Optional: Digital speed control.



LOM-500

Model	LOM-500-2	LOM-500-5	LOM-500D-2	LOM-500D-5
System	Forced air circulation			
Shaking system	Orbital			
Temp. range	0°C~60°C			
Temp. constancy	±0.1°C			
Temp. uniformity	±1°C (at 37)			
Temp. heat-up rate	25°C~60°C within 15 min			
Temp. cool-down rate	25°C~0°C within 40 min			
Temp. control	PID			
Temp. sensor	PT-100Ω			
Inside matrial	SUS-304			
Rate of shaking	30~400 rpm	20~250 rpm	30~400 rpm	20~250 rpm
Shaking width	25 mm	50 mm	25 mm	50 mm
Shaking plate	W600xD480		W600xD480 Double platform	
Refrigerator	1/3 HP			
Heater	800W			
Safety devices	Short circuit breaker, over heat protector, refrigerator over load protector, sensor abnormality, over low protector			
Inside dimensions(mm)	W700xD580xH1200			
Outside dimensions(mm)	W790xD860xH1770			
Volume (liters)	487			
Shelf	2		1	
Power supply	110/220V, 60/50Hz, (11A)			
Weight	220Kg		240Kg	

Capacity of flask holders

Model	111-1-110050	111-1-110125	111-1-110250	111-1-110500	111-1-111000	111-1-112000	111-1-113000	111-1-114000	111-1-115000	111-1-116000
Flask clamps	50ml	125ml	250ml	500ml	1000ml	2000ml	3liter	4liter	5liter	6liter
LOM-500-2/5 Capacity	80	48	30	20	12	6	6	4	2	2
LM-500D-2/5 Capacity	160	96	60	40	24	12	-	-	-	-

CO₂ INCUBATORS

Water Jacket-Hepa Filter

3503-2, 50Liter Small CO₂ Incubator



3503-2

The 3500 series of CO₂ Incubators offer dependable Infrared (IR) CO₂ Sensor control & are ideal for QA/QC applications. The compact size of the 3503 conserves valuable lab bench space. The six gallon water jacket & intelligent microprocessor offers superb uniformity for even the most demanding in vitro incubations.

Specifications:

Model	3503-2	3517-2	3524-2
Weight		129 kg	270 kg
Capacity (liter)	50	173	2x173(Double)
Inside dimen.(cm)	W40xD32xH40	W52xD50.8xH65.5	W52xD50.8xH65.5 for Each chamber
Outside dimen.(cm)	W53xD57xH67	W66xD65xH102	W66xD67xH198
Volume (liter)		170	170 for Each chamber
Temperature range	8°C Above ambient to 60°C		
Temp. uniformity	±0.35°C at 37°C	±0.35°C at 37°C	±0.35°C at 37°C
Electrical specification	220V/50Hz		
CO ² Range	0-20%		
CO ² Sensor	IR (Infrared)		
CO ² Rate		< 5 minutes	
Jacket type	Water		
Relative humidity range	up to 95%		
Shelves	3 Supplied (8 Maximum)	3 Supplied (16 Maximum)	3 Supplied (32 Maximum)

3517-2, 170Liter CO₂ Incubator



3517-2

3524-2, Double 170Liter CO₂ Incubators



3524-2

We set the standard by designing contamination control features into our incubators to facilitate impeccable environments for tissue culture & in-vitro fertilization. Our incubators are easy to clean & keep clean because we employ 100% stainless steel chambers and shelving, fully-coved corners, a removable inner door gasket and our Quick Clean Shelf System. The 3500 Series Incubators come standard with a patented copper-housed HEPA filter to inhibit bacterial growth and provide continuous decontamination.

The new look of the 3500 series includes great new features! Our new anti-corrosion anode allows for the optional use of distilled or tap water (de-ionized water should not be used) in the large 19 gallon water jacket, fully-coved corners make cleaning a breeze and the CO₂ sample port along with all of the data logger connections have been moved to the front control panel for quick and easy access.

Maintain precise time/date stamped records of all incubator functions from one minute to 99 minutes.

The 3500 series data logger features programmable outputs that transmit display data via the RS-232, direct to a printer, or to a remote alarm system.

Features:

- Coved Corners for Easy Cleaning.
- New Anti-Corrosion Anode for Easy Set-Up & Tap Water Use.
- Patented Copper-Housed HEPA Filter for Superior Contamination Prevention.
- Built-In CO₂ Tank Switcher.
- Factory Pre-Set Door Thermostat.
- Pre-Heated CO₂ Gas Inlet for Increased Temperature Uniformity.
- Front-Mounted Connections for Convenience.



5215-2

Specifications:

Model	5215-2	5230-2
Weight	112.5 kg	225 kg
Capacity (liter)	160	160 each chamber
Inside dimen.(cm)	W49xD50xH65	W52xD50xH61 per unit
Outside dimen.(cm)	W65xD69xH96	W137xD142xH190
volume (liter)	170	
Temp. range	8°C above ambient to 60°C	
Temp. uniformity	±0.35°C at 37°C	
Electrical specification	Volts: 120V Hertz: 50/60Hz Watts: 600W Amps: 5A	
CO ₂ Range	0-20%	
CO ₂ Sensor	IR	
CO ₂ Rate	< 5 minutes	
Jacket type	Air	
Relative humidity range	up to 95%	
Shelves	3 Supplied (16 Max.)	3 Supplied (16 Max.) per unit

Features: Copper Enclosed HEPA Filter • Infrared CO₂ Sensor • Heated Outer Doors • Pre-heated CO₂ Gas Inlet • Independent Overtemperature Protection • Quick Clean Shelf System.

3552-2, High Heat Decontamination CO₂ Incubator

3552-2

Features: Dry Heat Decontamination at 180°C for 120 min. • Pre-heated Copper CO₂ Gas Inlet for Increased Temp. Uniformity • No Handling of the IR Sensor • Extensive Warranty.

Decontamination is easier than ever. The Model 3552 is the latest addition to the 3500 series of CO₂ Incubators. Featuring a dry, high heat decontamination cycle, the

5215-2, Air Jacket CO₂ Incubator

Model 5215 was designed to minimize contamination & be operational within hours of installation. This slim, lightweight incubator is easily repositioned with minimal downtime and is well-suited for multiple users. Three temperature control settings (main chamber, external door, & front liner) minimize condensation & yield precise temperature uniformity with no unwelcome temperature gradients. Our unique HEPA filtration system removes 99.97% of all airborne microbes and isolated particulates 0.3 microns or larger. The patented copper housing around the filter is designed to destroy microbes entrapped in the filter. Additional anti-contamination features include a stainless steel chamber with easy-to-clean coved corners, our Quick Clean Shelf System which disassembles without tools in less than a minute, and our Non-Tip Shelf System to reduce spills.

5230-2, Air Jacket CO₂ Incubator

5230-2

3552 has the ability to maintain 180°C for 120 minutes without having to remove or handle the IR Sensor!

Another important and unique feature is that it is not necessary to remove the IR CO₂ sensor prior to activating the decontamination process. This is a more user friendly approach and eliminates potential damage to the sensitive IR sensor. This is decontamination at its easiest and most effective.

Other features include a USB interface for software communication and a pre-heated copper CO₂ gas inlet. This exclusive feature prevents condensation and reduces potential sites for contamination to form. Precise temperature control via an advanced microprocessor. An independent over-temperature safety controller is also integral to the design.

Model	3552-2
Weight	129 kg
Capacity (liter)	159
Inside dimen.(cm)	W52xD50xH61
Outside dimen.(cm)	W69xD71xH95
Temp. range	8°C above ambient to 50°C
Temp. uniformity	±0.35°C at 37°C
Electrical specification	120 V: 1600W / 15.0A / 60Hz
CO ₂ Range	0-20%
CO ₂ Sensor	IR ±0.1%
CO ₂ Rate	< 5 minutes
Relative humidity range	up to 95%
Shelves	3 Supplied (16 Maximum)

CO₂ INCUBATORS

Large Capacity

2428-2/2440-2/2460-2, Extra Large Capacity CO₂ Incubators

These models feature large incubation space without consuming excessive floor space. When production of cell lines or large scale tissue culture requires a high level of dependability, count on these units. Understanding the importance of verification for these applications, a 4-20 mA output continuously transmits CO₂ and temperature levels. Choose from three sizes.

Versatility and Outstanding Uniformity

Whether using tissue culture flasks, cell factories or roller bottle rack systems, these units have voluminous space, four interior electrical outlets & a reinforced floor with special flip out ramps to facilitate movement of equipment such as roller racks.

Utilizing advanced engineering to create forced air circulation throughout the chamber, these units provide unparalleled temperature uniformity that helps all samples to incubate at the same rate. The air jacket facilitates quick and easy setup and an optional caster platform adds mobility to the long list of benefits these units provide.

Uncompromising Control

Automated performance is at your fingertips because the micro-processor controls continuously survey and adjust CO₂ and temperature levels with enhanced accuracy, sensors with audible/visual alarms monitor set points. The IR CO₂ sensor's immediate reaction to changes in CO₂ levels allow for fast recovery even in chambers this size. A CO₂ shutoff occurs when the door opens to conserve gas consumption.

Superior Construction

Our stainless steel interior & powder coated exterior provide the durability you have come to expect from a MRC incubator. Each unit must pass our rigid quality control inspection before shipment, which is your assurance of reliability in the laboratory.

Features:

Accommodates Roller Bottle Apparatus • Infrared CO₂ Sensing Technology • Viewing Door • Independent Over temperature Protection.



Specifications:

Model	2428-2	2440-2	2460-2
Weight	225 kg	383 kg	428 kg
Capacity (liter)	902	1133	1678
Interior dimensions(cm)	W84xD68xH158	W89xD66xH193	W109xD89xH173
Exterior dimensions (cm)	W94xD91.5xH188	W104xD86xH224	W124xD104xH201
Temperature range	5°C above ambient to 60°C		
Temperature control	-	±0.1°C	
Temperature uniformity	±0.5°C at 37°C	±0.5°C at 37°C	
Electrical specification	220V Hertz: 50/60 Hz Watts: 2200W Amps: 10A		
CO ² Range	0-20%		
CO ² Sensor	IR		
CO ² Rate	< 5 minutes		
Jacket type	Air		
Shelves	6 Supplied (30 Maximum)		3 Supplied (30 Maximum)

2406-2, Economy Water Jacket CO₂ Incubators

Features: Infrared CO₂ Sensor • Heated Outer Door
• Independent Over temperature Protection • Quick Clean Shelf System.

Model 2406 was designed & manufactured to accommodate tight budgets, while maintaining the fundamental needs of quality & precision. These units have PID microprocessor controllers, a heated outer door & a tempered-glass inner door. They provide exceptional temperature uniformity, while

minimizing cold spots that lead to condensation and ultimately, contamination. Although they do not have a humidity display, the extremely stable temperature environment maintains constant humidity through evaporation at 95%. Double wall construction reduces these unit's footprint, so they fit in tight spaces as well as tight budgets. Two 2406 units stacked.

Model	2406-2	2406/2-2
Weight	140 kg	270 kg
Capacity (liter)	190	2x190 (double) each chamber
Inside dimen.(cm)	W52xD51xH72	W52xD51xH72
Outside dimen.(cm)	W67xD67xH101	W67xD67xH101
Temp. range	8°C above ambient to 60°C	5°C above ambient to 60°C
Temp. uniformity		±0.25°C at 37°C
Electrical specification	Volts: 120V Hertz: 50/60Hz Watts: 550W Amps: 5A	
CO ₂ Range		
CO ₂ Sensor	IR	IR
CO ₂ Rate		< 3 minutes
Relative humidity range	up to 80%	up to 95%
Shelves		3 Supplied per chamber(16 Max.)

LIFLY-2, Superfly Drosophila Specific Low Temperature Incubator, 577 Liter**Energy Saving Features...less impact on the environment, better breeding conditions and longer refrigeration compressor life.**

- On and off condenser cycles prevent ice build-up.
- No costly coil replacements from pitting caused by crystallized gas contact with ice.
- Compressor cycling requires less than 25% of the energy required for standard B.O.D. incubators.

The LIFLY Superfly Incubator takes advantage of the range of temperatures acceptable in Drosophila culture. Standard low temperature incubators are intended for Biological Oxygen Demand (B.O.D.) applications. B.O.D. incubators are designed for wastewater treatment, not Drosophila culture.

B.O.D. testing can tolerate the temperature fluxuations associated with defrost cycling to prevent freezing coils. Fruit Flies cannot tolerate these temperature spikes. The Superfly Drosophila specific incubator functions within the range of temperatures preferred by fruit flies. Rather than striving to maintain a distinct set point within 0.25°C, the incubator gently fluxuates between 17°C and 19°C.

Superfly Functionality

The Superfly Drosophila Specific Incubator elements will only activate if the chamber temperature goes below the lowest acceptable level.

The compressor will shut off and rest while the chamber temperature slowly rises in response to a door opening or heat from fan or optional light.

Model	LIFLY-2
Capacity	577 liter
Interior Dimensions in cm	67.5x59x145
Exterior Dimensions in cm	80x80x192.5
Temperature Range	18 ⁰ to 29°C

INCUBATORS

Humidity/Temp./Refrigerated



HC30R-2



HC9R-2

HC9R-2/HC30R-2, Humidity Test Chambers

MRC Humidity Test Chambers provide a controlled environment for a wide range of industrial and biotechnical testing applications.

This line is designed to duplicate natural conditions, that allows you to determine the limitations of a sample when exposed to various temperature and moisture fluctuations.

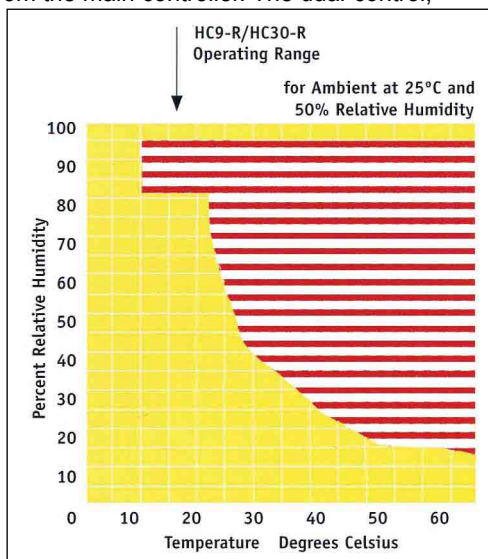
This unit incorporates a refrigeration system that dramatically increases the operational range of the cabinet. A low-pressure water vapor generator, injecting saturated water vapor into the recirculating air duct, controls chamber humidification.

This process is preferable to steam generation because steam introduces additional heat to the chamber atmosphere, which then compromises temperature control. Uniform temperature and humidity are maintained by circulating chamber atmosphere through a recirculating air duct system. The air ducts also serve as shelf supports and can be easily removed for cleaning.

Microprocessor Controls and Digital Display for both Temp. and Humidity. Microprocessor temperature and humidity controls with digital display provides optimal stability and allow for accurate control. Controllers have easy-to-use keypad, touch pads and a calibration feature. Setpoints have memory capabilities in the event of power outages.

Safety Features. The MRC safety controller provides independent, overtemperature protection (OTP) that operates independently from the main controller. The dual-control,

fail-safe function means a second system will ensure that temperature setpoint is never exceeded. By operating independently, it will take over & control the heating function if the main temp. setpoint is exceeded.



Features/ Benefits: Stainless steel chambers are seamless for durability, corrosion resistance and quality • Low-pressure water vapor generator provides humidification without generating additional heat • Microprocessor controls and digital readout display both temperature and humidity values • Refrigerated models provide extended performance for temperature and RH ranges • Two layers of insulation to maintain temperature and reduce heat loss.

Applications: Shelf Life and Half-Life Testing • Packaging • Sterility Testing • Mil-Specifications • Component Burn-In • Vapor Transmission.

Model	HC30R-2	HC9R-2
Capacity	865 Liter	283 Liter
Interior dimensions (cm)	W78.7xD69.8xH157.5	W76.2xD50.8xH76.2
Exterior dimensions (cm)	W109xD89xH216	W111.76xD73.66xH152.4
Temperature range	10°C to 70°C	10°C to 70°C
Temperature uniformity	±0.5°C at 37°C	±0.5°C at 37°C
Electrical specification	Volts: 220V Hertz: 50/60 Hz Watts: 1650W Amps: 7.5A	Volts: 220V Hertz: 50/60 Hz Watts: 1430W Amps: 6.5A
Jacket type	Air	Air
Relative humidity range	Ambient +10% to 95%	Ambient +10% to -95%
Shelving	6 Supplied (16 Maximum)	3 Supplied (8 Maximum)



EGG-100



EGG-200

EGG-100/200, Incubator For Eggs

Professional incubator with leading edge technology especially designed for parrot egg incubation. It is well insulated & will operate well within a large range of ambient temperatures (15 to 35 degrees Celsius). The Inca Incubator is designed for quality with high reliability, is easy to use and saves on electricity.

- A new and exclusive heating technique that strengthens chick immunity
- Large and clear digital temperature display
- Automatic egg rolling that mimics the action of the brooding mother
- Full humidity control - Highly accurate unique humidity and temperature meter
- Easy & Simple to clean
- Maximum Visibility.

Model	Input power	Power consumption	External dimen.(mm)		
			L	W	H
EGG-100	220-240V	50 Watts	460	250	200
EGG-200	220-240V	80 Watts	580	340	265



BRDR-10

BRDR-10/20, Brooder For Chicks

Fully digital Electronic temperature control with temperature display enables maximum accuracy & easy control of the brooder's temp. Fan assisted heating elements Placed on the inner top of the brooder, these fairly low temperature heating elements are set on a metal heat sink and heat the brooder. They are controlled by an electronic temperature control unit that digitally shows the temperature. The temperature of the unit can be set to the accuracy of 0.1 degrees Celsius. The heat they generate is spread evenly throughout the brooder by an automatically controlled computer type fan mounted on the heat sink. The fan is supported by a DC current that generates minimal heat and preserves the brooder's temperature. Easy disassembly All parts, including the complete heating elements, can be easily removed for cleaning and maintenance. Maximum Visibility Sliding transparent doors for visual inspection, that can be lifted out.

Model	Input power	Power consumption	External dimen.(mm)		
			L	W	H
BRDR-10	220-240 Volt	80 Watts	340	490	410
BRDR-20	220-240 Volt	160 Watts	450	690	500



QC-619T, Abrasion Tester

The main function is to use specified Grinding Wheel with specified Load to rub the surface of specimen, and after a setup number of timer of abrasive, evaluate the following conditions of the surface after test, and ratio the endurance characteristic of abrasion for this material.

- Worn out condition
- The loss of the weight
- The loss of the physical volume
- The thickness that been worn out, etc.
- Use NBS standard gum to ratio the endurance characteristic of abrasion for this material.

Specification:

- Machine Dimension: 33 × 43 × 30cm
- Machine Weight: 30 kg
- Power Supply: 240V 50Hz
- Rotary Speed: 60RPM (Or to be specified)
- Counter: LCD display, 6Digit (Optional Setting), Auto-Brake
- Load (Weights) : 250g, 500g, 1000g (Free assorting by user)
- Grinding Wheel specification: (As customer specifies)
- The cleft between Grinding Wheel and Specimen Plate-Holder: 37 ~ 38mm
- Grinding Wheel: Diameter 2", thickness 1/2"
- Pitch of Left and Right Grinding Wheel: 63.5mm
- Specimen size: Ø100mm, center hole: Ø8mm, thickness: 0.5~3mm (Adjustable), available for soft/hard material
- Accessories: Vacuum cleaner 1Set, Specimen cutter 1Pc (A), Wrench 1Pc (K), Grind Wheel 1Set (B), Sand Paper 5Pcs (C)
- Attachment: Warranty Certificate, Instruction Manual each one piece.



MSS-B, Salt Spray Testers

Testing Chamber: It is made of P.V.C. sheet, its internal structure uses advance technical of stainless steel pipe. The feature is well-reinforced, temperature well kept, and deformed free and keep temperature stable

- Heat-up method of chamber is "5 direction heat-up method", able to control constant temperature inside chamber ($\pm 1^{\circ}\text{C}$)
- Saturated air tank: The heating air purpose saturated air tank for mist spraying is made of stainless steel SUS 304, its feature with press-resistant, water-leakage free, air-leakage free, and deformed free, This installation also included auto-deleted when over pressure, to ensure a longer life span
- Heating constant temperature installation: It using 5-directions heating up by water type to control temp. Ensure temperature kept and constantly. It is also help to prevent the Choppy temperature- Electricity saving for long period use
- Specimen placement: The specimen angle is $15^{\circ}/30^{\circ}$. Place them average ready to test, standard specimen size is 150

x70mm or 100 x 65mm, finished-products test directly is also available. It is use glass-made nozzle and conformed to Bernoulli theorem to make salt a mist shape & fallen mist capacity is adjustable. (Generally use 1-2cc/hour)

Usage: Salt spray tester is used for testing rust-proof treatment of material, such as metal surface that after painting, coating, electroplating, anodizing, films of organic and non-organic...etc. It's a corrosion and Rust-Resistant test. It is for checking the corrosion-resistant of products (specimen) under long time corrosion after treatment like anodize, rustproof oil, chemical, etc.

Accessories: 1) Air compressor: 1Set. 2) Testing purpose pharmaceutical products: NaCl (Sodium chloride), NaOH(sodium hydroxide), CuCl (copper (I) chloride), and CH₃COOH (glacial acetic acid) each one bottle. Adjust appliances: Litmus paper, spoon, straw, and concoct tank for each

- The main difference between the above stated types are the testing chamber's capacity. Other functions are the same
- The industrial standard request the testing capacity reached 0.43m³ or above. Selecting proper type according to consumer's specimen size requirement.

Model		MSS-A	MSS-B
Internal Dim. (cm)		W60xD40xH45	W90xD50xH60
External Dim. (cm)		W125xD106xH94	W155xD120xH105
Quantity of collecting cup		1PC	2PC
Power of heater (Watt)		1000W	2000W
Temp. range	Chamber	Room temp. ~50°C	
	Air	Room temp. ~63°C	
Features	Temp. constancy	$\pm 0.5^{\circ}\text{C}$	
	Saturated air pressure (kg/cm ²)	0.8~2.0 ± 0.01	
	Spray volume (ml/80cm ² /hr)	0.5~0.3	
	PH-salt spray test	6.5~7.2	
	PH-CASS test	3.0~3.2	
Material	Exterior	P.V.C or P.P	
	Interior	P.V.C or P.P	
System	Salt spray vehicle	Air+acid (base) liquid	
	Heating	SUS#316 Stainless steel heater+Teflon coating	
	Control	Digital electronic control	
Power source		AC 1Ø, 220V $\pm 10\%$, 50/60Hz	

MFI-400 Series, Melt Flow Indexers

This type of Melt Flow Indexer is a new & affordable tabletop instrument that tests the melt mass-flow rate (MFR) & melt volume-flow rate (MVR) of a wide range of thermoplastic raw materials, in the form of granules, strips of film etc. This test method is particularly useful for quality control tests on thermoplastics. MVR will be found particularly useful when comparing materials of different filler content & when comparing filled with unfilled thermoplastics. The MFR can be determined from MVR measurements provided the melt density at the test temperature & pressure is known. The tester is far superior to all national and international standard of Melt Flow Rates requirements, including ISO1133, ASTM D1238 & GB/T 3682 method A & B. High Accuracy The built-in microprocessor maintains temperature control to within $\pm 0.5^{\circ}\text{C}$, with rapid ramp-up to the set point. Extruded material is automatically cut off by the built-in scraper mechanism at preset intervals, controllable to ± 0.1 second. Ease to operate! Testing Melt Flow Rate has never been so economical or easy to do! The tester is supplied completely with the accessories & weights necessary for maintenance & operation. Nothing else to buy-just plug it in & start a test.

Technical Parameters: Operating temperature: 120°C - 450°C • Temperature control accuracy: $\leq 0.5^{\circ}\text{C}$ • Temperature display resolution: 0.1°C • Temperature rising time: <30 min • Power supply: 220V/50Hz or 110V/60Hz.



MFI-400

It allows for testing melt mass-flow rate (MFR) according to the standards ISO1133, ASTM 01238 method A. The clear multi-line LCD display & tactile-feedback membrane keypad allows fast, accurate inputting of test parameters and providing continuous display of settings during testing.



MFI-400B

It allows for testing the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) according to the standards ASTM 01238, ISO1133, with the additional function of printing the test result by a built-in micro-printer.

MFI-400C Series

MFI-400C Software: Two languages are provided: English and Chinese. MFI-400C Software has the functions of setting parameters, constant temperature control, cutting sample, calibration, setting test time, displaying test datum & result, calculating melt density, as well as checking & printing test datum. Password verify is necessary for some main operations in case of mishandle.



MFI-400C

MFR&MVR, Loading the Weight Automatically

It allows for testing the melt mass-flow rate (MFR) and melt volume-flow rate (MVR), Melt density test according to the standards ASTM 01238, ISO1133. The clear multi-line Touch screen allows fast, accurate input of test parameters and providing continuous display of setting during testing, printing the test result by a micro-printer. With the additional function of loading the Weight automatically.



MFI-400C1/2

MFR&MVR, Loading the Weight Manually

It allows for testing the melt mass-flow rate (MFR) and melt volume-flow rate (MVR), Melt density test according to the standards ASTM 01238, ISO1133. The clear multi-line Touch screen allow fast, accurate input of test parameters and providing continuous display of setting during testing, with the additional function of printing the test result by a micro-printer.

MFR&MVR, Loading the Weight Manually

It allows for testing the melt mass-flow rate (MFR) according to the standards ASTM 01238, ISO1133. The clear multi-line Touch screen allows fast, accurate input of test parameters and providing continuous display of setting during testing.

HDT Series, Vicat Heat Deflection Tester

Apparatus is used to determine the Heat Deflection Temperature or the Vicat Softening Point. All the specimens are charged with a constant load and immersed in a bath, where temperature is increased at a standard velocity. The attained heat resistance rate of plastic materials is a widely required parameter for product characterization, for quality control, as well as for evaluating their conformity to the previewed applications.

The optional software system enables to produce graphs showing the deformation of each specimen and temperature increase versus time. This tester may be used for tests conforming to the following standards: ISO 75, ISO 306, ASTM 0648, ASTM D 1525, G81T 1633, G81T 1634. Housing made of steel. Stainless steel inner bath. The designed volume ensures a very good thermal exchange.

Technical Parameters:

Operating temperature: ambient temperature to 300°C • Heating rate: (120±10) °C/h or (50±5) °C/h • The Max Temperature Error: ±0.5°C • Distortion Range: -0.1 mm >- 1.1 mm • The Max. Distortion Error: 0.01 mm • Test Stations: 2, 3, 4, 6 • Heating Medium: methyl silicon oil • Power Supply: 110V/220V 60HZ/50HZ.



HDT-300B4

HDT-300B Series

Touch Screen Display.

Test stations: 2,4,6.

Enables to produce graphs showing the deformation of each specimen and temperature increase versus time.

Temp. Measuring point: one.



HDT-300M4

HDT-300M Series

LED Display

Test stations: 2, 4, 6

Temp. Measuring point: one



HDT-300C4

HDT-300C Series

Touch Screen Display.

Test stations: 2, 4, 6.

Enables to produce graphs showing the deformation of each specimen and temperature increase versus time.

Temp. Measuring point: one each station.

QG-1 Series, Metallurgical Specimen Cutter



QG-1 series

Specimen cutting is the first step during metallurgical sample preparation. QG-1 adopts high speed rotating thin grinding wheel to cut specimen, and it is equipped with cooling system to prevent the heat damage during cutting. The operation of QG-1 is awfully easy & the maintenance is extremely convenient.

Model	QG-15	QG-13
Max. sample section	50 x 50 mm	35 x 35 mm
Grinding wheel size	φ300 x 2 x φ32 mm	φ250 x 2 x φ32 mm
Rotate speed	2800 r/min	
Electromotor	Y90L-2, 2.6KW, 380V, 50Hz	Y802-2, 1.2KW, 380V, 50Hz
Dimensions	740 x 465 x 390 mm	650 x 400 x 350 mm
Net weight	70Kg	55Kg

Q-3A, Metallurgical Specimen Cutter



Q-3A

Q-3A is suitable for cutting the specimens of metal and rock materials, which facilitates the observation of metallographic and rock structure. Q-3A is equipped with cooling system that can cool down the specimen during cutting so as to prevent overheating and damaging. The operation of Q-3A is awfully easy and the maintenance is extremely convenient, it is an indispensable device for the factories, research institutions and college labs to prepare metallurgical specimen.

Technical specification:

- Max. Cutting Width: 60mm
- Max. Cutting Height: 80mm
- Max. Cutting Diameter: cp50mm
- Specifications of Abrasive Wheel: 250 x 2 x 32 mm
- Weight: 130kg

Q-5/Q-5A, Metallurgical Specimen Cutter



QG-5

Q-5 & Q-5A is used to chiefly cut the specimen with cylinder-shaped, multi-angular and ordinary metallurgical specimens with convex space. With a double-cover fully-sealed structure and double clipping clamp structure, which can guarantee the absolute safety under the state of cutting. Equipped with double deck stage, the cutting speed can be controllable. What is more, it is installed with a strongly cooling system so as to avoid the damages to the structure of the specimen caused by overt-heating during cutting operation, thus enlarging the cutting space while avoiding the hurt to the specimen surface. With the above-mentioned merits on both operation and maintenance, it is an excellent machine to cut the specimens with irregular shaper.

QG-5 Technical specifications:

- Maximum cutting section: 120x120mm
- Rotary cutting speed: 2800r/min
- Cutting disk size: φ400 x 3 x φ32mm
- Cutting power: 4KW/380V/50Hz
- Machine Dimensions: 760x850x1400mm
- Net weight: 380Kg.

QG-5A Technical specifications:

- Maximum cutting section: 100x100mm
- Rotary cutting speed: 2800r/min
- Cutting disk size: φ350 x 2.5 x φ32mm
- Cutting power: 4KW/380V/50Hz
- Machine Dimensions: 800x660x1380mm
- Net weight: 315Kg.

Q-100B/Q-80Z , Auto Metallurgical Specimen Cutter



Q-100B

- LCD displays all the cutting data.
- The diameters of specimens to be cut range from 5 to 8mm (1008:100mm) and the cutting capacity reaches 100x200mm.
- Manual cutting and automatic cutting can be changed over at random.
- Large cutting chamber and tempered-glass view window.
- Non-burnt movable cutting mode which greatly improves cutting quality.
- Automatic retract at the end of cutting operation.
- Dual-direction feed which increase the depth of cutting.

Model	Q-80Z	Q-100B
Power supply	3 phases/4 wires; 380V/50Hz	
Rotary cutting speed	2100 rpm	
Cutting disk size	350mm x 2.5mm x 32mm	
Max. cutting diameter	Φ80mm	φ100mm
Max. cutting capacity	80mm x 200mm	100mm x 200mm
Motor power	22.2KW	23KW
Dimensions of cutting table	310mm x 280mm	
Overall dimension	930x700x610mm	

MP-1B/MP-2B, Metallurgical Specimen Grinder/Polisher

MP-18 and MP-28 can be used for coarse grinding, fine grinding, rough polishing and fine polishing. It is the perfect metallographic specimen machines for the metallurgical specimen preparation.



MP-1B

Single disc Polisher/Grinder MP-1B

Technical Specifications

- Diameter of grinding disc: 230mm
- Diameter of polishing disc: 200mm
- Rotation speed of grinder/polishing disc: 50-1000r/min
- Power: 250W /220V 150Hz
- Dimension: 615x380x270mm
- Net weight: 30Kg



MP-2B

Double disc Polisher/Grinder MP-2B

Technical Specifications

- Diameter of grinding disc: 230mm
- Diameter of polishing disc: 200mm
- Rotation speed of grinder/polishing disc: 50-1000r/min
- Power: 550W / 220V 150Hz
- Dimension: 690x715x310mm
- Net weight: 45Kg

By change the grinding/polishing disc, MP-1S single disc polisher/grinder can be used for coarse grinding, fine grinding, coarse polishing and fine polishing MP-1S operates steadily in low noise, easily change speed and grind/polish units.



MP-1

MP-1, Single Disc, Dual Speed Metallurgical Specimen Preparation Grinder/Polisher With Polishing Head

Technical Specifications:

- Grinding disc diameter: 250mm
- Sand paper diameter: 230mm
- Polishing disc diameter: 220mm
- Abrasive disc diameter: 220mm
- Rotation speed: 500/1000rpm
- Power supply: 380V/50Hz
- Dimension: 360x480x680
- Net Weight: 70Kg



MP-1S

MP-1S, Single Disc, Stepless Speed Metallurgical Specimen Preparation Grinder/Polisher With Polishing Head

Technical Specifications:

- Grinding disc diameter: 250mm
- Sand paper diameter: 230mm
- Polishing disc diameter: 220mm
- Abrasive disc diameter: 220mm
- Rotation speed: 500-1000rpm/min
- Power supply: 220V/50Hz
- Dimension: 360x480x680
- Net Weight: 70Kg



MAPAO200M3/M5

MAPAO200M3/M5, Single Disc, Stepless Speed Automatic Specimen Metallurgical With Polishing Head

- Applying high-intensity FRP shell, rugged durability.
- Adopting low-noise high-torque brushless motors, operate smoothly.
- Sophisticated rotary balance, to ensure the plainness of specimen.
- Leak-proof design of Main spindle, bearing durability.

Technical Specifications:

- Grinding/polishing disc diameter: 200mm.
- Rotation speed: 0-600rpm/min.
- Power supply: 250W/220V/50Hz.
- Inlay molds: 3ENEA available; diameter: cp25 / cp30mm.
- Cooling pipe: 1 PC.
- Dimension: 350x440x540 mm.
- Net Weight: 60Kg.

MOPAO2DE/260E/160E, Medium Speed Metallurgical Specimen Grinder/Polisher With Polishing Head

- This grinder polisher is the most economical and applied machine for metallographic specimens. Full series of styles can fit multiple specimen preparation.
- Designed & manufactured according to international advanced methodology & qualification of metallographic specimens.
- Equipped with beautiful and applied glass fiber crust; pure stainless steel, rustless forever.
- Two optional styles equipped with diameter of 200mm, 250mm, and disk respectively.
- Both of style of single-disk and double-disk equipped with stepless speed change and multiple-step constant speed system.
- E-style machine equipped with stepless speed change and dual step constant speed system simultaneously, and can be switched each other. The turnaround of plates can be selected.



Model	Plate number	Diameter of plate	Rotate speed	Remark	
MoPao 160	1	200/250mm	150/300 (dual-speed)	380V/50Hz, 3 phases	
MoPao 260	2				
MoPao 300	1				
MoPao 160E	1	200/250mm	50-600 (stepless speed change)	220V/50Hz	
MoPao 260E	2				
MoPao 300E	1				
MoPao 2DE	2	200/250mm			380V50Hz; 3 phases
MoPao 2D	2		150/300	220V/50Hz	

SAD-11, Abrasive Band Grinding Machine (Double Abrasive Band)



SAD-11 apply abrasive band to grind and polish the specimen for spectral measurement, different bonds can be replaced timely, conveniently and easily.

Technical specifications:

- Roller center distance: 255mm
- With cooling water device
- Abrasive band: width 100mm, perimeter 920 mm
- Rotation speed: 1400r/min
- Power supply: 550W / 380 V 150Hz
- Dimension: 550x600x310mm

In metallographic testing laboratory, it is the indispensable procedures about sample's pre-rubbing, grinding and polishing during the cause of metallographic sample preparation.

YMP-2 series of grinder/polisher is developed and designed after extensive market surveys in many aspects and absorb users' requirements. It's a newly developed product with novel appearance. It starts steady with high-speed and low noise and it can meet different specimen preparation requirements.

It can improve the quality of grinding, polishing and preparing efficiency of the specimen.



YMP-2

YMP-2, Dual-Disc-Stepless-Speed Metallurgical Preparation Polisher/Grinder

Technical Specifications:

- Diameter of grinding disc: 250mm
- Diameter of sand paper: 230mm
- Diameter of polishing disc: 220mm
- Rotation speed: 50-1400r/min
- Power: 3S0W/220V/50Hz ; 350W/110V/60Hz
- Dimension: 700x610x330mm
- Net weight: 80Kg



YMP-2A

Dual-Disc-Four-Speed Metallurgical Preparation Polisher/Grinder YMP-2A

Technical Specifications:

- Diameter of grinding disc: 250mm
- Diameter of sand paper: 230mm
- Diameter of polishing disc: 220mm
- Grinding speed: 500 /1000 r/min, 300/600 r/min
- Power: 370W/380V/50Hz
- Dimension: 700x610x330mm
- Net weight: 80Kg



YMP-2B

Dual-Disc-Dual-Speed Metallurgical Preparation Polisher/Grinder YMP-2B

Technical Specifications:

- Diameter of grinding disc: 250mm
- Diameter of sand paper: 230mm
- Diameter of polishing disc: 220mm
- Grinding speed: 500,1000r/min,
- Power: 5S0W/380V50Hz
- Dimension: 700x610x330mm
- Net weight: 80Kg



XQ-1

XQ-1, Manual Mechanic Mounting Press

XQ-1 is manual mechanic mounting press with 3 different size of mounting mould, the temperature and heating time can be setup and shown manual on the panel.

Technical specifications:

- Mould diameter: $\phi 22\text{mm}$; $\phi 30\text{mm}$; $\phi 45\text{mm}$
- Input voltage: 220V/50Hz; 110V/60Hz
- Power: Max. 650W
- Dimension: 340x260x430mm
- Weight: 33kg



ZXQ-1

ZXQ-1, Automatic Mounting Press

Mounting press is used for inlay the irregular metallurgical specimens. ZXQ-1 is an auto-machine, it can setup with the heating temperature, mounting time and force.

Technical specifications:

- Mould diameter: $\phi 22\text{mm}$; $\phi 30\text{mm}$; $\phi 45\text{mm}$
- Voltage: 220V50HZ; 110V/60HZ
- Power: Max.1000W
- Pressure: 0-2MPa
- Temperature: 0-300°C
- Mounting time: 0-99 minutes and 0-59 seconds can be setup
- Dimension: 380x350x420mm
- Weight: 100Kg
- Automatic/Manual operation is available



ZXQ-5

ZXQ-5, Automatic Mounting Press

Mounting press is used for inlay the irregular metallurgical specimens. ZXQ-5 is an auto-machine, it can setup with the heating temperature, mounting time and force. Four different size of mould is available for mounting, and it can inlay two specimens simultaneously.

Technical specifications:

- Mould diameter: $\phi 25\text{mm}$; $\phi 30\text{mm}$; $\phi 40\text{mm}$; $\phi 50\text{mm}$
- Voltage: 220V50HZ; 110V/60HZ
- Power: Max.1800W
- Pressure: 0-2MPa
- Temperature: 0-300°C
- Mounting time: 0-99 minutes and 0-59 seconds can be setup
- Dimension & Weight: 615x510x500mm & 110Kg
- Cooling system: By water



Fuming Chamber For Finger-Print Taking

Features:

- Specially designed for finger print taking
- Pre programmed for easy to make finger print show up on objects
- Automatic air filtering and cleaning and ventilation
- In cabinet lamination
- 1 mm galvanized steel housing with powder coating OR Stainless steel housing
- Large observation window

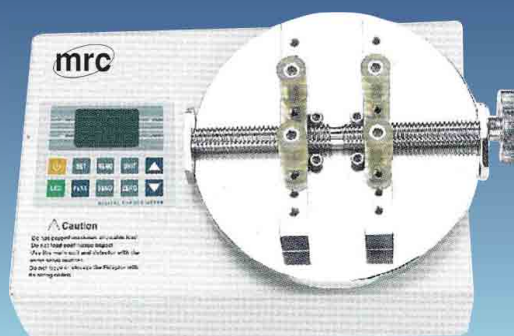
Applications:

- Police station
- Investigation bureau
- Military police
- For forensic investigation

Model		FP-500	FP-500DL
Power Supply		100~120 VAC 1 phase 50/60 Hz; 200~240 VAC 1 (or 3) phase 50 (or 60) Hz;	
Max Current (A)	100~120V	10A	
	200~240V	5A	
Humidity Control System		Microcomputer P.I.D control with automatic crash release device (watch dog) in case of system down.	
Ambient Temperature		-10 ~ +40 °C	
Performance	Cyanoacrylate Heating Rate		20 to 100 °C with in 2 minutes (up to 150°C)
	Humidity Range		Ambient ~ 99 %RH
	Humidity Fluctuation		± 5%RH
	Humidity Add Up Rate		50%RH to 80%RH within 30 minutes
Chamber Structure	Material	External	1mm thick galvanized steel plate with powder coating, 5mm tempered glass front panel
		Internal	1mm thick #304 stainless steel
	Insulation		N/A
	Filtering Tank		1 mm stainless steel
	Air Filtering Fan		Brushless/Sparkless blower
	Circulation Fan		Propeller impellers
	Humidity Sensor		US made low humidity sensor
	Filters		Hybrid carbon & Pre filter/10Pk
Control Panel		19x219mm 5 keys membrane touch key pad, 7 LED indicators, Dual 3 digits temperature display for setup and current temperature value.	
Programmable Control		Fuming time; Heating time and temperature; Air cleaning time; Humidity level	
Data Logger		N/A	Built-in 3600 sets of parameter (unlimited when connect to computer), Recording interval: 30 sec ~ 99 hrs.
Computer Connection		N/A	RS-232; RS-485; RJ-45 (Optional)
Automatic Lock		N/A	Synchronized with fuming activity
Lighting		Vapor - proof fluorescent light	
Safety Devices		Automatic door lock when fuming and air cleaning. Emergency stop. Filter condition alarm. Audible and visible alarm.	
Accessories		Shelves (3 PCS); Hooks (20 PCS); Caster wheels; Stabilizers; Instruction manual; Warranty	
Inside Capacity (Liter)		408	408
Dimensions	Inside Dimensions (mm)		W560 D700 H1040
	Outside Dimensions (mm)		W880 D870 H1910
Weight (kg)		150	150



HT Series



HB Series

HT/HB Series Digital Torque Meter

HT Series Digital Torque Meter is an intellectualized measure instrument, which is specially designed for testing and measuring different of torque. HT is main used for kinds motorized or air screwdriver, torque screwdriver, torque wrench, torque driver, measure and calibrate torque testing, and parts fracture test. It is widely applied in electric industry, machinery industry, light industry, automobile industry, scientific research and so on.

Specifications:

- High accuracy and resolution
- Peak hold function
- Peak automatic clearance function
- Tolerance limit(up and down limit)
- Automatic power off function
- 3 units available: N.m, kgf.cm, lbf.in
- Reset acceleration of gravity function
- Full range 150% overload
- Large memory
- Inductive background light
- USB output
- Match synchronous analysis software

Model	HT/HB-10	HT/HB-20	HT/HB-50	HT/HB-100	HT/HB-200
Capacity	1.0000N.m	2.0000N.m	5.00N.m	10.00N.m	20.0N.m
Resolution	0.0005N.m	0.001N.m	0.002N.m	0.05N.m	0.1N.m
Accuracy	±0.5%				



FG-5000A, 5000g Force Gauge

- 5000 g, g/oz/Newton
- Tension & Compression, Peak hold, Zero, Positive/ Reverse display, 5 digits LCD
- Full line accessories, optional test stand.

FG-20K, 20Kg Force Gauge

- 20kg, kg/LB/Newton.



TQ-8800, Torque Moment Meter

- Professional torque meter with separate probe.
- 15 Kg-cm torque sensor included.
- 3 units: 15 Kg-cm/13 LB-inch/147.1 N-cm. Peak, Data hold, Zero, Max./ Min., Fast/Slow.
- Size: 180x72x32mm. RS-2.

FS-1001, 5Kg & 20Kg Test Stand For Force Gauge

- Optional accessory for FORCE GAUGE, it is used to hold the tested material.
- Size: 650x250x230mm.



FG-5100, 100Kg Tension & Compression Force Gauge

- 100 Kg, Kg/LB/Newton.
- Tension or Compression, Peak hold, Zero.
- Positive/ Reverse display.
- 5 digits LCD with back light.
- RS-232 computer interface.
- Optional accessories: USB cable, RS232 cable, Software for data logging and recorder.
- DC 1.5V battery (UM-3, AA) x 6 or DC 9V adapter in.





Model	SHORE A	SHORE C	SHORE D
Range	10~90 HA	10~90 HW	10~90 HD
Head dim.	Φ0.79mm	SR 2.5 mm	SR 0.1 mm
Head stroke	2.5 mm		
Dimension	115x60x25 mm		
Weight	0.5 Kgs		



Technical Data

Lamps	D25x2, Ax2, CWFx2, UVx
Outside dimen.(mm)	L710xD460xH580
Inside dimen.(mm)	L680xD420xH405
Housing	Steel case with paint finishing
Counter	9999/H
Power supply	AC110/220V, 60/50Hz
Weight	Net weight 32Kg

SHORE Series, Durometers

SHORE A - widely used to test common rubber, complex rubber, soft rubber, elastomers, wax and so on.

SHORE D - widely used to test hard rubber, hard colophony, grass, plastic, print board, fibre & so on.

SHORE C - Durometer is suit for measuring the hardness of materials, which the pressure degree is 50%, the stress need above 0.5kgf/cm², and many other similar hardness material. It is widely used in testing various foam, sponge, microporous material and so on.

HLX Series, Constant Load Test Stands

HLX-AC



SHR-150M, Manual Rockwell Hardness Tester

SHR-150M is an effective and affordable Rockwell testing machine with high accuracy, reliability and durability, and it is applied in the workshops and measurement departments for determining the Rockwell hardness of ferrous and non-ferrous metals. SHR-150M adopts mechanical test cycle without any need of electricity, load force 60, 100, 150Kg is selected by dial knob, test force is manually loaded in handle, and tested result: HRA, HRB, HRC is showed on the analogue gauge.

Model	SHR-150M
Preliminary test force	10Kgf(98.07N)
Hardness analogue resolution	0.5HR
Max. Height of Specimen	170mm
Instrument Throat	140mm
Dimension (mm)	L520xW240xH700
Gross/Net Weight	120/90Kg
Accuracy	GB/T230.2; ASTM E-18; ISO6508

CLRC-115, Color Comparison Cabinet

CLRC-115 Color Comparison cabinet are designed in accordance with ASTM D1729, and lights standard of C.I.E the cabinet are intended for use by industry work shops, manufacturers, processors and inspectors, in short, for anyone involved with color and color matching on products, incorrect formulation can be avoided.

Application: Paint, ink, pigment, cream manufacturer and processor's and painting's color matching • Plastic, rubber, textile and leather goods color matching • Cars / Vehicles and machineries finish color matching • Cosmetic, food, chemical, medicine and papers industries color assessment • Glass, porcelain, enamel, construction materials color assessment.

Lamps of Light Source

D65	Artificial daylight	6500°K
A	Standard filament light A	2300°-2800°K
CWF	Cool white florescent light	4000°K
UV	Ultraviolet light	360mm wave length

RGB-1002, Color Analyzer

• Color Analyzer probe+ meter
Measurement value: RGB value HSL value (Hue/Saturation/Luminance)
• 45/0 color measuring geometry
• Used the spectral analysis method to determine the color of the sample
Complete set included the color probe and the meter, display.





QC-601

QC-601 Series, Manual Thermos Press Forming Machine

Put the plastic (or rubber) material inside the casting mold, in between the upper & lower heating plate, implement pressure and temperature, to form the material into a standard shape to be a sample to serve for test, or to be an example of color comparison, also to be example before mass-production.

Model	QC-601
Pressure	10, 30/50ton
Temperature	Normal atmospheric temperature ~ 300°C
Timer	0 ~ 999Min.
Size of Heating-plate	300×300mm
Distance between heating-plates	84mm Max.
Cooling method	Cooling water, recycling around upper mold and lower mold, force the mold and specimen cool down
Attachment	forming mold for specimen, one set.
Dimensions (mm)	470×620×1280
Weight	230kg
Power source	single phase. 220V/50HZ or 60HZ



QC-508E

QC-508E, Tensile Testing Machine

Function:

- Able proceed tensile, compression force, peeling, tearing testing
- Able display force value and changed sharp value
- Has metric and inch system inside and changeable
- With a stepper motor, this machine could set up testing speed directly
- Set up completed to push start button and machine start testing proceed automatic
- When testing completed, machine return automatic
- Quick-release adaptor match with various grips
- Easy operation by single push button
- Able connect with printer directly and output form
- Able connect with computer to proceed control, data analysis, etc. (option).

Model	QC-508E
Capacity	1 KN (Max)
Force dots per inch	1/10000
Stroke	400mm
Stroke dots per inch	5/1000mm
Speed	6~600mm/min
Space	Ø100 mm
Dimensions (mm)	420×280×880
Weight	27kg
Power	100~240 VAC

QC-508E is a light type machine takes newest designed concept & technology to be the smallest & lightweight. The power is all-purpose from 100V to 240V that makes the using place more flexible. It has a lot advantages, such as test exactly, operated simply, strong expanding, etc. It is the best choice for small capacity testing.



VB12, Φ300 Vertical Profile Projector Vexus

Applied-fields:

Vexus VB12 series digital measuring profile projector integrated optical, mechanical and electronic high efficiency measuring instrument. Image is the same direction with work piece, erect and direct viewing.

It is widely use in the field of mechanic, electronic, rubber industry, and college, research institute and the measuring checking department for checking product quality. VB12 can inspect all kinds of surface and outline of complicated work-pieces such as Template, Pressing work-pieces, Cam, Screw thread, Gear, etc.

Characteristics:

- Sturdy metal design with fashionable shape;
- Excellent optical path with sharp image: magnification error < 0.08%;
- Large travel stage with precise accuracy: 3+L/75;
- DRO DP300 with powerful measurement and process functions;
- Z-axis focus system adopts double rails lifting structure;
- Drawing, PC measurement report and SPC analyze Easily.

Model	Reverse image Obverse image	VB 12-1550 VB 12-1550Z	VB 12-2010 VB 12-2010Z
Worktable	Metal stage dimension	340x152mm	350x170mm
	Glass stage dimension	196x96mm	246x120mm
	Stage travel: X-axis	150mm	200mm
	Stage travel: Y-axis	50mm	100mm
	Stage travel: ZX-axis	90mm(for focusing)	90mm(for focusing)
	Accuracy	≤3+L/75(um)	
	Resolution of X and Y-scale:0.001mm		
Screen	Screen diameter: Ø312mm,effective range> Ø300(with * reticle)		
	Screen Rotary range of screen:0~360°		
	Resolution of rotary indication:1' or 0.01°		
Objective	Magnification	10x(std.) / 20x(opt.)	50x(opt.) / 100x(opt.)
	Object view-field	Ø30mm / Ø15mm	Ø6mm / Ø3mm
	Work distance	77.7mm / 44.3mm	38.4mm / 25.3mm
	Measuring height	90mm	
Digital readout	DP300 multifunction data processing system		
Illumination	Surface and Contour Illumination:24V/150W halogen lamp		
Power	AC110V/60Hz;220V/50Hz,400W		
Cooling	Forced cooling(3-axis-fans)		
Dimension(mm)		L800×W550×H1150	L800×W550×H1150
Instrument net weight		150kg	170kg

Standard delivery:

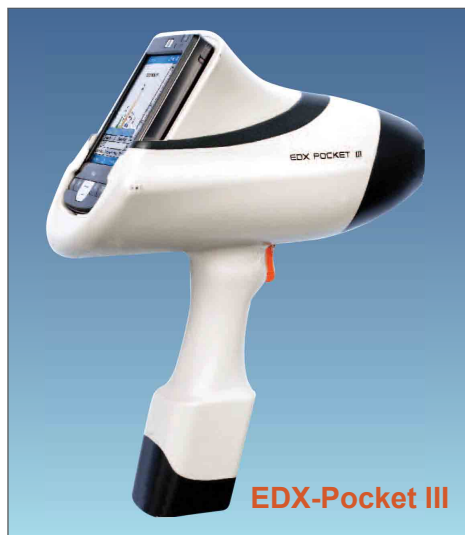
Main instrument with worktable; DRO DP100; 10X objective & transmitted mirror; mini-printer.

Optional accessories:

20x, 50x & 100x objective & mirror; footswitch; angle & radius over-chart; Rotary-table; measuring software; working cupboard.

Recommended working cupboard: JT02B:

Loading≥250kg, Dimension: L1000×W560×H800(mm).



EDX-Pocket III

EDX-Pocket III, Handheld X-ray Fluorescence Spectrometer

Specifically developed for on-site analysis by Skyray. They include RoHS Analyzers, Alloy Analyzers, Scrap Metals Recycling Analyzers, Mineral Analyzers, Precious Metals Analyzers and Soil Analyzers. They are the smallest, most functional and most accurate XRF analyzers available on the market. They can be used widely in fields such as alloy analysis, minerals analysis, geographic analysis, precious metals analysis, scrap metals recycling analysis, RoHS testing and soil analysis. Moreover, it can also be used to perform Positive Material Identification (PMI) and verification.

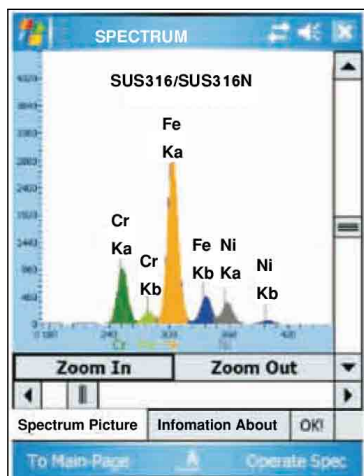
Model	EDX-Pocket III
Working Principle	XRF analysis exploiting x-ray Fluorescence Spectrometry
Measurable Elements	S-U
Detector	advanced thermoelectric cooling SI-PIN semiconductor X-ray detector with high performance and high energy resolution
Excitation Source	mini 40kV/50μAX-ray tube. Ag/W anode target
Data Display	high definition and high resolution PDA (Personal Digital Assistant), Windows CE operating system. Bluetooth communication, personal data handling and E-mail sending.
Data Storage	Large capacity SD card and SD card reader enable the data to store on PC and print out
Power Supply	Operating time of two fully-charged Lithium batteries is no less than 8 hours
Weight	1.4kg (without battery)
Dimensions (mm)	L260xH325xW125
Ambient Environment	Temperature -20°C ~ +40°C
Safety Feature	both PDA & software operations are protected by passwords, Unauthorized people are not allowed to operate.
Standard Accessories	shock, pressure & water-proof carrying case with padlocks, 110v/220v general-purpose charger, Large capacity SD memory card, SD card reader, two 4000mAh Lithium batteries, Lithium battery charger, PDA accessories, lab test stand (optional), etc.

- The Instrument is small, light & portable, providing rapid and non-destructive on-site analysis of the samples.
- Figurative Interface, flexible software operation, intuitive spectrum display and definite results.
- Several working curves are provided in the software, which can even be edited and renewed by the users upon test requirements.
- Optional GPS helps locate the tested sample when mining or surveying mines in the field.
- SD card with super large capacity is available. There is no limit of data storage.
- Attractive design and comfortable feel when held in hand.
- The carrying case has high strength and high sealing capacity, drop and shock proof as well.
- Faster analysis & better accuracy, delivering lab-quality results. Wide range of measurable elements: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Sn, Hf, Ta, W, Re, Pb, Bi, Se, Sb, Pb, Au and Hg.
- Broad application fields: RoHS testing, alloy analysis, geographic analysis, minerals analysis, precious metals analysis, heavy metals analysis in soils, and scrap metals recycling analysis.

Test Example & Analysis

As for finished products such as stainless steel, the users are more concerned about the concentration of Cr, Mn, Ni, Mo and Ti, for their varying concentrations may result in different uses of the steels. These alloying elements can be measured in the air.

Element	316 Range of the Content	Standard Value	Tested Value
Cr	16% ~ 18%	17.07	17.22
Mn	0 ~ 2%	1.14	0.79
Fe	66 ~ 72%	65.57	65.6
Ni	10 ~ 14%	12.1	12.08
Cu	0 ~ 0.8%	0.073	0.054
Mo	2 ~ 3%	2.92	2.92
Ti	0 ~ 0.05%	0.032	0.045
V	0 ~ 0.055%	0.036	0.053
Co	0 ~ 0.1%	0.081	0.074
Al	0.00	0.00	0.05
Zn	0.00	0.00	0.00
Se	0.00	0.00	0.00
Zr	0.00	0.00	0.00
Nb	0.00	0.00	0.00
Pd	0.00	0.00	0.00
Ag	0.00	0.00	0.00
Cd	0.00	0.00	0.00
In	0.00	0.00	0.00
Sn	0.00	0.00	0.00
Sb	0.00	0.00	0.00
Hf	0.00	0.00	0.00
Ta	0.00	0.00	0.00
Pt	0.00	0.00	0.00
Au	0.00	0.00	0.00
Pb	0.00	0.00	0.00
Bi	0.00	0.00	0.00



Spectrum of Grade Analysis

A test report for stainless steel

PL-600, Bench Top pH mV/Temp/Meter, Complete Kit



PL-600

- pH electrode (glass)
- Temperature probe (Pt 100)
- Electrode holder.
- Buffer solution 4 & 7
- AC/DC adaptor
- Instruction manual, Gift box

Features:

- Microprocessor based designed. Simultaneous display pH & Temperature, C/F switchable.
- Compensation by ATC or MTC. Backlight for operating conveniently anytime.
- Stores up to 64 reading which you can download to your computer via R232 output.
- All reading feature stamp meeting GLP guidelines.

Model	PL-600		
	pH	mV	Temp.
Range	0-14pH	-2000 - 2000	-0.5 - 105°C
Accuracy	±0.01pH+1digit	0.1% mV/F.S	±0.2°C+1digit
Resolution	0.01pH	1mV	0.1°C
ATC	0-100°C		
Memory datalogging	64 reading		
Output	RS-232		
Power	DC 9V by AC adaptor		
Dimensions	200x160x65mm		
Weight	650g		

Option: Model: MS-11C magnetic stirrer with clamp for holding ph electrode & temp. probe

86505/86555, BenchTop PH/ORP/COND/TDS/Salt Meter/ With Printer



86505

Features: Programmable ph/orp(mv)/conductivity itds isalinity w/temperature & real time clock stamped (86555 witheasy & convenient to operate printer) • Powered by adaptor for continuously using super large lcd multi-display (or Batteries for 86555) • Collect data via rs232 by linking with a pc • Automatic ph buffer recognition for calibration up to 5 points hold function • Freezes the current readings • Maxi min review the memorized data • Reliable probes witemp. compensation • Convenient to view calibration information of probes • Ready indicator shows on lcd is selectable • Stores up to 99 memories stamped w / real time • Automatic or manual temp. compensation • Able to read ph slope(%) / offset(mv) displays • optional &

replacement accessories: condo electrode: vz830paz-graphite or vz831 paz-platinum , ph electrode:vz86p3az-atc,vz86p2az-w/o atc , orp electrode:vz850paz-platinum pin type , vz86p5az-platinum band type.

Model	86505 / 86555 with printer	
Cond. Range	0-19.99,0-199.9,0-1999uS/cm 0-19.99mS/cm,0-199.9mS/cm	
Cond. Accuracy	±(1%FS+1 digit)Under good calibration	
Cond. Resolution	0.01 uS/0.1 uS/1 uS/0.01 mS/0.1 mS	
Cond. Sell constant	1.0	
mV Range	-1999-+1999mV	
mV Resolution	0.1mV (± 199.9mV) or 1mV(others)	
pH Accuracy	±0.02 pH	
TDS Range	(f: TDS conversion factor) 0.00~(19.99*f)ppm 0.0~(199.9*f)ppm 0~(1999*f)ppm 0.00~(19.99*f)ppt, 0.1~(199.9*f)ppt	
TDS Accuracy	±(1% FS+1 digit)	
TDS Resolution	0.01/0.111 ppm,0.01/0.1 ppt	
Salinity Range	0~11.38ppt 0~80.0ppt(8ased on NaCl)	
Salt Accuracy	±(1% FS+1 digit)	
Salt Resolution	0.01 ppt , 0.1 ppt	
Temp.(TpH & Tcond)	-5.0~80.0°C(23.0~176.0°F)	
Temp. Accuracy	±0.5°C(±0.9°F)	
Cond-TDS conversion factor	0.300-1.000	
Cond/Temp. coefficient	0.0 to 10.0% per °C	
Power	Adaptor 9VDC (Recommend Linear AC adaptor)	AA bat. X4pcs or Adaptor 9VDC (Optional)
Operating Temperature	5~40°C (41~104°F)	
Operating/storage RH	Up to 95% w/o condensation	
Storage Temperature	-20~60°C (-4~140°F)	
Dimensions (mm)	L217xW168xH58	L260xW169xH56.8
Weight	137g	150g



MP-103

MP-103, PH/MV/Temp. Meter

Features: Microprocessor based with splash proof housing. Rubber protective holster with magnetic • Simultaneous display pH and Temperature • Simple to calibrate by one keyboard for 3 points buffer. Calibration value can be adjusted as needed • Compensation by ATC or MTC. Indicate percentage of slope(PTS) after calibration • Low battery & consumption indicator. Auto shut off after 10 minutes of non use.

Accessories: Buffer solution 4 & 7 • 9V Battery • Electrode holder • Instruction manual • Gift box • pH electrode with Pt 100.

	pH	mV	Temp.
Range	0-14.00	±1999	0-100°C
Accuracy	±0.01+1 digit	±1+1 digit	±0.2°C+1 digit
Resolution	0.01	1	0.1°C
Compensation	ATC:0-100°C		
Calibration	pH 4.00, 7.00, 10.00		
Battery	9V		
Dimensions	108 x 75 x 30 mm		
Weight	135g (with battery)		



PH-207

PH-207, PH/MV/Temp. Meter

Features: Multi-measurement : pH, mV, Temperature • Dual display, show the pH & Temp. value at the same LCD display • High input impedance • Wide automatic & manual temperature compensation range • With the optional temp. probe for temp. compensation automatically or temperature measurement • The instrument build in mV (milli volt) measuring function, useful for making ion-selective, ORP, and other precise mV measurement • Built in Slope (PH 4) & Cal. (PH 7) calibration VR on the front panel, easy for single point or 2 points pH calibration • Heavy duty & compact housing case • Records Maximum, Minimum & Average readings with recall • Data hold • RS 232 PC serial interface.

Display	Dual function meter's display, 13mm(0.5"), Super large LCD display with contrast adjustment for best viewing angle
Data Hold	To hold the reading values on display
Memory Recall	Records Max., Min. & Average readings with RECALL
Power off	Auto shut off saves battery life, or manual off by push button
Data Output	RS232 PC serial Interface
Standard Accessories	Carring case, pH electrode, PE-01, ATC temp. probe, TP-07 PH 4 buffer solution, PH-04. PH 7 buffer solution, PH-07

Measurement	Range	Resolution	Accuracy
PH	0 to 14PH	0.01PH	±(0.03PH+2d)
mV	0 to 1999mV	1mV	±(0.5%+1d)
Temp. (°C)	0 to 65°C	0.1°C	±1°C(0-50°C) ±4°C(>50°C)
Temp. (°F)	32 to 150°F	0.1°F	±1.8°F(32-122°F) ±7.2°F(>122°F)



YK-23RP

YK-23RP+ORP-14, ORP Meter+Electrode

Applications: Use for oxidation/reduction measurement in plating baths, waste water monitoring and other applications such as Aquarium, Beverage, Fish Hatcheries, Food Processing, Photography, Laboratory, Quality Control, School & Colleges, Swimming Pools...

Model	YK-23RP
Features	Easy operation, compact size. Water resistance on the front panel. All function keys are used the rubber button.
Display	LCD, 21.5 mm (0.7") digit height
Range	-1,999 mV to +1,999 mV
Resolution	1 mV
Accuracy	± (0.8 % + 1d) @ 23 ± 5°C
Data Hold	To freeze the measured pH value on the display
Power Supply	DC 9V battery
Dimensions	205x68x30mm (8.1x2.7x1.2inch)
Weight	200 g/0.44 LB

Model	ORP-14
Features	Professional ORP electrode with high accuracy & extreme reliability
Electrode Structure	Silver-silver/chloride reference gel
Measure Range	-2,000 to 2,000 mV
Body Material	Epoxy
Connector	BNC
Mechanical Protection	With protection bottle on the electrode head
Dimensions	Body length - 150mm. Body Dia. - 12.5mm. Cable length - 3meter.

CD-4303, 200 uS/2 mS/20 mS, RS-232, Conductivity Meter

Features: Wide applications: water conditioning, aquariums, beverage, fish hatcheries, food processing, photography, laboratory, paper industry, quality control, school & college, water conditioning • Innovative feature with built-in automatic temperature compensation • Carbon rod electrode for long life • Dual LCD display, show both conductivity & temp. values • Heavy duty & compact housing case • Records Maximum, Minimum & Average readings with RECALL • Data Hold function • Auto shut off saves battery life • Operates from DC 9V battery • RS 232 PC serial interface.



Model	CD-4303
Measurement	Conductivity: 3 ranges, 199.9 uS, 1.999 mS, 19.99 mS
Memory Recall	Records Max., Min. & Average readings with recall facility
Power off	Manual off by push button or Auto shut off offer 10 minutes(not activated during memory record function)
Data Output	RS 232 PC serial interface
Power Supply	DC 9V battery
Weight	350g
Size	Main instrument: 180 x 72 x 32 mm (7.1 x 2.8 x 1.3 inch) Probe: Round, 22mm Dia. x 120mm length
Accessories Included	Instruction Manual - 1 PC. Sensor Probe - 1 PC. Carrying case - 1 PC.

Conductivity:

Range	Measurement	Resolution	Accuracy
200 uS	0.1 to 199.9 uS	0.1 uS	±(2%F.S. + 1d) *F.S. - Full scale
2 mS	0.2 to 1.999 mS	0.001 mS	
20 mS	2 to 19.99 mS	0.01 mS	
* uS - micro Simens, mS - milli Simens			

Temperature:

Measuring Range	0°C to 60°C/ 32°F to 140°F
Resolution	0.1°C/ 0.1°F

YK-2014CD, 200 uS/2 mS/20 mS, RS-232, Conductivity, TDS Meter - Glass Probe

Features: Wide applications: water conditioning, aquariums, beverage, fish hatcheries, food processing, photography, laboratory, paper industry, plating industry, quality control, school & college, water conditioning • Can default auto power off or manual power off.



Model	YK-2014CD
Dimensions	Main instrument: 203x76x38mm, Pt glass conductivity probe: Round, 12.4mm Dia. x 162mm length. Available for low conductivity measurement, K value=1 approx.
Data Hold	Freeze the display reading
Memory Recall	Maximum & Minimum value
Data Output	RS 232 PC serial interface
Accessories Included	Instruction manual - 1 PC, Conductivity probe - 1 PC, Carrying case - 1 PC
Optional Accessories	1.413 mS Conductivity Standard solution, AC to DC 9V adapter, RS232 cable, UPGB-02, USB cable, USB-01, Data Acquisition software SW-U801-WIN

Conductivity:

Range	Measurement	Resolution	Accuracy
200 uS	0 to 200.0 uS	0.1 uS	±(2%F.S. +1d) *F.S. - Full scale
2 mS	0.2 to 2.000 mS	0.001 mS	
20 mS	2 to 20.00 mS	0.01 mS	
200 mS	20 to 200.0 mS	0.1 mS	

TDS (Total Dissolved Solids)

Range	Measurement	Resolution	Accuracy
200 PPM	0 to 132 PPM	0.1 PPM	±(2%F.S. +1d) *F.S. - Full scale
2000 PPM	132 to 1320 PPM	1 PPM	
20,000 PPM	1320 to 13,200 PPM	10 PPM	
200,000 PPM	13,200 to 132,000 PPM	100 PPM	

Temperature:

Function	Measuring Range	Resolution	Accuracy
°C	0°C to 60°C	0.1°C	0.8°C
°F	32°F to 140°F	0.1°F	1.5°F



DO-5510

DO-5510, Dissolved Oxygen Meter

Features: The polarographic type oxygen probe with an incorporated Temp. sensor, high precision measurement for Dissolved Oxygen(DO), Oxygen in air(O₂) & Temp. measurement • Heavy duty dissolved oxygen probe, probe head can connect with BOD bottle • Automatic Temp. compensation from 0 to 50°C for sensor probe • Build in “ % SALT ” & “ Mountain Height ” compensation adjustment button • Microprocessor circuit • Records Maximum, Minimum value • RS 232 PC serial interface.

Model	DO-5510	
Display	Dual function meter's display, 13 mm(0.5"). Super large LCD display with contrast adjustment for best viewing angle.	
Measurement & Range	Dissolved Oxygen	0 to 20.0 mg/L(liter)
	Oxygen in Air	0 to 100.0 %
	Temperature	0 to 50°C
Resolution	Dissolved Oxygen	0.1 mg/L
	Oxygen in Air	0.1% O ₂
	Temperature	0.1
Accuracy (23±5°C)	Dissolved Oxygen	±0.4mg/L
	Oxygen in Air	±0.7% O ₂
	Temperature	±0.8°C/1.5°F
Sensor Structure	The polarographic type oxygen probe with an incorporated temperature sensor.	
Probe Compensation & Adg.	Temperature	0 to 50°C Automatic
	Salt	0 to 39% Salt
	Height (M.T.)	0 to 3900 meter
Memory Recall	Records Maximum, Minimum and Average readings with RECALL	

WA-2015, pH/ORP, DO, CD/TDS Meter - Complete Kit

Features: Professional bench type meter with large size LCD display with green color back light • One meter for multi purpose operation: pH/ORP, CD/TDS (Total dissolved solids), Dissolved Oxygen • Real time data logger (record year, month, date, hour, minute, second), 16,000 data logger • Auto data record, 16,000 Data logger no • Wide sampling time adjustment range from one second to 8 hours 59 minutes 59 seconds • Auto data logger, manual data logger • RS232 computer interface • Max., Min., Data hold • Can default auto power off or manual power off • Separate probe, easy for operation of different measurement environment • Wide applications: water conditioning, aquariums, beverage, fish hatcheries, food processing, photography, laboratory, paper industry, plating industry, quality control, school & college, water conditioning.

Optional Accessories: RS232 cable, UPGB-02, USB cable, USB-01, Data Acquisition software, SW-U801-WIN, Data Logger software, SW-DL2005.



WA-2015

Electrical Specifications:

Probes & accessories	pH electrode - PE-01 • ATC (automatic temp. probe) - TP-07 •
	pH 7 buffer solution - pH-07 • pH 4 buffer solution - pH-04 • ORP electrode - ORP-14

pH/mV:

Range	Measurement	Resolution	Accuracy
pH	0 to 14 pH	0.01 pH	± (0.02 pH + 2 d)
mV	0 to 1999 mV	1 mV	± (0.5% + 2 d)

Conductivity (uS, mS):

Range	Measurement	Resolution	Accuracy
200 uS	0 to 200.0 uS	0.1 uS	± (2% F.S.+1d) * F.S. - Full scale
2 mS	0.2 to 2.000 mS	0.001 mS	
20 mS	2 to 20.00 mS	0.01 mS	
200 mS	20 to 200.0 mS	0.1 mS	

TDS (Total Dissolved Solids):

Range	Measurement	Resolution	Accuracy
200 PPM	0 to 132 PPM	0.1 PPM	± (2% F.S.+1d) * F.S. - Full scale
2,000 PPM	132 to 1320 PPM	1 PPM	
20,000 PPM	1320 to 13,200 PPM	10 PPM	
200,000 PPM	13,200 to 132,000 PPM	100 PPM	

Temperature:

Function	Measuring Range	Resolution	Accuracy
°C	0°C to 60°C	0.1°C	± 0.8°C
°F	32°F to 140°F	0.1°F	± 1.5°F

Dissolved Oxygen:

Oxygen Probe	Optional, The polarographic type oxygen probe with		
Measurement & Range	Dissolved Oxygen	0 to 20.0mg/L (liter)	± 0.4 mg/L
	Oxygen in Air	0 to 100.0 %	± 0.7% O ₂
	Temperature	0 to 50°C	± 0.8°C/1.5°C
Resolution	Dissolved Oxygen	0.1 mg/L	± 0.4 mg/L
	Oxygen in Air	0.1 % O ₂	± 0.7% O ₂
	Temperature	0.1°C	± 0.8°C/1.5°C
Probe Size	190mm x 28mm Dia. (7.5"x1.1" Dia.)		
Optional Accessories	Oxygen probe - OXPB-11 • Spare Probe head with diaphragm set - OXHD-04 • Probe-filling Electrolyte - OXEL-03		



TU-2016

TU-2016, Turbidity Meter

Features:

- Designed to meet ISO 7027.
- NTU (Nephelometric TURBIDITY Unit) measuring unit.
- Wide and auto measurement range : 0 to 1,000 NTU.
- High resolution : 0.01 NTU/1 NTU.
- The unique optics structure, enables the instrument to read low value of TURBIDITY to the high level up to 1,000 NTU.
- Four operation buttons and two calibration points, easy operation and guarantee the spec. accuracy.
- Jumbo LCD, easy readout.
- Microprocessor circuit assures maximum possible accuracy, provides special functions and features.
- Battery operated for field and on-site testing convenience.
- Data hold function for freezing the desired value on display.
- Records Maximum and Minimum readings with Recall.
- Heavy duty & compact housing with hard carrying case, designed for easy carry out & operation.
- Auto shut off is available to save battery life.
- Application : Test municipal water, food and beverage water, or other aqueous solution where fluid clarity is important.

Model	TU-2016
Circuit	Custom one-chip of microprocessor LSI circuit.
Display	LCD size: 41mm x 34mm
Range	0.00 to 50.00NTU, 50 to 1,000NTU • NTU : Nephelometric Turbidity Unit • Auto range
Accuracy	± 5 % F.S. or ± 0.5 NTU, which ever is greater
Light source	LED, 850nm
Detector	Photo diode
Standard	Meet ISO 7027.
Response time	Less than 10 seconds
Sample volume needed	10 mL
Data Hold	Freeze the display reading
Memory Recall	Maximum & Minimum value
Display Sampling Time	Approx. 1 second
Power off	Auto shut off saves battery life or manual off by push button.
Calibration points	0NTU, 100NTU
Operating Temperature	0 to 50°C
Operating Humidity	Less than 85% R.H.
Power Supply	DC 1.5 V battery (UM4, AAA) x 6 PCs, or equivalent
Power Current	Stand by: Approx. DC 3.5 mA. Testing: Approx. DC 36 mA
Weight	320 g/0.70 LB. @ Battery is included.
Dimension	155x76x62mm (6.1x3.0x2.4inch)
Accessories Included	Instruction manual - 1 PC Included • Testing bottle with 0 NTU standard solution - 1 PC • Testing bottle with 100 NTU standard solution....1 PC • Empty testing bottle - 2 PCs • Clean cloth - 1 PC • Clean solution (Distill water) - 1 bottle • Hard carrying case, CA-08 - 1 PC.
Optional Accessories	Testing bottle with 100 NTU standard solution, TU-100NTU • Empty testing bottle, 0601.



CL-2006

CL-2006, Chlorine Meter

Features: The meter measures the Free and Total chlorine (CL) in the 0.00 to 3.50 ppm (mg/L) • The measuring method is an adaptation of the USEPA Method 330.5 for waste water and Standard Method 4500-Cl G for drinking water • The advanced optical system based on a special narrow band LED lamp that allows most accurate and repeatable reading • Friendly and powerful calibration function are able to validate good performance of your meter at any time • 1.00 ppm Free standard solution and 1.00 ppm Total standard solution are included as the standard accessories • The unique optics structure, enables the instrument to read with high resolution: 0.01 ppm (mg/L) • Splash waterproof on the front panel • Jumbo LCD, easy readout • Microprocessor circuit assures maximum possible accuracy, provides special functions and features • Battery operated for field and on-site testing convenience • Data hold function for freezing the desired value on display • Records Maximum and Minimum reading with Recall • Heavy duty & compact housing with hard carrying case, designed for easy carry out & operation • Auto shut off is available to save battery life • Application: Test swimming pool, municipal water, food and beverage water, or other aqueous solution where fluid clarity is important.

Model	CL-2006
Circuit	Custom one-chip of microprocessor LSI circuit
Display	LCD size: 41mm x 34mm
Range	Free chlorine (CL): 0.00 to 3.50 ppm (mg/L)
	Total chlorine (CL): 0.00 to 3.50ppm (mg/L)
Resolution	0.01ppm (mg/L)
Accuracy	± 0.02ppm (mg/L) @ 1.00ppm (mg/L)
Light source	LED, 525nm
Light detector	Photo diode
Method	The measuring method is an adaptation of the USEPA Method 330.5 & Standard Method 4500-Cl G. The reaction between free (total) chlorine & the DPD reagent cause a pink tint in the sample.
Response time	Less than 10 seconds
Sample volume	10 mL
Data Hold	Freeze the display reading
Memory Recall	Maximum & Minimum value
Display Sampling Time	Approx. 1 second
Power off	Auto shut off saves battery life or manual off by push button.
Calibration points	Zero chlorine. 1.00ppm (Free chlorine). 1.00ppm (Total chlorine).
Operating Temperature	0 to 50°C
Operating Humidity	Less than 85% R.H.
Power Supply	DC 1.5 V battery (UM4, AAA) x 6 PCs, or equivalent
Power Current	Stand by: Approx. DC 4 mA
	Testing: Approx. DC 12 mA
Weight	320 g/0.70 LB. @ Battery is included.
Dimension	155x76x62mm (6.1x3.0x2.4inch)
Accessories Included	Instruction manual - 1 PC Included • 1.0 ppm Free Chlorine standard solution, CF-01 - 1 PC • 1.0 ppm Total Chlorine standard solution, CT-01 - 1 PC • Zero Chlorine standard solution, CL-01 1 PC • Empty testing bottle - 2 PCs • Clean cloth - 1 PC • Free Chlorine DPD powder - 10 PCs • Total Chlorine DPD powder. - 10 PCs.
Optional Accessories	Free Chlorine DPD powder (10 PCs), Model : CFP-10 • Total Chlorine DPD powder (10 PCs), Model : CTP-10 • Empty testing bottle, Model : 0601 • 1.0 ppm Free Chlorine standard solution, Model : CF-01 • 1/0 ppm Total Chlorine standard solution, Model : CT-01 • Zero Chlorine standard solution, Model : CL-01.



YK-2004AH

YK-2004AH, CFM Hot Wire Thermo Anemometer

Hot Wire Anemometer+Air Flow: CMM, CFM. 0.2 - 20.0 m/s, • high precision for low air velocity measurement • Telescope probe. m/s, ft/min, km/h, knots, mile/h, °C/°F • Max., Min., Data hold, RS-232.



AM-4206M

AM-4206M, CFM Metal Vane Anemometer, 0.5 TO 35.0M/S

Anemometer With Air Flow & Air Velocity • CMM (m3/min.) • CFM (ftVmin. • m/s, ft/min, km/h, mile/h, knots, Temp. (°C/°F) 0.4 to 25.0 m/s., ± -P circuit • Max., Min., Memory recall button • Size: 180x72x32mm • RS-232, Metal Vane.



AM-4216

AM-4216, CFM Mini Metal Vane Anemometer

Anemometer, 13 mm Dia. heavy mini vane, telescope probe High Temp, air velocity measurement, m/s, ft/min, km/h, knots, mile/h, Temp • 0.8 to 12.0m/s., 1/2-P circuit. RS-232, With the CMM m3/min. CFM ftVmin. measurement.



TES-1350A, Sound Level Meter

0.1dB Resolution • Maximum hold function • AUX Output Jacks • Range: ALO (low)Weighting: 35~100dB, AHI (high) Weighting: 65~130dB, CLO (low)Weighting: 35~100dB, CHI (high)Weighting: 65~130dB • Frequency: 31.5Hz~8KHz • Dynamic: 65dB • Display: 4 digital • Accuracy: ±2dB.

LM-8100, Anemometer, Humidity Meter Light Meter, Thermometer

4 function: Humidity/Temp. measurement, Anemometer/Temp. measurement, Light measurement Type K Thermometer. Humidity: 10 to 95 %RH, Temp. (°C/°F). Anemometer: 0.4 to 30 m/s, Temp. (°C/°F) • Light : auto range, 0 to 20,000 Lux, 0 to 1,860 Ft-cd • Type K Thermometer: -100 to 1300 °C, °C/°F • Data hold, Record (Max., Min.) • RS232/USB computer interface • Optional type K Temp. probe: TP-01, TP-02A, TP-03, TP-04 • Compact housing, easy carryout



LM-8102, Anemometer, Humidity Meter, Light Meter, Thermometer, Sound Level Meter

Sound level meter: 30 to 130 dB, auto range • Humidity: 10 to 95 %RH, Temp.. (°C/°F) • Anemometer: 0.4 to 30 m/s, Temp.. (°C/°F) • Light: 0 to 20,000 Lux, 0 to 1,660 Ft-cd, auto range • Type K Thermometer: -100 to 1300 °C, °C/°F • Sound level meter meet IEC 61672 TYPE 2. Data hold, Record (Max., Min.), RS232/USB • 5 function, all in one.

TES-1332A, Digital Light Meter, Up To 200000Lux+Analog Output

Cosine Angular corrected • Analog output jack for recording • Range: (±3%rdg ±0.5%f.s.) 200/2,000/20,000/200,000Lux.



YK-37UVSD, UVA, UVC Light Meter

Realtime data logger, save the data into the SO memory card and can be down load to the Excel, extra software is no need • UVA, UVC light measurement. Select UVA, UVC function on front panel • Professional metallic housing UV light sensor • 2 ranges: 2 mW/cm' x 0.001 mW/cm'. 20 mW/cm' x 0.01 mW/cm' • Data hold, Record (Max., Min.) • RS232/USB computer interface • Patented.



TES-1370, CO2 Analyzer

Range: 0 ~ 6000PPM • Humidity: 10% ~ 95%RH • Temperature Indication: -20°C ~ 60°C • Logging Capacity: 2000 Readings • Max./Min with time stamp • Alarm & Time setting.

MCH-383SD, CO2/Humidity/Temperature Monitor

- Monitor with real time data logger, save the measuring data along the time information (year, month, date, minute, second) into the SD memory card and can be down load to the Excel, extra soft ware is no need.
- CO2 range: 0 to 4000 ppm.
- Humidity: 10 to 95 %RH.
- Temperature: 0 to 50.0°C, °C/°F.
- Show CO2, humidity and temperature value in the same LCD.
- Large LCD display, easy readout.
- Low power consumption and long battery life when use battery power.
- DC 1.5V (UM-4, AAA) battery x 6 PCs or DC 9V adapter in.
- RS232/USB computer interface.
- Size: 132x80x32mm..



TES-92

TES-92, ElectroSmog Meter

Features:

50MHz to 3.5GHz Frequency range • For isotropic measurements of electromagnetic fields • Non-directional (isotropic). measurement with threechannel measurement probe • High dynamic range due to three-channel digital results processing • Configurable alarm threshold, and memory function • Easy to use.

Applications:

High frequency (RF) electromagnetic wave field strength measurement • Mobil phone base station antenna radiation power density measurement • Wireless communication applications (CW, TDMA, GSM, DECT) • RF power measurement for transmitters • Wireless LAN (Wi-Fi) detection, installation • Spy camera, wireless bug finder • Cellular / Cordless phone radiation safety level • Microwave oven leakage detection • Personal living environment EMF safety.



EMF-810, MicroWave Leakage Detector

- Operating freq. range : 2.45 GHz 50 MHz.
- Measurement range : 0 to 1.999 mW/cm.2
- Peak hold, Alarm Setting.
- Application for measuring the EMF value of micro-wave frequency precisely.
- Useful equipment to detect the leakage of micro wave oven.

MG-3002, Wide Range, General Purpose AC/DC Magnetic Meter

- Wide range, general purpose magnetic measurement.
- Unit: G (Gauss), mT (milli Tesla).
- DC/AC magnetic measurement.
- DC Range: 300.00 mT/3000.0 mT.
- AC Range: 150.00 mT/1500.0 mT.
- Resolution: 0.01 mT/0.1 mT, 0.1 G/1 G. DC polarity: N/S
- Sensor: Hall sensor.
- Zero, Data hold. Record (Max., Min.).
- RS232/USB computer interface.
- DC 9V battery (006 P) x1 PC or DC 9V adapter.



TES-1394, EMF Tester, 3 Axis

- Display: 3-1/2 digits, Max. indication 1999.
- Range: 20/200/2000 milli Gauss
- Resolution: 0.01/0.1/1 milli Gauss.
- Accuracy: $\pm(3\%+3d)$ at 50Hz/60Hz, $\pm(5\%+3d)$ at 40 Hz~200Hz.
- Number of Axis: Three axis.
- Band Width: 30 Hz~2000 Hz.
- Data logging Capacity: 999 Points.
- Sampling Time: Approx. 0.5 second.



445703

445703, Indicator, RH/Temp. Big Digit

1" Digits on super large LCD • Max/Min with "reset" function • Humidity: 10 to 99% RH • Temp: 14 to 140°F or -10 to 60°C • Accuracy: $\pm 5\%$ RH; $\pm 1.8^\circ\text{F}$, $\pm 1^\circ\text{C}$.



HT-315

HT-315, Fast Response, %RH, Temp., Dew Point Humid. Meter

Measurement: Humidity, Temperature, Dew point • Resolution: 0.01 %RH, 0.01 degree. Fast response time • Separate probe. Pocket and compact housing case • Max., Min. measurement • Data hold. LCD display • DC 006P 9V battery • Size: 135x60x33 mm.

CR4-KTH, Temperature/Humidity Recorder, 0-100% Humidity, -40 To 55degC

Automatic Probe recognition • Front panel touch pad • Real Time data view • Battery backup (CR4) • Field replaceable probes • Field calibration of probes • Independent Channel Alarms (CR4) • PC software included (SL4) • (Windows 95 & 98 compatible only).



MHB-382SD, Digital Temp. & Humid. Barometer

Monitor with real time data logger, save the measuring data along the time information (year, month, date, minute, second) into the SO memory card and can be down load to the Excel, extra software is no need • Humidity: 10 to 95 %RH • Temperature: 0 to 50.0 °C, °C/F • Barometer; 10 to 1100 hPa, mmHg, inHg • Show barometer, humidity and temperature value in the same LCD • Large LCD display, easy readout • Low power consumption and long battery life when use battery power • DC 1.5V (UM-4, AAA) battery x 6 PCs or DC 9V adapter in • RS232/USB computer interface. Size: 132x80x32mm.

8808, Larg LCD Temp./RH Monitor & Logger

A very useful tool for iaq(indoor air quality) monitoring and control. Wall mountable super large lcd display easy to read and save space. Record range:Temp .. -20°C-70°C(-4°F-158°F), RH: 0-100% • Power requirement: Battery 4 pes xAAsize(Inciuded) • Accuracy: Temp .. $\pm 0.6^\circ\text{C}$ (0-500C), others $\pm 1.2^\circ\text{C}$, RH: $\pm 3\%$ (1 0-90% at 25°C) others $\pm 5\%$ • Resolution: Temp .. 0.1°C/F, RH: 0.1% • Power weak: Battery icon display • LCD display: Super large size:50.9x65.5mm.

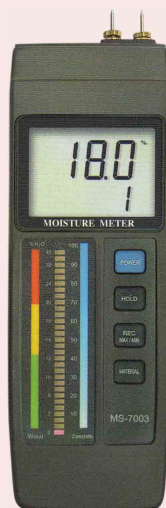
• Dimension: 120Lx93W x42Tmm, Programmable parameters:Sample points,logger sample interval start I stop date and time hi/lo alarm threshold unit selection, real time • Optional accessories: Salt calibration 0033AZ1,0075AZ1, 9 volt adaptor.



PMS-714

PMS-714, Soil Moisture Meter

Range: 0 to 100% moisture content • Heavy duty probe,probe length: 20cm • Meter build test probe all in one, easy operation • Hold, record (Max, Min)q • IP-65 Water resistance, heavy duty • DC 1.5V battery (UM-4, AAA)X4.



MS-7003, Bar Graph LED+LCD Moisture Meter

Designed to check the moisture level of wood, concrete, and other non-wood material • 6 % to 40 % moisture range on wood • 0 to 100% relative moisture value for Concrete and other non-wood material • Red LED bar graph indicator and LCD digital display • All in one, meter build in the test pins • Optional separate probe, available for remote measurement • Microprocessor circuit assures maximum possible accuracy, provides special functions and features • Records Maximum & Minimum reading with recall • Data hold function to freeze the desired value on display • Heavy duty & compact housing case, designed for easy carry out & operation • Built-in low battery indicator.



CR87HT220C

CR87HT220C, High Temp. Recorder

Applications: Broad range of Temperature Applications • Measures and records temperature in air, gas, liquids, powders, solids, and semi-solids • Features/Benefits: Temperature range: 0°F to 1000°F (0°C to 500°C) • Remote readings from up to 2000 ft • Programmable speed and temperature ranges.



CR87B220C

CR87B220C, Temperature Recorder, -40 to 50°C

Applications: Designed for Refrigerators/Freezers, Laboratory & Environmental Applications • Measures & records temperature in air, gas, liquids, powders, solids, and semi-solids • Features/Benefits: Temp. range: -40°F to 120°F (-40°C to 50°C) • Remote readings from up to 100 ft. (optional sensor wire p/n CABLE10T) • Programmable speed and temperature ranges.



401014, Thermometer, Big Digit Indoor/Outdoor

Large LCD display with 1" (25mm) digits • Simultaneous display of indoor/outdoor temp. • Indoor Range: 14 to 140°F (-10 to 60°C) • Outdoor Range: -58 to 158°F (-50 to 70°C). ±1.8°F /1°C accuracy; 0.1°F/°C resolution.

TM-5005, Thermometer, Big Digit Indoor/Outdoor

Large LCD display with 1" (25mm) digits • Simultaneous display of indoor/outdoor temperature • Indoor Range: 14 to 140°F (-10 to 60°C) • Outdoor Range: -58 to 158°F (-50 to 70°C). ±1.8°F /1°C accuracy; 0.1°F/°C resolution.



42510A, IR Temp. Meter, -50 to 650°C

• IR Temperature range: -58 to 1200°F (-50 to 650°C). High resolution of 0.1° up to 199.9°. High/Low setpoints with audible alarm. 0.10 to 1.00 adjustable emissivity for better accuracy on different surfaces • Built-in laser pointer for easy targeting. Large backlit LCD display • Data Hold and Min/Max, overrange indicator, auto power off • Complete with 9V battery and pouch case.

42540, High Temperature IR Thermometer

Widest temperature range from -58° to 1400°F (-50 to 760°C). Built-in laser pointer for easy targeting, high resolution of 0.1° up to 199.9°. High 16 to 1 distance to target ratio measures smaller surface areas at greater distances • Large backlit LCD display. 0.10 to 1.00 adjustable emissivity for better accuracy on different surfaces. MAX/MIN/AVG/DIF features display highest, lowest, average, and MAX minus MIN values. Automatic Data Hold, auto power off.

42545, IR Temp. Meter, -58 to 1000°C

Wide temperature range from -58 to 1832°F (-50 to 1000°C) • Built-in laser pointer for easy targeting • Large backlit LCD display • Adjustable emissivity High resolution of 0.1° up to 199.9° • High and low alarm set points.



42570, Dual Laser InfraRed Thermometer

High 50:1 distance to target ratio measures smaller surface areas at greater distances • Dual Laser Targeting indicates ideal measuring distance when two laser points converge to 1" target spot • IR Temp. range: -58 to 3992°F (-50 to 2200°C) • Type K thermocouple input from -58 to 2498°F (-50 to 1370°C) • White backlit multifunction LCD display with bargraph • Fast 100 millisecond response time • MAX/MIN/AVG/DIF feature displays highest, lowest, average, & MAX minus Min values • Adjustable emissivity increases

measurement accuracy for different surfaces • Adjustable High/Low set points with audible alarm alerts user when temperature exceeds the programmed set points • USB interface • Double molded housing • Complete with Type K Temperature probe, USB cable and software, carrying case and 9V battery.





PM-9100

PM-9100/9102/9107, Manometer, Dual & Differential Input.

Dual & differential input, 200/2000/7000 mbar maximum range • Application: Industrial, laboratory, heating, ventilation, medical hospital, used for air or not corrosive and not ionized gas & liquid • Sensor is built inside the housing. Single lugs for pipe connection • 8 kind display units (mbar, psi, Kg/cm², mm Hg, inch Hg, meter H₂O, inch H₂O, Atmosphere) select by pushbutton on the front panel • Records max. & min. readings • Zero button on the front panel, easy to offset the zero value • Data Hold. RS232 PC serial interface, can match the personal computer used as the Data Logger, Recorder.... and other modern pressure measuring system.

PS-9302, Advanced Digital Pressure Meter+ Sensor (PS-100)

Meter connects with 2, 5, 10, 20, 50, 100, 400 bar sensor • no calibration procedures are necessary when change a new sensor. Bar, PSI, Kg/cm², inch/Hg, mm/Hg, inch/H₂O, meter/H₂O, Atmosphere • Data hold, Memory (Max., Min.) • RS232. Size: 180x72x32mm.



PS100-Series, Pressure Sensor

Pressure sensor connected with PS-9302

- PS100-2BAR : 2 bar sensor.
- PS100-5BAR : 5 bar sensor.
- PS100-10BAR : 10 bar sensor.
- PS100-20BAR : 20 bar sensor.
- PS100-50BAR : 50 bar sensor.
- PS100-100BAR : 100 bar sensor.
- PS100-400BAR : 400 bar sensor

VC-9200, Vacuum Meter

- 1125 torr x 1 torr, 1500 mbar x 1 mbar.
- Units : torr, mm Hg, micron, KPa, Pa, inch Hg, psi.
- RS232, Hold, Record (Max., Min.).
- Heavy duty vacuum sensor used for air, oil gas...
- Application : Automobile, Industrial, laboratory, heating, ventilation, medical hospital...



KA-7531

KA-7531, Simulator, Thermocouples, mV, V, mA, Hz

Features:

- Universal manual simulator for simulating temperature sensors and process variables when testing measuring instruments, regulators, & other equipment.
- Pt100 simulation with 5 fixed resistors in 4-conductor technology Voltage and thermocouples simulation with 16-bit D/A converter, current simulation with 16-bit D/A converter frequency and pulse generator with quartz-crystal oscillator continuity check with settable threshold.
- All signals are available at the same time.
- Signals can be set either manually or automatically, in step or ramp form.
- All signals and all the programming can be shown on the illuminated graphics display.
- Connection of peripherals via clamp connectors, cable with anti-kink protective sleeve and strain relief.

- Power supply via battery, mains unit, USB cable ZA 1919-DKUV or connection to RS422 network distributor with connector ZAS099-FSV.
- Modem, compact housing - also suitable for DIN top-hat rail mounting.
- Option of PC-controlled operation via all data cables, also networked with settable device address via network distributor & RS422 connector.



5900AV

5900AV, Voltage & Current Loop Simulator

- Rugged design for handheld or bench top use
- Large 3-1/2 digit LCD built into adjustable "flip-up" cover
- Precision source for calibrating process devices & measuring DC process signals from 0 to 24 mA & 0 to 10V
- High accuracy to 0.075 % & drives current loads to 350ohm
- Range: Source-0-24 mA, 0-10V, Measure-0-50 mA, 0-19.99V
- Resolution: 0.01/0.1mA, 1/10 mV • Accuracy: ±0.075% of reading +1 digit
- Power: 9V or AC Adaptor(optional)
- Dimensions: 96 x 120 x 46 mm(folded)
- Weight: 260 g (with battery).



CM-8825FN

CM-8825FN, Coating Thickness Meters

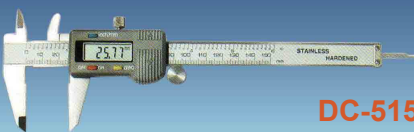
Measuring Range: 0-50mil •
Resolution: 0.5mil • Accuracy: 1~3%
• Min. Measuring area: 6mm • Min.
Sample Thickness: 0.3mm.



CM-8829S

CM-8829S, Coating Thickness Meter

Measuring Range: 0-50mil •
Resolution: 1mil • Accuracy: 1~3%
• Min. Measuring area: 5mm •
Min. Sample Thickness: 0.3mm.



DC-515

DC-515, Digital Caliber

DC-515: 150mm x 0.01mm, 6inch x 0.0005". mm/inch select, zero button •
1.5 V silver oxide battery, long life •
Size: 235x75x15mm.



TACO-30, Photo/Contact Tachometer, Pocket Type

- Mini pocket size, easy carryout.
- Photo tach. : 5 to 100,000 RPM
Contact tach. : 0.5 to 19,999 RPM.
Surface speed: m/min, ft/min.
- Laser beam for Photo tachometer, long measuring distance.
- LCD display, RS-232USB interface.
- Patented.
- DC 1.5V battery (UM-4, AAA) x 4.

DT-2239A, Portable Digital Stroboscope

- Range : 100 - 10,000 RPM.
- Accuracy : (0.05 % + 1 d). Xenon flash tube.
- Display : 10 mm red LED.
- Size : 210 x 120 x 120 mm.



VB-8212/8213, Vibration Meters+Sensor

VB-8212: Separate professional vibration probe •
Velocity: 200 mm/s • Acceleration: 200 m/s². RMS,
Peak, RS232, Hold, Record (Max., Min.) • Build-in
Metric & Imperial display unit.

VB-8213: Acceleration : 200 m/s². Velocity : 200
mm/s. Displacement : 2.0 mm • Max hold, peak value,
data hold. Memory (Max., Min.) • LCD display with bar
graph. 500 point data logger. Zero adjustment, RS232
computer interface • Optional data transmission
software, SW-DL2005 • Accelerator and hard carrying
case are included.

DI-800, Laser Distance Meter

Great product very easy to use and
set up • One tool that everyone from the professional the
DIYer • Generates vertical and horizontal lines for layout
• Two laser lines with adjustable angle 0-180degree for
more Complicated work • Taking field
measurements and checking for plumb and level so there
are no surprises later • Using for everything from
installing cabinets and trim to hanging Pictures on the
wall • Backlight available.



DC-516

DC-516, Digital Micrometer

DC-516: 25mm x 0.001mm, 1inch x 0.00005" • Accuracy: 0.002mm.
mm/inch select, zero button. 1.5V
silver oxide battery, long life • Size:
156x56x22mm.



ARIMAD-3000

Arimad Advantage:

Arimad reflects changes taking place in the development of the plant.

Typical samples can be taken from various fields with immediate results.

Irrigation scheduling based on Arimad enable postponement of over irrigation and result in water economies. A frequent check of plant's water, which causes a reduction in yield. The correct use of Arimad helps to fix an exact water allocation. The growth of the plant remains controlled from the first stage of irrigation. A significant correlation is established between the water potential of the plant and its yield.

An approximate indication can be given as to recommended indications for watering cotton: Sprinkler irrigation - 18 bar. Drip irrigation - 14 bar.

Adjustments need to be made for every crop for different climatic conditions. If tests show a deviation from recommended averages, a modification of the irrigation schedule should be adapted:

High tension values - immediate application & increasing amount of water.

Low tension values - reduction of the water application
Arimad is already widely used in different climatic regions.

Warranty - one year (excluding damage).

Spare parts - supply guaranteed.

ARIMAD-3000

An Instrument For Measuring The Water Potential Of Plants

Arimad uses a pressure chamber of the "Schulander" type to measure water potential of plants. This Indicates:

- Prevailing soil moisture condition;
- Influence of environment factors
- State of water within the plant

Arimad is light and portable. It can be operated easily by one person anywhere.

Arimad tests are simple and short. The five steps are:

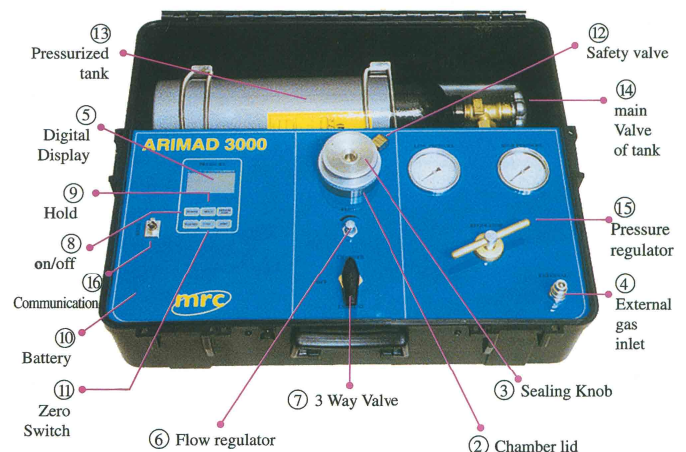
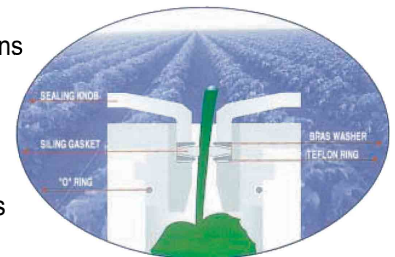
- Selecting a representative leaf;
- Preparing the instrument;
- Inserting pressure in the chamber;
- Reading the plant's water potential.

Arimad is a plant tester in contrast to other instrument switch test soils or climatic conditions. The pressure chamber method demonstrates the plant's reaction to moisture excess or deficiency. This data will determine an exact irrigation schedule.

General Observations:

The water potential imply changes in growth, proteins & photo synthetics.

Hence, an accurate picture of developmental changes within the crop is portrayed.





SMZ-168-TL

SMZ-168-BL/TL, Advanced Zoom Stereo Microscopes

The SMZ-168 provides a zoom ratio of 1:6.7 with excellent optical performance, ultra long working distance, unbeatable depth of view as well as an extra large and comfortable working surface.

MRC introduces a new zoom stereo microscope - the SMZ-168 with continuous zoom range from 0.75X to 5X, complete image parfocality, 23mm field of view & using MRC's established high-performance optics with amazing clarity and depth of view.

Optical System: High Resolution Stereo Image • Zoom Magnification Click Stops • Anti-Fungus Properties.

Focusing Block: Ball bearing focusing mechanisms • 50mm focusing range • 76mm inner head mount.

Base Stand: Streamlined base stand • large working area • 12V/10W Halogen transmitted light [intensity control] • Universal power input 110V - 220V.

Model	SMZ-168-BL	SMZ-168-TL
Optical system	Greenough	Greenough
Total magnification	2.25X~320X	2.25X~320X
Zoom body magnification	0.75x~5x	0.75x~5x
Zoom ratio	1:6.7	1:6.7
Eyepiece	WF10x/23 high eyepoint	WF10x/23 high eyepoint
Interpupillary distance	52mm~79mm	52mm~79mm
Diopter adjustment	±5°	±5°
Observation angle	±35°	±35°
Working distance	113mm	113mm
Choice of eyepiece	WF5X/23; WF6.25X/23; WF10X/21; WF15X/17; WF20X/13; WF30X/8; WF32X/8	WF5X/23; WF6.25X/23; WF10X/21; WF15X/17; WF20X/13; WF30X/8; WF32X/8
Additional objectives available	0.3x WD=343mm, 0.5x WD=200mm, 0.75x WD=130mm, 1.5x WD=54mm, 2x WD=34.5mm	0.3x WD=343mm, 0.5x WD=200mm, 0.75x WD=130mm, 1.5x WD=54mm, 2x WD=34.5mm
Max. magnification	320x	320x
Max. field of view	102mm	102mm
Max. working distance	343mm	343mm
Top light	12V/10W Halogen	12V/10W Halogen
Bottom light	12V/10W Halogen	12V/10W Halogen
Photo & video adapter		Photo & video adapter 1/3" CCD available

Accessories:**Auxiliary Objectives**

0.3X W.D. 324mm AX6602607	0.5X W.D. 192mm AX6602608	0.63X W.D. 156mm AX6602643
0.75X W.D. 127mm AX6602609	1.5X W.D. 50mm AX6602610	2X W.D. 34.5mm AX6602611

Camera Adapters

2X Photo Adapter 35mm SLR Camera AX6602603	0.35X CCD Adapter 1/3" CCD Camera AX6602602	0.65X CCD Adapter 1/2" CCD Camera SW0113R5

Mechanical Stage

Base stand mountable Max. X distance: 75mm Max. Y distance: 50mm Dimension in mm: 222.8(w) x 170(l) x 29.5(h) SW010338K	
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Light Sources

IL-RF, Fluorescent Ring Light

- The bright 7W fluorescent lighting system provides cool white illumination.
- Long life bulb, spare bulb included.
- Ring design eliminates shadows.
- Fits cones between 4.5-6.5cm (1.8"-2.4" dia.)
- Adapters available to fit most models of stereozoom microscope.



This is an excellent way to add lighting to stereozoom microscopes.

AC-LED, LED Ring Light

- Power Supply: AC 90-265V, 50/60Hz
- Output 24V 6W
- Color Temperature: 6400K
- Lamp Life: Minimum 10,000 hours
- Operating Temperature: 32-104 F(0-40°C)
- Humidity Range: 0-80%
- Max. Opening: 62mm
- Fuse: 1A
- The Power Box Dimensions: 103x 61x32mm.



- 60 LED Bulbs, adjustable brightness.
- Applicable to SZ, SZ2, SZ3 and FS Series Stereo Microscopes

CL-150, Fiber Optical

The newest addition to our line of illumination equipment is the CL-150. It features "cold" illumination through filtration and a series of user defined colored filters. The cold light source has high intensity fiber optic illumination & accessories that allow you to position your light for best possible viewing. The original design shown above features a sturdy small footprint through integrated solid state circuitry. The 150 watt lamp is equipped with a variable control. The CL-150 provides the best illumination for high brightness & low temperatures.



- Streamline façade
- New Design for easy replacing lamp
- Adopt over loading protect set
- Brightness > 23000LU

Power Input	90V-265V	
Power Output	5V-21V	
Power Consumption	150W	
Dimensions(mm)	210×170×130	
Filter	Filter Red/Blue/Green/Yellow	
Reflector Lamp	21V/150W	
Fiber Adapter	F20	
Option Specification	Twin-Arm Fibre 2-F5X500mm	Ring Fibre F55XF10X1000mm
Option	Microscope Adapter for Ring Fiber	
Adapter Specification	M44X0.75 M48X0.75	M50X0.75 M54X0.75

Eyepieces

WF6.25X/23mm	SG02T0103
WF10X/23mm	SG02T0218
WF15X/17mm	SG02T0318
WF20X/13mm	SG02T0406
WF32X/8mm	SG02T0502



Measuring Eyepieces

360° : 10° SG060314	10mm:0.1mm SG060312	14mm:0.2mm SG060320	14mm:0.1mm SG060315

Polarizing Equipment

- Base stand mountable 1-piece set
 - 360° independently rotatable polariser (top)
 - 360° independently rotatable analyser (bottom)
- SP080013K



Darkfield Attachment

- Conical glossy central stop for diffracted light observation
 - Iris diaphragm for controlling the shape of light
 - Base stand mountable
- SP090001



SMZ-168 Stands



- 2105**
Special Universal Stand
- Length of base 250mm
 - Height of pole 373mm
 - Width of base 250mm
 - Diameter of pole for focusing mount 32mm



- 2108K**
Ball Bearing Boom Stand
- Diameter of vertical pole 36mm.
 - Diameter of pole for focusing mount 32mm.



- 2107K**
Articulating Arm Boom Stand
- Diameter of vertical pole 36mm.
 - Diameter of pole for focusing mount 32mm.



- 2109K**
Articulating Arm Boom Stand
- Diameter of vertical pole 36mm.
 - Diameter of pole for focusing mount 32mm.

SMZ-430, Stereo Magnifier

SMZ-430 Improves operators' working efficiency and makes operators no longer suffer the strain of eye, neck or back due to the humanistic design.

It can be applicable (0 the filed of electronic industry, precrsron mold.

plastic shop. medical diagnosis, public security system. and so on.

SMZ-430 with magnification 4-30x and stereo image; rotary turret can toge ther fix three pieces of Objective to work, wide-field view and long working distance make the observation more ease and joyful.

**Specifications:**

Outfit	Objective Magnification	Total Magnification	Working Distance	Visual Field
Standard	SMZ430-2X	4X	208mm	68mm
Standard	SMZ430-4X	8X	98mm	34mm
Standard	SMZ430-6X	12X	80mm	22.7mm
Optional	SMZ430-8X	16X	58mm	17mm
Optional	SMZ430-10X	20X	46mm	13.6mm
Optional	SMZ430-15X	30X	50mm	9.1mm

GEM-250, Stereo Gemological Microscope

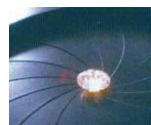
The GEM-250 utilizes the optical performance of MRC's GEM-250 stereomicroscope to enhance distinct three-dimensional details with a zoom function. Rugged and precise, the optics of the GEM-250 performs enlargements, analyses, & measurements more accurately & efficient! thus reducing your workload. At a working distance of 113mm, manipulation of the inspected gem or the addition of a further apparatus is permitted without obstruction. Available in a trinocular version for photographic or digital capture of the gem, the GEM-250 provides you with an opportunity for extra revenue. Moreover, when teamed with MRC's RCam 480, the GEM-250 becomes your instrument of instruction for teaching and training by showcasing the gem in real time via a television, a projector, and computer simultaneously.



GEM-250

Eyepieces:

- Magnification: 10x
- Field of View range: 30.7mm-4.6mm
- Mount Diameter: Ø30mm
- Reticules: Ø25mm
- Magnification range: 0.75x-5x
- Zoom Ratio: 1: 6.7
- Observation angle: 35°
- Working distance: 113mm

Illumination: Bright Field Illumination

Integrating a consistent & powerful SOW Quartz Halogen Bright field illumination with a precise, adjustable aperture diaphragm [Ø41mm - Ø2mm], you are able to measure with a table gauge the proportions and pavilions of a diamond.

Dark Field Illumination

Dark field is the ideal illumination for observation of inclusions. With MRC's versatile aperture diaphragm [pictured above], you can control the depth of field and contrast while using the dark field illumination for better identification.

Incident fluorescent illumination, Diamond Light

Designed for use with diamonds, the incident light can be adjusted for a thorough examination of the clarity, colour, & finishing. The bulb has a colour temp. of 6000K to reduce any yellowing effects on the gem.

Holders, Plates, & Analysers:

1. Wire Stone holder The ideal holder for diamonds, rubies and sapphires. Comprised of stainless steel for a long working life, the wire stone holder permits the maximum amount of observation.

2. Rounded Edge Stone holder Perfect for irregular gems and jewelry. Precision Grafted of stainless steel to provide an adequate grip without corrupting irregular shaped gem samples.

3. Inclusion pointer For rapid location of inclusions and fractures on the surface of gem.

Large gem stags plate

Magnetically attachable & covering the stage area of the GM168 base to provide a large surface for rough stones and large gems (i. e. fade) inspection in conjunction with the incident fluorescent illumination.

**Dimont Proportion Analyser Kit**

Complete kit for effective 8, accurate identification 5 measurement of proportions 4 pavilions. Includes the magnetised diamond mount, diamond proportion reticule, & micrometer eyepiece (10x)

**Immersion cell**

Capable of rapid & easy detection of treated gems characteristics: such as clarity enhancement, HPHT annealing, irradiation, & surface colouration, the immersion cell is especially useful for rubies.

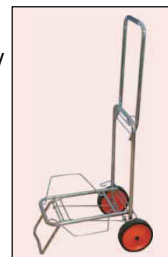
**Accessories: Case**

When moving the microscope from place to place use our rigid case.

Model: SC-70: with lock & key. Dimensions: 295x535x400mm (high)

**Trolley**

Our trolley Model TR-70

**Stand Features & Benefits:****Rotary Base**

360° rotary base allows you to showcase the gem to a customer or to confer with a colleague on proper identification.

**Tilting Base**

With a tilting range of 0° [upright] to 45°, the GEM-250's base is accessible to users of various heights.

**Focus Adjustment**

Allowing for a total travel of 125mm for adaptation to different sizes of gems and stones, no sample is too small or too large.

**Stage**

Able to accommodate both a gem holder and inclusion pointer simultaneously in addition to different contrast methods.





MZ-3

MZ-3, Video Zoom Microscope

The quality optical system & the specially coated optical components adopted in MZ3 Video Zoom Microscope furnish it to deliver sharp and flat images. With the locking screw, the zoom knob of the zoom body can be operated more precisely.

This product can be applied to viewing, inspecting and testing digital images in electronic components, semiconductor, laser, LED, LCD, industrial and biological fields. Digital Camera, CCD Camera, DSLR and SLR can be attached to MZ3 Video Zoom Microscope by using the relevant adapters.

Based on the best optical system, can deliver clear, bright and flat images. The zoom knob of zoom body with lock-up equipment can reach high precision. It can apply to modern electronic equipment, semiconductor, laser, LED, LCD, industry inspection, digital observation on biology and other fields.

Specifications:

- Zoom Range: 0.7X-5X.
- Zoom Ratio: 1: 7.
- Magnification: 16X-160X.
- Field of View: 2.14mm-21.4mm.
- Working Distance: 100mm-105mm.



Option:

MZ3-H: Horizontal Stand with separate 15" LCD.



MZ-CHG

Option:

MZ-CHG: Cross Hair Generator. Easy operation-Button control, knob control and mouse control. High work efficiency-Real-time data updated, without waiting, work stability.

The Cross-hair generator with built-in video conversion can show analog signal with folding cross-hair and coordinate outputted from CCD on screen. It can provide adjustable cross-hair observation when observing. For VGA LCD, it can convert analog signal into VGA signal, output resolution of VGA:

1024X768 and 1280X 1024, power supply: 5V 1A. Can be used for measurement of high-precision, realizing data processing of video signal, measurement of distance and angle. When installed in microscope, observation, inspection & measurement functions can be realized. This product can be widely used in biology, medical treatment and chemistry.

Optical Data Sheet: (Based on 14" Monitor and 1/3" CCD Camera)

Model	MZ3110101		
Objective Lens	Working Distance (mm)	Coupler	
		0.4X	
		Mag.	FOV (mm)
1X	105	16X-114.3X	21.4-3
1.4X	100	22.4X-160X	15.3-2.14



BAM100, Biological Microscope

Equipped with UCIS universal infinity independent-achromatic optical system, chromatic aberrations and curvature of field are both ideally corrected over the field of view. And the UCIS objectives own higher NA's producing crisp, clear images with minimal flare. Benefit from UCIS infinity optics, BAM100 series provide a flexible upgrade path to accommodate various accessories to meet your applications for observations of light field, phase contrast, dark field and polarization. And the BAM100 series optics are perfect for both observations through the eyepiece as well as capturing images with a digital camera or a computer. Giency heat-sink-device of BAM 100 series keeps the microscopes surface at lower temperature even after long time work.

Features: High eye-point eyepiece • Eergonomic and Flexible observation tub
 • Trinocular Tub • Abbe condenser with color-coded diaphragm scale markings
 • Revolving nosepiece • Eergonomic co-axial coarse and find, adjustment knob
 • Grasping part • Dark condenser • Bright and even illumination.

Parts	Sepcifications	BAM102	BAM103	Order Number
BAM 100 Frame	One-piece construction from arm to base	•	•	UB100
Optics	UCIS Infinity Independent Achromatic Optical Design	•	•	MS3
Seidentopf Observation Tube	Binocular Tube, Interpupillary distance 52-75mm, 30° inclined, 360° rotateable	•	•	MT3
	Trinocular tube, Interpupillary distance 52-75mm, 30° inclined, trinocular light is split 20/80 by a high quality prism	•	•	
Plan Eyepiece	WF10X/18, Hight eye-point up to 21mm, diopter adjustable	•	•	E1018PB
	WF10X/20, Hight eye-point up to 21mm, diopter adjustable	•	•	E1020PB
	WF16X/14	•	•	E1614WA
	WF10X/18(Pointer), Hight eye-point up to 21mm, diopter adjustable	•	•	E1018GB
	WF10X/20(Pointer), Hight eye-point up to 21mm, diopter adjustable	•	•	E1020GB
	Reticule Eyepiece: CROSSWF10X/18	•	•	E1018RA
	Reticule Eyepiece: CROSSWF10X/20	•	•	E1020RB
Centering Telescope	CTE	•	•	WY2
Infinity Achromatic Objectives	4X/0.13 ∞/0.17, WD12.31	•	•	WB-X4A
	10X/0.30 ∞/0.17, WD6.75	•	•	WB-X10A
	40X/0.70 ∞/0.17, WD0.76 (Spring)	•	•	WB-X40A
	100X/1.25 ∞/0.17, WD0.12 (Spring,Oil)	•	•	WB-X100A
Infinity Achromatic Phase-Contrast Objectives (positive Or negative)	PH 10X/0.30 ∞/0.17, WD6.75	•	•	WB-XPp10A/WB-XPp10A
	PH 40X/0.70 ∞/0.17, WD0.76 (Spring)	•	•	WB-XPp40A/WB-XPp40A
	PH 100X/1.25 ∞/0.17, WD0.12 (Spring,Oil)	•	•	WB-XPp100A/WB-XPp100A
Infinity Plan Objectives	Plan 4X/0.13 ∞/0.17, WD12.31	•	•	WB-P4A
	Plan 10X/0.30 ∞/0.17, WD4.00	•	•	WB-P10A
	Plan 20X/0.45 ∞/0.17, WD1.24	•	•	WB-P20A
	Plan 40X/0.70 ∞/0.17, WD0.29 (Spring)	•	•	WB-P40A
	Plan 60X/0.80 ∞/0.17, WD0.40 (Spring)	•	•	WB-P60A
	Plan 100X/1.25 ∞/0.17, WD0.09 (Spring,Oil)	•	•	WB-P100A
Infinity Plan Phase-Contrast Objectives	PH Plan 10X/0.30 ∞/0.17, WD4.00	•	•	WB-PPHp10A/WB-PPHp10A
	PH Plan 20X/0.45 ∞/0.17, WD1.24	•	•	WB-PPHp20A/WB-PPHp20A
	PH Plan 40X/0.70 ∞/0.17, WD0.29 (Spring)	•	•	WB-PPHp40A/WB-PPHp40A
	PH Plan 60X/0.80 ∞/0.17, WD0.40 (Spring)	•	•	WB-PPHp60A/WB-PPHp60A
	PH Plan 100X/1.25 ∞/0.17, WD0.09 (Spring,Oil)	•	•	WB-PPHp100A/WB-PPHp100A
Phase-Contrast Slide	10X PH	•	•	PCB-XPp10A
	40X PH	•	•	PCB-XPp40A
	100X PH	•	•	PCB-XPp100A
Condenser	Abbe codenserAbbe condenser: NA 1.25, with iris diaphragm	•	•	JG3
	Dark Condenser	•	•	JG10
Stage	Mechanical Stage: 142x135mm platform, with X/Y travel of 76X52mm by low-positioned X/Y coaxial contril knob, with scale mark and specimen-slide clip, enough space to hold 2 specimen-slide	•	•	ZT3
Revolving Nosepiece	quadruple, inward facing	•	•	ZQ470
Illumination Kohler	No field diaphragm	•	•	KL2
	With field diaphragm	•	•	KL3
C-Mount	SX2: 0.5X	•	•	SX2
	SX3: 1X	•	•	SX3
Filter	Blue	•	•	LA2-0011
	Green	•	•	LU2-0011
	Yellow	•	•	LH2-0011
	Grass Glass	•	•	LB2-0011
Filter Holder	Filter Holder: (Attached to the Kohler) for more than one filter	•	•	LA1-0071
Polarization kits	Analyzer	•	•	PQ1
	Polarizer	•	•	PY1
Illumination Bulb	6V20W Osram Halogen Bulb	•	•	BZ-0022A
	3W LED Bulb	•	•	DQL1-1000
Immerse Oil	8ml	•	•	BZ-0027
Allen Screw Driver	Φ2mm	•	•	BZ-0018
Power Line	1.8m, CE certified	•	•	BZ-0021
Package	Inner package: foam, plastic bag; Out Package: Paper box	•	•	BZ3-0011A

Symbol Meaning: • means standard ○ means optional



BAM200

BAM200, System Microscope

BAM200 is our contribution to you for your application in medicine, clinical laboratories, pathology, and biology, from routine task to research. Equipped with advanced USIC infinity optics and ergonomic, flexible, stable, high efficiency mechanism, BAM200 can satisfy your observation of brightfield, darkfield, polarization, phase-contrast, and fluorescence.

Features:

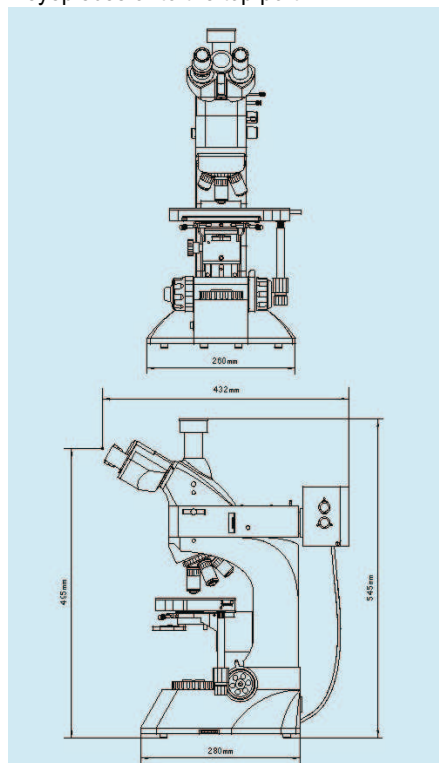
- High eye-point up to 21mm
- Abbe condenser
- Dry dark-field condenser
- Simple polarizing observation
- Phase-contrast condenser
- Reflected light fluorescence
- Mechanical stage
- Rackless stage with enhanced operability
- Inward-facing revolving nosepiece
- Observation tube
- Comfortable ergolift
- Grasping part.

Symbol Meaning: ● means standard ○ means optional

Parts	Specifications	BAM202	BAM203	Order Number
UB200i Frame	One-piece construction from arm to base	●	●	UB200
Optics	UCIS Infinity Independent Achromatic Optical Design	●	●	MS2
Seidentopf Observation Tube	Binocular Tube, Interpupillary distance 52-74mm, 30° inclined, 360° rotatable	●	●	MT2
	Trinocular tube, Interpupillary distance 52-74mm, 30° inclined, trinocular light is split 20/80 by a high quality prism		●	
Eyepiece	WF10X/20, High eye-point up to 21mm, diopter adjustable	●●	●●	E1020PA
	WF10X/22, High eye-point up to 21mm, diopter adjustable	○ ○	○ ○	E1022PC
	WF16X/14	○ ○	○ ○	E1614WB
	WF10X/20(Pointer), High eye-point up to 21mm, diopter adjustable	○	○	E1020GA
	WF10X/22(Pointer), High eye-point up to 21mm, diopter adjustable	○	○	E1022GC
	Reticule Eyepiece: CROSSWF10X/20	○	○	E1020RA
	Reticule Eyepiece: CROSSWF10X/22	○	○	E1022RC
Centering Telescope	CTE	○	○	WY2
Infinity Semi Plan Objectives	4X/0.13 ∞/0.17, WD12.31	●	●	WB-X4A
	10X/0.30 ∞/0.17, WD6.75	●	●	WB-X10A
	40X/0.70 ∞/0.17, WD0.76 (Spring)	●	●	WB-X40A
	100X/1.25 ∞/0.17, WD0.12 (Spring,Oil)	●	●	WB-X100A
Infinity Semi Plan Phase-Contrast Objectives (positive or negative)	PH 10X/0.30 ∞/0.17, WD6.75	○	○	WB-EPHp10A / WB-EPHn10A
	PH 40X/0.70 ∞/0.17, WD0.76 (Spring)	○	○	WB-EPHp40A / WB-EPHn40A
	PH 100X/1.25 ∞/0.17, WD0.12 (Spring,Oil)	○	○	WB-EPHp100A / WB-EPHn100A
Infinity Plan Objectives	Plan 4X/0.13 ∞/0.17, WD12.31	○	○	WB-P4A
	Plan 10X/0.30 ∞/0.17, WD4.00	○	○	WB-P10A
	Plan 20X/0.45 ∞/0.17, WD1.24	○	○	WB-P20A
	Plan 40X/0.70 ∞/0.17, WD0.29 (Spring)	○	○	WB-P40A
	Plan 60X/0.80 ∞/0.17, WD0.40 (Spring)	○	○	WB-P60A
	Plan 100X/1.25 ∞/0.17, WD0.09 (Spring,Oil)	○	○	WB-P100A
Infinity Plan Phase-Contrast Objectives	PH Plan 10X/0.30 ∞/0.17, WD4.00	○	○	WB-PPHp10A / WB-PPHn10A
	PH Plan 20X/0.45 ∞/0.17, WD1.24	○	○	WB-PPHp20A / WB-PPHn20A
	PH Plan 40X/0.70 ∞/0.17, WD0.29 (Spring)	○	○	WB-PPHp40A / WB-PPHn40A
	PH Plan 60X/0.80 ∞/0.17, WD0.40 (Spring)	○	○	WB-PPHp60A / WB-PPHn60A
	PH Plan 100X/1.25 ∞/0.17, WD0.09 (Spring,Oil)	○	○	WB-PPHp100A / WB-PPHn100A
Phase-Contrast Slide	10X PH	○	○	PCB-XPH10A
	40X PH	○	○	PCB-XPH40A
	100X PH	○	○	PCB-XPH100A
Condenser	Multi-purpose phase-contrast Condenser; NA:1.25, Phase-contrast observation from 10X to 100X and Dark-field observation from 10X to 40X is allowed	○	○	JG20
	Abbe condenser/Abbe condenser: NA 1.25, with iris diaphragm	●	●	JG2
	Dark Condenser	○	○	JG10
Stage	Mechanical Stage: 156x138mm platform, with X/Y travel of 76x54mm	●	●	ZT2
Revolving Nosepiece	quadruple, inward facing	●	●	ZQ480
Illumination Kohler	With field diaphragm	●	●	KL3
C-Mount	SX2: 0.5X	●	●	SX2
Filter	Blue	●	●	LA1-0011
	Green	○	○	LU1-0011
	Yellow	○	○	LH1-0011
	Grass Glass	○	○	LB1-0011
Filter Holder	Filter Holder: (Attached to the Kohler) for more than one filter	○	○	LA1-0071
Polarization kits	Analyzer	○	○	PQ1
	Polarizer	○	○	PY1
Illumination Bulb	6V20W Osram Halogen Bulb	●	●	BZ-0022A
	6V30W Osram Halogen Bulb	○	○	BZ-0022B
	3W LED Bulb	○	○	DQL1-1000
Immerse Oil	8ml	●	●	BZ-0027
Allen Screw Driver	Φ2mm	●	●	BZ-0018
Power Line	1.8m, CE certified	●	●	BZ-0021
Package	Inner package: foam, plastic bag; Out Package: Paper box	●	●	BZ3-0011A

**L3230****Features:**

- With infinity plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division affine focusing: 2~1m.
- Movement of stage: 30mm
- With vertical illuminator and transmitted illuminator, can observe surfaces of non-transparent object or transparent object.
- Trinocular, can switch to observe normally or to observe the Polarize, can send 100% or light to the binocular eyepieces or to the top port.

**L3230, Reflected Light & Transmitted Light Microscope**

L3230 reflected and transmitted microscope is suitable to observe surfaces of non-transparent object or transparent object. It is equipped with vertical illuminator, infinity plan achromatic objectives with long working distance (no cover glass), wide-field eyepieces and set polarizer device in trinocular. It provides clear and high-contrast image, beautiful sculpt, convenient control, etc. It is the ideal instruments in research work in biology, metallography, mineralogy, precision engineering, electronics, etc. It is suitable for scientific research, teaching demonstration in the colleges and factory.

Model	L3230
Eyepiece & Objectives	Wide field WF10X(Φ20mm)
	PL L5X/0.12 Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L10X/0.25 Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L40X/0.60 (spring) Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L60X/0.75 (spring) Infinity plan achromatic objectives with long working distance (no cover glass)
Eyepieces tube	Trinocular, Inclination of 30°, (Analyzer with field diaphragm to switch)
Vertical illumination unit	6V 30W, halogen lamp, adjustable brightness
	Vertical illumination with field diaphragm, aperture diaphragm and polarizer, (Y,B,G) filter and Ground glass
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: 2μm.
Nosepiece	Quadruple (Backward ball bearing inner locating)
Stage	Double layer mechanical (Size: 210mmX140mm, moving range: 75mmX50mm)
Vertical illumination unit	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for illumination with halogen lamp (With field diaphragm)
	6V 20W, halogen lamp, adjustable brightness

Name	Sort/Technique parameter	NO.
Eyepiece	Wide field eyepiece WF10X(Φ18mm)	1041010
	Wide field eyepiece WF16X(Φ11mm)	1051016
	Dividing eyepiece 10X(Φ18mm) 0.10mm/Div	1121010
Objective	PL L 20X/0.40 Infinity plan achromatic objectives with long working distance (no cover glass)	2830120
Nosepiece	Quintuple Backward ball bearing inner locating	032002
Filter	Green filter	115002
	Yellow filter	115003
CCD adapter	0.4X	810001
	0.5X	810004
	1X	810002
	0.5X with dividing 0.1mm/Div	810003
Photo unit	2.5X/4X Change over photograph attachment with 10X viewing eyepiece	840001
	4X Focusing photograph attachment	840002



B1-220ASC

Accessories For Microscope Applications

Phase Contrast

Phase contrast provides clear contrast of specimen without dying and therefore useful for observing alive or transparent specimens.



By simply rotating the turret, the condenser can be set for brightfield and phase contrast microscopy. It can be used with 10x, 20x, 40x and 100x phase objectives. Simple plug in phase ring is also available for 10x, 20x and 40x phase objectives.



Polarizing

Polarizing - special polarizing equipment available with polarizer, analyzer and an optional pol specimen stage enable pol microscopy as Geology, Mineralogy etc.



Darkfield

Darkfield central stop enables darkfield observation at 4x through 40x when the attachment is mounted on the brightfield condenser bottom section.

Kohler Illumination
Kohler Illumination which is centerable and can be ordered as option.



B1-Series, Biological Microscope

The MRC BI-Series Biological Microscopes with its standard features are designed for school applications. This system is for use in laboratories/ clinics, research facilities and medical schools. The modern and ergonomic design distinguishes itself from the others. Its affordable price and excellent quality give you the best value for your money.

Head

There are five kinds of head for your choice, which are 360° rotating around its vertical axis. Two binocular heads are available, with standard 45° inclined and optional 30° inclined, providing adequate choices for your best viewing comfort. Also, diopter rings on both tubes are a standard feature to facilitate compensation for eye acuity. Graduated interpupillary distance adjustment is from 54mm to 76mm. Also, there are monocular, dual teaching and trinocular head available for selection.

Mechanical Stage

Built-in ball bearings mechanical stage provides a travel range of 76mm X 50mm in the X and Y direction respectively with graduations reading up to 0.1 mm for accurate positioning of specimen.

Coaxial Coarse and Fine Focusing Knobs

The precision Focusing mechanism is designed for frequent use and also provides a smooth adjustment of focus. The coarse focus is with adjustable tension device.

Condenser

The extremely efficient, removable N.A. 1.25 abbe condenser for brighter illumination level, and an iris diaphragm for resolution and contrast control.

Illuminator

A standard halogen lamp 1 2V/20W with the intensity control system is used, providing an even and bright illumination for all magnifications. Kohler illumination can be ordered as option which is centerable for advanced and special applications.

Objectives:

A full range of achromatic (A-10X, A-40XR and A-100XR oil) & plan achromatic super contrast (Plan ASC4X, Plan ASC10X, Plan ASC40XR, and Plan ASC100XR oil) objectives in the BI series provide you with superior optical quality. A new device for anti-fungus is available, this effect can last for more than three years.



	Magnification	Model	N.A.
High performance Achromatic	PL4X	SG01.S01211	0.1
	A10X	SG01.S02211	0.25
	A20X	SG01.S03211	0.45
	A40X	SG01.S04211	0.65
	A60X	SG01.S05211	0.85
	A100X	SG01.S06211	1.25
Ultra high performance Plan Achromatic Super Contrast	Plan ASC4X	SG01.S01217	0.1
	Plan ASC10X	SG01.S02217	0.25
	Plan ASC40X	SG01.S04217	0.65
	Plan ASC100X	SG01.S06217	1.25

**DMBA210, Basic Digital Biological Microscope**

The DMBA210 Digital is designed for both educational and teaching environments delivering a new higher level of optical performance.

Description:

The new DMBA210 series is setting a new standard in microscope performance through improvements both in optical and mechanical features. Designed to be used in Educational Life Science, Medical as well as a variety of biological applications, this new microscope is built around Mrc's complete understanding of the daily demands placed on the standard educational microscope.

Student proof features together with a new generation of EF-N Plan Achromatic objectives provide a fully corrected intermediate image for crisp and clear visual and digital results. The DMBA210 is a robust student instrument that brings professional, repeatable image quality results to all of its intended applications. The DMBA210 Digital is a Digital version of the DMBA210 that features a built-in imaging head with 3.0MP streaming live output through USB2.0 connections.

Model	DMBA210		
Observation Tubes	Ergonomic 30 degree viewing angle		
	55-75mm interpupillary distance		
	Large field of view with 18mm or 20mm options		
	Built-in Digital with 20/80 split and 3.0MP imaging sensor delivering high-resolution streaming images through a USB2.0 connection		
Eyepieces	N-WF 10x/18mm		
	N-WF 10x/20mm		
	N-WF 15x/13.3mm		
	N-WF 12.5x/16mm		
Objectives			
	Magnification	N.A.	W.D (mm)
	EF-N Plan 4x	0.1	6.3
	EF-N Plan 10x	0.25	4.4
	EF-N Plan 20x	0.4	4.66
	EF-N Plan 40x	0.65	0.35
	EF-N Plan 60x	0.85	0.13
	EF-N Plan 100x	1.25	0.13
	EF-N Plan Phase 10x	0.25	4.4
	EF-N Plan Phase 40x	0.65	0.35
Illumination Options	6V/30W Halogen		
	3W LED		
	Mirror		
Condenser	Abbe 1.25NA with slot for accessories and condenser lock available		
Stage	Hard Coated Mechanical Stage with 76x30mm travel range		
	Left or Right Stage drive available		
Other Options	Simple Phase Contrast 10x and 40x sliders for condenser		
	Darkfield slider for condenser		
	Simple Polarisation with analyser and polarizer		

Features:

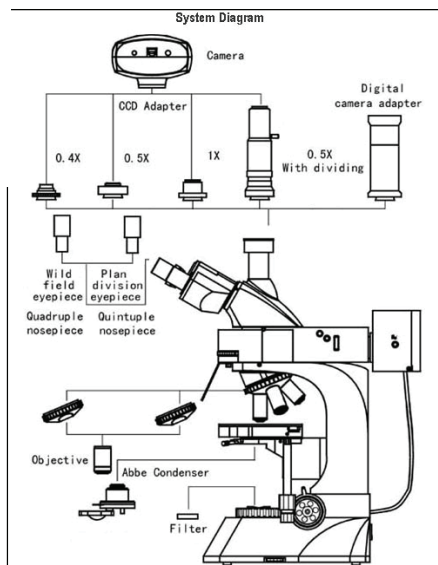
Requires a USB2.0 connection • Windows XP, Vista or OSX • Intel Centrino Recommended • Mrc Images Plus 2.0 software for PC and Mac (OSX).



L3201LED

Features:

- Adopt infinity optical system and modularization function design.
- Equipped with infinity plan achromatic fluorescent objectives, enable obtain more clearer and brighter image.
- Wide-field plan eyepieces: field number $\Phi 22\text{mm}$.
- Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: $2\mu\text{m}$
- Transmitted illumination: 3W high brightness white LED, brightness adjustable.
- Epi-illumination: 3W high brightness monochromatic LED, enable changing for different wave length LED, but the brightness can't be adjustable.
- Trinocular can be observation for eyepieces and micro photography in 100% light flux, suits for low illuminance micro photography.
- Wide voltage range power supply (85-265V 50/60Hz).

**L3201LED EPI-Fluorescent Microscope**

L3201LED Epi-fluorescent microscope is used for fluorescence microscopy and transmitted field observation. It is equipped with no magnification spherochromatic aberration infinity plan achromatic fluorescent objectives and wide field eyepieces, has clear picture and wide view field. The transmitted and epi-fluorescent illumination light source are high power & brightness LED, but power consumption is lower and use life longer, very good radiating heat effect. Safely and comfortably using the instrument, the cost of use and maintenance are more lower. It is the ideal instrument in biology, cytology, oncology, genetics, immunology etc. It also can be used in scientific research, universities, medical treatment, epidemic prevention etc.

Standard Configuration:

Model	L3201LED
Objectives	Infinity plan achromatic objectives
	PL 4X/0.10 (Work distance) : 19.8mm
	PL 10X/0.25 (Work distance) : 5.0 mm
	PL FL20X/0.65 (spring) Work distance : 0.70 mm
	PLF L40X/0.85 (spring) Work distance : 0.42 mm
	PL 100X/1.25(Spring, oil) Work distance : 0.36mm
Eyepieces tube	Trinocular (Inclination of 30°)
Epi-fluorescent illumination system	3W high brightness LED. Enable selecting monochromatic or bichromatic LED for light source, every monochromatic LED wave band: Green (520nm - 530nm) Blue(460nm - 470nm)
	Fluorescence filters: B(Blue) and G(Green)
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: $2\mu\text{m}$
Nosepiece	Quadruple(Backward ball bearing inner locating)
Stage	Double layer mechanical (Size: 210mmX140mm, movingrange: 75mmX50mm)
Transmitted illumination system	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for LED illumination and integrated field diaphragm
	3W high brightness white LED, brightness adjustable

Optional accessories:

Name	Sort/Technique parameter	NO.
Eyepiece	Dividing eyepiece(field number:22mm) 0.10mm/Div	1122010
Objective	Infinity plan achromatic objective	
	PL 60X/0.80 Work distance : 0.46 mm	2060160
Nosepiece	Quintuple(Backward ball bearing inner locating)	032002
Filter	Green filter	115002
	Yellow filter	115003
LED	390nm~400nm Violet (390nm~400nm)	-
	360nm~370nm Ultraviolet (360nm~370nm)	-
Fluorescent filters	V(Violet)	-
	UV(Ultraviolet)	-
CCD adapter	0.4X	810001
	0.5X	810004
	1X	810002
	0.5X with dividing 0.1mm/Div	810003
Camera	2DV-1 (With USB & video output)	800001
	DV-2 (With USB output)	800003
	DV-3 (With video output)	800005
Digital camera adapter	CANON(EF) NIKON(F)	820001



AE31

The Light Source

The Koehler illumination system with a 6V-30W Quartz halogen lamp provides bright, even illumination at any magnification. The "only one in its class" centerable lamp is housed externally and has an externally operated mechanism for control of all facets of illumination. A segmented illumination intensity indicator is ideally located for easy viewing.

Specifications:

	AE30	AE31
Optical system	CCIS (Colour corrected infinity optical system). Parfocal distance: 45mm	
Observation Tubes	Siedentopf type binocular tube	Siedentopf type trinocular tube (light distribution, bino/photo: 1 00/0 or 0/100)
	Inclination	
	45 degrees	45 degrees
	Interpupillary distance	
	50-75mm	50-75mm
	Eyepoint height	
	380mm from table	400mm from table
Eyepieces	Widefield High Eyepoint WF PL 10X (FN 22) with diopter adjustment	
Nosepiece	Quintuple nosepiece, side facing type	
Plain stage	Stage size: 200 x 260mm. Stage height: 207mm from table.	
Focusing	Coaxial/via nosepiece up I down movement Coarse/fine movement - 42mm/0.2mm Min. fine reading Zprn. Adjustable coarse torque	
Illumination	6V-30W Quartz halogen centerable lamp is housed externally and has an externally operated device for all the elements of illumination with built-in heat absorbing filter & removable diffuser	
Condenser	ELWO N.A. 0.30 (WO. 72mm) Focusable LWO N.A. 0.50 (WO. 28mm) Focusable for objectives 4X to 40X	
Collector	Aspherically lenses with field diaphragm	

AE31, Inverted Microscope

MRC combines CCIS optics with innovative mechanical design, unrivalled versatility, ergonomics and optical excellence and brings you a new series of inverted microscopes.

Colour Corrected Infinity Optical System

The eels optics allows new accessories and functions to be incorporated into the AE30/31 inverted microscope.

The CCIS infinity design has succeeded in achieving longer working distance objectives with higher numerical apertures. This represents a significant development in optical performance and versatility.

The Microscope Stand

The design of the AE30/31 inverted microscopes optimally integrates all functions enabling effective ergonomics and maximum expandability.

Condenser Mount

The centerable condenser mount is height adjustable with rack and pinion and is dovetail mounted on an illuminating pillar with a clamp screw.

Standard & Optional Set Configuration

Specifications			Order No.	AE30	AE31
Eyepieces	Widefield High Eyepoint	WF PL 10X122 with diopter adjustment	SG02S0144	●	●
CCIS Infinity Objectives	LWD Phase	CCIS PL Ph10X	SG01S02291	●	●
		CCIS LWD PL Ph20X	SG01S03291	●	●
		CCIS LWD PL Ph40X	SG01S04291	○	○
	LWD Plan	CCIS PL4X	SG01S01241	●	●
		CCIS PL10X	SG01S02241	○	○
		CCIS LWD PL20X	SG01S03241	○	○
		CCIS LWD PL40X	SG01S04241	○	○
	CCIS LWD PL60X	SG01S05241	●	●	
Condenser	ELWD N.A. 0.30 (W.D. 72mm)		SG030401A	●	●
	LWD N.A. 0.5 (W.D. 28mm)		SG030701	○	○
Phase Slider	Centerable: Ph1, Ph3, One empty position		SW0123F8	●*	●*
	Non-centerable Ph1, Brightfield, Ph3(to be released)				
Phase Contrast Accessories	Phase Centering Telescope (030)		SG069993	●*	●*
Photo Adapters	Photo Adapter (requires one of the photo eyepieces below)		SP100294	-	○
	2.5X Photo eyepiece		SG02S1001	-	○
	4X Photo eyepiece		SG02S1101	-	○
Video Adapters	CCD adapter 0.65X		SP100384	-	○
	CCD adapter 1X		SP100350	-	○
Stage & Accessories	Glass stage insert		SP100301	●	●
	Metal stage insert		SW0199F9	●	●
	Auxiliary stages (paired set)		SW0123G3	○	○
	Universal attachable mechanical stage with well plate holders		SW010392	○	○
	35mm Petri dish holder		SP100303	○	○
	54mm Petri dish holder		SP100304	○	○
	65mm Petri dish holder		SP100302	○	○
Filters	Green interference (45mm diameter)		SG060747	●	●
	Blue filter (45mm diameter)		SG060727	●	●
	Ground glass (45mm diameter)		SG060729A	●	●
Allen Hex. Key	Two keys provided		SP070014	●*	●*
Notes: ● represents the standard accessories. ○ represents the optional accessories. * to be used with phase objectives.					



MIP6A, Metallurgical Microscope

MIP6A is the ideal tools for testing metal material, verifying the quality of casting and analyzing metallographic organization of the material metallized. It can be widely used in such as factories, schools and science research institutions for identifying and analyzing the microstructure of all kinds of metal and alloys. Note: in this table, "n" denotes a standard attachment, "m" denotes an optional accessory. Design change: To keep pace with technological advances, we have reserved the right to make design modifications & changes without notice.

Design Change: To keep pace with technological advances, we have reserved the right to make design modifications and changes without notice • Package dimension: 665mm x475mm x310mm • Net weight: 14kg • Gross weight: 19kg • ISO9001 Certification.

Standard Outfits:

Order No.	Item	Standard Outfits
	Main body	•
S09	Mechanical stage with a stroke of 75 by 50 & size of 180 by 55	•
EP10	Plan eyepiece 10 X -18	• •
EP12.5	Plan eyepiece 12. X -14	• •
EH5	Huygenian ocular 5 X -20	○ ○
EW10	Plan eyepiece 10 X -20	○ ○
Epr10b	Plan eyepiece 10 X -14	•
B-OAr4	Achromatic objective 4/0.10	
M-OAr10	Achromatic objective 10/0.25	
M-OSPr40	S-plan achromatic objective 40/0.65	
M-OAor100	Achromatic objective 100/1.25 oil	
B-OPr2.5	Plan achromatic objective 2.5/0.07	○
B-OPr4	Plan achromatic objective 4/0.10	○
B-OPr10	Plan achromatic objective 10/0.25	•
B-OPr20	Plan achromatic objective 20/0.35	•
B-OPr40a	Plan achromatic objective 40/0.65	•
M-OSPor100	S-plan achromatic objective 100/1.25 oil	•
9J-6	Stage plate (1)	•
9J-7	Stage plate (2)	•
9J-8	Stage plate (3)	•
9J-9	Stage plate (4)	○
9J-11	Stage plate holder	•
TBR03	Rotating binocular head (45 degree)	•
LH01	Lamp housing	•
	Halogen lamp 6V30W	• •
PO02	Polarizer	•
PA01	Analyzer	•
CL02	Specimen clamps	•
9J.7	Photo adaptor	○
EPHp5	Photo eyepiece S5X	○
EPHp6.3	Photo eyepiece S6.3X	○
EPHp0.65	Video eyepiece 0.65X	○
	Metallurgical Microphotography equipments	○
	35mm DF camera with shutter release	○
SC03	Specimen holder	○
	Stage micrometer (division 0.01mm)	○



MIP101

MIP101, Metallurgical Microscope

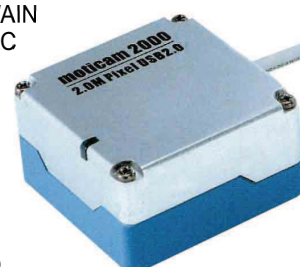
MIP101, the reflected light microscope is suitable to observe the microscopical surfaces of non-transparent object. It is equipped with large move range stage, vertical illumination, plan achromatic objectives and wide-field eyepieces. It provides clear and high-contrast picture, and with polarizer device. It is the ideal instrument in research work in metallography, mineralogy, precision engineering, electronics etc. It's suitable for scientific research, teaching demonstration in the colleges and factory.

Module & Spec.				
Eyepieces	Wide field	WF10X(Ø18mm)		●
		WF16X(Ø11mm)		○
	Plan dividing	10X (0.10mm/div)		○
Objectives	Plan achromatic (No cover glass)	Magnification/N.A	Work distance	
		PL5X/0.12	18.3	●
		PL10X/0.25	8.9	●
		PL25X/0.40	8.7	●
		PL40X/0.60	3.7	●
		PL50X/0.70	2.02	○
		PL80X0.80	0.96	●
Eyepieces tube	Trinocular	Compensation (inclination of 30°) Including analyzer		●
Stage	Size: 250x250mm can be move quickly. Move Range: 153x153mm			●
	Size: 274x274mm can be move quickly. Move Range: 203x203mm			
Nosepiece	Backward inner locating on ball bearing	Quintuple		●
CCD Camera Accessories	0.4X CCD Camera adapter			○
	CCD Camera adapter			○
	0.5X CCD Camera adapter with dividing			○
	CCD Camera			○
Illumination unit	Vertical illuminator 6V 20W halogen lamp, adjustable brightness, with polarizer			●
Digital Camera Adapter	CCD camera and accessories			○

Imaging Device	2.0 Megapixels 1/2"
Effective Pixels	1600 x 1200
Max. Still Image Resolution	2.0 Megapixels
Scanning System	Progressive Scan
Max. Frame Rate	10fps@Max. Res, 40 fps@Binning
Max. Data Transfer	480MB/Sec through USB2.0
Min. Illumination	3 Lux
Camera Power Supply	5V self-power through USB connection
Min. System Requirements	P3; 1GHz, 256MB RAM, 32MB Display, Win XP/2000, USB2.0 G4; 1GHz, 256MB RAM, OSX, USB2.0
Included Software	MRC Images Plus 2.0 for Windows & Macintosh (2 CD)
Calibration Slide	MRC Certified printed calibration slide

Live High Resolution Digital Camera

Moticam is compact and lightweight camera that attach to virtually any microscope through the eyepiece, eyetube or onto a trinocular mount • Easy plug & play USB2.0 Hi-Speed connection ensures that crisp and clear real-time images are displayed on the computer monitor turning any microscope into a Digital Microscope • Use this camera with your own software through a TWAIN interface or use the included MRC Images Plus 2.0 application software on both Windows and Macintosh systems • The complete set of included accessories gives these hi-resolution cameras the ability to be used in many different applications from Macro to Micro viewing.



MOTICAM 2000
201

STM-505 Series, Measuring Microscopes



STM-505



STM-505D

Applied fields:

It is an excellent measuring instrument for non-contact inspection and 2D precision measurement, it is applicable to measure the small parts in the metrology department and product line.

It can be installed with digimatic measure heads, CCD adapter, CCD camera, digital crossline generator, monitor to be a 2D vision system.

Model	STM-505	STM-505D
Measuring travel	50x50mm	
Working distance	67mm	
Glass stage size	96x96mm	
Maximum work piece height	115mm	
Maximum work piece weight	5kg	
Optical system	Magnification: 30x (15x eyepiece; 2 objective)	
	The eyepiece protractor is graduated in 1°	
	Minimum angel reading: 6'	
	Sighting device: cross-reticel	
Measuring heads&resolution	Mechanic & 0.002mm	Digital (164-162) & 0.001mm
Optional accessories	Rotary table with diameter: φ66mm	
	5x, 10x objective	
	CCD adapter	
	CCD camera	
	Digital cross line generator	
	monitor	
Power supply	AC110V/60Hz; 220V/50Hz	
Dimension	210x333x391mm	
Weight	13.5kg	



PM11-Series

PM11-Series, Portable Measuring Microscope

A brand new portable microscope with a wide field of view for general applications. Provides a bright, clear and undistorted image with high quality optics and a rack focusing system. Can be used in low light areas with a pen-light attachment and an alloy base. Widely applied to biology, archaeology, botany, forensics, geology, entomology horticulture, numismatics and philately, quality control, textiles and electronic industries. An excellent introductory microscope for a beginner.

	PM112231	PM113231	PM114231	PM117231
Magnification	20x	40x	50x	100x
Eyepiece	10x	10x	10x	10x
Objective	2x	4x	5x	10x
Numerical Aperture	0.05	0.10	0.12	0.25
Min. readable division	0.002" (0.05mm)	0.001" (0.025mm)	0.001" (0.025mm)	0.0004" (0.01mm)
Working distance	0.68" (17.2mm)	0.71" (18mm)	0.69" (17.6mm)	0.27" (6.93mm)
Focus range	0.65" (16.5mm)			
Battery	2 AAA Batteries			
Height of Microscope	5" (127mm)			



PM12-Series

PM12-Series, Portable Measuring Microscope With Penlight

Compact and light weight with a wide field of view.

It allows not only to provide magnified view of fine pattern and contour of objects, but also to measure length and compare dimensions by using a scale included in the eyepiece.

It is useful not only for the general observation but also for improving accuracy in precision machining and securing uniform quality in the inspection process. The pen illumination system provides a high intensity source but is removable if not needed.

	PM121021	PM121041	PM121061	PM121101
Magnification	20x	40x	60x	100x
Eyepiece	10x	10x	10x	10x
Objective	2x	4x	6x	10x
Numerical Aperture	0.05	0.10	0.15	0.25
Min. readable division	0.005" (0.1mm)	0.002" (0.05mm)	0.0012" (0.02mm)	0.0005" (0.01mm)
Working distance	0.63" (16mm)	0.59" (15mm)	0.39" (10mm)	0.22" (5.5mm)
Focus range	1.42" (36mm)			
Battery	2 AAA Batteries			
Height of Microscope	7.4" (188mm)			



AMP3000

AMP3000, Surgical Microscope

MRC AMP3000 series Surgical Microscopes offer outstanding optical performance with brilliant apochromatic optics and excellent ergonomics. It brings high performance, reliability. The ergonomic design of the microscope gives precise,

fatigue-free operation, with brilliant three-dimensional images at a large depth of focus. It is suitable to be used as Dental and ENT surgical microscope especially.



Features:

- Ergonomic hanging Counterbalanced pantographic arm design allows you to sit straight, which helps to eliminate back and neck pain.
- Optical head can be folded down to the arm at a highest position. In that way you will have a clear and free working area when you don't use microscope.
- Objective lens 200mm & 250mm with fine focusing adjustment knob.
- Two 150W Halogen bulbs with through the lens coaxial lighting and "change on the fly" lamp selector.
- **Should a lamp fail during an examination, this feature allows a quick change from one lamp to another resulting in an uninterrupted procedure.
- Infinity corrected optical system / coaxial illumination. Fiber optic illumination system with brightness adjustment knob. The knob is just over the optical head. It is very convenient to adjust the brightness.
- Built-in orange filter and green filter. You can select the filters by a knob located at the same place of the fiber optic cable which is connected to the back of optical head.
- Easily maneuverable optical head with tension control knobs and 2 handles (One front handle is optional). The optical head can be stopped at any position in the moving range.
- A special switch is fitted into the arm. The lamp will keep "on" when the optical head moves in normal working range and the lamp will turn off automatically while the optical head moves out of normal working range.
- An integrated 1/3" CCD video camera is available for some models.

Specifications:

- Either 45° inclined or 0°-180° indinable binocular head for Dental surgery or Straight binocular head for ENT surgery.
- 12.5x118mm High Eye-point Wide-Field eyepieces.
- Range of Pupillary distance: 50mm to 70mm.
- Range of the Diopter of Eyepiece: +/- 70.
- 250mm apochromatic objective lens.
- Magnification: 5-step, Total magnification indicator 0.4=3.44x, 0.6=5.36x, 1=8.48x, 1.6=13.6x, 2.5=21.2X.
- Diameter of object field: 8.3mm to 51.9mm.
- Arms: First big arm, 500mm in length can be rotated 360°. Second small arm, 600mm in length with movement +/- 300mm, can be rotated +/- 150°. Third angled arm can be 3-D movement.
- Height: 1750mm.
- Base size: 610mm X 600mm.
- Two 15V/150W Halogen Lamps are manually changeable by a level.
- Maximum Object Illumination: 30,000 Lx.
- Built-in Orange filter and Green filter changed by a knob.
- Power supply: 220V/50Hz or 110V/60Hz.

Optional Accessories:

AM-E10x: 10x eyepiece
 AM-E16x: 16x eyepiece
 AM-Lens: Objective Lens 200mm, 300mm, 350mm, 400mm
 AM-BS : Beam Splitter
 AM-CA : Video (CCO Camera) Adapter
 AM-DA : Digital Camera Adapter
 Microscope Rotation Ring System
 Wall Mount System
 Ceiling Mount System
 Fixed Mount System
 CCD Video Cameras & Monitors.



AMP6000

Features:

- 12.5x High Eye-point Wide-Field eyepieces with diopter locks & fold down eyecups.
The range of the Diopter of Eyepiece: +/- 6D.
- 250mm objective lens with objective protector.
- The range of pupillary distance: 50mm to 75mm.
- 3-Step Magnifications (5x, 8x, 12.7x), 5-Step Magnifications (3.2x, 5x, 8x, 12.7x, 20x) or Magnification (3.2x-20x) with standard 12.5x eye piece & 250mm objective lens.
- Observation field from 42mm to 16mm for 3-Step, from 65mm to 10mm for 5-Step & from 65mm to 10mm for Continuous Zoom.
- Optional magnification are available by combining eyepiece 10x, 16x or 20x & objective Lens 100mm, 175mm, 200mm, 300mm, 350mm or 400mm.
- Infinity corrected optical system/ coaxial illumination.
- Fiber optic illumination system with 12V/150W Halogen illumination and built-in orange filter.
- Object Brightness: 38,000.00 Lx Min.
- Manual focusing control or Motorized focusing with foot control with adjustable Focus Range of 30mm.
- Motorized focusing speed: 2mm/s Max.
- Counterbalanced pantographic arm.
- Easily maneuverable optical head with tension control knobs and 2 handles.
- Microscope body can be rotated 315° when casters are fixed.
- AM-P6000D series Dental Microscope comes with 31 inches post and AM-P6000E series ENT Microscope comes with 41 inches post.

AMP6000, Surgical Microscope

MRC is proud to offer AMP6000 series surgical microscopes. It is a light weight and portable surgical microscope suitable for almost all working situation, especially in a small space. The lenses inside the microscope are made of Schott" Optical Glass imported from Germany, which offers excellent optic feature, such as high resolution, long depth of field, etc. It brings high performance, reliability.

The ergonomic design of the microscope gives precise, fatigue-free operation, with brilliant three-dimensional images at a large depth of focus. It is suitable to be used as Dental and ENT surgical microscope especially.

MOTICAM Cameras

MOTICAM 1000

MOTICAM 1000

- No pixelation when used with a projector.
- Crisp & Clear images, great for Interactive White boards.
- Used in Schools, Universities and Laboratories.

1280x1024
12mm



MOTICAM 2000

MOTICAM 2000

- Live 2 Megapixel solution in small metal casing.
- Live Scale-Bar and Scale-Cross.
- Includes additional Eyetube adapter.

1600x1200
12mm



MOTICAM 2300

MOTICAM 2300

- 3 Megapixel Live Resolution with advanced controls.
- May be used for most bright Fluorescence Applications.
- Live Scale-Bar and Scale-Cross.

2048x1536
16mm



MOTICAM 2500

MOTICAM 2500

- 5 Megapixel Live Resolution with enhanced clarity.
- Affordable documentation solution.
- Live Scale-Bar, Grid and Scale-Cross.

2592x1944
12mm



Motic Images Plus 2.0
PC & OSX



USB 2.0



28mm, 30mm,
34mm, 35mm

For more details see page 209



COL-1320, Colposcope

Features:

- Hand polished optics for exceptional clarity.
- Individually adjustable binocular optics for true stereoscopic view.
- Optical measuring circles for precise measurements.
- Clear, bright LED light source that is longer lasting, gives more sure color balance, and is cooler to the touch than the standard halogen light source.
- Light intensity 6.5V /10,000 LUX.
- Focal length: 300mm.
- Magnification: 15x, 7.5x, and 3.75x.
- Field of View: 7.74mm, 15.5mm, 30.93mm.
- Depth of Field: 3mm, 4mm, 22mm.
- Smooth adjustable controls for gross and fine focus
- Optic Angle of binocular head is 45°.
- Universal Teflon ball joint never has to be tightened or adjusted & it gives you a fluid 360° motion for gross focus.
- Roller base for easy transport.
- Space saving small footprint: length is 14" and width is 12".
- Clutter reducing internal power cable.
- Working height: 33" to 49".
- One piece shipplaq that puts you in operation within minutes of opening the box (no assembly/installation necessary).
- Comes with color instruction booklet, dust cover to limit wear and tear, and two extra fuses.

MRC is proud to offer the COL-3000 Series Colposcopes. The lenses inside these colposcopes are made by Schott® Optical Glass imported from Germany. which offers excellent optic feature. such as high resolution. long depth of field. etc.



COL-3300, Colposcope

Features:

- Smooth three-step turret magnification changer.
- 300mm working distance objective lens offering 2.7x, 6.7x, and 16.7x magnifications. Optional magnifications/objective lens combinations are available.
- Widefield 12.5x eyepieces with diopter locks and fold-down rubber eyecups for eyeglass wearers.
- Straight binocular head F=160.
- Light Intensity on object plane: 38,000.00 Lux. Min.
- Fan cooled, **dual-port variable fiber optic coaxial illumination with 15V/150W lamp.
- Maximum height from floor to objective lens: 1200mm.
- Minimum height from floor to objective lens: 1050mm.
- Green filter in selector knob.
- Small diameter base on roller castors with adjustable vertical post height.
- Spare lamp, dust cover and instruction manual.

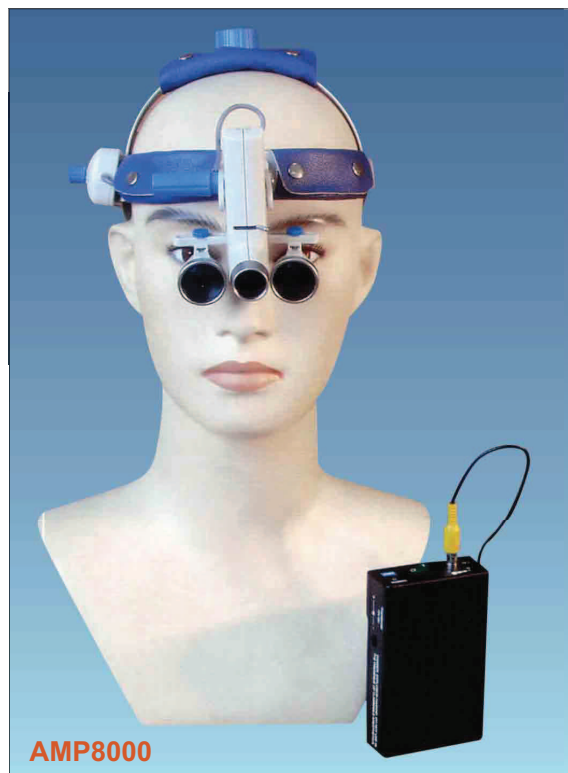
**should a lamp fail during an examination, the dual-port feature allows a quick change from one lamp to another resulting in an uninterrupted procedure.

**COL-3500, Colposcope****Features:**

- Smooth five-step turret magnification changer.
 - 300mm working distance objective lens offering 2.7x, 4.2x, 6.7x, 10.7x, and 16.7x magnifications.
 - Optional magnifications/objective lens combinations are available.
 - Widefield 12.5x eyepieces with diopter locks and fold-down rubber eyecups for eyeglass wearers.
 - Straight binocular head F=160.
 - Light Intensity on object plane: 38,000.00 Lux Min.
 - Fan cooled, **dual-port variable fiber optic coaxial illumination with 15V/150W lamp.
- **should a lamp fail during an examination, the dual-port feature allows a quick change from one lamp to another resulting in an uninterrupted procedure.
- Maximum height from floor to objective lens: 1200mm.
 - Minimum height from floor to objective lens: 800mm.
 - Overall distance from the column to the objective lens: 1050mm.
 - Green filter with selector knob.
 - Spare lamp, dust cover and instruction manual.

**COL-3900, Colposcope****Features:**

- Continuous zoom magnification system from 2.2x through i2.9x.
 - 300mm working distance objective lens offering continuous zoom magnifications from 2.2x to i2.9x.
 - Optional magnifications/objective lens combinations are available.
 - Widefield i2.5x eyepieces with diopter locks and fold-down rubber eyecups for eyeglass wearers.
 - Straight binocular head F=i60.
 - Light Intensity on object plane: 38,000.00 Lux Min.
 - Fan cooled, **dual-port variable fiber optic coaxial illumination with i5V i50W lamp .
- **should a lamp fail during an examination, the dual-port feature allows a quick change.
- Maximum height from floor to objective lens: i200mm.
 - Minimum height from floor to objective lens: 800mm.
 - Overall distance from the column to the objective lens: i050mm.
 - Green filter with selector knob.
 - Spare lamp, dust cover and instruction manual.



AMP8000, LED Heading

AMP8000 brings you the most advanced lighting technology.

Our new LED headlight provides cool, bright, white light for procedures and examinations

The LED headlight is more than twice as bright as other standard LED and conventional headlights.

When you need well-defined illumination - without the heat of traditional halogen headlight - look at our new LED headlights providing superior quality and reliability.

Features:

- Light source: our LED lamp without the heat of traditional halogen headlight. with a color temperature of 6000 kelvin, this light supplies bright, white, shadow-free light allowing the doctor to see tissue characteristics without distortion.
- Enjoy the flexibility of operating the headlight by the use of the rechargeable lithium battery, without the use of direct power source.
It is one of the most comfortable lightweight headlight and suitable for all kinds of surgery.
- The headlight could be used when it is charging.
- With low-battery indicator light.
- Smart design, convenient for mobile diagnosis.

11/12
 Australian Distributors
 Importers & Manufacturers
 www.chromalytic.net.au

CHROMALYTIC +61(0)3 9762 2034
 ECHNOLOGY Pty Ltd

Optical specifications		
Illumination light spot at 420mm distance (with iris diaphragm)		20-100mm
Illumination in 250mm working distance		≥25000lx
Adjustable range		
Fluctuation distance		12.5mm
Angle		Range vertical ±25°
Weight		
Head lamp (excluding head band)		70g
Electrical Specifications		
Illumination source		Extremely bright light, 3W LED, life 20000 hours, continuous burn, does not need to change the LED lamp
Battery		7.2V Lithium battery
Battery run time		Not less than 2.5 hours continuous run time on a fully charged battery
Voltage		220V AC/110V AC
Maximum input power		15W
Electrical safety standard		GB9706. 1, Class II type BF equipment
Environment requirements		
Use condition	Environment temperature	+10°C~+40°C
	Relative humidity	30%~75%
	Atmospheric pressure	700hPa~1060hPa
Shipping and stock	Environment temperature	-40°C~+55°C
	Age relative humidity	10%~90%
	Atmospheric pressure	500hPa~1060hPa



MOTICAM 1000

MOTICAM 1000

- No pixelation when used with a projector.
- Crisp & Clear images, great for Interactive White boards.
- Used in Schools, Universities and Laboratories.

1280x1024
12mm



MOTICAM 2300

MOTICAM 2300

- 3 Megapixel Live Resolution with advanced controls.
- May be used for most bright Fluorescence Applications.
- Live Scale-Bar and Scale-Cross.

2048x1536
16mm



MOTICAM 2000

MOTICAM 2000

- Live 2 Megapixel solution in small metal casing.
- Live Scale-Bar and Scale-Cross.
- Includes additional Eyetube adapter.

1600x1200
12mm



MOTICAM 2500

MOTICAM 2500

- 5 Megapixel Live Resolution with enhanced clarity.
- Affordable documentation solution.
- Live Scale-Bar, Grid and Scale-Cross.

2592x1944
12mm



Motic Images Plus 2.0
PC & OSX



USB 2.0



28mm, 30mm,
34mm, 35mm

Software
Included

MOTICAM-PRO feature a 4 frame buffer as well as on-board image processing with the built-in Schott BG 40 bandpass filter further ensuring high-quality imaging. The Moticam Pro also features an external hardware trigger port (TTL) which can be used to trigger the camera or have the camera trigger an external device.



Model	252A	205A	205C	285A	285C
Colour/Monochrome	Color	Color	Monochrome	Color	Monochrome
Resolution	2080x1542	1360x1024	1360x1024	1360x1024	1360x1024
Max. Frame Rate of full Resolution	4.28fps	7.5fps	7.5fps	15fps	15fps
Image Sensor	ICX2520AQ	ICX2050AK	ICX205AL	ICX285AQ	ICX285AL
Sensor Size	1/1.8	1/2	1/2	2/3	2/3
Pixel Size	3.45µ x 3.45µ	4.65µ x 4.65µ	4.65µ x 4.65µ	6.45µ x 6.45µ	6.45µ x 6.45µ
ADC Converter	12 bit				
Image Memory	4 frame buffer				
Shutter Settings	125ms-60sec				





BR200

Applications:

- Home inspection: Inspect in walls for mold, insect infestation, electrical wire or water pipe location.
- HVAC: Inspect inside ducts, behind motors and compressors.
- Automotive: View inside or around engines and transmissions.
- Government: Safety and security inspections.
- Industrial: Inspect weld integrity, process equipment, gears, molding machines.
- Aerospace: Aircraft inspections for contamination, debris, cracks or other damage.

Complete with 4 AA batteries, microSD memory card with SD adaptor, USB cable, extension tools (mirror, hook, magnet), video interconnect cable, AC adaptor (100-240V, 50/60Hz), magnetic base stand, and storage case.

BR200, Video Boreoscope/Wireless Inspection Camera

Features: Captured video with date/time stamp can be played back on the wireless monitor or on any monitor with a video input jack • Video and images can also be transferred to your PC via the microSD card (with included SD adaptor) or USB cable (included) and viewed using Windows®Multimedia Player • NTSC or PAL operation with menus in 10 languages: English, Chinese, German, French, Spanish, Portuguese, Italian, Japanese, Dutch, & Russian • Mini water-proof (IP67) camera for high resolution viewing • Two bright LED lamps with dimmer to illuminate viewed object • Glare-free close-up field of view • 39" (1m) flexible gooseneck retains configured shape.

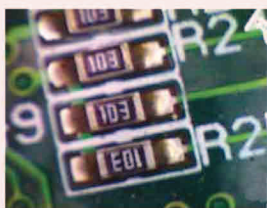
Model	BR200
Pixels	712x486 (NTSC)/704x576 (PAL)
Transmission Frequency	2.4GHz
Modulation Type	FM
Bandwidth	18MHz
Transmission Range	32ft (10m) unobstructed view
Viewing direction	Viewing Angle 50°
Viewing distance	5.9" to 9.8" (15 to 25cm)
Shaft diameter	0.66" (17mm)
Minimum bend radius	2.36" (60mm)
Working length	39" (1m)
Camera Dimensions	7.3 x 5.7 x 1.6" (186 x 145 x 41mm)
Weight	18.7oz (530g)
Monitor	
LCD Screen Type	3.5" TFT
Pixels	320 x 240
Video Output Level	0.9 to 1.3V@75Ω
Frame Rate	10, 15, 20, 25, 30FPS
Video Resolution	960 x 240 (avi format)
Image Resolution	640x 480 (jpeg format)
Monitor Dimensions	3.9 x 2.7 x 1" (100 x 70 x 25mm)
Operating/Charge Time	1.5 hours/3 hours
Weight	4.9oz (140g)



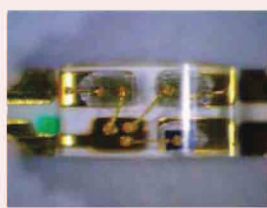
MC108

MC108, Digital Mini Microscope**Features:**

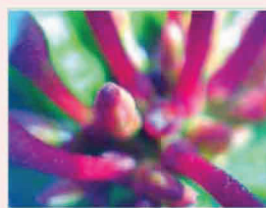
- 7x to 108x magnification range, Optical Zoom: 7x to 27x, Digital Zoom: 4x.
- Four white LEDs with adjustable brightness for object illumination.
- 5 Image Effect modes: Normal, Gray, Inverse, Emboss, & Dual Window View.
- Dual Window View simultaneously displays the magnified image next to the original image.
- Real-time imaging on your PC screen via USB interface and included software.
- Includes microscope stand for hands-free viewing.
- Dimensions: 4.7x2.2x0.8" (120x56x20mm). Weight: 2.5oz (70g) without batteries.
- Complete with stand, three AAA Ni-MH rechargeable batteries, 100 to 240VAC (50/60Hz) adaptor/charger, Windows® compatible PC software with mini USB cable, cleaning cloth, and wrist strap.



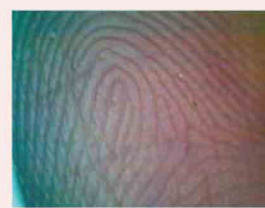
PC board inspection



Soldering check



Plant research



Fingerprint verification



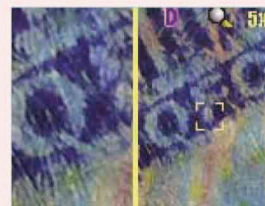
Fabric inspection



Analysis of printing



Check for counterfeit money



Dual Window view simultaneously displays magnified image next to the original image

MPC Series, Research Micro Pipettes

Pipettes are having smart soft nger-grip of Thermoplastic Elastomer (TPE) ensuring.

- Minimum transfer of body heat to the pipette resulting in high accuracy even on continuous use
- Minimum fatigue of hands & ngers
- Reduced thumb stress
- Easy identification through color coding
- Very attractive look.



1. Soft Comfort - The smooth plunger mechanism offers least resistance for ease of effortless accuracy.
2. Comfortable Finger Rest - for resting of the pipette on either hand.
3. Tip ejector - for smooth ejection of the tip preventing any contamination.
4. Ergonomy - Best in-hand grip for comfort.
5. Precise setting - of the selected volume ensures accurate dispensing of the liquid.
6. Light weight - of the pipette makes your job less tiresome & improves ecieny.
7. Ideal Shaft Shape - Helps reach contents in narrow or deep tubes.
8. Durable Tip Cone - offers highest resistance to shocks and chemical corrosion.
9. Fully autoclavable option.

Variable Volume Micropipettes

Model	Volume Range	Increment	Inaccuracy(±)%	Imprecision(±)%
MPC-2.5	0.1 - 2.5µl	0.01µl	12	6
			2.5	1.6
MPC-10	0.5 - 10µl	0.1µl	2.5	1.5
			1	0.8
MPC-50	5 - 50µl	0.5µl	2	2
			0.6	0.3
MPC-100	10 - 100µl	0.5µl	3	1.5
			0.8	0.15
MPC-1000	100 - 1000µl	5.0µl	2	0.7
			0.6	0.2
MPC-20	2 - 20µl	0.1µl	3	2
			0.9	0.4
MPC-200	20 - 200µl	0.1µl	2	0.8
			0.6	0.15
MPC-5000	500 - 5000µl	50.0µl	2	0.6
			0.5	0.2

* Add A for fully autoclavable.

Micropipette Stands

Model	Capacity
151-1-000013	4 Micropipettes
151-1-000014	6 Micropipettes

- Soft smart finger-grip of TPE.
- Manifold can rotate 3600 for easy right or left hand operation.
- Easily removable & fully autoclavable manifold.
- One hand tip ejection.
- Soft force tip loading and ejection.
- Consistent sample loading.
- Leak free sealing of tip.
- Attractive color coding.
- Compatible with most types of tips.
- Calibration report enclosed with every pipette.
- Fully autoclavable option.



Multichannel Micropipettes

Model	Vol. Range	Channel	Increment	Inaccuracy(±)%	Imprecision(±)%
MPC8-10	0.5 - 10µl	8	0.1	4	4
				1.5	1.5
MPC8-50	5 - 50µl	8	0.5	3	2
				1	0.7
MPC8-100	10 - 100µl	8	1	1.5	1.5
				1	0.5
MPC8-300	30 - 300µl	8	1	1.5	0.75
				0.8	0.25
MPC12-10	0.5 - 10µl	12	0.1	4	4
				1.5	1.5
MPC12-50	5 - 50µl	12	0.5	3	2
				1	0.7
MPC12-100	10 - 100µl	12	1	1.5	1.5
				1	0.5
MPC12-300	30 - 300µl	12	1	1.5	0.75
				0.8	0.25

* Add A for fully autoclavable.





PIP-Series

PIP Series, Smart Pipet Controllers

Powerful yet quiet pump • Soft grip push buttons
• Double safety valve • Autoclavable pipet cone.

- Can fill 25ml pipet under 4 seconds.
- Safety valve and hydrophobic filters provide double protection against fluid penetration.
- 2 different speed modes - High & Low along with Gravity drain.
- The pump speed can also be fine-tuned by varying finger pressure on operating knobs for better control of speed.
- Cadmium free environment friendly NiMH batteries.
- Batteries can be changed very easily by the user.
- The intelligent charger prevents over charging I heating of batteries.
- Low battery indicator.
- The specially designed Desktop Stand enables the PipetHelp to be charged while resting on it.
- The PipetHelp can hold the serological pipette while resting on Desktop Stand.



Ordering Information:

Model	Description
PIP-R	Red
PIP-B	Blue
PIP-O	Orange
PIP-G	Green

Accessories:

Model	Description
151-1-000001	Silicone pipet adaptor with safety valve
151-1-000002	Pipet cone- autoclavable - Red
151-1-000003	Pipet cone- autoclavable - Blue
151-1-000004	Pipet cone- autoclavable - Orange
151-1-000005	Pipet cone- autoclavable - Green
151-1-000006	PTFE membrane Filter Set, 0.20 11m (5pes)
151-1-000007	PTFE membrane Filter Set, 0.45 11m (5pes)
151-1-000008	Battery charger
151-1-000009	Adaptor for charger plug
151-1-000010	NiMH battery (set of two batteries)
151-1-000011	Wall mounting stand
151-1-000012	Desktop stand

Specifications:

Power	2 x 1.2 V 11000 mAh NiMH batteries
Battery Service Life	Eight hours continuous use
Battery Charging time	2 - 3 hours to charge fully
Volumetric Range	Plastic or Glass pipette from 0.1ml up to 200ml
Safety System	Replaceable hydrophobic 0.45 11m PTFE filter Safety check valve
Standard Accessory	Battery charger (UK plug) Desktop Stand Hydrophobic PTFE membrane filter 0.45 11m 1 Pc Hydrophobic PTFE membrane filter 0.20 11m 1 Pc Wall mounting stand with screw



Comfortable stress-free operating knob



Wall mounting stand with fixing screw



One hand operations



Desktop stand



Attractively color coded



PLRM-4

Specifications:Measurement Range: -180° to $+180^{\circ}$ Scale Value: 1° Vernier: $\pm 0.05^{\circ}$

Magnifier: 3X

Light Source: Sodium Lamp

Wavelength: 589.44nm

Tube Length: up to 200mm

Stable Time: 10 minutes

Power Requirements: 220V/50Hz

Dimensions: L500x W135x H330mm

Weight: 5kg

PLRM-4, Full-Circle Manual Polarimeter

PLRM-4 manual polarimeter is ideal for determining concentration levels of samples for applications in the medical, educational, pharmaceutical, and cosmetic industries etc.

Easy Measurement: The polarimeter with 589.44nm monochromatic sodium lamp. After powered on, the polarized light beam is immediately project on filter, polarizer etc. You can view the visual fields of brightness or shade through eyepiece. Put the sample tube in measuring field chamber. Rotate the vernier knob again, you can view equal brightness. Read the scale from magnifier that is measured value.

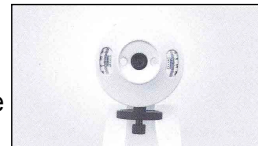
Specific Optical Rotation Measurement:

Specific optical rotation is constant of substance, you can measure it by 100mm glass tube when temperature of solution at 20°C .

Purity Measurement: The polarimeter is ideal for determining purity of sample. If you want to know its purity, you need only measure its the angle of rotation and calculate it.

Concentration Measurement: For some substance of known specific optical rotation, you can measure its the angle of rotation and calculate concentration according to formula.

International Sugar Scale: According to international sugar scale, put the 26 grams pure sugar in solution, The angle of rotation of solution is 34.626° . By the rules, you can calculate the purity of sugar.



Rotate the vernier knob till the visual field to equal brightness. (Zero point)



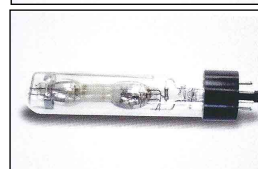
PLRS-5

PLRS-5, Semiautomatic Polarimeter

Introduction: **PLRS-5** semiautomatic polarimeter used to measure angle of rotation, specific optical rotation of optically active substance. You can calculate its purity, concentration and percentage by measured value.

Features: Microprocessor-Based • The angle of rotation is digitally displayed • Simple push-button adjustment of visual fields • Zero indicator light confirms accurate calibration.

Specification: Measuring Range: -180° to $+180^{\circ}$ • Accuracy: $\pm 0.02^{\circ}$ • Light Source: Sodium lamp • Optical Wavelengths: 589.44nm • Stable Time: 5 minutes • Tube Length: up to 200mm • Power Requirements: 220VAC/50Hz • Dimensions: 590(L)x255(W)x400(H)mm • Weight: 7kg.



PLRA-2

PLRA-2, Automatic Polarimeter

Introduction: **PLRA-2** automatic polarimeter is the basic scientific instrument used to measure angle of rotation, specific optical rotation of optically active substance.

Automatic Measurement: **PLRA-2** built-in auto-controlling system. Power on the polarimeter, the system will search for zero point automatically. You need only put the sample tube in measuring field chamber, the polarimeter will display the angle of rotation.

Auto-Judge Substance FDRM Levorotatory DR

Dextrorotatory: The polarimeter can auto-judge compound form levorotatory or dextrorotatory. If there is negative measures value, that means is levorotatory substance, if appearing positive measures value, it means is dextrorotatory substance.

Reproducibility: In experiment, you need test a sample solution three times or more to ensure the accuracy of the measured value. You can press [+] or [-] key and the polarimeter will test again. The polarimeter not only can test the angle of rotation of substance and but can calculate its purity, concentration and percentage.

**Specification:**Measuring Range: -45° to $+45^{\circ}$ Accuracy: $\pm 0.02^{\circ}$ Reproducibility: $\pm 0.01^{\circ}$ Resolution: 0.005 $^{\circ}$

Light Source: Sodium lamp

Optical Wavelengths: 589.44nm

Stable Time: 5 minutes

Tube Length: up to 200mm

Power Requirements: 220VAC/50Hz

Dimensions: 600(L)x300(W)x200(H)mm

Weight: 25kg.

PRESSURE METER

Model : PS-9302

ISO-9001, CE, IEC1010

FEATURES

- * Meter can cooperate with 2, 5, 10, 20, 50, 100, 400 bar sensor, new calibration are not necessary when change the new sensor .
- * 8 kind pressure units : bar, psi, Kg/cm² mm/Hg, inch/Hg, meter/H₂O, inch/H₂O, Atmosphere.
- * 4 pin DIN socket, 2 pins to provide DC 5 V exciting voltage .
- * Zero button.
- * Separate pressure sensor, easy operation. & remote measurement.
- * Records max. & min. readings.
- * Data Hold.
- * RS 232 PC serial interface.



PRESSURE METER

Model : PS-9302

FEATURES

* Meter can cooperate with 2, 5, 10, 20, 50, 100, 400 bar sensor, new calibration are not necessary when change the new sensor.	* Zero button on the front panel, easy adjust the zero value of pressure sensor.
* When change the new pressure sensor, just select pressure type (2, 5, 10, 20, 50, 100, 400 bar) on the front panel button. The sensor type will memorize into the circuit permanently by EEPROM.	* Push button gain adjustment, usage for calibration precisely if necessary.
* 8 kind pressure units (bar, psi, Kg/cm2 mm/Hg, inch/Hg, meter/H2O, inch/H2O, Atmosphere) select by push button on the front panel	* Separate pressure sensor, easy operation. & remote measurement.
* Optional full line pressure sensor (2, 5, 10, 20, 50, 100, 400 bar) are available.	* Microprocessor circuit assures maximum possible accuracy, provides special functions and features,
* Auto shut off saves battery life.	* Super large LCD display with contrast adjustment for best viewing angle.
* 4 pin DIN socket, 2 pins to provide DC 5 V exciting voltage (power supply) to pressure transducer, another two pins for accept transducer signal of 100mV full scale.	* Records maximum & minimum readings with recall.
	* Data Hold function for stored the desired value on display.
	* Built-in low battery indicator.
	* RS 232 PC serial interface, can match the personal computer used as the Data Logger, Pressure Recorder.... & other modern pressure measuring system.

GENERAL SPECIFICATIONS

Circuit	Microprocessor LSI circuit.	Power off	Auto shut off, saves battery life, or manual off by push button.
Display	61 mm x 34 mm supper large LCD display. 15 mm (0.6") digit size.	Sampling time	Approx. 0.8 second.
Display units	bar, psi, Kg/cm2, mm/Hg, inch/Hg, meter/H2O inch/H2O, Atmosphere.	Operating temperature	0 to 50 °C (32 to 122 °F).
Pressure transducer	Optional, exciting voltage DC 5V, Sensor max. range output is DC 100 mV.	Operating humidity	Less than 80% R.H.
Zero adjust	Push button on the front panel.	Power supply	006P DC 9V battery(heavy duty).
Span adjust	Push button gain adjustment, usage for calibration precisely if necessary.	Power current	Approx. DC 8.5 mA.
Transducer mV input signal	Approx 100 mV (Full Scale).	Weight	345 g/0.76 LB
Exciting output power supply	DC 5 V.	Dimension	180 x 72 x 32 mm (7.1 x 2.8 x 1.3 inch).
Data hold	By push button.	Accessories included	* Instruction manual..... 1 PC * Hard carrying case (CA-06)..... 1 PC
Data record	Record maximum & minimum readings.	Optional accessories	* Pressure sensor, PS100-xxBAR * Data acquisition software (Windows version), SW-U101-WIN * RS232 cable, UPCB-01
Data output	RS 232 PC serial interface.		

APPLICATIONS

* Measure Pneumatic Pressures.	* Hydraulic Servo controls	* Refrigeration
* Measure Automobile Engine Vacuum Pressures.	* Air conditioning	
* Pressure for Super Heat Measurements	* Food Processing	

ELECTRICAL SPECIFICATIONS

Sensor type	2 bar		5 bar		10 bar		20 bar		50 bar		100 bar		400 bar	
	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution
bar	2	0.002	5	0.005	10	0.01	20	0.02	50	0.05	100	0.1	400	0.5
psi	29	0.02	72.5	0.1	145	0.2	290	0.2	725	1	1450	2	5800	5
Kg/cm2	2.040	0.002	5.095	0.005	10.19	0.01	20.40	0.02	50.95	0.05	101.9	0.1	408	0.5
mm/Hg	1500	2	3750	5	7500	10	15000	20	37500	50	75000	100	300000	500
inch/Hg	59.05	0.05	147.6	0.1	295.2	0.2	590.5	0.5	1476	1	2952	2	11810	10
meter/H2O	20.40	0.02	50.95	0.05	101.9	0.1	204.0	0.2	509.5	0.5	1019	1	4075	5
inch/HF20	802	1	2006	2	4010	5	8020	10	20050	20	40100	50	160600	200
Atmosphere	1.974	0.002	4.935	0.005	9.87	0.01	19.74	0.02	49.35	0.05	98.7	0.1	394.5	0.5

PRESSURE SENSOR, Model : PS100-XXBAR

Description	* Optional, pressure sensor that cooperate with PS-9302. * Out put : 100 mV DC for full scale. * 4 pin DIN plug, 2 pins to accept DC 5 V exciting voltage(power supply) for pressure transducer, another two pins for output signal of 100mV full scale. Size : 30 mm dia. x 85 mm. Weight : 160 g. Pressure Port Connector : PS 1/4", 19 teeth per inch.
Model	2 bar sensor PS100-2BAR 5 bar sensor PS100-5BAR 10 bar sensor PS100-10BAR 20 bar sensor PS100-20BAR 50 bar sensor PS100-50BAR 100 bar sensor PS100-100BAR 400 bar sensor PS100-400BAR

* Appearance and specifications listed in this brochure are subject to change without notice.

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PRESSURE SENSOR

Model : PS100-xxBAR

ISO-9001, CE, IEC1010



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CHROMALYTIC +61(0)3 9762 2034
ECHnology Pty Ltd



PRESSURE TRANSDUCER

Model : PS100-xxBAR

SPECIFICATIONS		
Max capacity & model	<i>Max capacity</i>	<i>Model</i>
	2 BAR (29 PSI)	PS100-2BAR
	5 BAR (72.5 PSI)	PS100-5BAR
	10 BAR (145 PSI)	PS100-10BAR
	20 BAR (290 PSI)	PS100-20BAR
	50 BAR (725 PSI)	PS100-50BAR
	100 BAR (1450 PSI)	PS100-100BAR
	200 BAR (2900 PSI)	PS100-400BAR
Application	Optional pressure transducer for the pressure meter PS-9302	
Overload protection for the pressure sensor	150% max. capacity	
Supply voltage	DC 9V	
Transducer Port Connector	1/4" PS (per inch 19 teeth).	
Span	$\pm 1 \% \text{ F.S.}$ @ Within 10 °C to 40 °C . @ Linearity + Hysteresis + Repeatability	
Zero	$\pm 2 \% \text{ F.S.}$ @ Within 10 °C to 40 °C .	
Operating Temperature	0 °C to 60 °C (32 °F to 140 °F).	
Operating Humidity	Max. 80% RH.	
Output	Full capacity output = 100 mV DC	
Size	30 mm dia. x 85 mm.	
Weight	160 g.	
Cable length	1 meter.	
Wire Connection	4 pins standard DIN plug to cooperate the PS-9302 input socket. * 2 pins for 5V DC power supply. * 2 pins for 100 mV DC input signal.	



BT501J

BT501J, 0.005-10mL/min

Acceptable pump heads are JY10 & D61x. The pump provides flow rates from 0.005 to 10mL/min. It can realize speed adjusting and direction changing and has functions of prime and external start/stop. It features compact size & easy to operate.

Functions and Features:

- Applicable pump heads: JY10 and DGtx (10 rollers).
- Prime key for fast filling and emptying.
- Speed, start/ stop and direction can be controlled through membrane keypad or through external Control interface.
- Memory function, storing the running parameters automatically.
- Compact size, light weight and low power consumption.
- Membrane keypad, easy to operate.
- Good performance and low price.
- At normal lab conditions.



BT1002J

BT1002J, 0.0002-380mL/min

Acceptable pump heads for BT100-2J are YZ1515x, YZ2515x, YZII15, YZII25 DG-1 and DG-2. The pump provides flow rates from 0.0002 to 380 mL/min. The speed can be adjusted manually or automatically through external control. Store the running parameters automatically. Easy to operate.

Functions and Features:

- Applicable pump heads: YZ1515x, YZ2515x, YZII15, YZII25, DG-1, DG-2.
- Prime key for fast filling and emptying.
- Adjust speed manually or automatically through analog interface.
- Memory function, storing the running parameters automatically.
- Membrane keypad, easy to operate.
- Good performance and low price.
- At normal lab conditions.



BT3002J

BT3002J, 0.07-1140mL/min

Acceptable pump heads for BT3002J are VZ1515x, YZ2515x, YZII15, YZII25, BZ25. The pump delivers flow rates from 0.07 to 1140 mL/min. The speed can be adjusted manually or automatically through external control interface. Store the running parameter automatically. Easy to operate.

Functions and Features:

- Applicable pump heads: YZ1515x, YZ2515x, YZII15, YZII25, BZ25.
- Prime button for fast filling and emptying.
- Adjust speed manually or automatically through analog interface.
- Memory function, storing the running parameters automatically. Equipped with Longer Dispensing Controller for filling function.
- At normal lab conditions.

Model	BT501J	BT1002J	BT3002J
Speed	0.1 to 50.0 rpm, reversible	0.1 to 100 rpm, reversible	1 to 300 rpm, reversible
Speed precision	0.1 rpm		1 rpm
Speed control	Membrane keypad		10-turn potentiometer
Display	3-Digit LED displays current rpm		3-digit LED displays current speed
Communication interface	-	RS-485	-
External control	Start/stop & cw/ccw control	Start/stop, cw/ccw control, and speed control (0 to 5 V, 0 to 10 V, 4 to 20 mA and 0 - 10 KHz optional)	
Power supply	AC 220V $\pm 10\%$ 50/60 Hz (standard), AC 110V $\pm 10\%$ 50/60 Hz (optional)	AC 90-260V 50/60Hz	AC 220 V $\pm 10\%$ 50/60 Hz (standard), AC 110 V $\pm 10\%$ 50/60 Hz (optional)
Power consumption	< 10 W	< 30 W	< 35 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%		
Dimension (mm)	L176xW110xH115	L232xW142xH149	L227xW155xH171
IP rating	IP 31		
Drive weight	2.2kg	2.3kg	3.6kg



LEAD2, Flow Rate 0.01-350mL/min

The applicable pump heads for Lead2 are Lead1 5-48, Lead1 5-88, Lead1 5-24, Lead15-44 & max. 8 channels are available. The pump delivers flow rates from 0.01 to 350 mL/min. It has flow rates display & flow rates calibration functions. It also has functions of speed adjustment, start/stop, cw/ccw, prime (rinsing), tubing selection, 485 communication, analog control, etc.

Functions and Features:

Accept 4 special pump heads • Planetary gearbox is adopted in its pump heads. This changes the traditional driving methods of tubing pumps, decreases abrasion, prolongs tubing life and improves accuracy • **Display can switch between flow rates and speed** • **Calibration function for more accurate flow rates** • Computer control available through RS485 communication • Prime key for fast filling and emptying.

Model	LEAD2
Speed	1 to 100 rpm, reversible
Speed precision	0.1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x32 graphic LCD displays current running status
Analog interface	Start/stop and cw/ccw control, 0 to 5V, 0 to 10V, and 4 to 20mA speed Control
Communication	RS-485
Power supply	AC 220 V \pm 10% 50/60 Hz (standard), AC 110 V \pm 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L190xW162xH275
Drive weight	3.5kg
IP rating	IP 31



BT1001L, Flow Rate 0.05-500mL/min

The max. output torque of BT1001L drive is 2 Nm. Multi pump heads are available. The pump provides flow rates from 0.05 to 500 mL/min. 128x64 graphic LCD displays running menus and parameter setting menus. The flow rate & the speed (rpm) can be displayed in the same screen. The display interface is friendly. It has flow rate calibration function to make the flow rate more accurate. It has many control modes. The external control can be realized through standard external interface or RS485 communication interface.

Functions and Features:

Display can switch between flow rates & rpm • **Calibration capability for more accurate flow rate** • Graphic LCD together with rotary coded switch makes it friendly and easy to use • Higher torque to accept more pump heads and more channels • RS485 communication interface available. Offering communication protocol to customer and customizing software according to customer's requirements.

Model	BT1001L
Speed	1 to 100 rpm, reversible
Speed precision	0.1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x64 graphic LCD displays current running status
Analog interface	Start/stop and cw/ccw control, 0 to 5V, 0 to 10V, and 4 to 20mA speed Control
Communication	RS-485
Power supply	AC 220 V \pm 10% 50/60 Hz (standard), AC 110 V \pm 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L202xW160xH239
Drive weight	5.34 kg
IP rating	IP 31



BT1001F

BT1001F, Dispensing, 0.16-500mL/min

Applicable pump heads for BT100-1F are YZ1515x, YZ2515x, YZ1115, YZ1125 and D6-1, DG-2, DG-4. The pump delivers flow rates from 0.02 pL to 480 mL/min and dispensing volume is from 0.01 mL to 9900 mL. Combining 128*32 LCD display with membrane keypad and rotary coded switch makes the operation easy and prompt. The speed can be adjusted manually or automatically through external control interface.

Functions and Features: Acceptable pump heads: YZ1515x, YZ2515x, YZ1115, YZ1125 and OG-1, OG-2, DG-4 • Micro flow rates transferring: The smallest flow rate can reach 0.16 μ L/min • Back suction function: In

dispensing mode, the pump runs reversely after stopping to prevent the liquid from dripping • Operating mode: Membrane keypad & rotary coded switch • Speed control: The speed can be adjusted manually or automatically through external control interface • Display: LCD displays current running status • MAX key: For fast filling and emptying • Memory function: Storing the running parameters automatically • Calibration function: The flow rates and the dispensing volume can be calibrated to increase the accuracy • Communication function: Realize computer control through RS485 communication interface

Model	BT1001F
Flow rate	0.16 J IL/ min to 500 mL /min
Dispensing volume	0.01 mL to 9.99L
Speed	0.01rpm to 100.0rpm
Copy number	0 to 9999
Pause time	0.1 s to 99.90 min
Back suction time	0 to 99.9s
External control input interface	start/stop control, direction control, flow rates control (0-5V,0-10V,4-20mA,0-10KHz optional)
Output interface	start/stop, direction output and 0-10KHz frequency output (corresponding to 0 to 100.0 rpm) with insulating function
Communication	RS-485
Power	AC 100 - 240 V \pm 10% 50/60 Hz
Power consumption	< 40 W
Operating condition	Temperature 0 to 40°C
Relative humidity	< 80%
Dimensions (mm)	L292xW185xH180
Drive weight	3.8 kg
IP rating	IP31



BT3001F

BT3001F, Dispensing, 0.07-1140mL/min

The applicable pump treats for BT3001F are YZ1515x YZ2515x YZ1115 YZ1125 The pump delivers Flow rates from 0.07 to 1140 ml/mm 128 x 64 graphic LCD displays running menus and parameter Setting menus The display interfaces are friendly. It has many control modes. The external control can be realized through standard external control interface or 485 communication interface.

Functions and Features: Applicable pump heads YZ1515x YZ2515x, YZ1115, YZ1125 • Set pause time to realize dispensing and filling automatically • Display can switch between flow rates & rpm • Calibrate setting flow rates to acquire more accurate flow rates • RS485 communication interface available. Offering communication protocol to customer and customizing software according to customer's requirements.

Model	BT3001F
Speed	1 to 100 rpm, reversible
Speed precision	1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x64 graphic LCD displays flow rate speed or dispensing
Copy number	1 to 999
Dispense volume	0.1ml tp 99.9L
Pause time	1 to 999s
Back suction angel	0 to 360 18° increments
Analog interface	Start/stop and cw/ccw control, 0 to 5 V, 0 to 10 V, and 4 to 20 mA speed contro
Communication interface	RS-485
Power supply	AC 220 V \pm 10% 50/60 Hz (standard), AC 110 V \pm 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L202xW160xH239
Drive weight	4.3 kg
IP rating	IP 31



BT6002J

BT6002J, 0.07-3000mL/min

Suitable pump heads for BT6002J are YZ1515X, YZ2515X, YZ1115, YZ1125 and BZ25. It can deliver flow rates from 0.07 to 3000 mL/min and its speed can be adjusted manually or automatically through external control interface. BT6002J can realize dispensing function when it connects to a FK-1C dispensing controller. It is easy to operate.

WT6002J, 4.2-6000mL/min

WT6002J peristaltic pump adopts brushless DC motor. It has features of high output torque, low vibration, high efficiency. It can drive double pump heads. It accepts many pump heads and delivers flow rate from 4.2 to 6000 mL/min. The speed can be adjusted manually or automatically through external control.

Features:

High IP rating suitable for wet and dust environment • Big torque, high efficiency, maintenance-free • LED display speed and working status • Using membrane to control pump operation • Prime key: Fast filling and emptying • Start/stop, CW/CCW and speed can be controlled by external control • Memory function: Storing the running parameters automatically • Program download functions: Reserve ISP port on PCB, program can be download and updated • Cooling functions: Natural heat dissipation, ensure the temperature of drive not exceed the scope • Output port: Output the work status of pulse, start/stop and direction.

Model	BT6002J	WT6002J
Speed	1-600 rpm, reversible	60-600rpm
Speed accuracy	±1.0%	
Speed resolution	1 rpm	
External control	Star t/stop, cw/ccw control, and speed control (0 to 5 V, 0 to 10 V, 4 to 20 mA and 0 - 10 KHz optional)	
Communication interface	RS-485	
Power supply	AC 90 - 260 V 50/60 Hz	AC 176-264V, 50/60Hz
Power consumption	< 100 W	≤ 200W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%	
Dimension (mm)	L280×W200×H180	L292×W185×H180
Drive weight	3.8 kg	5.2kg
IP rating	IP 31	



ZG-60600

ZG-60600, 740-12000mL/min

Applicable pump heads for ZG-60600 are YZ35-13, YZ35 (AI), YZ35 (POM). The pump delivers flow rates from 0.74 to 12 Umin. The speed can be adjusted manually or automatically through external control interface. Driven by DC motor the ZG60-600 has higher torque and can drive double pump heads. ZG-60600 is ideal for industrial application to meet your needs for higher pressure and quick fluid transfer. Steady flow rate, lower noise and easy to operate.

Functions and Features:

Applicable pump heads: YZ35-13, YZ35 (AI), YZ35 (POM) • Stainless steel housing of the drive is available • Suitable for industrial applications • Longer Footswitch or other external control device optional • Equipped with Longer Dispensing Controller for filling function.

Model	ZG-60600
Speed	60-600 rpm, reversible
Speed control	10-turn potentiometer
Analog interface	N/A
Power supply	AC 220 V ±10% 50/60 Hz
Power consumption	< 400 W
Operating condition	Temperature 0 to 40°C, Relative humidity <80%
Dimension (mm)	L325xW236xH193
Drive weight	17 kg
IP rating	IP 31



WT6001F

WT6001F, Dispensing 0.7-6000mL/min

Applicable pump heads for WT600-1F are YZ1515x, YZ2515x, YZ1115, YZ1125, KZ25, BZ25, DMD25 and DG15-24. The pump delivers flow rates from 0.7 mL to 6000 mL/min and dispensing volume is from 0.1 mL to 99.9 L. Combining 128x32 LCD display with membrane keypad and rotary encoded switch makes the operation easy and prompt. The speed can be adjusted manually or automatically through external control interface.

Functions and Features:

Acceptable pump heads: YZ1515x, YZ2515x, YZ1115, YZ1125, DG15-24, KZ25, BZ25, DMD25 • Back suction function: In dispensing mode, the pump runs reversely after finishing one filling operation to prevent the liquid from dripping • Operating mode: Membrane keypad and rotary encoded switch.

- Speed control: The speed can be adjusted manually or automatically through external control
- Display: LCD displays current running status and parameters
- Prime key: For fast filling and emptying
- Memory function: Storing the running parameters automatically
- Calibration function: The flow rates and the dispensing volume can be calibrated to increase the accuracy

Model	WT6001F
Dispensing volume	0.1 mL to 99.9 L
Speed	10 to 600 rpm, reversible
Copy number	0 to 9999
Pause time	0.1 s to 99.9 min
Back suction	0 to 9.9 revolution
External control	Control start/stop, direction, flow rate control (0-5V, 0-10V, 4-20mA, 0-10Khz optional)
Output interface	start/stop, direction output, and 0 - 10 KHz frequency output
Communication	RS-485
Power	AC 176 - 264 V 50/60 Hz
Power consumption	< 140 W
Operating condition	Temperature 0 to 40°C, Relative humidity <98%
Dimensions (mm)	L292 × W185 × H180
Drive weight	5.2kg
IP rating	IP 31



JL350-2J

JL350-2J, ≤ 35L/min, Industrial

JL350-2J peristaltic pump is ideal for high flow rates fluids transfer, driven by the AC motor and the frequency converter control the speed. The pump delivers flow rates from 1.6 to 35L/min. Through the transparent front cover, the running status of the pump head is visible. The speed, running direction and run/stop of the pump we controlled manually by membrane Keypad or automatically by external control interface. Its operation is simple and reliable.

Functions and Features:

- High-power pumps, and the maximum flow rates can reach 35L/min
- The structure of concave working surface and convex roller realizes the tubing self-position function. It reduces abrasion and prolongs tubing life
- Variable frequency speed control to AC motor with creeper gear
- Adjustable occlusion
- Strong drive
- Pump head operation is visible through transparent front cover.

Model	JL350-2J
Speed	30-350 rpm, reversible
Speed precision	0.6 rpm
Power supply	AC 220 V ±10% 50/60 Hz
Power consumption	< 400 W
Operating condition	Temperature 0 to 40°C, Relative humidity <80%
Dimension (mm)	L417xW401xH321
Drive weight	32 kg
IP rating	IP 31



WT6003J

WT6003J, Industrial 4.2-6000mL/min

WT6003J peristaltic pump is high IP rating and high efficiency. It adopts brushless DC motor and speed closed loop control. It has features of high output torque, low vibration and free maintenance. It accepts multiple two channels pump heads and delivers flow rates from 4.2 to 6000 mL/min (single channel).

**Water Proof
IP-65**

Functions and Features:

- High IP rating: Suitable for moist and dust working condition
- MAX key: For fast filling and emptying
- Memory function: Storing the running parameters automatically
- Communication function: Realize the computer control through RS485 interface
- Display: 3 digits LED displays the speed of the pump
- External control input: Control the speed, start/stop and direction of the pump
- Suitable for different pump heads and tubing
- High output torque which can drive double pump heads
- Brushless DC motor, high output torque, free maintenance
- Operation mode: Switch and membrane keypad. Easy to operate.

Model	WT6003J
Speed	60 to 600 rpm, reversible
Speed resolution	1 rpm
IP rating	IP 55
Drive output torque	≥1.50 N-M
Speed Control Accuracy	±1.0%
Communication	RS-485
Power	AC 176-264V 50/60Hz
Power consumption	< 190 W
Operating condition	Temperature -10 to 40°C, Relative humidity <80%
Dimensions (mm)	L273xW190xH272
Weight	7.3kg
Heat emitting mode	Natural cooling. the inner temperature of the drive is less than 40°C
Speed control mode	Membrane keypad
Display mode	3digits LED displays the speed of the pump, 4pcs LED indicators display the working state
External control	0.5 - 5 V, 1 - 10 V, 4 - 20 mA or 1 - 10kHz are corresponding to 60 - 600 rpm



YT600-1J

YT600-1J, 600-11000mL/min

The pump delivers flow rates from 600 to 11000 mL/min. The speed can be adjusted manually or automatically through external control interface. Driven by DC motor YT600-1J has higher torque and can drive double pump heads. Suitable for industrial applications which need high pressure and big flow rates.

Functions and Features:

- Acceptable pump heads: YZ35-13, K 35
- Suitable for industrial applications
- Can be equipped with Longer Dispensing Controller for filling function when connecting single channel pump head.

IP-54

YZ35-Series, Industrial Easy-Load Pump Heads

**YZ35-13**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.

**YZ35(AI)**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.
- The housing material is alloy aluminum, surface anodizing.

**YZ35(POM)**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.
- The housing material is POM.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ35-13	73# 82#	11000	≤600	PSU AL POM
YZ35				

DMD25, Low Pulse Pump Head

**DMD25**

- Suitable for accurate dispensing.
- Track assembly and base are independent. Easy to load tubing.
- Accept many sizes of tubing to realize wide range flow rates transferring.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
DMD25	119"	150	≤350	POM
	120"	800		
	15"	1500		
	24"	2400		
	35"	2950		
	36"	4000		

BZ-25, Standard Pump Head

**BZ25**

- Stable operation and stackable.
- Compact size.
- Standard pump head, fixed occlusion.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
BZ25	24#	1600	≤600	PC

DG15-Series, Medium And Small Flow Rates Multi-Channel Pump Head

**DG15**

- Cartridges and base can be separated.
- Suitable for several tubing sizes for a wide flow range.
- The material of the roller is RULON®J.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
DG15-24	16# 17# 25#	1800	≤600	POM
DG15-28	Inner diameter ≤3.17mm, Wall thickness 0.8-1 (mm) 13# 14#	75	≤100	
DG15-48				

KZ25, Quick-load Pump Head

**KZ25**

- Cartridges and base can be separated.
- Pump heads can be stackable.
- Compact size and a wide flow range.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
KZ25	15#	1800	≤600	PC
	24#	3500		
	35#	5000		
	36#	6000		

DG-Series, Heads Information



Features:

Multi-channel transfer • Change tubing easily • Fix tubing easily • Occlusion can be adjusted slightly by ratchet wheel to meet different tubing wall thickness requirements • 6-roller and 10-roller pump heads available • More rollers reduce pulsation and flow rates slightly • Skillful trigger design, convenient to open the cartridges (DG-1, DG-2).

Type	Tubing	Max. flow rate (mL/min)		Speed (rpm)	Cartridge material	Part number		Weight (kg)	
		6 Rollers	10 Rollers			6 Rollers	10 Rollers	6 Rollers	10 Rollers
DG-1	Inner diameter ≤ 3.17 mm wall thickness 0.8-1 (mm)	48 (per channel)	32 (per channel)	≤ 100	POM	51011001	51011002	0.21	0.20
DG-2						51012001	51012002	0.27	0.26
DG-4						51013001	51013002	0.40	0.39
DG-6						51014001	51014002	0.54	0.51
DG-8						51015001	51015002	0.67	0.63
DG-12						51016001	51016002	0.95	0.88

Easy-load Pump Heads



YZ II 15 (YZ II 25)

- Change tubing easily & rapidly.
- Compact size.
- Accept several tubing sizes for a wide flow range.



YZ1515x (YZ2525x)

- Change tubing easily and rapidly.
- Accept several tubing sizes for a wide flow range.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ II 15	13" 14" 16" 17" 18" 19" 25"	2200	≤ 600	PESU
YZ II 25	15" 24" 35" 36"	3000		

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ1515x	13" 14" 16" 17" 18" 19" 25"	2200	≤ 600	PESU
YZ2525x	15" 24"	1600		



BT501J

BT501J, 0.005-10mL/min

Acceptable pump heads are JY10 & D61x. The pump provides flow rates from 0.005 to 10mL/min. It can realize speed adjusting and direction changing and has functions of prime and external start/stop. It features compact size & easy to operate.

Functions and Features:

- Applicable pump heads: JY10 and DGtx (10 rollers).
- Prime key for fast filling and emptying.
- Speed, start/ stop and direction can be controlled through membrane keypad or through external Control interface.
- Memory function, storing the running parameters automatically.
- Compact size, light weight and low power consumption.
- Membrane keypad, easy to operate.
- Good performance and low price.
- At normal lab conditions.



BT1002J

BT1002J, 0.0002-380mL/min

Acceptable pump heads for BT100-2J are YZ1515x, YZ2515x, YZII15, YZII25 DG-1 and DG-2. The pump provides flow rates from 0.0002 to 380 mL/min. The speed can be adjusted manually or automatically through external control. Store the running parameters automatically. Easy to operate.

Functions and Features:

- Applicable pump heads: YZ1515x, YZ2515x, YZII15, YZII25, DG-1, DG-2.
- Prime key for fast filling and emptying.
- Adjust speed manually or automatically through analog interface.
- Memory function, storing the running parameters automatically.
- Membrane keypad, easy to operate.
- Good performance and low price.
- At normal lab conditions.



BT3002J

BT3002J, 0.07-1140mL/min

Acceptable pump heads for BT3002J are VZ1515x, YZ2515x, YZII15, YZII25, BZ25. The pump delivers flow rates from 0.07 to 1140 mL/min. The speed can be adjusted manually or automatically through external control interface. Store the running parameter automatically. Easy to operate.

Functions and Features:

- Applicable pump heads: YZ1515x, YZ2515x, YZII15, YZII25, BZ25.
- Prime button for fast filling and emptying.
- Adjust speed manually or automatically through analog interface.
- Memory function, storing the running parameters automatically. Equipped with Longer Dispensing Controller for filling function.
- At normal lab conditions.

Model	BT501J	BT1002J	BT3002J
Speed	0.1 to 50.0 rpm, reversible	0.1 to 100 rpm, reversible	1 to 300 rpm, reversible
Speed precision	0.1 rpm		1 rpm
Speed control	Membrane keypad		10-turn potentiometer
Display	3-Digit LED displays current rpm		3-digit LED displays current speed
Communication interface	-	RS-485	-
External control	Start/stop & cw/ccw control	Start/stop, cw/ccw control, and speed control (0 to 5 V, 0 to 10 V, 4 to 20 mA and 0 - 10 KHz optional)	
Power supply	AC 220V $\pm 10\%$ 50/60 Hz (standard), AC 110V $\pm 10\%$ 50/60 Hz (optional)	AC 90-260V 50/60Hz	AC 220 V $\pm 10\%$ 50/60 Hz (standard), AC 110 V $\pm 10\%$ 50/60 Hz (optional)
Power consumption	< 10 W	< 30 W	< 35 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%		
Dimension (mm)	L176xW110xH115	L232xW142xH149	L227xW155xH171
IP rating	IP 31		
Drive weight	2.2kg	2.3kg	3.6kg

**LEAD2, Flow Rate 0.01-350mL/min**

The applicable pump heads for Lead2 are Lead1 5-48, Lead1 5-88, Lead1 5-24, Lead15-44 & max. 8 channels are available. The pump delivers flow rates from 0.01 to 350 mL/min. It has flow rates display & flow rates calibration functions. It also has functions of speed adjustment, start/stop, cw/ccw, prime (rinsing), tubing selection, 485 communication, analog control, etc.

Functions and Features:

Accept 4 special pump heads • Planetary gearbox is adopted in its pump heads. This changes the traditional driving methods of tubing pumps, decreases abrasion, prolongs tubing life and improves accuracy • **Display can switch between flow rates and speed** • **Calibration function for more accurate flow rates** • Computer control available through RS485 communication • Prime key for fast filling and emptying.

Model	LEAD2
Speed	1 to 100 rpm, reversible
Speed precision	0.1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x32 graphic LCD displays current running status
Analog interface	Start/stop and cw/ccw control, 0 to 5V, 0 to 10V, and 4 to 20mA speed Control
Communication	RS-485
Power supply	AC 220 V \pm 10% 50/60 Hz (standard), AC 110 V \pm 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L190xW162xH275
Drive weight	3.5kg
IP rating	IP 31

**BT1001L, Flow Rate 0.05-500mL/min**

The max. output torque of BT1001L drive is 2 Nm. Multi pump heads are available. The pump provides flow rates from 0.05 to 500 mL/min. 128x64 graphic LCD displays running menus and parameter setting menus. The flow rate & the speed (rpm) can be displayed in the same screen. The display interface is friendly. It has flow rate calibration function to make the flow rate more accurate. It has many control modes. The external control can be realized through standard external interface or RS485 communication interface.

Functions and Features:

Display can switch between flow rates & rpm • **Calibration capability for more accurate flow rate** • Graphic LCD together with rotary coded switch makes it friendly and easy to use • Higher torque to accept more pump heads and more channels • RS485 communication interface available. Offering communication protocol to customer and customizing software according to customer's requirements.

Model	BT1001L
Speed	1 to 100 rpm, reversible
Speed precision	0.1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x64 graphic LCD displays current running status
Analog interface	Start/stop and cw/ccw control, 0 to 5V, 0 to 10V, and 4 to 20mA speed Control
Communication	RS-485
Power supply	AC 220 V \pm 10% 50/60 Hz (standard), AC 110 V \pm 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L202xW160xH239
Drive weight	5.34 kg
IP rating	IP 31



BT1001F

BT1001F, Dispensing, 0.16-500mL/min

Applicable pump heads for BT100-1F are YZ1515x, YZ2515x, YZ1115, YZ1125 and D6-1, DG-2, DG-4. The pump delivers flow rates from 0.02 pL to 480 mL/min and dispensing volume is from 0.01 mL to 9900 mL. Combining 128*32 LCD display with membrane keypad and rotary coded switch makes the operation easy and prompt. The speed can be adjusted manually or automatically through external control interface.

Functions and Features: Acceptable pump heads: YZ1515x, YZ2515x, YZ1115, YZ1125 and OG-1, OG-2, DG-4 • Micro flow rates transferring: The smallest flow rate can reach 0.16 μ L/min • Back suction function: In

dispensing mode, the pump runs reversely after stopping to prevent the liquid from dripping • Operating mode: Membrane keypad & rotary coded switch • Speed control: The speed can be adjusted manually or automatically through external control interface • Display: LCD displays current running status • MAX key: For fast filling and emptying • Memory function: Storing the running parameters automatically • Calibration function: The flow rates and the dispensing volume can be calibrated to increase the accuracy • Communication function: Realize computer control through RS485 communication interface

Model	BT1001F
Flow rate	0.16 J IL/ min to 500 mL /min
Dispensing volume	0.01 mL to 9.99L
Speed	0.01rpm to 100.0rpm
Copy number	0 to 9999
Pause time	0.1 s to 99.90 min
Back suction time	0 to 99.9s
External control input interface	start/stop control, direction control, flow rates control (0-5V,0-10V,4-20mA,0-10KHz optional)
Output interface	start/stop, direction output and 0-10KHz frequency output (corresponding to 0 to 100.0 rpm) with insulating function
Communication	RS-485
Power	AC 100 - 240 V \pm 10% 50/60 Hz
Power consumption	< 40 W
Operating condition	Temperature 0 to 40°C
Relative humidity	< 80%
Dimensions (mm)	L292xW185xH180
Drive weight	3.8 kg
IP rating	IP31



BT3001F

BT3001F, Dispensing, 0.07-1140mL/min

The applicable pump treats for BT3001F are YZ1515x YZ2515x YZ1115 YZ1125 The pump delivers Flow rates from 0.07 to 1140 ml/mm 128 x 64 graphic LCD displays running menus and parameter Setting menus The display interfaces are friendly. It has many control modes. The external control can be realized through standard external control interface or 485 communication interface.

Functions and Features: Applicable pump heads YZ1515x YZ2515x, YZ1115, YZ1125 • Set pause time to realize dispensing and filling automatically • Display can switch between flow rates & rpm • Calibrate setting flow rates to acquire more accurate flow rates • RS485 communication interface available. Offering communication protocol to customer and customizing software according to customer's requirements.

Model	BT3001F
Speed	1 to 100 rpm, reversible
Speed precision	1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x64 graphic LCD displays flow rate speed or dispensing
Copy number	1 to 999
Dispense volume	0.1ml tp 99.9L
Pause time	1 to 999s
Back suction angel	0 to 360 18° increments
Analog interface	Start/stop and cw/ccw control, 0 to 5 V, 0 to 10 V, and 4 to 20 mA speed contro
Communication interface	RS-485
Power supply	AC 220 V \pm 10% 50/60 Hz (standard), AC 110 V \pm 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L202xW160xH239
Drive weight	4.3 kg
IP rating	IP 31



BT6002J

BT6002J, 0.07-3000mL/min

Suitable pump heads for BT6002J are YZ1515X, YZ2515X, YZ1115, YZ1125 and BZ25. It can deliver flow rates from 0.07 to 3000 mL/min and its speed can be adjusted manually or automatically through external control interface. BT6002J can realize dispensing function when it connects to a FK-1C dispensing controller. It is easy to operate.

WT6002J, 4.2-6000mL/min

WT6002J peristaltic pump adopts brushless DC motor. It has features of high output torque, low vibration, high efficiency. It can drive double pump heads. It accepts many pump heads and delivers flow rate from 4.2 to 6000 mL/min. The speed can be adjusted manually or automatically through external control.

Features:

High IP rating suitable for wet and dust environment • Big torque, high efficiency, maintenance-free • LED display speed and working status • Using membrane to control pump operation • Prime key: Fast filling and emptying • Start/stop, CW/CCW and speed can be controlled by external control • Memory function: Storing the running parameters automatically • Program download functions: Reserve ISP port on PCB, program can be download and updated • Cooling functions: Natural heat dissipation, ensure the temperature of drive not exceed the scope • Output port: Output the work status of pulse, start/stop and direction.

Model	BT6002J	WT6002J
Speed	1-600 rpm, reversible	60-600rpm
Speed accuracy	±1.0%	
Speed resolution	1 rpm	
External control	Star t/stop, cw/ccw control, and speed control (0 to 5 V, 0 to 10 V, 4 to 20 mA and 0 - 10 KHz optional)	
Communication interface	RS-485	
Power supply	AC 90 - 260 V 50/60 Hz	AC 176-264V, 50/60Hz
Power consumption	< 100 W	≤ 200W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%	
Dimension (mm)	L280×W200×H180	L292×W185×H180
Drive weight	3.8 kg	5.2kg
IP rating	IP 31	



ZG-60600

ZG-60600, 740-12000mL/min

Applicable pump heads for ZG-60600 are YZ35-13, YZ35 (AI), YZ35 (POM). The pump delivers flow rates from 0.74 to 12 Umin. The speed can be adjusted manually or automatically through external control interface. Driven by DC motor the ZG60-600 has higher torque and can drive double pump heads. ZG-60600 is ideal for industrial application to meet your needs for higher pressure and quick fluid transfer. Steady flow rate, lower noise and easy to operate.

Functions and Features:

Applicable pump heads: YZ35-13, YZ35 (AI), YZ35 (POM) • Stainless steel housing of the drive is available • Suitable for industrial applications • Longer Footswitch or other external control device optional • Equipped with Longer Dispensing Controller for filling function.

Model	ZG-60600
Speed	60-600 rpm, reversible
Speed control	10-turn potentiometer
Analog interface	N/A
Power supply	AC 220 V ±10% 50/60 Hz
Power consumption	< 400 W
Operating condition	Temperature 0 to 40°C, Relative humidity <80%
Dimension (mm)	L325xW236xH193
Drive weight	17 kg
IP rating	IP 31



WT6001F

WT6001F, Dispensing 0.7-6000mL/min

Applicable pump heads for WT600-1F are YZ1515x, YZ2515x, YZ1115, YZ1125, KZ25, BZ25, DMD25 and DG15-24. The pump delivers flow rates from 0.7 mL to 6000 mL/min and dispensing volume is from 0.1 mL to 99.9 L. Combining 128x32 LCD display with membrane keypad and rotary encoded switch makes the operation easy and prompt. The speed can be adjusted manually or automatically through external control interface.

Functions and Features:

Acceptable pump heads: YZ1515x, YZ2515x, YZ1115, YZ1125, DG15-24, KZ25, BZ25, DMD25 • Back suction function: In dispensing mode, the pump runs reversely after finishing one filling operation to prevent the liquid from dripping • Operating mode: Membrane keypad and rotary encoded switch.

- Speed control: The speed can be adjusted manually or automatically through external control
- Display: LCD displays current running status and parameters
- Prime key: For fast filling and emptying
- Memory function: Storing the running parameters automatically
- Calibration function: The flow rates and the dispensing volume can be calibrated to increase the accuracy

Model	WT6001F
Dispensing volume	0.1 mL to 99.9 L
Speed	10 to 600 rpm, reversible
Copy number	0 to 9999
Pause time	0.1 s to 99.9 min
Back suction	0 to 9.9 revolution
External control	Control start/stop, direction, flow rate control (0-5V, 0-10V, 4-20mA, 0-10Khz optional)
Output interface	start/stop, direction output, and 0 - 10 KHz frequency output
Communication	RS-485
Power	AC 176 - 264 V 50/60 Hz
Power consumption	< 140 W
Operating condition	Temperature 0 to 40°C, Relative humidity <98%
Dimensions (mm)	L292 × W185 × H180
Drive weight	5.2kg
IP rating	IP 31



JL350-2J

JL350-2J, ≤ 35L/min, Industrial

JL350-2J peristaltic pump is ideal for high flow rates fluids transfer, driven by the AC motor and the frequency converter control the speed. The pump delivers flow rates from 1.6 to 35L/min. Through the transparent front cover, the running status of the pump head is visible. The speed, running direction and run/stop of the pump we controlled manually by membrane Keypad or automatically by external control interface. Its operation is simple and reliable.

Functions and Features:

- High-power pumps, and the maximum flow rates can reach 35L/min
- The structure of concave working surface and convex roller realizes the tubing self-position function. It reduces abrasion and prolongs tubing life
- Variable frequency speed control to AC motor with creeper gear
- Adjustable occlusion
- Strong drive
- Pump head operation is visible through transparent front cover.

Model	JL350-2J
Speed	30-350 rpm, reversible
Speed precision	0.6 rpm
Power supply	AC 220 V ±10% 50/60 Hz
Power consumption	< 400 W
Operating condition	Temperature 0 to 40°C, Relative humidity <80%
Dimension (mm)	L417×W401×H321
Drive weight	32 kg
IP rating	IP 31



WT6003J

WT6003J, Industrial 4.2-6000mL/min

WT6003J peristaltic pump is high IP rating and high efficiency. It adopts brushless DC motor and speed closed loop control. It has features of high output torque, low vibration and free maintenance. It accepts multiple two channels pump heads and delivers flow rates from 4.2 to 6000 mL/min (single channel).

**Water Proof
IP-65**

Functions and Features:

• High IP rating: Suitable for moist and dust working condition • MAX key: For fast filling and emptying • Memory function: Storing the running parameters automatically • Communication function: Realize the computer control through RS485 interface • Display: 3 digits LED displays the speed of the pump • External control input: Control the speed, start/stop and direction of the pump • Suitable for different pump heads and tubing • High output torque which can drive double pump heads • Brushless DC motor, high output torque, free maintenance • Operation mode: Switch and membrane keypad. Easy to operate.

Model	WT6003J
Speed	60 to 600 rpm, reversible
Speed resolution	1 rpm
IP rating	IP 55
Drive output torque	≥1.50 N-M
Speed Control Accuracy	±1.0%
Communication	RS-485
Power	AC 176-264V 50/60Hz
Power consumption	< 190 W
Operating condition	Temperature -10 to 40°C, Relative humidity <80%
Dimensions (mm)	L273xW190xH272
Weight	7.3kg
Heat emitting mode	Natural cooling. the inner temperature of the drive is less than 40°C
Speed control mode	Membrane keypad
Display mode	3digits LED displays the speed of the pump, 4pcs LED indicators display the working state
External control	0.5 - 5 V, 1 - 10 V, 4 - 20 mA or 1 - 10kHz are corresponding to 60 - 600 rpm



YT600-1J

YT600-1J, 600-11000mL/min

The pump delivers flow rates from 600 to 11000 mL/min. The speed can be adjusted manually or automatically through external control interface. Driven by DC motor YT600-1J has higher torque and can drive double pump heads. Suitable for industrial applications which need high pressure and big flow rates.

Functions and Features:

Acceptable pump heads: YZ35-13, K 35 • Suitable for industrial applications • Can be equipped with Longer Dispensing Controller for filling function when connecting single channel pump head.

IP-54

YZ35-Series, Industrial Easy-Load Pump Heads

**YZ35-13**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.

**YZ35(AI)**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.
- The housing material is alloy aluminum, surface anodizing.

**YZ35(POM)**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.
- The housing material is POM.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ35-13	73" 82"	11000	≤600	PSU AL POM
YZ35				

DMD25, Low Pulse Pump Head

**DMD25**

- Suitable for accurate dispensing.
- Track assembly and base are independent. Easy to load tubing.
- Accept many sizes of tubing to realize wide range flow rates transferring.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
DMD25	119"	150	≤350	POM
	120"	800		
	15"	1500		
	24"	2400		
	35"	2950		
	36"	4000		

BZ-25, Standard Pump Head

**BZ25**

- Stable operation and stackable.
- Compact size.
- Standard pump head, fixed occlusion.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
BZ25	24"	1600	≤600	PC

DG15-Series, Medium And Small Flow Rates Multi-Channel Pump Head

**DG15**

- Cartridges and base can be separated.
- Suitable for several tubing sizes for a wide flow range.
- The material of the roller is RULON®J.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
DG15-24	16# 17# 25#	1800	≤600	POM
DG15-28	Inner diameter ≤3.17mm, Wall thickness 0.8-1 (mm) 13# 14#	75	≤100	
DG15-48				

KZ25, Quick-load Pump Head

**KZ25**

- Cartridges and base can be separated.
- Pump heads can be stackable.
- Compact size and a wide flow range.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
KZ25	15"	1800	≤600	PC
	24"	3500		
	35"	5000		
	36"	6000		

DG-Series, Heads Information



Features:

Multi-channel transfer • Change tubing easily • Fix tubing easily • Occlusion can be adjusted slightly by ratchet wheel to meet different tubing wall thickness requirements • 6-roller and 10-roller pump heads available • More rollers reduce pulsation and flow rates slightly • Skillful trigger design, convenient to open the cartridges (DG-1, DG-2).

Type	Tubing	Max. flow rate (mL/min)		Speed (rpm)	Cartridge material	Part number		Weight (kg)	
		6 Rollers	10 Rollers			6 Rollers	10 Rollers	6 Rollers	10 Rollers
DG-1	Inner diameter ≤ 3.17 mm wall thickness 0.8-1 (mm)	48 (per channel)	32 (per channel)	≤ 100	POM	51011001	51011002	0.21	0.20
DG-2						51012001	51012002	0.27	0.26
DG-4						51013001	51013002	0.40	0.39
DG-6						51014001	51014002	0.54	0.51
DG-8						51015001	51015002	0.67	0.63
DG-12						51016001	51016002	0.95	0.88

Easy-load Pump Heads



YZ II 15 (YZ II 25)

- Change tubing easily & rapidly.
- Compact size.
- Accept several tubing sizes for a wide flow range.



YZ1515x (YZ2525x)

- Change tubing easily and rapidly.
- Accept several tubing sizes for a wide flow range.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ II 15	13" 14" 16" 17" 18" 19" 25"	2200	≤ 600	PESU
YZ II 25	15" 24" 35" 36"	3000		

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ1515x	13" 14" 16" 17" 18" 19" 25"	2200	≤ 600	PESU
YZ2525x	15" 24"	1600		



TRO-1200

TRO-1200, Rocking Roller Mixer

Features:

- Suitable for blending analysis samples such as blood samples.
- Plastic roller suitable for use with a variety of tubes.
- Gently rolling and tilting action.
- Easily load and unload without turning off the unit.
- Driving only with on/off switch and easy operation.
- Designed for continuous operation and fixed speed.

Model	Speed (rpm)	Number of roller	Roller size (mm)	Weight	Size (mm)
TRO-1200	40 (fixed)	5	Ø 30xL320	4.0kg	W455xD180xH95



TRO-1000

TRO-1000, Test Tube Rocker

For capped tubes up to 110mm long.

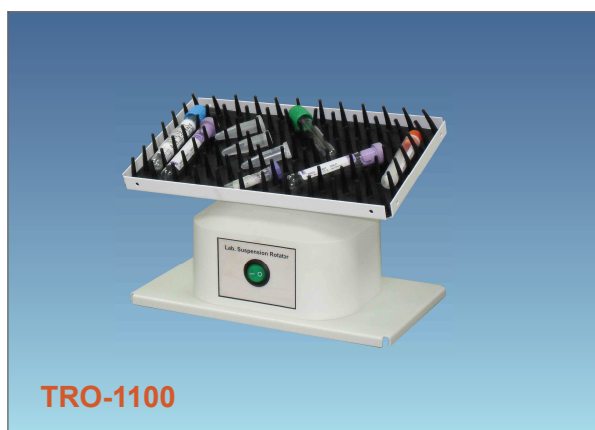
A white silicon rubber friction grip pad contrasts specimens and labels for easy viewing. Capped tubes can be easily loaded/unloaded without turning of the rocker

Features:

Holds 10mm~30mm tube diameter sizes • Ideal for blood collection tubes • smooth mixing action provides uniform

specimen suspension • Precision-controlled rocking motion • Continuous operation • Easy to load and unload the test tubes without turning the mixer off • Rubber cushion preventing the test tubes from slipping • Quiet, smooth, and steady operation • Constant speed 25rpm, 45° angle.

Model	Speed (fixed)	Capacity	Speed (rpm)	Platform size (mm)	Weight	Size (mm)
TRO-1000	30rpm at 60Hz 25rpm at 50Hz	16 Tubes	30rpm at 60Hz 25rpm at 50Hz	W300xD115	1.5/kg	W350xD140xH110



TRO-1100

TRO-1100, Multi Tube Rotator

3D Rotation Permits Gentle, Low Foaming Agitation!

Accommodates fourteen 2,7,10 and 15ml tubes for mixing blood samples, DNA extractions and hybridizations.

Features:

3D gyratory movement provides consistently uniform specimen quality in one minutes • Large capacity of tray holds a variety of sizes and shapes of containers such as tubes and vials • Rubber dimple mat of tray firmly but gently holds containers • Test tubes can be easily loaded and unloaded without turning the unit off • Ideal for use in hematology, blood

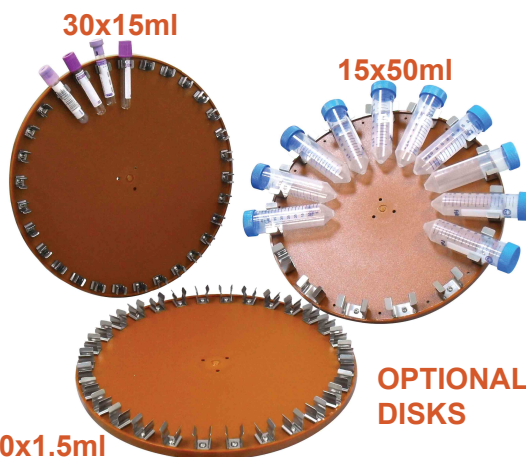
chemistry and other laboratory applications where a continuous, gentle motion is necessary • Mechanical action of unit provides a circular motion coupled with a rocking pattern which keeps liquids and solutions gently mixed without the potential for shearing or other damage • Angle of rotation varies 20° from the horizontal plane • Shaker has a fixed speed of 30 rpm • Portable. lightweight metal body is durable and easy to clean • Compact size permits easy transportability and use in areas with limited space • Black silicon, non-skid, dimpled platform surface and sides hold 2,7,10 or 15 ml tubes firmly in place. No need for racks or clamps • Removable Black silicone platform, easy to clean and can be used to transport tubes.

Model	Speed(fixed)	Movement	Switch	Tray size(mm)	Size (mm)	Weight
TRO-1100	30rpm at 60Hz 25rpm at 50Hz	3D gyratory movement on a central point	On/Off	W230xD125	W230xD125xH175	1.8/kg

**TMO-1600 Series**

Features: Suitable for mix of blood and culture samples

- 360° rotating action
- Continuous or timing operation (0-30 minutes)
- Fixed mixing angle at 45°
- Easy to load & unload the tubes
- Adjustable speed
- Smooth start and change of the stirring speed
- Durable construction for long term operation
- 3 Different disks (optional)
- Included: Disk, 10x1.5ml & 10x15ml & 10x50ml tube holders



Model	Angle Range	Speed Range (rpm)	Disc size (mm)	Weight	Dimensions (mm)	Power
TMO-1600	Fixed 45°	10~100	Ø 300	5.0kg	W250xD300xH250	AC 110V/60Hz or 220V/50Hz

Discs:

Model Number	Description
303-1-100001	Disk, 30x1.5ml tube holders (Optional)
303-1-100002	Disk, 30x15ml tube holders (Optional)
303-1-100003	Disk, 15x50ml tube holders (Optional)
303-1-100004	Disk, 10x1.5ml & 10x15ml & 10x50ml tube holders (Included)

**TMO-1700/1702, Suspension Mixer****Applications:**

Variable speed & adjustable angle rotation for optimum culture results in such applications as growth of tissues and viruses. hormone production from selected tissues, sample testing for the presence of viruses & cytotoxicity assays

- Operates in standard incubators for cultivation under controlled temperature conditions up to 40°C and humidity conditions from 20 to 80% non-condensing
- Powder coated stainless steel outer body construction for durability & corrosion resistance
- Drum can be lifted off rotors easily.



Features: Suitable for mix of blood & culture samples

- 360° rotating action
- Gentle rotating motion mixes the contents of test tubes
- Continuous operation
- Equipped with a tachometer to indicate speed
- Fully adjustable mixing angle from 0°~90°
- Choose from fixed or adjustable speed
- Easy to load and unload the tubes.

Model	Angle Range	Speed Range (rpm)	Disc size (mm)	Weight	Dimensions (mm)	Power
TMO-1700	on 45°	10~100	Ø 310	12.0kg	W310xD310xH460	AC 110V/60Hz or 220V/50Hz
TMO-1702	on 45°	40~240				

Roller Drums:

Model Number	Description
303-1-100021	Drum, 114xØ18mm tube places (Optional)
303-1-100022	Drum, 40xØ29mm tube places (Optional)
303-1-100023	Drum, 48xØ18mm tube places & 20xØ29mm tube places (Included)

TMO-1400, Rotator



TMO-1400

Adjustable speed and angle of rotation

- Variable speed and adjustable mixing angle, 0° to 90°
- Continuous or timed operation
- Durable construction for long-term operation
- 4 different disks and 3 roller drums
- Disk also available for 250ml flask.

Model	TMO-1400
Angel range	0°~90°
Speed range	0~50 rpm
Timer	180 min
Temp.Resist	Lower than 65°C (Dry air)
Weight	7.5kg
Dimensions(mm)	W220xD236xH246
Wattage	35W
Power	AC110V/220V/230V, 50/60Hz
Unit	Rotator, Adjustable angle

Accessories:

Model Number	Description
PO-4	Mount knobs for attaching one or 2 discs to the unit

TMO-1500, Rotator



TMO-1500

Use with a wide variety of accessories

- Variable speed and adjustable mixing angle, 0° to 90°
- Continuous or timed operation
- A wide choice of accessories to be used, including conical tubes, bottles and 250ml flask
- Optional rocking platform for staining or destaining.

Model	TMO-1500
Angel range	0°~90°
Speed range	0~50 rpm
Timer	180 min
Temp.Resist	Lower than 65°C (Dry air)
Weight	8kg
Dimensions(mm)	W502xD236xH246
Wattage	35W
Power	AC110V/220V/230V, 50/60Hz
Unit	Rotisserie Rotator, Adjustable angle

Accessories:



Optional Disks:

Model Number	Description
D50-8	Disk / 50ml conical tube-capacity:8ea
D15-16	Disk / 15ml conical tube-capacity:16ea
D1.5-32	Disk / 1.5ml centrifuge tube-capacity:32ea
D1.5-60	Disk / 1.5ml centrifuge tube-capacity:60ea
D250-4	Disk / 250ml Flask-capacity:4ea

Optional Disks:

Model Number	Description
RD16-151	Roller Drum/Up to 15mm Diameter tube-capacity: 151ea
RD18-104	Roller Drum/Up to 17mm Diameter tube-capacity: 104ea
RD25-42	Roller Drum/Up to 24mm Diameter tube-capacity: 42ea

Roller Drum-TMO-1500 Only:

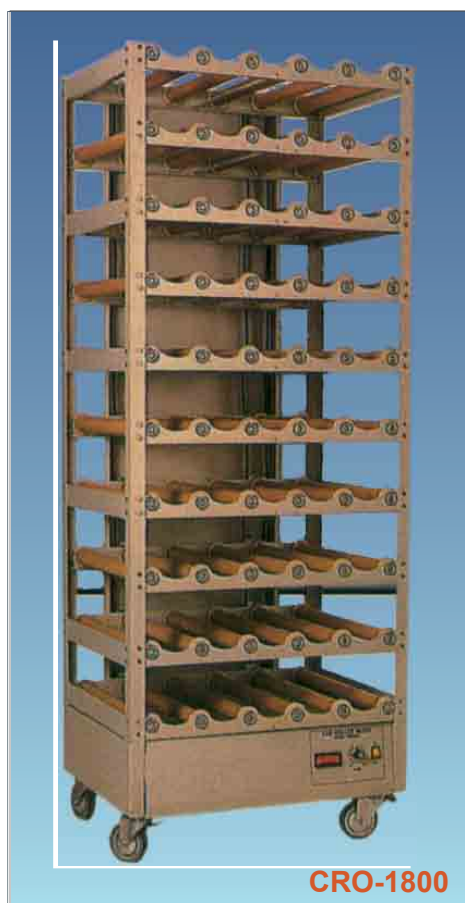
Model Number	Description
RT-4	80mm DiameterX200mm length bottle capacity:4ea
RT-6	60mm DiameterX200mm length bottle capacity:6ea
RT-10	40mm DiameterX200mm length bottle capacity:10ea 40mm DiameterX200mm length bottle capacity:20ea
RT-8V	50ml Conical tube-capacity : 8ea-vertical mount
RT-16V	50ml Conical tube-capacity : 16ea-vertical mount
RT-24H	50ml Conical tube-capacity : 24ea-horizontal mount
RT-200-64	1.5ml Centrifuge tube-capacity : 64ea
RT-200-96	1.5ml Centrifuge tube-capacity : 96ea
RT-200-128	1.5ml Centrifuge tube-capacity : 128ea
RT-300-120	1.5ml Centrifuge tube-capacity : 120ea
RT-300-180	1.5ml Centrifuge tube-capacity : 180ea
RT-300-240	1.5ml Centrifuge tube-capacity : 240ea
RK-HAG	Rocking platform(W285xD195xH65, tilt angle:±7°)
PO-4	Mount knobs for attaching one or 2 discs to the unit

CRO-1800, Cell Culture System Roller Mixer**Features:**

- Cell culture system roller mixer is equipped with high-quality rubber rollers, which are mounted in permanently lubricated sealed ball bearings, designed for lifetime operation.
- Cell culture system roller mixer allows large scale propagation of mono layer cultures in standard roller vessels.
- The fully enclosed belt-drive system also assures years of trouble-free service. Size: H182cm, W75cm, D56cm. Space between levels: 18.2cm. the levels can be changed.
- Wheels (rollers) are made of rubber, with two bearing fixed at both rollers end respectively. Wheels (rollers) are not coated. Material of frame is made of aluminium, but, the bottom cabinet is made of iron.
- The system would not be ignition, because, it runs under a low rpm, without brake.
- It is used with synchronous belts (chains), this belts should not be ignition under a low rpm running during operation.
- The system can be available for 104mm & 137mm diameter rolling bottles, 86mm diameter is too small.

Model	Speed (rpm)	Capacity	Speed display
CRO-1800	0.2~3.0	100pcs x 2000ml culture	Digital

Power supply: AC110V 60Hz, 220v 50/60Hz

**CRO-1800****TRO-1300, Multi-Purpose Mixer**

MRC TRO-1300 Multi-Mix has the capability to perform three modes of mixing, all of which are programmable & can all be used in the same "run". Or, if you just want to rotationally mix, set the unit to rotate. It is very simple to operate and program, runs can be programmed in seconds. You can mix many different sizes of tubes ranging from 1.5 ml to 50 ml with the 2 interchangeable mixing platforms that come standard with the unit. Tubes are held in-place with unique rubber flexible grippers; that surround and firmly hold tubes of varying diameters.

Specifications:

- Capacity: Platform 1: 22 Tubes: 1.5ml–15 (Installed when new) Platform 2: 6x50ml Tubes & 2x1.5–15ml Tubes (Included as an accessory).
- RPM: Variable from 5 –30 RPM.
- Timer: Up to 999 Sec., max mixing time: 12 hours.
- Reciprocating Timer: Up to 999 Sec.
- Rotation Angle in Reciprocation Mode: 15°–90° (in 15° increments).
- Turning angle vortex mode: 1 to 5.
- Vortexing times: 1 to 5.
- Maximum timer: 12 hours.
- Power: 110/220V.
- Dimensions: 13.5" x 7" x 7.5".
- Weight: 6.7 Lbs. / 3 Kgs.



The TRO-1300 can mix in the following motions:

1. Rotate 360°, forward or reverse, & forward, then reverse.
2. Reciprocating Rocker, back & forth like a traditional rocker.
3. Vortex, (cavitate) Tube Capacity, 2 Platforms: Platform 1: 22 Tubes: 1.5ml-15ml (Installed)
Platform 2: Six, 50ml Tubes & Two 1.5-15ml Tubes (Included).



SPECTRO-UV11D

SPECTRO-V11D Spectrophotometer

SPECTRO-V11D is the only model of manually setting wavelength among families, But precise design & high quality components ensures excellent performance. It is widely used in high schools and colleges for general analysis and experiments

- Optical System: Single Beam, Grating 1200 lines/mm
- Detector: Silicone Photo diode

Features: Large LCD Screen(128x64Dots) • The wavelength can be read out from the screen directly • Auto zero & blank, easy to use. Press one button for easy switching of Transmittance, Absorbance & Concentration modes • Parallel port, data can be exported to printer directly • Coefficient method to measure the

unknown samples. $C=A/B$. It can memorize the Last input of K & B • Large sample compartment, it can accommodate 5-100mm path length cuvettes with optional holders • Pre-aligned design ensures the user to change lamp conveniently • Optional software M.Wave Professional based on windows® can expand the applications to Standard Curve & Kinetics • High quality silicon photometric diode detector and 1200 lines/mm grating ensure the high accuracy and precision.

Model	SPECTRO-V11D	SPECTRO-UV11
Wavelength range	325-1000nm	200-1000nm
Spectral Bandwidth	4nm	
Wavelength Accuracy	±2nm	
Wavelength Repeatability	1nm	
Wavelength Setting	Manual	Auto
Photometric Accuracy	±0.5%T	
Photometric Repeatability	0.3%T	
Photometric Range	-0.3-A, 0-200%T	
Stray Light	0.3%T	
Stability	±0.004A/h @ 500nm	
Display	128 x 64 Dots LCD	
Photometric Mode	T, A, C, F	
Standard Cell Holder	4-position 10mm cell changer	
Sample Compartment	Standard 10mm path length cuvette	
Light Source	Tungsten Lamp	Tungsten&Deuterium lamp
Output	USB Port&Parallel Port (printer)	
Power Requirement	AC 220V/50Hz or AC110V/60Hz	
Dimensions (mm)	W480xD360xH160	
Weight	10kg	12kg

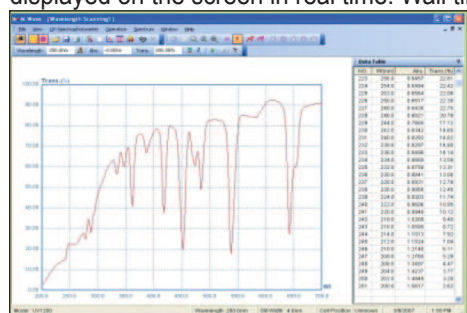
Wave Professional PC-Control Software

The windows® based PC application software takes the best features of the stand-alone version plus more powerful data processing and expanded data collecting and storage capability. The software is optional. Once it be used, the uv/v-l series become more excellent



Quantitative: Use up to 38 standards to establish standard curve. Four methods for fitting a curve: Linear fit, Linear through zero, Square fit.

Kinetics: The Kinetics mode may be used for time course scanning or reaction rate calculations. Abs. Vs. time graphs is displayed on the screen in real time. Wait time, test time and time intervals may be set.



Wavelength Scan:

Automatically record peaks & valleys. The quantity of the curves is unlimited that you store. Post- run manipulation & processing includes: Re-scaling axes, curve Smoothing, combination, zooming, overlap... 1 st to 4th derivative.

Multi-wavelength Test: You can set at most 20 wavelengths to measure a sample.

DNA Test:

2 formulas are under your choice:

ONACon. = $62.9 \times A_{260} - 36.0 \times A_{280}$
 or = $49.1 \times A_{260} - 3.48 \times A_{230}$
 Protein Con. = $1552 \times A_{260} - 757.3 \times A_{280}$
 or = $183 \times A_{260} - 75.8 \times A_{230}$
 You can also enter other wavelengths and factors to calculate.



SPECTRO-UV/V12

SPECTRO-UV/V12, Spectrophotometer

The UV/V12 spectrophotometer have the most attractive cost performance. Using your standard sample solutions, you can get a standard curve on the large LCD screen by the local control software, also you can print the curve through the parallel port. They are widely used in colleges and enterprises for general quantitative analysis and experiments.

Optical System: Single Beam, Grating 1200 lines/mm • Detector: Silicone Photo diode • SPECTRO-V12 Range: 325-1000nm, SPECTRO-UV12 Range: 200-1000nm.

Functions:

1. Basic Mode Absorbance, Transmittance or Concentration measurements.

2. Quantitative I) **Standard Curve** At most 9 standard samples can be used to establish a standard curve, the curve and the curve equation will display on the screen simultaneously. You can measure your unknown concentration solutions by the curve. II) **Coefficient Method** If you have known the coefficient k&b of the formula $C=kA+b$, you can input the value directly by the button, Then to test your unknown solutions.

Model	SPECTRO-V12	SPECTRO-UV12
Spectral Bandwidth	4nm	
Wavelength Accuracy	±2nm	
Wavelength Repeatability	0.8nm	
Photometric Accuracy	±0.5%T	
Photometric Repeatability	0.3%T	
Photometric Range	-0.3-3.0A, 0-200%T	
Stray Light	0.3%T	
Stability	±0.002A/h @ 500nm	
Sample Compartment	Standard 10mm pathlength cuvette	
Light Source	Tungsten Lamp	Tungsten&Deuterium lamp
Output	USB Port&Parallel Port (printer)	
Power Requirement	AC 220V/50Hz or AC110V/60Hz	
Dimensions (mm)	W470xD370xH180	
Weight	12kg	12kg



SPECTRO-UV3 Series

SPECTRO-UV3, Scanning Spectrophotometer

SPECTRO-UV3 Series is an advanced single beam design consisting of 10 models. They differ In bandwidth & wavelength accuracy, but provide excellent performance for measurements in the range of 190nm to 1100nm. Optional add: S to spectro UV 32 selectable bandwidth 0.5,1,2,4nm. They are suitable for clinical lab applications, pharmaceutical, & bio-chemical. as well as routine applications such as Quantitative analysis, Kinetics, Wavelength Scan, Multi-Wavelength, & DNA/Protein analysis. UV-Vis Analyst application software based Microsoft Windows makes these instruments versatile. All instruments provide excellent performance for measurements. They are divided into in 2 types: PC models & stand-alone models -In Stand-alone models, all software methods are

included as built-in standard; this eliminates the need of software. Online software update via Internet Data can be downloaded. The PC models come standard with Windows® based application software UV-Vis Analyst.

Features: Fixed or variable slits (bandwidths) Sealed, solvent-resistant tactile keypad with alpha-numeric entry for file names and units. Pre-aligned deuterium lamp for easy lamp replacement The status of the lamps may be monitored. Powerful built-in program or PC Windows® based software UV/VIS. Analyst including sophisticated utility programs. Data Download-to-PC software for stand-alone models (optional). Real-time clock for date & time stamping of results.

Model	SPECTRO-UV30/UV30PC	SPECTRO-UV31/UV31PC	SPECTRO-UV32/UV32PC	SPECTRO-UV32S/UV32PCS	SPECTRO-UV33/UV33PC
Wavelength range	190-1100nm				
Spectral bandwidth	4nm	2nm	1.8nm	0.5/1/2/4nm	1nm
Optical system	Single beam, grating 1200 lines/mm				
Wavelength accuracy	±0.5nm		±0.3nm		
Wavelength repeatability	0.3nm		0.2nm		
Scan speed	Hi, Med, Low, Max.3000nm/min				
Photometric accuracy	≤±0.5%T or ±0.003A@1A				
Photometric range	-0.3 -3A, 0-200%T				
Stray light	≤0.05%T@220nm, 360nm				
Stability	±0.002A/h@500nm				
Display	5 inches LCD (320x240 dots)				
Baseline flatness	±0.002A(200-1000nm)				
Standard cell holder	Standard 10mm pathlength cuvette				
Light source	Halogen&Deuterium lamp (pre-aligned)				
Output	USB Port¶llel port (printer)				
Power requirement	AC 110/220V 50/60Hz				
Dimensions (mm)	W480xD360xH160		W600xD450xH200		
Weight	14kg		20kg		



SPECTRO-16/18 Series, Spectrophotometer

The SPECTRO-16/18 Series are developed for precise test, its stray light is only 0.05%T. They are flexible, easy to use and maximize value. The value is evident from the performance provided every day. The local stand-alone software provide functions of Basic Mode, Quantitative Test, Kinetics and System Utilities.

• Optical System: Single Beam, Grating 1200 lines/mm • SPECTRO-V16/V18 Range: 320-1100nm, SPECTRO-UV16/UV18 Range: 190-1100nm.










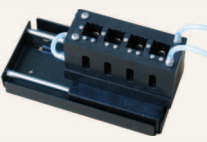
Features:

Large LCD screen (128x64Dots). Can display total 200 groups of data, 5 groups per screen. Can display standard curve and kinetics curve • System can also

save the test results, total 200 groups of data and 100 standard curves can be saved in the RAM. Be Convenient for check and reload • Data can be restored after a sudden power cut • Auto setting wavelength • Tungsten lamp & deuterium lamp can be turned on/off individually to extend lifetime • The optional application software M.Wave Professional provides complete control of the spectrophotometer from a Computer through the Built-in USB port. It can expand to the following functions: Quantitative, Kinetics, Wavelength Scan, Multi-wavelength & DNA/Protein Test • Pre-aligned design makes it convenient to Change lamps • Large sample compartment, It can accommodate 5-100mm path length cuvettes with optional holders. A variety of optional holders.

Model	SPECTRO-V16	SPECTRO-V18	SPECTRO-UV16	SPECTRO-UV18
Spectral Bandwidth	4nm	2nm	4nm	2nm
Wavelength Accuracy	±0.5nm			
Wavelength Repeatability	0.3nm			
Photometric Accuracy	±0.3%T			
Photometric Repeatability	0.2%T			
Photometric Range	-0.3-3A, 0-200%T			
Stray Light	0.05%T @ 360nm		0.05%T @ 220nm, 340nm	
Stability	±0.002A/h @ 500nm			
Display	Graphic LCD (128 x 64 Dots)			
Keyboard	22 Membrane keypad			
Sample Compartment	Standard 10mm pathlength cuvette			
Light Source	Tungsten Lamp		Tungsten&Deuterium lamp	
Output	USB Port&Parallel Port (printer)			
Power Requirement	AC 220V/50Hz or AC110V/60Hz			
Dimensions (mm)	W470xD370xH180			
Weight	14kg		14kg	

Accessories - Holder:

P.N 900410  4-Cell Holder for 10mm Squ. Cuvette	P.N 900420  4-Cell Holder for up to 50mm Squ. Cuvette	P.N 900430  4-Cell Holder for up to 100mm Squ. Cuvette	P.N 900540  Cylindrical Cell Holder	P.N 900610  Water-Jacketed Single Cell Holder
P.N 900210  Micro Cell Holder	P.N 900530  Test Tube Holder	P.N 900310  8-Position Auto Cell Changer	P.N 900550  Solid Sample Holder (Single Cell)	P.N 900620  10mm Water-Jacket 4-Cell Holder

Accessories - Others:

P.N 900910  Thermal Printer	P.N 900920  Stylus Printer	1. P.N 900120 2. P.N 900110 3. P.N 900130  1.Peltier Unit 2.Ambier Sipper Unit 3.Peltier/Sipper System
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SPECTRO-UV6 Series, Double Beam Spectrophotometer

UV-6 Series are advanced double beam design consisting of four models:

Stand-alone models: SPECTRO-UV61 with

1.8nm fixed bandwidth &

SPECTRO-UV63 with 1.0nm fixed

bandwidth; PC models: UV61PC with

1.8nm fixed bandwidth & UV63PC with

1.0nm fixed bandwidth. Optional add: S

to spectro UV 61 selectable bandwidth 0.5,1,2,4nm. Other specifications of the four models are almost the same except bandwidth. The 2 detectors are measuring sample & reference respectively & simultaneously for optimizing measurement accuracy. They provide excellent performance for measurements in the range of 190nm to 1100nm. They are suitable for pharmaceutical, biochemical & clinical lab applications as well as routine applications such as quantitative analyses, kinetics, spectrum scanning, multiple components & DNA/Protein, PC Windows application software make these instruments versatile. All instruments provide excellent performance for measurements.

- Optical System: Double Beam, Grating 1200 lines/mm
- To Stand-alone models, All software methods are included as built-in standard, thus eliminating the need for software options
- Online software upgrade via internet helps to keep your software up-to-date

- Data Download-to-PC software expands the data storage to unlimited
- The stand-alone models with 5 inches screen and the PC models with 3.8 inches screen
- Model SPECTRO-UV61/UV61PC Range: 190-1100nm
- Model SPECTRO-UV63/UV63PC Range: 190-1100nm.



Model	SPECTRO-UV61	SPECTRO-UV61PC	SPECTRO-UV63	SPECTRO-UV63PC
Spectral Bandwidth	1.8nm	1.8nm	1.0nm	1.0nm
Wavelength Accuracy	±0.3nm			
Wavelength Repeatability	0.2nm			
Scanning Speed	Hi, Med, Low, Max, 3000nm/m in			
Photometric Accuracy	±0.3%T			
Photometric Repeatability	0.15%T			
Photometric Range	-0.3-3A, 0-200%T.0-9999Conc.			
Stray Light	0.05%T			
Stability	±0.001A/h @ 500nm			
Display	5 inches LCD (320x240)	3.8 inches LCD (320x240)	5 inches LCD (320x240)	3.8 inches LCD (320x240)
Baseline Flatness	±0.001A(200-1000nm)			
Sample Compartment	Accommodates 100mm pathlength cuvette with optional holder			
Light Source	Halogen&Deuterium lamp(Pre-aligned)			
Output	USB Port&Parallel Port (printer)			
Power Requirement	AC 220V/50Hz or AC110V/60Hz			
Dimensions (mm)	W600xD450xH200			
Weight	22kg		22kg	

The PC models come standard with windows® based application software UV/VisAnalyst. S option bandwidth 0.5,1,2,4nm.

Accessories - Cells:

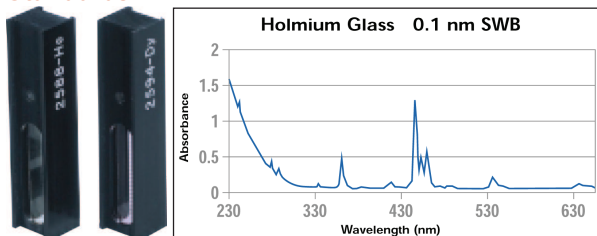
Square Cuvette		
Name&Specifications	P.N	Remark
Square Cuvettes.Glass 10mm	916101	/4pcs
Square Cuvettes.Glass 20mm	916102	/4pcs
Square Cuvettes.Glass 30mm	916103	/4pcs
Square Cuvettes.Glass 50mm	916104	/4pcs
Square Cuvettes.Glass 100mm	916105	/4pcs
Square Cuvettes.Quartz 10mm	916111	/2pcs
Square Cuvettes.Quartz 20mm	916112	/2pcs
Square Cuvettes.Quartz 30mm	916113	/2pcs
Square Cuvettes.Quartz 50mm	916114	/2pcs
Square Cuvettes.Quartz 100mm	916115	/2pcs

Micro Cell

Name&Specifications	P.N	Remark
100UL Micro Cell	916121	/1pcs
Square Cuvettes.Glass 20mm	916122	/1pcs
Square Cuvettes.Glass 30mm	916123	/1pcs

Flow Cell

Name&Specifications	P.N	Remark
5mm SEIF Masking Cont. Flowthrough G.Cell	916131	/1pcs
10mm SEIF Masking Cont. Flowthrough G.Cell	916132	/1pcs
20mm SEIF Masking Cont. Flowthrough G.Cell	916133	/1pcs
30mm SEIF Masking Cont. Flowthrough G.Cell	916134	/1pcs
5mm SEIF Masking Cont. Flowthrough Q.Cell	916141	/1pcs
10mm SEIF Masking Cont. Flowthrough Q.Cell	916142	/1pcs
20mm SEIF Masking Cont. Flowthrough Q.Cell	916143	/1pcs
30mm SEIF Masking Cont. Flowthrough Q.Cell	916144	/1pcs

Standards



MOS-1818

MOS-2525

MOS-1818, Power Large Volume Stirring, Up To 20Liter

Magnetic stirrer 175 x 175 mm with a heavy duty brushless (non sparking) induction motor with condenser. Exclusive powerful magnet is especially designed for most efficient magnetic coupling. Stir up to 20-25 litre water • Gentle or vigorous stirring • Integral ring-stand holder • Include rear bracket for support rod.

Stirring Assembly: Electronic speed control provides constant torque over a speed range from 50 to 1200 RPM, regardless viscosity changes of the medium.

Application: Stirring viscous gels • Stirring latex mixtures

- Mixing polymers, starches & Molasses • Standard reagent mixing
- Stir up to 4 liters of aqueous solution • Aluminium top plate remains cool while stirring • For safe operation, all models include a power indicator light that illuminates when power is applied to the control • Quiet stirring at a gentle 100 rpm as well as at a vigorous 1000 rpm operation • Strong magnetic coupling ensures that stir bar remains coupled with drive magnet, even in viscous solutions.

MOS-2525, Large Volume Stirrer

The giant stirrer is similar to the above described Model MOS-1818 but with a 25 x 25 cm. top plate. The giant size top plate easily accommodates stirring loads as large as 20-25 liter water.



MOS-1212

MOS-1212, Magnetic Stirrer Up To 8Liter

Powerful drive magnet • Strong motor-stirs up to 8 litre water • Compact design maximizes use of available bench space • Variable speed control up to 1300rpm • Electronic speed control with "OFF" position • Available as 4-position stirrer, and 6-position stirrer • Powerful motor and strong magnet provide exceptional stirring even with a solution that has a viscosity similar to cooking oil • Durable, easy-to-clean, corrosion-resistant top plate available.

Application: Turbidity testing: maintain solution homogeneity • Polymer integrity tests/viscosity.



MOS-120, Magnetic Stirrer With Clamp

- for holding pH electrode & temperature probe.
- Used for stirring while adjusting pH of solutions.

Features: Low cost, Lightweight and Compact • Designed in a special round shape by ABS housings to resist most harmful chemicals • The speed can be adjusted between 0 to 2300rpm • Suitable for mixing thinly fluid media up to 1000ml • The Clamp can be adjusted height easily for holding PH electrode or temperature probe.



MOS-1212B, Precision Stirring, Up To 200rpm

Precise, controlled stirring • Designed to prevent heat transfer to media • Cool running • Electronic speed control up to 200RPM • Gear motor (without belt) • Powerful drive magnet • Soft start/soft stop speed control permits a gradual change in speed to minimize cell

trauma • The -20°C to 60°C ambient operating temperature range provides optimum performance, either on benchtop or in an incubator • Unique "drip protection" lip on stirrer surface protects internal components in case of spillage • Magnetic stirrer provides precise, controlled, gentle stirring required for optimum cell growth.

Application: Designed for growing anchorage-dependent cells on microcarriers • Traditional suspension methods • Other applications requiring slow, controlled stirring • General lab mixing • Titrations stirring • Preparing culture media.

Model	Top plate	Capacity	Speed range	Dimensions (WxHxD)	Weight
MOS-120	Dia. 120mm	1 Liter	up to 2300 rpm	135x50 mm	0.5 kg
MOS-1212	120x120 mm	8 Liter	100 to 1200 rpm	120x100x135 mm	1.2 kg
MOS-1818	175x175 mm	20 Liter	100 to 1400 rpm	200x150x260 mm	3.2 kg
MOS-2525	250x250 mm	25 Liter	100 to 1400 rpm	250x150x260 mm	4.2 kg
MOS-1212B	120x120 mm	8 Liter	up to 200 rpm	120x150x135 mm	1.8 kg

MUS-4/6/2x2/3x2, MultiMagnetic Stirrer, Separate Speed Controller For Each Channel



MUS-6



MUS-3x2

The Multimagnetic Stirrer provides 4 to 6 stirring places. Separate stirrer control knobs and pilot lamps are provided, so that each stirrer can be independently controlled. 220V/50Hz. (On request 115 V/60Hz).



MUS-4

Dimensions:

Model MUS-4,
4 plates: W600xD146xH80

Model MUS-6,
6 plates: W800xD146xH120

Model MUS-3x2,
2x3 plates: W450xD300xH120

Model MUS-2x2,
2x2 plates: W300xD300xH80



MUS-2x2

Model		MUS-4	MUS-6	MUS-3x2	MUS-2x2
Speed range		0~1300 rpm			
Distance between stirring point		133 mm		150 mm	
Capacity		One point maximum - 8L			
		2liter-6 each			
Material		Plate: Aluminium			
Weight		5kg	7.5kg		5kg
Dimensions (mm)		W600xD146xH80	W800xD146XH120	W450xD300XH120	W300xD300XH80
Wattage		15W	30W		15W
Power		AC110/220/230V, 50/60Hz			
Unit	MUS-4 / MUS-2x2	4 Point magnetic stirrer			
	MUS-6 / MUS-3x2	6 point magnetic stirrer			

MUS-5/10, Multi-Magnetic Stirrer, 1 Speed Controller For All Channels



MUS-5

MUS-10



MUS-5



MUS-10

Low profile - High performance

- Multi-position magnetic stirrers, without heating
- High quality permanent DC brushless motor for quiet and powerful stirring
- Variable speed control between 0 to 1,300rpm
- Stainless steel top plate for the protection against the penetration of liquids
- Stable low profile body for convenient and safe experiment.

Model	MUS-5	MUS-10
Speed range	0~1300 rpm	
Distance between stirring point	90 mm	
Capacity	One point maximum - 2L	
	250ml - 5ea	250ml - 10ea
Material	Plate: Stainless steel	
Weight	3kg	5kg
Dimensions (mm)	W114xD564xH63	W197xD564XH63
Wattage	15W	30W
Power	AC110/220/230V, 50/60Hz	
Unit	ST-5	5 Point magnetic stirrer
	ST-10	10 point magnetic stirrer



RW-Series



RM



RTM

RW-12/06/03-RM-RTM, Small Analog

Features:

- For simple stirring tasks of up to 10liters (H₂O).
- Small high torque motor, quiet, vibrationless.
- Shaft and chuck are in stainless steel.
- Easy height adjustment.
- All-in-one design with an auto heat protection.
- Auto fuse cut-off when overload. Stable speed.
- Wide torque and speed selections, can match the different viscosity and volume.

Option:

- RM model with needle tachometer.
- RTM model is equipped with digital speed and torque meter.

Accessories:

Stirring Shaft: Ø8x500mm

Propeller: No. 8 Ø50mm

Stand base:

W400xD315xH54mm, 8kg.

Holder

Pole



Model	RW-12	RW-06	RW-03
Motor	DC45W		
Speed (rpm)	200~1200	100~600	50~300
Torque (kg-cm)	2.5	5	10
Viscosity (1000 cps/L)	20	50	100
Body size (mm)	E Type: W130xD180xH170, RM/RTM Type: W157xD180xH178		
Body net weight (kg)	4.3		
Power	AC110/220V, 50/60Hz, Single Phase		



RD-12

RD-12/06/03, Small Digital

Features:

- For simple stirring tasks of up to 10liters (H₂O).
- Digital speed meter display.
- Torque meter in analog display.
- All in one construction with sealed enclosure, Quiet operation.
- Torque increase automatically in high viscosity, with a constant speed.
- Fuse cut-off automatically when it is overheat.
- Stainless steel chuck.

Accessories:

Stirring Shaft: Ø8x500mm

Propeller: No. 8 Ø50mm

Stand base:

W400xD315xH54mm, 8kg.

Holder

Pole



Model	RD-12	RD-06	RD-03
Motor	DC45W		
Speed (rpm)	200~1200	100~600	50~300
Torque (kg-cm)	2.5	5	10
Viscosity (1000 cps/L)	20	50	100
Body size (mm)	W97xD210xH161		
Body net weight (kg)	4.6		
Power	AC110/220V, 50/60Hz, Single Phase		



RB-Series



RM

RB-25/40-RM, Medium Analog, High Speed**Features:**

- Stirring quantity maximum 20liters(H₂O).
- Small high torque motor, quiet turning.
- Chemical resistant, stainless steel chuck and stirring shaft.
- Motor over-heat protection .
- Fuse cut off automatically while the max. torque is overload.

Option:

- RM model equipped with analog tachometer.

Accessories:**Stirring Shaft:** Ø8x500mm**Propeller:** No. 8 Ø50mm**Stand base:**

W400xD315xH54mm, 8kg.

Holder**Pole**

Model	RB-25	RB-40
Motor	DC 60W	
Speed (rpm)	0~2500	0~4000
Torque (kg-cm)	2	1.5
Viscosity (1000 cps/L)	5	3
Body size (mm)	W165xD120xH215	
Body net weight (kg)	3.8	
Power	AC110/220V, 50/60Hz, Single Phase	



RP-30



T

RP-30/12/06/03-T, Medium Digital**Features:**

- Stirring quantity maximum 20liters(H₂O).
- For tasks up to the medium viscosity range.
- Small high-torque motor, quite and vibrationless in working.
- Stainless shaft and chuck.
- LED rpm display, touching control pad.
- Auto-supplement of power.
- Automatic microprocessor controller.
- LED timer (0-99 h), (59min) with an alarm buzzer.

Option:

- T series with LED tachometer and torque meter.

Accessories:**Stirring Shaft:** Ø8x500mm**Propeller:** No. 8 Ø50mm**Stand base:**

W400xD315xH54mm, 8kg.

Holder**Pole****RP-12/06/03**

Model	RP-30	RP-12	RP-06	RP-03
Motor	DC60W			
Speed (rpm)	200~3000	120~1200	60~600	30~300
Torque (kg-cm)	1.5	2.5	5	10
Viscosity (1000 cps/L)	5	20	50	100
Time Setting	0~99 Hours, 59 mins			
Body size (mm)	W155xD120xH215	W150xD180xH178		
Body net weight (kg)	4	4.5		
Power	AC110/220V, 50/60Hz, Single Phase			



RL-1500D

RL-1500/0750/0375-D, DC Stirrers

Features: Stirring quantity maximum 30liter(H₂O) • Brushless DC Motor • Double torque (kg-cm) display: Display with 5 sections in percentage. Also, Display with figures in digital • Quick reaction, constant speed, over-heat-protection • Digital timer control in 0-99 hours 59 min • Modern outlook with the easy operation • Stainless steel chuck and stirring shaft • The chuck suits to the shaft under Ø10mm. Easy height adjustment • Various speed and torque selections are available • Basic type without digital display and time setting.

Accessories:

Stirring Shaft: Ø8x500mm

Propeller: No. 8 Ø50mm

Stand base: W400xD315xH54mm, 8kg.

Holder

Pole



RL-1500

Digital Model	RL-1500D	RL-0750D	RL-0375D
Analog Model	RL-1500	RL-0750	RL-0375
Motor	DC-80W		
Speed (rpm)	100-1500	50-750	25-375
Torque (kg-cm)	3	6	12
Viscosity (1000 cps/L)	20	50	100
Time setting	0-99 Hours, 59 mins		
Body size (mm)	W110xD229xH147		
Body net weight (kg)	3.7		
Power	AC110/220V, 50/60Hz		



RL-2000D

RL-2000/1250-D, DC Stirrers

Features: Stirring quantity maximum 30liter(H₂O) • Brushless DC Motor • Double torque (kg-cm) display: Display with 5 sections in percentage. Also, Display with figures in digital • Quick reaction, constant speed, over-heat-protection • Digital timer control in 0-99 hours 59 min • Modern outlook with the easy operation • Stainless steel chuck and stirring shaft • The chuck suits to the shaft under Ø10mm. Easy height adjustment • Various speed and torque selections are available • Basic type without digital display and time setting.



RL-2000

Digital Model	RL-2000D	RL-1250D
Analog Model	RL-2000	RL-1250
Motor	DC-80W	
Speed (rpm)	200-2000	125-1250
Torque (kg-cm)	2.2	3.6
Viscosity (1000 cps/L)	15	25
Time setting	0-99 Hours, 59 mins	
Body size (mm)	W100xD220xH180	
Body net weight (kg)	3.4	
Power	AC110/220V, 50/60Hz	



RL-3000D

Accessories:**Stirring Shaft:** Ø8x500mm**Propeller:** No. 8 Ø50mm**Stand base:** W400xD315xH54mm, 8kg.**Holder****Pole****RL-3000, High Speed Stirrer**

Features: Stirring quantity maximum 50liter(H₂O) • Brushless DC Motor • Double torque (kg-cm) display: Display with 5 sections in percentage. Also, Display with figures in digital • Quick reaction, constant speed, over-heat-protection • Digital timer control in 0-99 hours 59 min • Modern outlook with the easy operation • Stainless steel chuck and stirring shaft • The chuck suits to the shaft under Ø10mm. Easy height adjustment • Various speed and torque selections are available • Basic type without digital display and time setting.



RL-3000

Digital Model	RL-3000D
Base Model	RL-3000
Motor	DC-150W
Speed (rpm)	200-3000
Torque (kg-cm)	3.5
Viscosity (1000 cps/L)	5
Time setting	0~99 Hours, 59 mins
Body size (mm)	W110xD220xH166
Body net weight (kg)	3.5
Power	AC110/220V, 50/60Hz



RG-03/06/12

RG-03/06/12-RM/RTM, Powerfull High Viscosity Stirrers**Features:**

Stirring capacity maximum 80liter(H₂O) • Suitable for material with high viscosity or large volume • Chemical resistant coating as well as stainless steel chuck and shaft • Small motor with high torque, quiet & vibrationless during working • Stirring shaft can be adjusted up and down freely • Auto function of current accelerating & restraining • Overheat and overload safety device

Options:

- RM type with needle tachometer
- RTM type with needle tachometer & torque meter.



RM



RTM



RG-03/06/12

Model	RG-12	RG-06	RG-03
Motor	DC 200W		
Speed (rpm)	200~1200	100~600	50~300
Torque (kg-cm)	15	30	60
Body size (mm)	W125xD250xH250		
Body net weight (kg)	6.5		
Power	AC110/220V, 50/60Hz		



HOM-010

HOM-010/010M/020, HomoMixers - Emulsion Mixer

Applications:

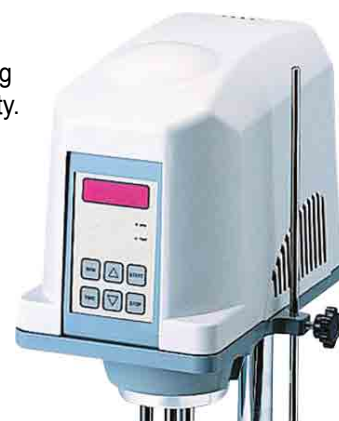
The emulsion mixer makes use of flowing molecule to pressurize, accelerate, destroy and strike samples. Through these interaction, the sample would be dispersed and become tiny and blender. It is suitable for emulsifying food, paint & chemicals, such as dairy, juice, vinegar, fat, molasses and so on.

It can assure not only the emulsification quality but also good efficiency.

No precipitation and separation of phases are strong features of these models. Is ideal for all laboratory work, research and development, QA analysis and small scale production in all industries.

Is suitable for the widest range of applications – mixing, emulsifying, homogenizing, disintegrating and dissolving – with high efficiency and flexibility.

Features: Spring elevator pole easy positioning with • Speed change Stepless, torque increase automatically with a constant speed • Overheat and fuse safety device • Impeller made by stainless steel SUS 316 material • Outline paint is in medicine-resisting coating & make no pollution • Change in speed stepless & stable speed • HOM-010 with LED display speed • HOM-010M with LED timer (0-99 h)(59 imn) speed & time display.



HOM-010M

Model	HOM-010	HOM-010M	HOM-020
Motor	DC 220W		DC 350W
Speed (rpm)	0 ~ 12,000	1,000 ~ 12,000	0 ~ 7000
Max. torque (kg-cm)			5.4
Capacity (L)	0.1 ~ 2		1 ~ 20
Body size (mm)	W145xD285xH210		W145xD285xH250
Stand base size(mm)	W370xD270xH500		W399xD376xH840
Timer	-	(0-99hour)(99min)	
Net weight (kg)	10		18
Power	AC110/220V, 50/60Hz, single phase		AC110/220V,50/60Hz

HOM-010V, Vacuum Emulsion Mixer

The MRC system is a modular designed miniplant reactor system, planned and designed to simulate and optimize chemical reaction processes as well as mixing, dispersion and homogenization processes at a model scale with a maximum volume of 2000 ml. The medium in the reactor vessel can be heated up to 100 °C. Vacuum operation is possible up to 26 mbar.

• Chemical resistant, stainless steel chuck and stirring shaft • Small motor with high torque provides a quiet & vibrationless operation • Stable rotational speed • Widely used in vacuum emulsion preparation.



HOM-010V

Model	HOM-010V
Mixer motor	DC 220W
Speed (rpm)	0~12000
Stirring capacity (L)	0.1~2
Water bath temp.	RT~100°C
Water bath capacity (L)	10
Heater	600W
Vacuum pump motor	250W
Pressure	-740mm-Hg
Pumping speed (L/min)	60
Power	AC110/220V, 50/60Hz



HOD-010M

HOD-010/020, HomoMixers

Features:

- Spring elevator pole easy positioning with Speed change Stepless, torque increase automatically with a constant speed.
- Overheat & fuse safety device.
- Small motor with high torque provides quiet and vibration free operation.
- HOD-010 with LED display speed.
- HOD-010M with LED timer (0-99 h)(59 min) & speed & time display.

Applications:

Suitable using for medicines, dye, weave, adhesive, cosmetic, spice, paint, fiber and general chemicals, drugs, as well as other using for homogenizing, and dispersing of relevant chemical materials.



HOD-010

Model	HOD-010	HOD-010M	HOD-020
Motor	DC 220W		DC 350W
Speed (rpm)	0 ~ 12,000	1,000 ~ 12,000	0 ~ 7,000
Max. torque (kg-cm)			5.4
Capacity (L)	0.1 ~ 5		1 ~ 20
Body size (mm)	W145xD285xH210		W145xD285xH250
Stand base size (mm)	W370xD270xH500		W399xD376xH840
Net weight (kg)	10		17
Power	AC110/220V, 50/60Hz, single phase		AC110/220V, 50/60Hz



RC-350RM

RC Series, High Torque DC-Stirrers

Features:

- Auto function of current accelerating and restraining.
- Small motor with high torque provides quiet and vibrationless operation.
- Over heat protection.

Option:

- "D" model with LED rpm meter.
- RM type with needle tachometer



RC-200D



RC-450D



Model	RC-200	RC-350	RC-450
Motor	DC 200W	DC 350W	DC 450W
Speed (rpm)	0~4000	0~7000	0~4000
Torque (kg-cm)	7	5.4	18
Net weight (kg)	17	18	25
Power	AC110/220V, 50/60Hz, Single Phase		

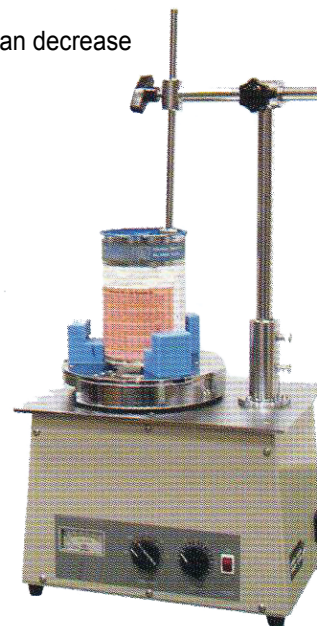


RO-120V

RO-120 Series, High Viscosity Stirrer

It is revolving vessel design, fits high viscosity fluid stir shaft is in stainless steel.

RO-120V is vacuum stir and can decrease bubble during operation.



RO-120

Model	RO-120	RO-120V
Capacity (L)	0.2~5	
Timer (min.)	0~60 or "NO"	
Speed (rpm)	0~120	
Dimension (mm)	W325xD236xH593	W461xD320xH613
Weight (kg)	20	35
Power	AC110/220V ,50/60Hz	



HOD-30

HOD-30, High Speed Stirrer

- LED speed (rpm) display.
- Spring hoister for easy operation.
- Stirring shaft 08mm, length adjusted freely.
- Auto function of current accelerating and restraining.
- With an overheat protection and fuse safety device.
- Small motor with high torque provides quiet and vibration less operation.
- Stainless steel shaft and chuck.

Accessories:


























Stirring Shaft: Ø8x500mm

Propeller: No. 11 Ø50mm

Stand base: W400xD315xH54mm, 8kg.

Holder / Pole

Model	HOD-30
Motor	DC 210W
Speed (rpm)	0~3000
Torque (kg-cm)	7
Viscosity (1000 cps/L)	30
Body size (mm)	W125xD265xH270
Stand Body size (mm)	W310xD270xH690
Body net weight (kg)	10
Power	AC110/220V, 50/60Hz

No.1	No.2	No.3	No.4	No.5
				
Ø 4.5, 5, 6.5, 7.5, 8.5, 9.5cm	Ø 5cm	Ø 5cm	Ø 5cm	Ø 5cm
No.6 4-bladed	No.7	No.8 3-bladed	No.9	No.10 Dissolver stirrer
				
Ø 3, 7, 10cm Standard stirring element. For drawing the material to be mixed from the top to the bottom. Local shearing forces. Generates axial flow in the vessel. Used at medium to high speeds.	Ø 5cm	Ø 5cm Flow-efficient design. For drawing the material to be mixed from the top and the bottom. Minimum shearing forces. Used at medium to high speeds.	Ø 5, 9cm	Ø 1.5, 2.5, 4cm Radial flow, for drawing the material to be mixed from the top and the bottom. High turbulence, high shearing forces. Particle reduction. Used at medium to high speeds.
No.11 Dissolver stirrer	No.12	No.13 3-bladed	No.14 4-bladed	No.15
				
Ø 5, 6, 8, 10, 12, 14cm	Ø 10cm	Ø 5cm	Ø 5, 7, 10cm	Ø 8, 10, 12cm
No.16	No.17 Centrifugal stirrer	No.18 Anchor stirrer	No.19	No.20 Paddle stirrer
				
Ø 8, 10, 12, 16, 20cm	Ø 5cm Two-bladed, blades open with increasing speed. For stirring in round vessels with narrow necks. Effect is similar to that of a 4-bladed propeller stirrer. Medium to high speeds required.	Ø 5, 7, 7.5, 8, 11cm Tangential flow, high shearing rate at edges, minimum deposits on the vessel wall. Used at low speeds. Polymer reactions, even distribution of high mineral contents in liquids. The ideal stirrer for medium to highly viscous fluids.	Ø 9.5cm	Ø 7cm Tangential flow, minimum turbulence, good heat exchange, gentle treatment of product. Used at low to medium speeds.
No.21	No.22	No.23	No.24	No.25
				
Ø 3cm	Ø 2.5, 4cm	Ø 14cm	Ø 10cm	Ø 4cm



PCR-300, Polymerase Chain Reaction

Features:

- Regulated lid pressure, preventing the sample in a centrifugal tube from evaporation
- Heated lid pressure warning device, prevent the excessive power which would easily damage the tube
- This convenient and flexible heating modules changeable device could easy change its required modules
- Electrical connections of modules are designed plug-to-plug, actually make the exchange wirelessly, the exchange is convenient and flexible
- The completely closed Amplification space can effectively prevent having dew on the inner surface of the tube
- Amplification part and operation part is designed right-and-left structure, for using conveniently and safely.



PCRG-400, PCR Thermal Cycler

Features:

- The most advanced PELTIER technology.
- Convenient and flexible fitting for exchanging block easily.
- Large LCD panel enhances visibility and ease-of-operation.
- Graphic display makes programming quick and simple.
- With memory function in case of power-down.
- Low noise, low energy consumption, long application life.
- Large screen display, more intuitive to inspect.
- Optimal design of the human body, the operators more convenient.
- Lid can be arbitrary angle positioning.
- Handle-module, module replacement more secure and convenient



PCRSG-500, PCR Thermal Cycler

Features:

- Convenient and flexible module replacement mode
- The working area of the sample is completely closed which ensures clean and dry low temperature storing
- Two level adjustable hot lid pressure ensures the hot lid touch the testing tube with proper pressure
- Gold or silver-gilt module can improve the efficiency of heat conducting and make the experiment more efficient
- Large size and high-definition LCD
- Intuitive, friendly user interface makes programming easier and faster
- Step less adjustable hot lid
- Memory function in case of power-down
- Low noise, low energy consumption, long application life
- Hot lid could be stopped at any angle
- Metal made hot lid, safer and more reliable
- Windows operating system, PC Connection, External Mouse
- Convenient and free program updating
- Distant fault judgment.

Model	PCRSG-500	PCRG-400	PCR-300
Capacity	96x0.2ml, 54x0.5ml, 384	96x0.2ml, 54x0.5ml, 96x0.2ml+77x0.5ml, 384well	64x0.2ml, 36x0.5ml
Temp. range	0-99° (Ambient temp≤30°)		
Heating/Cooling rate (Max)	≥4.0°C/s	≥4.0°C/s	≥3.0°C/s
Uniformity (At 55°C)	≤±0.2°	≤±0.2°	≤±0.2°
Accuracy	≤±0.1°		
Gradient temp range	30-100°	30°	-
Gradient spread	30° (±15°C)	30° (±15°C)	-
Heated lid temp	20-115°	20-115°	105°
Temp control	Block, tube, calculated	Block, tube, calculated	
Stored program no.	1000	200	99
Max no. of cycle	299	99	
Display	5.7" LCD	5.7" LCD, 320x240pels LCM	4.0" LCD
Communication	USB2.0/RS232/LAN	-	-
Size (mm)	380x270x250	380x270x250	370x249x180
Weight	7.8kg	7.2kg	4.8kg



SONIC SERIES

SONIC Series, Ultrasonic Cell Disruptures Cell Disrupture Homogenizer:

Ultrasonic cell disruptures are multi-function and multipurpose instruments that utilize strong supersonic produce empty effect of taking among liquid, the instruments of multi-function, multiuse of dealing with the supersonic to the material, can be used in the brokenness of many kinds of animal and plant cells, virus cell, at the same time, can use emulsification, separates, melts, draws, subdues steeping, washes and accelerates the chemical reaction etc. evenly. Widely used in such fields as biochemistry, microbiology, medicine chemistry, surface chemistry, physics, zoology, etc. The three types of machines are with temperature control functions.

Optional Probes:



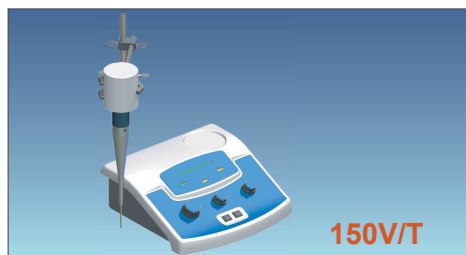
Standard Delivery:

Power supply, Ultrasonic transducer, Ultrasonic probe, Sound abating enclosure.

Main Functions:

- Digital display.
- Automatic tracking frequency.
- Adjustable power.
- Internal timer.
- Duty cycle setup.
- Overload alarm.

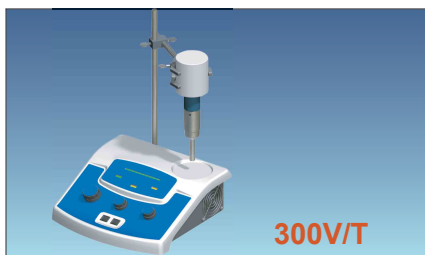
Model	Ultrasonic frequency	Maximum power	Duty ratio (%)	Optional Probes diameter	Standard probe size included with machine	Capacity (ml)	Temp. control
SONIC-150W	20-25 KHz	150W	1-99%	3mm	6mm	10-100ml	No
SONIC-250W	20-25 KHz	250W	1-99%	3mm	6mm	10-200ml	No
SONIC-650W	20-25 KHz	650W	1-99%	2,3,8,10,12, 15mm	6mm	0.5-500ml	No
SONIC-650WT	20-25 KHz	650W	1-99%	2,3,8,10,12, 15mm	6mm	0.5-600ml	Yes
SONIC-950WT	20-25 KHz	950W	0.1-99.9%	2,3,8,10,12, 15, 18mm	6mm	0.5-600ml	Yes
SONIC-1200W	19.5-20.5KHz	1200W	1-99%	15,25ml	20mm	50-1000ml	No
SONIC-1200WT	19.5-20.5KHz	1200W	0.1-99.9%	15,25ml	20mm	50-1000ml	Yes
SONIC-1800W	19.5-20.5KHz	1800W	0.1-99.9%	25,28ml	25mm	50-1200ml	Yes



150V/T

Features:

Power Output	0-150WATTS
Output Frequency	20k Hz
Automatic Tuning	Yes
Microprocessor Control	N/A
Duty Cycle (Pulsing)	10 - 90%
Timer	1-15 minutes
Display	LED
Temperature Controller	N/A
Sound Abating Chamber	Optional



300V/T

Features:

Power Output	0-300WATTS
Output Frequency	20k Hz
Automatic Tuning	Yes
Microprocessor Control	N/A
Duty Cycle (Pulsing)	10 - 90%
Timer	1-15 minutes
Display	LED
Temperature Controller	N/A
Sound Abating Chamber	Optional

ULTRASONIC
3000**Features:**

Power Output	0-300WATTS
Output Frequency	20k Hz
Automatic Tuning	Yes
Microprocessor Control	N/A
Duty Cycle (Pulsing)	10 - 90%
Timer	1-15 minutes
Display	LED
Temperature Controller	N/A
Sound Abating Chamber	Integrated

Titanium Micro Tips (Micro Horns):

Catalog No.	Tip diameter	Processing vol.	Intensity	Type
0-120-0005	5/32" (3.8mm)	300µl-15ml	Very high	Sttaped
0-120-0007*	1/18" (3.2mm)	500µl-10ml	Very high	Tapered
0-120-0008*	3/16" (4.8mm)	750µl-25ml	High	Tapered

* Tapered micro tips are a 2 piece design & must be used in conjunction with the 1/2" dia. tapped tip. cat no. 0-120-0010.

Titanium Standard Tips (Horns):

Solid Tips -are machined from a single piece of Titanium & are preferred when processing liquids with high surface tension. In addition, Solid Tips are generally less likely to cause sample cross contaminations.

Tapped Tips -All include 1 Titanium Replacement, Flat Tip. Flat Tips should be replaced when they show signs of excessive "pitting" and intensity/performance is greatly decreased.



Catalog No.	Tip diameter	Processing vol.	Intensity	Type
0-120-0009	3/8" (9.2 mm)	5ml-200ml	High	Solid
0-120-0010	1/2" (12.7mm)	10ml-300ml	Medium-high	Tapered
0-120-0011	1/2" (12.7mm)	10ml-300ml	Medium-high	Solid
0-120-0012	3/4" (19.1mm)	25ml-600ml	Medium	Tapped
0-120-0013	3/4" (19.1mm)	25ml-600ml	Medium	Solid
0-120-0014	1" (25.4mm)	50ml-1000ml	Low	Tapped
0-120-0015	1" (25.4mm)	50ml-1000ml	Low	Solid

Titanium Replacement Flat Tips:

Catalog No.	0-120-0016	0-120-0017	0-120-0018
Tip diameter	1/2" (12.7mm)	3/4" (19.1mm)	1" (12.7mm)

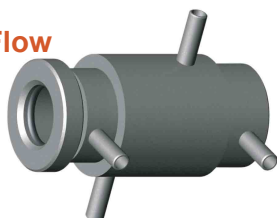
Titanium Cup Tips:

It provide an easy way to process samples without direct exposure to the homogenizer tip, avoiding cross contamination. Titanium Cup Tips can simultaneously process sealed vial, test tubes or micro tubes with identical parameters.

Micro Tube
Tray Holders

Catalog No.	Tip Diameter	Reservoir Vol.	Intensity
0-120-0019	1 1/2" (38.1mm)	250ml	Medium
0-120-0020	2" (50.8mm)	2000ml	Low

Catalog No.	0-120-0021	0-120-0022
No. of tubes	8	20

Continuous Flow Chamber:

This chamber permits continuous processing of liquids, and is designed for emulsifying and homogenizing applications. The continuous flow chamber may be sealed in a closed system when mounted, so that infectious materials can be used. It is equipped with a water flow-through cooling jacket to enable the temperature of the processed solution to be maintained at a desired level.

Ultrasonic Cleaner is on based of Cavitation effect caused by high frequency ultrasonic wave vibration signal in fluid.

Microscopic bubbles are formed and they implode violently that cause Cavitation, which gives out great impact to the cleaning subject and provides an intense scrubbing action on the surface of cleaning subject. Additionally, the bubbles are small enough to penetrate even microscopic crevices, cleaning them thoroughly and consistently.

Cleaning Applications:

Air brushes, spray guns • Archival papers • Automotive & aviation components • Calligraphic pens • Computer plotter pens • Dental and surgical instruments • Dentist burrs • Dentures • Films • Fuel injectors • Geological & metallurgical specimens • Homogenisations • Hypodermic needles • Ink jet cartridges • Jewellery • Laboratory glassware and apparatus • Laparoscopes • Lenses, other optical components • Metal/fibre filters • Metal/rubber seals • Microelectronic circuits & small components • Moulding die • Nozzles & Sieves • Printed circuit boards • Production line cleaning • Scientific & industrial instruments • Spectacle frames • Transparencies • Watches & clockwork. • Electron workshop, Glasses shop, Jewelry shop, Mobile phone, maintain shop, Hospital Dentistry, Office and household articles etc.



AC-Analog series

Ultrasonic cleaner-set with analog timer & temperature controller, with wire basket&lid, highly effective & efficient cleaning, stainless steel, up to 80°C, 0~20min, 40kHz frequency Made of stainless steel, finished surface.

Analog controller, timer, temperature and output control

Features:

- Useful for Cleaning to Remove Dirt, Grease, Waxes and Oil from all Lab Instruments by Ultrasonic Frequency.
- Made of Stainless Steel, Finished Surface.
- Analog Controller, Timer, Temperature and Output Control.
- Temperature Range from Ambient to 80°C.
- Convenient Preset Function: Heating and Timer.
- HF-Frequency: 40kHz.

- Bottom-Mounted Drain (except AC-120H) • Maximum 20 minutes Set Cleaning Time • 220V, 50/60Hz.

Model	AC-120H	AC-150H	AC-200H	AC-400H
Operating Frequency	42Khz	42Khz	42Khz	42Khz
Tank capacity (liters)	3	6	10	30
Internal tank size(mm)	L240xW140xH100	L300xW155xH150	L300xW240xH150	L500xW300xH200
External Dimension(mm)	L270xW170xH240	L330xW180xH310	L330xW270xH310	L550xW330xH360
Internal tank stuff	SUS 304 #1.0t			
External stuff	Steel plate toast paint			
LID cover stuff	Stainless steel SUS 304			
Timer	20 min			
Ultrasonic power	100W	300W	500W	500W
Heating Power	100W	150W	200W	500W
Net Weight	2.8Kg	4.8Kg	7.3Kg	13.9Kg
Drainage	None	Have	Have	Have
Power source	AC100~120V/AC220~240V 50/60Hz			

For intensive cleaning, degassing emulsifying, deflocculation homogenization, & the acceleration of chemical processes in the research, production, and maintenance sectors.

Principle

The clean function of ultrasonic wave is to use the waves over the frequency of human hearing conducting within the liquid. When ultrasonic waves, longitudinal waves, are conducting within the cleaner, which pushing function for the medium will enable the pressure within the liquid to change and produce mini vacuum bubbles referred as Cavitation. When gas bubbles are pressed to break, they will produce so great excitation energy as to separate the dirties stacked to the dead corner of object as well as to enhance clean effect of cleaner. With high frequency, short wave length and strong penetrating power, so that it can completely clean the article having hidden seam or complex structure.

Laboratories	Cleaning, degassing, homogenizing, emulsifying,
Madicine	Cleaning surgical instrument, in the manufacture of implants and stants
Dental	Cleaning instruments for dental treatment, cleaning dental prostheses
Optics	Cleaning spectacles, optical lenses before coating...
Jewellery & watches	Cleaning chains, rings, straps...
Chemical sector	Cleaning reactors, acceleration of chemical reactions...
Plastics industry	Cleaning injection moulds...
Aircraft industry	Cleaning engine parts...

CAV-METER, Cavitation Intensity Meter



Our Ultrasonic Cleaning Cavitation Intensity Meter instantly measures ultrasonic energy (cavitation) directly in ultrasonic cleaning tanks. It is used to measure ultrasonic energy simply by dipping the cavitation meter probe into an ultrasonic tank. It is very rugged and built to last a lifetime. The solid stainless steel probe can be used in any harsh chemical and extreme environments.



DC-Power Full Series

Digital Ultrasonic Cleaner-set, with Wire Basket & Lid, Highly Effective & Efficient Cleaning, Stainless Steel, up to 70°C, 0-99min., Frequency

- Useful for Cleaning to Remove Dirt, Grease, Waxes and Oil from all Lab instruments by Ultrasonic Frequency.
- Microprocessor Control: Timer, Temperature and Output Control.
- HF-Frequency: up to 40kHz.
- Temperature Range from Ambient to 70°C.
- Convenient Preset Function: Heating and Timer.
- Bottom - Mounted Drain (Except DC-80H).
- Maximum 99 minutes Set Cleaning Time.

Model	DC-80H	DC-150H	DC-200H	DC-400H
Operating frequency	40 KHz			
Tank Capacity (liters)	2	7.2	10.8	30
Internal tank size (mm)	L150xW135xH100	L300xW160xH150	L300xW240xH150	L500xW300xH200
External dimension (mm)	L175xW160xH270	L330xW205xH330	L330xW285xH330	L530xW345xH380
Internal tank stuff	SUS 304 #1.0t			
External stuff	Steel plate toast paint			
LID cover stuff	Stainless steel SUS 304			
Timer	30 min	99 min		
Ultrasonic power	80W	150W	200W	400W, 600W
Heating Power	40W	200W	200W	500W
Net weight	3.5kg	8kg	9.5kg, 10.5kg	18.5kg, 19.5kg
Drainage	-	Have		
Power source	AC100~120V/AC220~240V 50/60Hz			

U ULTRASONIC CLEANERS

Personal, Dental

DG-600, Personal Ultrasonic Cleaner (without heating)



Model	DG-600
Operating frequency	43 KHz
Tank Capacity	600 ml
Internal tank size (mm)	L170xW90xH55
External dimen. (mm)	L193xW113xH110
Internal tank stuff	SUS304 # 0.7t
External stuff	ABS with fireproof
Dust cover stuff	Semi transparent plastic
Timer	5 min
Ultrasonic power	50W
Heateing Power	Without
Net weight	1 kg
Power source	AC100~120V/AC220V 50/60Hz

DG-1300, Personal Ultrasonic Cleaner (with heating)



Model	DG-1300
Operating frequency	42 KHz
Tank Capacity	1,300 ml
Internal tank size (mm)	L175xW145xH70
External dimen. (mm)	L228xW183xH158
Internal tank stuff	Stainless steel SUS304
External stuff	ABS with fireproof
Dust cover stuff	Semi transparent plastic
Time Control	5 Cycles with Digital time display
Ultrasonic power	60W
Heateing Power	60°C
Net weight	1.75 kg
Power source	AC 110-120V 60Hz AC 220-240V 50/60 Hz

Features:

- High-power ultrasonic transducer for superior cleaning effect.
- Large capacity tank for professional cleaning.
- Add heating for special cleaning demands.
- 3-59 minutes adjustable with digital display.
- 5 Cycles adjustable with digital display.
- Memory function for the power failure.
- Transparent lid with blue light for view the cleaning process.
- With radiator for longer working time.
- Secure circuitry design with moisture-proof PCBA.

Electron workshop, Glasses shop, Jewelry shop, Mobile phone, maintain shop, Hospital Dentistry, Office and household articles etc.

CLEAN-01, 4.5liter Ultrasonic Cleaner (Dental)



- Cycle time set: 2-30 minutes.
- Temp set: 20-80°C.
- Safety feature: Heating stops when tank is empty.
- Water outlet is installed to drain liquid from the tank easily.
- Low noise fits clinical environment.
- Cleaning basket holds delicate instruments in place.
- Keypads & digital display are user friendly.
- Rinse time can be set from 2 to 30 min, rinse temperature can also be set. Power is automatically cut off when is lack of water.
- External drainage system makes easy change of rinse liquid; Low noise design makes quiet operation.
- Specialized basket is designed for delicate minute devices that should be free from friction and braise, for example, high-speed and low-speed hand piece turbines
- Clear operation plate with digital display makes it easy to operate.



SONIC SERIES

SONIC Series, Ultrasonic Cell Disruptures Cell Disrupture Homogenizer:

Ultrasonic cell disruptures are multi-function and multipurpose instruments that utilize strong supersonic produce empty effect of taking among liquid, the instruments of multi-function, multiuse of dealing with the supersonic to the material, can be used in the brokenness of many kinds of animal and plant cells, virus cell, at the same time, can use emulsification, separates, melts, draws, subdues steeping, washes and accelerates the chemical reaction etc. evenly. Widely used in such fields as biochemistry, microbiology, medicine chemistry, surface chemistry, physics, zoology, etc. The three types of machines are with temperature control functions.

Optional Probes:



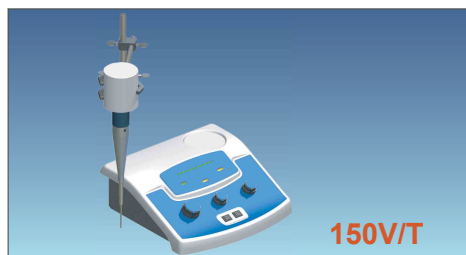
Standard Delivery:

Power supply, Ultrasonic transducer, Ultrasonic probe, Sound abating enclosure.

Main Functions:

- Digital display.
- Automatic tracking frequency.
- Adjustable power.
- Internal timer.
- Duty cycle setup.
- Overload alarm.

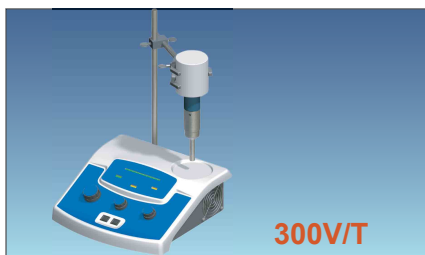
Model	Ultrasonic frequency	Maximum power	Duty ratio (%)	Optional Probes diameter	Standard probe size included with machine	Capacity (ml)	Temp. control
SONIC-150W	20-25 KHz	150W	1-99%	3mm	6mm	10-100ml	No
SONIC-250W	20-25 KHz	250W	1-99%	3mm	6mm	10-200ml	No
SONIC-650W	20-25 KHz	650W	1-99%	2,3,8,10,12, 15mm	6mm	0.5-500ml	No
SONIC-650WT	20-25 KHz	650W	1-99%	2,3,8,10,12, 15mm	6mm	0.5-600ml	Yes
SONIC-950WT	20-25 KHz	950W	0.1-99.9%	2,3,8,10,12, 15, 18mm	6mm	0.5-600ml	Yes
SONIC-1200W	19.5-20.5KHz	1200W	1-99%	15,25ml	20mm	50-1000ml	No
SONIC-1200WT	19.5-20.5KHz	1200W	0.1-99.9%	15,25ml	20mm	50-1000ml	Yes
SONIC-1800W	19.5-20.5KHz	1800W	0.1-99.9%	25,28ml	25mm	50-1200ml	Yes



150V/T

Features:

Power Output	0-150WATTS
Output Frequency	20k Hz
Automatic Tuning	Yes
Microprocessor Control	N/A
Duty Cycle (Pulsing)	10 - 90%
Timer	1-15 minutes
Display	LED
Temperature Controller	N/A
Sound Abating Chamber	Optional



300V/T

Features:

Power Output	0-300WATTS
Output Frequency	20k Hz
Automatic Tuning	Yes
Microprocessor Control	N/A
Duty Cycle (Pulsing)	10 - 90%
Timer	1-15 minutes
Display	LED
Temperature Controller	N/A
Sound Abating Chamber	Optional

ULTRASONIC
3000**Features:**

Power Output	0-300WATTS
Output Frequency	20k Hz
Automatic Tuning	Yes
Microprocessor Control	N/A
Duty Cycle (Pulsing)	10 - 90%
Timer	1-15 minutes
Display	LED
Temperature Controller	N/A
Sound Abating Chamber	Integrated

Titanium Micro Tips (Micro Horns):

Catalog No.	Tip diameter	Processing vol.	Intensity	Type
0-120-0005	5/32" (3.8mm)	300µl-15ml	Very high	Stepped
0-120-0007*	1/18" (3.2mm)	500µl-10ml	Very high	Tapered
0-120-0008*	3/16" (4.8mm)	750µl-25ml	High	Tapered

* Tapered micro tips are a 2 piece design & must be used in conjunction with the 1/2" dia. tapered tip. cat no. 0-120-0010.

Titanium Standard Tips (Horns):

Solid Tips -are machined from a single piece of Titanium & are preferred when processing liquids with high surface tension. In addition, Solid Tips are generally less likely to cause sample cross contaminations.

Tapped Tips -All include 1 Titanium Replacement, Flat Tip. Flat Tips should be replaced when they show signs of excessive "pitting" and intensity/performance is greatly decreased.



Catalog No.	Tip diameter	Processing vol.	Intensity	Type
0-120-0009	3/8" (9.2 mm)	5ml-200ml	High	Solid
0-120-0010	1/2" (12.7mm)	10ml-300ml	Medium-high	Tapered
0-120-0011	1/2" (12.7mm)	10ml-300ml	Medium-high	Solid
0-120-0012	3/4" (19.1mm)	25ml-600ml	Medium	Tapped
0-120-0013	3/4" (19.1mm)	25ml-600ml	Medium	Solid
0-120-0014	1" (25.4mm)	50ml-1000ml	Low	Tapped
0-120-0015	1" (25.4mm)	50ml-1000ml	Low	Solid

Titanium Replacement Flat Tips:

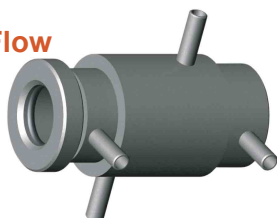
Catalog No.	0-120-0016	0-120-0017	0-120-0018
Tip diameter	1/2" (12.7mm)	3/4" (19.1mm)	1" (12.7mm)

Titanium Cup Tips:

It provide an easy way to process samples without direct exposure to the homogenizer tip, avoiding cross contamination. Titanium Cup Tips can simultaneously process sealed vial, test tubes or micro tubes with identical parameters.

Micro Tube
Tray Holders

Catalog No.	Tip Diameter	Reservoir Vol.	Intensity
0-120-0019	1 1/2" (38.1mm)	250ml	Medium
0-120-0020	2" (50.8mm)	2000ml	Low
Catalog No.	0-120-0021		0-120-0022
No. of tubes	8		20

Continuous Flow Chamber:

This chamber permits continuous processing of liquids, and is designed for emulsifying and homogenizing applications.

The continuous flow chamber may be sealed in a closed system when mounted, so that infectious materials can be used.

It is equipped with a water flow-through cooling jacket to enable the temperature of the processed solution to be maintained at a desired level.

VP-Series, Oil-Free Vacuum Pump/Compressor



VP-17

VP-19

VP-33

VP Series vacuum pump is a piston-powered, oil-free pump.

With innovative electronic, mechanical technology and human design concept make.

VP's family quiet and low vibration, compact and light weight, clean and maintenance free, safe and comfortable.

- **Quiet and low vibration**

Directly motor driven without transmission mechanism and quality rubber feet keep noise level only 50 dB, which is the lowest among equivalent products.

- **Compact and light weight**

Aluminum die-cast and precise construction makes VP's family so small, compact, and light weight.

- **Clean and maintenance free**

Oil-free design makes it clean and maintenance free, we guarantee two years of free service parts.

- **Safe and comfortable**

VP's families are as appropriate as pressure air supplier or suction units.

They are adaptable to many laboratory and industry requirements, such as:

- Liquid filtration for microbiology
- Liquid filtration for suspended solid test
- Air sampling
- Vacuum tweezers
- Aeration bubbler
- Vacuum oven

Model		VP-17	VP-34	VP-19	VP-58	VP-33
Power		220-240V/50Hz	220-240V/50Hz	220-240V/50Hz	220-240V/50Hz	220-240V/50Hz
Max power consumption (W)		65/60	100/80	100/80	210/190	210/190
Max. current (A)		0.7/0.3	1.0/0.4	1.0/0.4	1.9/1	1.9/1
Max. vacuum		-650mmHg=85.5kPa =110Torr=146milibar	-650mmHg=85.5kPa =110Torr=146milibar	-730mmHg=97.33kPa =30Torr=40milibar	-650mmHg=85.5kPa =110Torr=146milibar	-730mmHg=97.33kPa =30Torr=40milibar
Vacuum	0mmHg	17 l/min=0.6CFM	34 l/min=1.2CFM	19 l/min=0.67CFM	58 l/min=2.05CFM	33 l/min=1.17CFM
	100mmHg	14 l/min=0.49CFM	31 l/min=1.09CFM	18 l/min=0.64CFM	52 l/min=1.84CFM	30 l/min=1.06CFM
	200mmHg	12 l/min=0.42CFM	29 l/min=1.02CFM	16 l/min=0.57CFM	46 l/min=1.63CFM	27 l/min=0.95CFM
	300mmHg	9.5 l/min=0.34CFM	23 l/min=0.81CFM	14 l/min=0.49CFM	40 l/min=1.41CFM	25 l/min=0.88CFM
	400mmHg	7 l/min=0.25CFM	19 l/min=0.67CFM	11 l/min=0.39CFM	30 l/min=1.06CFM	20 l/min=0.71CFM
	500mmHg	4.5 l/min=0.16CFM	13 l/min=0.46CFM	9 l/min=0.32CFM	16 l/min=0.57CFM	14 l/min=0.49CFM
	600mmHg	1.5 l/min=0.05CFM	4 l/min=0.14CFM	6 l/min=0.21CFM	6 l/min=0.21CFM	12 l/min=0.42CFM
Motor rotation		1450 RPM	1450 RPM	1450 RPM	1450 RPM	1450 RPM
Capacitor		6uf/250V/ 2uf/450V	10uf/250V/ 3uf/450V	10uf/250V/ 3uf/450V	16uf/250V/ 5uf/400V	16uf/250V/ 5uf/400V
Horse power		1/8HP	1/6HP	1/6HP	1/4HP	1/4HP
Pole		4P	4P	4P	4P	4P
Net wet		4.1kg	5.2kg	5.2kg	7.6kg	7.6kg
Port thread		5/16"	5/16"	5/16"	5/16"	5/16"
Noise level		50dB	50dB	50dB	52dB	52dB

MANF-3/6, Multi Brauch Manifolds**Specifications:**

- 3-branch stainless steel manifold.
- Includes 3 stainless steel cups (100ml), each branch is individually controlled within maximum.
- Pressure 3000 psi.
- Filter size :47mm.
- SS#316 stainless steel construction.

**Specifications:**

- 6-branch stainless steel manifold.
- Includes 6 stainless steel cups (100ml), each branch is individually controlled within maximum.
- Pressure 3000 psi.
- Filter size :47mm.
- SS#316 stainless steel construction.

Specifications:

- The complete system includes MANVS.
- 3-branch stainless steel manifold.
- With 3 pcs stainless steel cup (SS316, 47mm, 100ml).
- A dragon 100 torch burner.
- PALL GN-6 membrane (200/pk).
- A suction bottle (3000ml,PC).
- Two silicon tube(1M) and Rocker 400 vacuum.
- pump for organism test.

**COMP-25, Compressor****Features:**

- Quiet and low vibration.
- Compact and light weight.
- Clean and maintenance free Safe and comfortable.

Applications:

- Fermenter
- Bioreactor
- Dust cleaner

Model		COMP-25			
Power		220-240V/50Hz			
Max. power consumption (W)		125			
Max. current (A)		0.6			
Max. vacuum		60psi=4.2kg/cm ² =4.1bar			
Max. pressure (without tank)	0 PSI	25 l/min=0.88CFM			
	20 PSI	23 l/min=0.81CFM			
	30 PSI	18 l/min=0.64CFM			
	40 PSI	16 l/min=0.57CFM			
Max. flow rate (with tank)	20 PSI	Time	0-15 sec.	15-30 sec.	after 30 sec.
	Flow	40 l/in=1.41CFM	Decreasing	25 l/in=0.88CFM	
	30 PSI	Time	0-10 sec.	10-25 sec.	after 25 sec.
	Flow	50 l/in=1.77CFM	Decreasing	25 l/in=0.88CFM	
	40 PSI	Time	0-8 sec.	8-22 sec.	after 22 sec.
	Flow	60 l/in=2.1CFM	Decreasing	25 l/in=0.88CFM	
	Motor rotation	1700 RPM			
	Capacitor	3uf/250V			
Horse power		1/6HP			
Pole		4P			
Net wet		8.4kg			
Gross weight		9.4kg			
Port thread		5/16"			
Noise level		50dB			

CVP-13/14/32, Chemical Resistant Pumps



CVP-14

CVP-32

CVP-13

Features:

Chemker series are chemical resistant, diaphragm vacuum pumps which can be widely used to hard acidic, basic and solvent vapors by utilizing corrosion proof PTFE on all the wetted surfaces. Through innovative mechanical technology & human considerations, we have made Chemker series to be quiet, safe, maintenance-free and I cost effective vacuum pumps.

Applications:

- Rotary evaporator (CVP-13 only).
- Gel drying.
- Blotting.
- Solvent filtration.



Model		CVP-14	CVP-32	CVP-13
Power		220-240V/50Hz	220-240V/50Hz	220-240V/50Hz
Max power consumption (W)		60	95	95
Max. current (A)		0.32	0.6	0.6
Max. vacuum		-650mmHg=85.5kPa =110Torr=146milibar	-650mmHg=85.5kPa =110Torr=146milibar	-750mmHg=98.68kPa =10Torr=13milibar
Max. pressure		25PSI	30PSI	30PSI
Vacuum	0mmHg	14 l/min=0.49CFM	28 l/min=0.99CFM	13 l/min=0.46CFM
	200mmHg	8 l/min=0.28CFM	16 l/min=0.57CFM	7 l/min=0.25CFM
	400mmHg	4 l/min=0.14CFM	8 l/min=0.28CFM	4 l/min=0.14CFM
	500mmHg	3 l/min=0.11CFM	6 l/min=0.21CFM	3 l/min=0.11CFM
Motor rotation		1450 RPM	1450 RPM	1450 RPM
Capacitor		2uf/450V	4uf/400V	4uf/450V
Horse power		1/8HP	1/6HP	1/6HP
Pole		4P	4P	4P
Net wet		5kg	7kg	7kg
Gross weight		5.2kg	7.4kg	7.4kg
Port thread		5/16"	5/16"	5/16"
Noise level		50dB	52dB	50dB

Aspirator

AS-3, Aspirator



AS-3

Feature: This apparatus is equipped with low-noise 150W motor, & this Aspirator of high suction ability. It can reach the vacuum station you need at very short time. Applied on the fields of vacuum evaporator, vapor filtration and all suction's procedures.

Vacuum capacity	5°C	10°C	20°C	30°C
	7mmHg	12mmHg	20mmHg	28mmHg
Air velocity	16~18L/Min x2			
Motor	Induction motor 150W			
Tank	Polypropylene tank 10L			
Suction port	Two suction port 8 mm			
Overflow & drain	Overflow nozzle 17.5 mm			
Aspirator tube	2 Pieces			
Power	110V/220V, 260VA			
Dimensions (mm)	360Lx240Wx390H			



ST-Series

ST-Series, Rotary Vane Vacuum Pump

ST-Series vacuum pump is a rotary pump, specially engineered for laboratory high volume and medium high vacuum applications, such as vacuum drying, vacuum filtration, centrifugal concentrator etc. With innovative mechanical technology and human design concept make tanker's family extremely quiet, low vibration, and long life service. In addition, alloy aluminium casing and rugged handle make it light filter help us to avoid oil mist spraying and reducing air pollution.

Features: Very high vacuum • High flow rate • Quiet and low vibration • Compact and light weight.

Applications: Vacuum oven • Vacuum freezer • Vacuum concentrator.



Lubricant

ST SC is a special formulation lubricant for ST's pump, excellent viscosity temperature behavior, oxidation stability and resistance to ageing.



Exhaust Filter

Optional accessory for capturing oil mist from exhaust port stainless steel housing built in a replaceable filter element.

Model	ST-85	ST-140	ST-42	ST-185
CFM (L/Min) 60Hz	3(85)	5(140)	1.5(42)	3(85)
Max. Vacuum, Torr (mBar)	0.1(0.13)	0.1(0.13)	0.05(0.066)	0.05(0.066)
Motor Pump Speed (@60Hz)	1725 rpm	1725 rpm	1725 rpm	1725 rpm
Motor Horsepower (HP)	1/3	1/2	1/3	1/2
Intake Connection (inch)	5/16"	5/16"	5/16"	5/16"
Noise Level (dB)	52	52	52	52
Weight (kg)	8.6	12	10.4	13
Dimensions (mm)	L314xM122xH256	L335xM138xH270	L314xM122xH256	L385xM206xH304



FVP

FVP, Vacuum Filtration Stand

FVP is an innovatory filtration stand, which is the first unit in the global market to assemble all apparatuses in one base so as to save 1/2 of table space than traditional way.

Features:

Unique magnetic fixing stand enable flask to be placed firmly • Rapid draining design let operator to be from unpacking flask to pour out filtrated water • Adopt oil free vacuum pump, no maintenance.

FVP-GN6 - filtration stand, complete set

include suction

flask & stainless steel funnel

(100ml), dragon 100 torch burner and PALL GN-6 membrane filter (0.45 um).



FVP-GN6

FVP - filtration stand, complete set include suction flask (without funnel).

FVP-4242 - filtration stand, AC110V/60Hz, AC220V/50Hz, complete set include suction flask & PALL# 4242 funnel (300ml).

Vacuum filtration is widely used in laboratory for various tests such as microorganism test in food, pharmacy, beverage, drinking water industries and suspended solid test in environment protection field, sample or solution pretreatment before microanalysis such as AA, HPLS, GC, etc.

Filtration Glass Set-include suction flask & funnel

Innovative suction bottle with drain • Weighted tray for firmly holding • All the glass ware are made of borosilicate glass.



FGS-003 includes sintered I glass funnel (capacity 300ml, 47mm diam.) with tabulated base, clamp, jointed flask(1000ml) for sample pretreatment or solution refining used micro analysis, such as HPLC, AA, GC etc.



FGS-005 includes sintered glass funnel with silicon stopper(capacity 300ml, 47mm diameter), clamp, flask (1000ml) for sample pretreatment or solution refining used micro analysis, such as HPLC, AA, GC etc.



FGS-007 includes glass funnel (capacity 15ml, 25mm diameter), base with stainless steel support and PTFE gasket and silicon stopper, clamp, flask (125ml) for pretreatment of viscous sample.



FGS-001 filtration glass set is an unique collocation which combines a magnetic funnel (capacity 300ml, 47mm diameter), stopper & an innovative magnetic suction bottle (PYREX flask modified, 1000ml) with drain & held firmly by a weighted tray for general filtration such suspended solid test.

DC1S, Vacuum Controller



- Absolute Pressure 1400 - 1 mbar
- 1050 - 1 Torr

Silent vacuum controller with internal, continuous valves. By a novel, patented method and fuzzy logic extremely powerful, quick and precise.

Advantages:

- continuous control valves made of synthetics (PPS)
- manual setpoint adjustment or automatic mode for finding boiling points
- chemically resistant ceramic-sensor

Examples For Applications:

rotary evaporators • vacuum drying • laboratory workplaces



FGS-002 filtration glass set is an unique collocation which combines a stainless steel funnel (100ml), stopper & an innovative magnetic suction bottle (PYREX flask modified, 1000ml) with drain and held firmly by a weighted tray for filtration need fast sterilization such as Total Bacteria, Coliform test.



FGS-004 includes sintered glass funnel (capacity 15ml, 25mm diameter), clamp, suction bottle (125ml) for sample pretreatment used in micro analysis, such as DNA/RNA hybridization etc.



FGS-006 includes glass funnel (capacity 300ml, 47mm diameter), base with stainless steel support and PTFE gasket and silicon stopper, clamp, flask (1000ml) for pretreatment of viscous sample.

Vacuum filtration system includes FGS-002 glass set & VP-17 vacuum pump.



Vacuum filtration system includes FGS-005 glass set & VP-14.



Portable Suction Units



BSU-991



BSU-510



BSU-990

Features:

- Equipped with oil-less piston vacuum pump ensures lubrication free and maintenance free.
- A 1000ml autoclaveable polycarbonate collection jar graduated in "ml" with fluid overflow preventive fitting.
- Built-in vacuum gauge ranges 0 - 760mmHg (0 - 30inHg) easy for direct reading.
- All models are CE-certified complied with EMC requirement of EN60601-1/ EN60601-1-2/EN55011 Class B/ IEC61000-32/IEC61000-3-3.
- Classified the equipment as Class I.



BSU-660



BSU-770

BSU-510

- Choice of oil rotary vane pump or oil-less piston vacuum pump to suit your intended purpose.
- Comes with 2 plastic collection jars incorporated with overflow preventive stopper.
- Comes with foot switch providing another choice of operation for intermittent and continuous suction procedure.

BSU-990: (Battery Rechargeable for EMERGENCY purpose)

- Comes with plug-in cable available for use in ambulance, car or anyplace where 12VDC is available for emergency purpose.

- Equipped with a Sealed Lead-Acid 12V rechargeable battery and an automatic charging system to function a fully automatic power charge at the same time when AC mains power is used.
- 1 to 1.5 hours are available for operate from the full charge of battery. Or optional for, battery capable of 3 - 3.5 hours. Ideal for use in areas where the failure of mains power, unstable current or the blackout occurs every often.
- 3-steps switch for BSU-990 functions Suction' OFF and Charge.
- **BSU-991** is operated in AC power and/or also applied to operate in ambulance and car by the attached plug-in cable, but no battery is equipped.

Model	BSU-990 (new)	BSU-991 (new)	BSU-660	BSU-510	
			BSU-770		
Dimension (MM) approx.	200x350x205	200x350x205	435x200x255 320x145x240	450x250x310	
Vacuum pump	Oil-less piston	Oil-less piston	Oil-less piston	Oil rotary	Oil-less
Airflow rate (LPM, approx.)	13-15L	13-15L	13-15L	80L	28-33L
Vacuum range (± 10 mmHg)	0-600mmHg	0-600mmHg	0-600mmHg	0-700	0-680
Overflow prevention	Yes	Yes	Yes	Yes	
Collection bottle (plastic)	1000ml x 1pc	1000ml x 1pc	1000ml x 1pc	1000ml x 2pc	
12V battery operation	190 minutes	N.A.	N.A.	N.A.	
(From the full charge) Standard accessory	Suction tubing 1000ml jar x 1	Suction tubing 1000ml jar x 1	Suction tubing 1000ml jar x 1	Suction tubing x 1 1000ml jar x 2	
Optional accessory	Bacteria filter	Bacteria filter	Bacteria filter	Bacteria filter	

Mobile Suction Units



BSU-305

BSU-305P

BSU-510-1

Features:

- User-friendly design, ideal for use in operation theater room or general wards providing an efficient performance such as suction biopsy, surgery, endometrial curette, OB/GYN and abortion etc.
- BSU-305 features a storage cabinet on back, convenient for storing accessories and tools.
- Built-in vacuum gauge with a range from 0 - 760mmHg (0 - 31 inHg) for direct readout.
- Provided with autoclave-able poly carbonate bottles graduated in ML incorporated with over-flow preventive fitting.
- Changeover to another bottle by turning the control knob LEFT-RIGHT for suctioning to the corresponding bottle.
- BSU-305P features one piece molded exterior body made by compact fiberglass for superior resistance to rust, chop and corrosion easy for cleaning.
- Mounted by 4 rubber anti-static wheels with 2 locking facility.
- Strong vacuum aspiration regulated from 0 to the maximum capable of sustaining of performing all purposes.
- Silicon suction tubing is autoclave-able and reusable.
- Low noise operation for use in hospital ward and theater room.

Model	BSU-305	BSU-305P		BSU-501-1	
Overall dimension	640x395x825mm	500x420x885mm		455x300x710mm	
Vacuum pump	Oil rotary	Oil rotary	Oil-less	Oil rotary	Oil-less
Cylinder (piston pump)	No	No	2	No	1
Wattage	191W	191W	270W	191W	200W
Max. airflow (±10%)	80 LPM	80 LPM	75-85 LPM	80 LPM	28-33 LPM
Max. vacuum (±10% mmHg)	710mmHg	710mmHg	680mmHg	710mmHg	680mmHg
Net weight (approx.)	35.3kg	28.3kg	26kg	23.5kg	19.3kg
Collection jars	3000ml plastic jars	3000ml plastic jars		1000ml plastic x 2pcs	
Overall prevention	Yes	Yes		Yes	
Standard accessory	Jars x 2+footswitch x 1, Silicon suction tubing x 1	Jars x 2+footswitch x 1, Silicon suction tubing x 1		Jars x 2+footswitch x 1, Silicon suction tubing x 1	
Optional accessory	Bacteria filter, suction cup cannula tube set	Bacteria filter, suction cup cannula tube set		Bacteria filter, suction cup cannula tube set	
Quality standard	ISO9001, ISO 13485, GMP, CE	ISO9001, ISO 13485, GMP, CE		ISO9001, ISO 13485, GMP, CE	

V VACUUM PUMPS

Bio Suction Unit

BSU-25/40, Bio Suction Units



Features: Double overflow Protection

Bio Suction System includes a level float control in the suction bottle and disc filter between bottle and pump which will completely avoid medium flowing into vacuum pump.

Maintenance free

Bio Suction system adopt oil free vacuum pump, low noise, durable and no maintenance is required.

Durable Case

Whole A.B.S.made outer shell with light weight, shiny appearance and easy maintenance.

Autoclavable

Suction Bottle, tube are steam autoclavable.

Applications: Cell culture aspiration • Medium suction

BSU-25 - Includes suction bottle (1000cc), Silicon tube (100cm), Single-channel aspiration adapter each 1ea, 0.2µm disc filter (Ø37mm), fuse each 2ea.

BSU-40 - Includes suction bottle (2000cc), Silicon tube (100cm), Single-channel aspiration adapter foot-switch each 1ea, 0.2µm disc filter (Ø50mm), fuse each 2ea.

Model	BSU-25	BSU-40
Pump type	Diaphragm	Piston
Motor power	25W	200W
Max. vacuum	680 mmHg	700 mmHg
Max. flow	25 l/min	40 l/min
Pole	4	4
Safety	Thermal protector, auto reset	
Foot switch control	-	ON for suction, OFF for release
Net/gross weight	4.3/5.5kg	12/16.2kg
Machine size (cm)	L37xW15xH25	L54xW26xH35
Dimensions (cm)	L43xW22xH32	L62xW32xH44
Power	AC 110V/60Hz or 220V/50Hz	

Options:

167200-37, Bio-suction aspiration adapter set:

1. Single channel plastic aspiration adapter.
2. Single channel stainless steel aspiration adapter.
3. Single channel plastic aspiration adapter with ejector for plastic tips.
4. Hand operator.
5. 8 Channel stainless steel aspiration adapter.
6. 8 Channel plastic aspiration with ejector for plastic tips.
7. Stand for hand operator.



167200-37

DISC FILTER



Options:

0.2µm Disc filter:

1. Made of hydrophobic PTFE which can prevent medium from flowing into the pump.
2. Autoclavable (15 minutes at 121°C).
3. Air flow rate (at 10psi).

Options:

167200-31/32/33, Suction bottles/rack:

1. Hit resistant adopt polycarbonate material to improve anti-bump ability.
2. Autoclavable heating resistant up to 130°C.
3. Safe with float level control to prevent medium from flowing into the pump.
4. Capacities: **167200-31** - 1000ml, **167200-32** - 2000ml, **167200-33** - 3000ml.



SUCTION BOTTLE

VACUUM METER

Model : VC-9200

FEATURES

* Absolute vacuum & absolute pressure measurement	* Auto shut off saves battery life.
* Wide measure range from 1 to 1500 mbar.	* Microprocessor circuit assures maximum possible accuracy, provides special functions and features,
* Overload protection up to 2000 mbar max.	* Records maximum & minimum readings with recall.
* Separate probe, easy operation.	* Data Hold function for stored the desired value on display.
* Application : Automobile, Industrial, laboratory, heating, ventilation, medical hospital.....	* Built-in low battery indicator.
* Heavy duty sensor used for air, oil gas, liquid.	* RS232 PC serial interface, can match the personal computer used as the Data Logger, Recorder....
* 8 kind display units (torr, mm Hg, micron, mbar, KPa, Pa, inch Hg, psi) select by push button on the front panel.	

GENERAL SPECIFICATIONS

Display	61 mm x 34 mm supper large LCD display. 15 mm (0.6") digit size.	Power supply	006P DC 9V battery(heavy duty).
Display units	8 kind display units : torr, mm Hg, micron, mbar, KPa, Pa, inch Hg, psi.	Power current	Approx. DC 6.0 mA.
Circuit	Microprocessor LSI circuit.	Pressure Port Connector	1/4" PS
Function	Data hold, memory (max., min.)	Weight	<i>Instrument :</i> 220 g/0.48 LB.
Sensor probe	* Separate probe, easy operation. * Heavy duty sensor used for vacuum measurement of air, oil gas, liquid.		<i>Sensor probe :</i> 175 g/0.39 LB.
Data hold	By push button.	Dimension	<i>Meter :</i> 180 x 72 x 32 mm (7.1 x 2.8 x 1.3 inch)
Data record	Record maximum & minimum readings.		<i>Sensor probe :</i> 90 mm x 30 mm Dia.
Data output	RS 232 PC serial interface.	Accessories	* Sensor probe..... 1 PC.
Sampling time	Approx. 0.8 second.		* Instruction manual..... 1 PC.
Power off	Auto shut off, saves battery life, or manual off by push button.	included	* Hard carrying case..... 1 PC.
Operating temperature	0 to 50 °C (32 to 122 °F).	Optional accessories	* Data acquisition software (Windows version), SW-U801-WIN.
Operating humidity	Less than 80% R.H.		* RS232 cable, UPCB-01 * USB cable, USB-01

ELECTRICAL SPECIFICATIONS

Unit	Max. range	Resolution	Accuracy (23± 5 °C)
mbar	1500 mbar	1 mbar	± 1 % F. S. (F.S. : full scale) <i>Note :</i> <i>Included linearity, hysteresis and repeatability</i>
KPa	150.0 KPa	0.1 KPa	
Pa	150,000 Pa	100 Pa	
torr	1125 torr	1 torr	
mm Hg	1125 mm Hg	1 mm Hg	
micron	1125,000 micron	1000 micron	
inch Hg	44.30 inch Hg	0.02 inch Hg	
psi	21.75 psi	0.01 psi	

* Appearance and specifications listed in this brochure are subject to change without notice.

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VP-Series, Oil-Free Vacuum Pump/Compressor



VP-17

VP-19

VP-33

VP Series vacuum pump is a piston-powered, oil-free pump.

With innovative electronic, mechanical technology and human design concept make.

VP's family quiet and low vibration, compact and light weight, clean and maintenance free, safe and comfortable.

- **Quiet and low vibration**

Directly motor driven without transmission mechanism and quality rubber feet keep noise level only 50 dB, which is the lowest among equivalent products.

- **Compact and light weight**

Aluminum die-cast and precise construction makes VP's family so small, compact, and light weight.

- **Clean and maintenance free**

Oil-free design makes it clean and maintenance free, we guarantee two years of free service parts.

- **Safe and comfortable**

VP's families are as appropriate as pressure air supplier or suction units.

They are adaptable to many laboratory and industry requirements, such as:

- Liquid filtration for microbiology
- Liquid filtration for suspended solid test
- Air sampling
- Vacuum tweezers
- Aeration bubbler
- Vacuum oven

Model		VP-17	VP-34	VP-19	VP-58	VP-33
Power		220-240V/50Hz	220-240V/50Hz	220-240V/50Hz	220-240V/50Hz	220-240V/50Hz
Max power consumption (W)		65/60	100/80	100/80	210/190	210/190
Max. current (A)		0.7/0.3	1.0/0.4	1.0/0.4	1.9/1	1.9/1
Max. vacuum		-650mmHg=85.5kPa =110Torr=146milibar	-650mmHg=85.5kPa =110Torr=146milibar	-730mmHg=97.33kPa =30Torr=40milibar	-650mmHg=85.5kPa =110Torr=146milibar	-730mmHg=97.33kPa =30Torr=40milibar
Vacuum	0mmHg	17 l/min=0.6CFM	34 l/min=1.2CFM	19 l/min=0.67CFM	58 l/min=2.05CFM	33 l/min=1.17CFM
	100mmHg	14 l/min=0.49CFM	31 l/min=1.09CFM	18 l/min=0.64CFM	52 l/min=1.84CFM	30 l/min=1.06CFM
	200mmHg	12 l/min=0.42CFM	29 l/min=1.02CFM	16 l/min=0.57CFM	46 l/min=1.63CFM	27 l/min=0.95CFM
	300mmHg	9.5 l/min=0.34CFM	23 l/min=0.81CFM	14 l/min=0.49CFM	40 l/min=1.41CFM	25 l/min=0.88CFM
	400mmHg	7 l/min=0.25CFM	19 l/min=0.67CFM	11 l/min=0.39CFM	30 l/min=1.06CFM	20 l/min=0.71CFM
	500mmHg	4.5 l/min=0.16CFM	13 l/min=0.46CFM	9 l/min=0.32CFM	16 l/min=0.57CFM	14 l/min=0.49CFM
	600mmHg	1.5 l/min=0.05CFM	4 l/min=0.14CFM	6 l/min=0.21CFM	6 l/min=0.21CFM	12 l/min=0.42CFM
Motor rotation		1450 RPM	1450 RPM	1450 RPM	1450 RPM	1450 RPM
Capacitor		6uf/250V/ 2uf/450V	10uf/250V/ 3uf/450V	10uf/250V/ 3uf/450V	16uf/250V/ 5uf/400V	16uf/250V/ 5uf/400V
Horse power		1/8HP	1/6HP	1/6HP	1/4HP	1/4HP
Pole		4P	4P	4P	4P	4P
Net wet		4.1kg	5.2kg	5.2kg	7.6kg	7.6kg
Port thread		5/16"	5/16"	5/16"	5/16"	5/16"
Noise level		50dB	50dB	50dB	52dB	52dB

MANF-3/6, Multi Branch Manifolds**MANF-3****Specifications:**

- 3-branch stainless steel manifold.
- Includes 3 stainless steel cups (100ml), each branch is individually controlled within maximum.
- Pressure 3000 psi.
- Filter size :47mm.
- SS#316 stainless steel construction.

**MANF-6****Specifications:**

- 6-branch stainless steel manifold.
- Includes 6 stainless steel cups (100ml), each branch is individually controlled within maximum.
- Pressure 3000 psi.
- Filter size :47mm.
- SS#316 stainless steel construction.

Specifications:

- The complete system includes MANVS.
- 3-branch stainless steel manifold.
- With 3 pcs stainless steel cup (SS316, 47mm, 100ml).
- A dragon 100 torch burner.
- PALL GN-6 membrane (200/pk).
- A suction bottle (3000ml,PC).
- Two silicon tube(1M) and Rocker 400 vacuum.
- pump for organism test.

**COMP-25, Compressor****COMP-25****Features:**

- Quiet and low vibration.
- Compact and light weight.
- Clean and maintenance free Safe and comfortable.

Applications:

- Fermenter
- Bioreactor
- Dust cleaner

Model		COMP-25			
Power		220-240V/50Hz			
Max. power consumption (W)		125			
Max. current (A)		0.6			
Max. vacuum		60psi=4.2kg/cm ² =4.1bar			
Max. pressure (without tank)	0 PSI	25 l/min=0.88CFM			
	20 PSI	23 l/min=0.81CFM			
	30 PSI	18 l/min=0.64CFM			
	40 PSI	16 l/min=0.57CFM			
Max. flow rate (with tank)	20 PSI	Time	0-15 sec.	15-30 sec.	after 30 sec.
	Flow	40 l/in=1.41CFM	Decreasing	25 l/in=0.88CFM	
	30 PSI	Time	0-10 sec.	10-25 sec.	after 25 sec.
	Flow	50 l/in=1.77CFM	Decreasing	25 l/in=0.88CFM	
	40 PSI	Time	0-8 sec.	8-22 sec.	after 22 sec.
	Flow	60 l/in=2.1CFM	Decreasing	25 l/in=0.88CFM	
	Motor rotation	1700 RPM			
	Capacitor	3uf/250V			
Horse power		1/6HP			
Pole		4P			
Net wet		8.4kg			
Gross weight		9.4kg			
Port thread		5/16"			
Noise level		50dB			

CVP-13/14/32, Chemical Resistant Pumps



Features:

Chemker series are chemical resistant, diaphragm vacuum pumps which can be widely used to hard acidic, basic and solvent vapors by utilizing corrosion proof PTFE on all the wetted surfaces. Through innovative mechanical technology & human considerations, we have made Chemker series to be quiet, safe, maintenance-free and I cost effective vacuum pumps.

Applications:

- Rotary evaporator (CVP-13 only).
- Gel drying.
- Blotting.
- Solvent filtration.



Model		CVP-14	CVP-32	CVP-13
Power		220-240V/50Hz	220-240V/50Hz	220-240V/50Hz
Max power consumption (W)		60	95	95
Max. current (A)		0.32	0.6	0.6
Max. vacuum		-650mmHg=85.5kPa =110Torr=146milibar	-650mmHg=85.5kPa =110Torr=146milibar	-750mmHg=98.68kPa =10Torr=13milibar
Max. pressure		25PSI	30PSI	30PSI
Vacuum	0mmHg	14 l/min=0.49CFM	28 l/min=0.99CFM	13 l/min=0.46CFM
	200mmHg	8 l/min=0.28CFM	16 l/min=0.57CFM	7 l/min=0.25CFM
	400mmHg	4 l/min=0.14CFM	8 l/min=0.28CFM	4 l/min=0.14CFM
	500mmHg	3 l/min=0.11CFM	6 l/min=0.21CFM	3 l/min=0.11CFM
Motor rotation		1450 RPM	1450 RPM	1450 RPM
Capacitor		2uf/450V	4uf/400V	4uf/450V
Horse power		1/8HP	1/6HP	1/6HP
Pole		4P	4P	4P
Net wet		5kg	7kg	7kg
Gross weight		5.2kg	7.4kg	7.4kg
Port thread		5/16"	5/16"	5/16"
Noise level		50dB	52dB	50dB

Aspirator

AS-3, Aspirator



Feature: This apparatus is equipped with low-noise 150W motor, & this Aspirator of high suction ability. It can reach the vacuum station you need at very short time. Applied on the fields of vacuum evaporator, vapor filtration and all suction's procedures.

Vacuum capacity	5°C	10°C	20°C	30°C
	7mmHg	12mmHg	20mmHg	28mmHg
Air velocity	16~18L/Min x2			
Motor	Induction motor 150W			
Tank	Polypropylene tank 10L			
Suction port	Two suction port 8 mm			
Overflow & drain	Overflow nozzle 17.5 mm			
Aspirator tube	2 Pieces			
Power	110V/220V, 260VA			
Dimensions (mm)	360Lx240Wx390H			



ST-Series

ST-Series, Rotary Vane Vacuum Pump

ST-Series vacuum pump is a rotary pump, specially engineered for laboratory high volume and medium high vacuum applications, such as vacuum drying, vacuum filtration, centrifugal concentrator etc. With innovative mechanical technology and human design concept make tanker's family extremely quiet, now vibration, and long life service. In addition, ally aluminium casing and rugged handle make it light filter help us to avoid oil mist spraying and reducing air pollution.

Features: Very high vacuum • High flow rate • Quiet and low vibration • Compact and light weight.

Applications: Vacuum oven • Vacuum freezer • Vacuum concentrator.



Lubricant

ST SC is a special formulation lubricant for ST's pump, excellent viscosity temperature behavior, oxidation stability and resistance to ageing.



Exhaust Filter

Optional accessory for capturing oil mist from exhaust port stainless steel housing built in a replaceable filter element.

Model	ST-85	ST-140	ST-42	ST-185
CFM (L/Min) 60Hz	3(85)	5(140)	1.5(42)	3(85)
Max. Vacuum, Torr (mBar)	0.1(0.13)	0.1(0.13)	0.05(0.066)	0.05(0.066)
Motor Pump Speed (@60Hz)	1725 rpm	1725 rpm	1725 rpm	1725 rpm
Motor Horsepower (HP)	1/3	1/2	1/3	1/2
Intake Connection (inch)	5/16"	5/16"	5/16"	5/16"
Noise Level (dB)	52	52	52	52
Weight (kg)	8.6	12	10.4	13
Dimensions (mm)	L314xM122xH256	L335xM138xH270	L314xM122xH256	L385xM206xH304



FVP

FVP, Vacuum Filtration Stand

FVP is an innovatory filtration stand, which is the first unit in the global market to assemble all apparatuses in one base so as to save 1/2 of table space than traditional way.

Features:

Unique magnetic fixing stand enable flask to be placed firmly • Rapid draining design let operator to be from unpacking flask to pour out filtrated water • Adopt oil free vacuum pump, no maintenance.

FVP-GN6 - filtration stand, complete set

include suction

flask & stainless steel funnel

(100ml), dragon 100 torch burner and PALL GN-6 membrane filter (0.45 um).



FVP-GN6

FVP - filtration stand, complete set include suction flask (without funnel).

FVP-4242 - filtration stand, AC110V/60Hz, AC220V/50Hz, complete set include suction flask & PALL# 4242 funnel (300ml).

Vacuum filtration is widely used in laboratory for various tests such as microorganism test in food, pharmacy, beverage, drinking water industries and suspended solid test in environment protection field, sample or solution pretreatment before microanalysis such as AA, HPLS, GC, etc.

Filtration Glass Set-include suction flask & funnel

Innovative suction bottle with drain • Weighted tray for firmly holding • All the glass ware are made of borosilicate glass.



FGS-003 includes sintered I glass funnel (capacity 300ml, 47mm diam.) with tabulated base, clamp, jointed flask(1000ml) for sample pretreatment or solution refining used micro analysis, such as HPLC, AA, GC etc.



FGS-005 includes sintered glass funnel with silicon stopper(capacity 300ml, 47mm diameter), clamp, flask (1000ml) for sample pretreatment or solution refining used micro analysis, such as HPLC, AA, GC etc.



FGS-007 includes glass funnel (capacity 15ml, 25mm diameter), base with stainless steel support and PTFE gasket and silicon stopper, clamp, flask (125ml) for pretreatment of viscous sample.



FGS-001 filtration glass set is an unique collocation which combines a magnetic funnel (capacity 300ml, 47mm diameter), stopper & an innovative magnetic suction bottle (PYREX flask modified, 1000ml) with drain & held firmly by a weighted tray for general filtration such suspended solid test.

DC1S, Vacuum Controller



- Absolute Pressure 1400 - 1 mbar
- 1050 - 1 Torr

Silent vacuum controller with internal, continuous valves. By a novel, patented method and fuzzy logic extremely powerful, quick and precise.

Advantages:

- continuous control valves made of synthetics (PPS)
- manual setpoint adjustment or automatic mode for finding boiling points
- chemically resistant ceramic-sensor

Examples For Applications:

rotary evaporators • vacuum drying • laboratory workplaces



FGS-002 filtration glass set is an unique collocation which combines a stainless steel funnel (100ml), stopper & an innovative magnetic suction bottle (PYREX flask modified, 1000ml) with drain and held firmly by a weighted tray for filtration need fast sterilization such as Total Bacteria, Coliform test.



FGS-004 includes sintered glass funnel (capacity 15ml, 25mm diameter), clamp, suction bottle (125ml) for sample pretreatment used in micro analysis, such as DNA/RNA hybridization etc.



FGS-006 includes glass funnel (capacity 300ml, 47mm diameter), base with stainless steel support and PTFE gasket and silicon stopper, clamp, flask (1000ml) for pretreatment of viscous sample.

Vacuum filtration system includes FGS-002 glass set & VP-17 vacuum pump.



Vacuum filtration system includes FGS-005 glass set & VP-14.



Portable Suction Units



BSU-991



BSU-510



BSU-990

Features:

- Equipped with oil-less piston vacuum pump ensures lubrication free and maintenance free.
- A 1000ml autoclaveable polycarbonate collection jar graduated in "ml" with fluid overflow preventive fitting.
- Built-in vacuum gauge ranges 0 - 760mmHg (0 - 30inHg) easy for direct reading.
- All models are CE-certified complied with EMC requirement of EN60601-1/ EN60601-1-2/EN55011 Class B/ IEC61000-32/IEC61000-3-3.
- Classified the equipment as Class I.



BSU-660



BSU-770

BSU-510

- Choice of oil rotary vane pump or oil-less piston vacuum pump to suit your intended purpose.
- Comes with 2 plastic collection jars incorporated with overflow preventive stopper.
- Comes with foot switch providing another choice of operation for intermittent and continuous suction procedure.

BSU-990: (Battery Rechargeable for EMERGENCY purpose)

- Comes with plug-in cable available for use in ambulance, car or anyplace where 12VDC is available for emergency purpose.

- Equipped with a Sealed Lead-Acid 12V rechargeable battery and an automatic charging system to function a fully automatic power charge at the same time when AC mains power is used.
- 1 to 1.5 hours are available for operate from the full charge of battery. Or optional for, battery capable of 3 - 3.5 hours. Ideal for use in areas where the failure of mains power, unstable current or the blackout occurs every often.
- 3-steps switch for BSU-990 functions Suction' OFF and Charge.
- **BSU-991** is operated in AC power and/or also applied to operate in ambulance and car by the attached plug-in cable, but no battery is equipped.

Model	BSU-990 (new)	BSU-991 (new)	BSU-660	BSU-510	
			BSU-770		
Dimension (MM) approx.	200x350x205	200x350x205	435x200x255 320x145x240	450x250x310	
Vacuum pump	Oil-less piston	Oil-less piston	Oil-less piston	Oil rotary	Oil-less
Airflow rate (LPM, approx.)	13-15L	13-15L	13-15L	80L	28-33L
Vacuum range (± 10 mmHg)	0-600mmHg	0-600mmHg	0-600mmHg	0-700	0-680
Overflow prevention	Yes	Yes	Yes	Yes	
Collection bottle (plastic)	1000ml x 1pc	1000ml x 1pc	1000ml x 1pc	1000ml x 2pc	
12V battery operation	190 minutes	N.A.	N.A.	N.A.	
(From the full charge) Standard accessory	Suction tubing 1000ml jar x 1	Suction tubing 1000ml jar x 1	Suction tubing 1000ml jar x 1	Suction tubing x 1 1000ml jar x 2	
Optional accessory	Bacteria filter	Bacteria filter	Bacteria filter	Bacteria filter	

Mobile Suction Units



BSU-305

BSU-305P

BSU-510-1

Features:

- User-friendly design, ideal for use in operation theater room or general wards providing an efficient performance such as suction biopsy, surgery, endometrial curette, OB/GYN and abortion etc.
- BSU-305 features a storage cabinet on back, convenient for storing accessories and tools.
- Built-in vacuum gauge with a range from 0 - 760mmHg (0 - 31 inHg) for direct readout.
- Provided with autoclave-able poly carbonate bottles graduated in ML incorporated with over-flow preventive fitting.
- Changeover to another bottle by turning the control knob LEFT-RIGHT for suctioning to the corresponding bottle.
- BSU-305P features one piece molded exterior body made by compact fiberglass for superior resistance to rust, chop and corrosion easy for cleaning.
- Mounted by 4 rubber anti-static wheels with 2 locking facility.
- Strong vacuum aspiration regulated from 0 to the maximum capable of sustaining of performing all purposes.
- Silicon suction tubing is autoclave-able and reusable.
- Low noise operation for use in hospital ward and theater room.

Model	BSU-305		BSU-305P		BSU-510-1	
Overall dimension	640x395x825mm		500x420x885mm		455x300x710mm	
Vacuum pump	Oil rotary		Oil rotary	Oil-less	Oil rotary	Oil-less
Cylinder (piston pump)	No		No	2	No	1
Wattage	191W		191W	270W	191W	200W
Max. airflow (±10%)	80 LPM		80 LPM	75-85 LPM	80 LPM	28-33 LPM
Max. vacuum (±10% mmHg)	710mmHg		710mmHg	680mmHg	710mmHg	680mmHg
Net weight (approx.)	35.3kg		28.3kg	26kg	23.5kg	19.3kg
Collection jars	3000ml plastic jars		3000ml plastic jars		1000ml plastic x 2pcs	
Overall prevention	Yes		Yes		Yes	
Standard accessory	Jars x 2+footswitch x 1, Silicon suction tubing x 1		Jars x 2+footswitch x 1, Silicon suction tubing x 1		Jars x 2+footswitch x 1, Silicon suction tubing x 1	
Optional accessory	Bacteria filter, suction cup cannula tube set		Bacteria filter, suction cup cannula tube set		Bacteria filter, suction cup cannula tube set	
Quality standard	ISO9001, ISO 13485, GMP, CE		ISO9001, ISO 13485, GMP, CE		ISO9001, ISO 13485, GMP, CE	

V VACUUM PUMPS

Bio Suction Unit

BSU-25/40, Bio Suction Units



Features: Double overflow Protection

Bio Suction System includes a level float control in the suction bottle and disc filter between bottle and pump which will completely avoid medium flowing into vacuum pump.

Maintenance free

Bio Suction system adopt oil free vacuum pump, low noise, durable and no maintenance is required.

Durable Case

Whole A.B.S.made outer shell with light weight, shiny appearance and easy maintenance.

Autoclavable

Suction Bottle, tube are steam autoclavable.

Applications: Cell culture aspiration • Medium suction

BSU-25 - Includes suction bottle (1000cc), Silicon tube (100cm), Single-channel aspiration adapter each 1ea, 0.2µm disc filter (Ø37mm), fuse each 2ea.

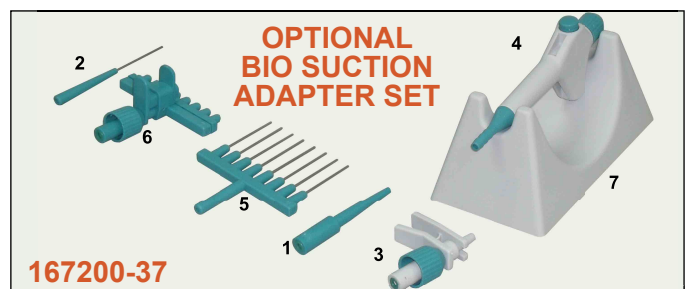
BSU-40 - Includes suction bottle (2000cc), Silicon tube (100cm), Single-channel aspiration adapter foot-switch each 1ea, 0.2µm disc filter (Ø50mm), fuse each 2ea.

Model	BSU-25	BSU-40
Pump type	Diaphragm	Piston
Motor power	25W	200W
Max. vacuum	680 mmHg	700 mmHg
Max. flow	25 l/min	40 l/min
Pole	4	4
Safety	Thermal protector, auto reset	
Foot switch control	-	ON for suction, OFF for release
Net/gross weight	4.3/5.5kg	12/16.2kg
Machine size (cm)	L37xW15xH25	L54xW26xH35
Dimensions (cm)	L43xW22xH32	L62xW32xH44
Power	AC 110V/60Hz or 220V/50Hz	

Options:

167200-37, Bio-suction aspiration adapter set:

1. Single channel plastic aspiration adapter.
2. Single channel stainless steel aspiration adapter.
3. Single channel plastic aspiration adapter with ejector for plastic tips.
4. Hand operator.
5. 8 Channel stainless steel aspiration adapter.
6. 8 Channel plastic aspiration with ejector for plastic tips.
7. Stand for hand operator.



167200-37

DISC FILTER



Options:

0.2µm Disc filter:

1. Made of hydrophobic PTFE which can prevent medium from flowing into the pump.
2. Autoclavable (15 minutes at 121°C).
3. Air flow rate (at 10psi).

Options:

167200-31/32/33, Suction bottles/rack:

1. Hit resistant adopt polycarbonate material to improve anti-bump ability.
2. Autoclavable heating resistant up to 130°C.
3. Safe with float level control to prevent medium from flowing into the pump.
4. Capacities: **167200-31** - 1000ml, **167200-32** - 2000ml, **167200-33** - 3000ml.



SUCTION BOTTLE



SI-100



SI-200

SI-100, Tube Head SI-200, 100mm Platform Head Features:

- Powerful & quiet.
- Power on LED indicator rugged & sturdy for most demanding applications or tubes.
- Ideal for mixing solutions in small flasks with circular, oscillating movement
- Realize high power, stable motion with low noise
- Tough housing provides a stable platform for all types of mixing
- 3-position power switch operates with continuous action or "touch on" control
- Variable speed control allows slow speed shaking action, up to high speed vortexing
- Compact, robust, and durable design for efficiency.
- Variable speed control, up to 3000rpm.
- Continuous operation or automatically press start.

Fast, thorough, and quiet vortex mixing action, but vibration free • Using high quality motor to achieve the performance • SI-100 with a single cup head suitable for mixing the content of one tube; SI-200 with a platform head suitable for mixing the contents of several test tubes simultaneously or one flask only.

Model	Max speed (rpm)	Top head size	Weight (kg)	Size (mm)
SI-100	3000	Rubber single cup head with Ø26 mm	3.2	W160xD130xH170
SI-200		Rubber platform head with Ø100 mm	4.2	W200xD130xH180



SI-D236

SI-D236, Vortex Turbo Mix Disruptor

Features:

- Rapid hands-free disruption of up to 12 microtubes (1.5ml or 2.0ml) at one time.
- Unique agitation, vortexing, and collision actions for cell disruption and sample resuspension.
- Maintains operating speed for up to 15 minutes, or continuous operation, even in cold rooms.
- Supplied Pop-off cup easily attaches for use as a standard single-tube vortex mixer.
- Ideal for glass bead procedures using Disruptor Beads
- Less costly than ultrasonic units or homogenizers

Beads

- Spherical lead free soda lime glass beads are available in two sizes.
- Can be used for disruption of yeast, bacteria, and other samples.
- Used in combination with Disruptor Genie or Turbo Mix attachment for Vortex-Genie 2 or Vortex-Genie 2T.

Model	Disruptor genie	Disruptor beads
Supplied	1.5ml microtube holder (shown, tubes not included), and pop-off cup	0.1mm diameter beads for bacteria, 0.5mm diameter beads for yeast
Dimensions (base) (mm)	D165xW122xH190	
Weight	4.3kg	3.75kg

GENIE-2, Tube Head & 75mm Platform Head GENIE-2T, Include Timer 1~60 Min



GENIE-2

GENIE-2T

"Touch On" control. With the true "Hands-Free" operation of continuous action, lab operators can greatly increase lab efficiency.

- Does not walk. Tough metal housing combined with "just enough weight", provides a stable platform for all types of mixing.
- Unmatched Reliability. Many years of proven performance in laboratories all over the world.

The **Vortex-Genie 2T** incorporates the precise & reliable mixing action of the familiar Vortex-Genie 2 with an integrated timer for increased convenience. Continuous mode operates from 1-60 minutes, and "Touch On" mode operates from 1-60 seconds. Untimed operation is also available. Variable speed control allows precise mixing from gentle shaking to vigorous vortexing.

The Vortex-Genie 2T is supplied with a pop-off cup and 76mm platform. additional accessories are available to accommodate a range of vessels including microtubes and microplates.

Features:

- Shaking or Vortexing Action. Variable speed control allows slow speed shaking action up to high speed vortexing. In addition, each attachment is designed to produce different mixing actions, allowing users to choose the correct action for each application.
- Multi-Task Versatility. A broad range of attachments of various shapes, sizes, and materials allows for mixing of almost all common tubes or containers for Hands-Free or Touch operation.
- Hands-Free or Touch. A 3-position power switch operates with continuous action or



Model	Genie-2	Genie-2T
Supplied	3 inch platform (shown) & pop-off cup	3 inch platform (shown) & pop-off cup
Timer	No	1 - 60 minutes
Dimensions (base) (mm)	D165xW122xH165	
Weight	4 kg	

Accessories:

H-302, Adaptor sets for tubes 10-37mm diameter, Bottles & Flasks

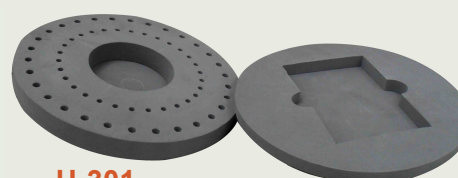
The Large Sample Set (Model H302) can be used with Vortex-Genie 2 mixer for beakers, flasks and large tubes. It consists of a Recessed Platform, 2 Elastic Bands, and an assortment of Foam Inserts for tubes of various diameters (10mm to 37.0mm). A Blank Foam Insert is also provided for user customization.



H-302

H-301, Adaptor sets for 5 & 1.5 tubes & microplate

The Multiple Sample Starter Set (Model H301) can be used with Vortex-Genie 2 mixer and consists of a 6-in (152mm) Platform, Microtube Foam Insert and Microplate Foam Insert. Each insert fits snugly into the 6-in Platform attachment to accommodate either 60 microtubes or one standard footprint microplate, respectively.



H-301

VT-03E/04E, Viscotesters



VT-04E

This product is designed for a wide range of viscosity measurements. It is suitable for checking industrial substances such as heavy oil, paint, and adhesives. It can be used for quality control in manufacturing processes of foodstuffs and other products. When inspecting construction vehicles and other machinery, the unit can serve to measure not only the viscosity of hydraulic oil but also of tight spindle oil, gear oil, etc. The unit employs the rotating cylinder principle. A rotor turning at constant speed is inserted into the liquid to be measured. The resistance to rotor movement caused by the viscosity (torque) is measured using a special mechanism to obtain direct readings in millipascal-seconds (mPa.s) or decipascal-seconds (dPa.s).

- Compact size, can be operated with one hand.
- Battery powered design allows use anywhere.
- Quick startup shows readings immediately after turn-on.
- Direct readings in millipascal-seconds or decipascal-seconds (SI-units).
- Stand and AC adapter available as options.

VT-03E, Specification

Measurement range: No.4 rotor: 2 - 33 mPa.s

No.5 rotor: 15 - 150 mPa.s

No.3 rotor: 50 - 300 mPa.s

Measurement accuracy: Within $\pm 5\%$ of scale maximum

(using supplied cup A or cup B)

Scale calibrated according to JIS Z 8809 viscosity calibration standard

Rotor speed: 62.5 rpm

Power requirements: 6 V DC (four IEC A6P batteries) Of AC adapter VA-05

Current consumption at maximum torque approx. 100 mA

Dimensions: 98 (W) X 181 (D) X 40 (H) mm (without protruding parts)

Weight: Approx. 570 g (without batteries)

Supplied accessories for VT-03E

No.3 rotor (dia. 45x47x160mm) SUS304 1
 No.4 rotor (dia. 78x46x159mm) AlO50 (alumite) 1
 No.5 rotor (dia. 61.2x36x149mm) AlO50 (alumite) 1
 Cup A (dia. 92x76mm) AlO50 (alumite) 1
 Clip B (dia. 92x76mm) AlO50 (alumite) 1
 (Cup B has 30mm diameter hole at the bottom.)
 IEC R6P (size AA) battery 4
 Instruction manual 1

Composition:

Model	VT-03E	VT-04E
	VT-03 Unit	VT-04 Unit
Rotor	No.3, No.4, No.5	No.1, No.2, No.3
Cup	A, B	No.3 Cup
Extension Rod	-	1 PC
Batteries	4pcs, IEC R6	4pcs, IEC R6

Optional accessory: Stand VA-04. AC adapter VA-05

Supplied accessories for VT-04E

No.1 rotor (dia. 24x53x166mm) SUS304 1
 No.2 rotor (dia. 15x11x113mm) SUS304 1
 No.3 rotor (dia. 45x47x160mm) SUS304 1
 No.3 Cup (dia. 52.6x75mm) SUS304 1
 Extension Rotor (900mm \times 300x3) SUS304 1
 IEC A6P (Size AA) battery 4
 Instruction manual 1

VT-04E, Specifications

Measurement range: No.3 rotor: 0.3 - 13 dPa's (IV~h No.3 cup)

No.1 rotor: 3 - 150 dPa's (with JIS 300 mL beaker)

No.2 rotor: 100 - 4000 dPa.s (with JIS 300 mL beaker)

Measurement accuracy and reproducibility

Measurement accuracy $\pm 1.0\%$ of Indicated value

Reproducibility $\pm 5\%$ (calibrated with silicon oil)

Rotor speed: 62.5 rpm

Power requirements: 6V DC (four IEC A6P batteries) or AC adapter VA-05

Current consumption at maximum torque approx. 300 mA

Dimensions: 98 (W) X 181 (D) X 40 (H) mm (without protruding parts)

Weight: Approx. 5709 g (without batteries)

Sample Amount for Measurement

	VT-03E	VT-04E
Cup A	approx. 500mL	-
No.3 Cup	-	approx. 170mL
Commercially available 300mL beaker	-	approx. 350mL

Optional accessory: Stand VA-04. AC adapter VA-05



VIS-2

VIS-2, Stormer Viscometer

The VIS-2 Digital Stormer viscometer measures fluid viscosity in Krebs Units. A paddle type spindle is driven at 200rpm by a constant speed motor. The reaction torque of the spindle rotating at 200rpm is converted to viscosity in Krebs Units. The digital display of the viscometer shows viscosity in Krebs Units (KU), the associated grams value (gm), and viscosity in centipoise (cP).

Application:

Paints, coatings, Adhesives, Inks, Pastes.

Features:

- Measure range: 40KU-141KU. 32gm-1099gm. 27cP- 5274cp.
- Accuracy: $\pm 1\%$ (F.S).
- Reproducibility: $\pm 0.5\%$ (F.S).
- Speed: 200 RPM (± 0.01 RPM).
- Measuring containers: 1 pint. 1/2 pint.
- Input Voltage: 100V-240V, 50Hz/60Hz.
- Net Weight: 7 Kg.

Instrument configuration:

- VIS-2 Viscometer.
- Automatic up and down rod and base.
- paddle spindle KU1-10.
- 1/2 pint can adapter. 1 pint can adapter KU 1-74.
- RTD Temperature Probe.



VIS-1

VIS-1, Viscometer

Specification:

VIS-1 Rotational Viscometer is designed for the determination of viscosity and rheological behavior of fluid and semi-fluid. It can also be used to measure the dynamical viscosity and structural viscosity of mineral oil, lubrication oil, adhesives, paints, dyestuff and printing inks, etc.

Characteristics:

- Measurement range: $0.1-1 \times 10^5$ mPa.s.
- Rotors: No. 1 2 3 4.
- Rotor speed (rpm): 6/12/30/60.
- Accuracy: $\pm 5\%$ Newtonian Fluid.
- Overall dimen.: 445x235x380mm.
- Net weight: 8 kg.



Rotors	Speed r/min	60	30	12	6
1		100	200	500	1000
2		500	1000	2500	5000
3		2000	4000	10000	20000
4		10000	20000	50000	100000

Professional, Rotational Viscometers



Direct readout of all measurement parameters on an illuminated Liquid Crystal Display • Data on screen: • Speed selected: r.p.m. • Spindle selected: S.P. • Viscosity reading: cP (mPa-s) • Percentage of full scale: % • Sample temperature: °C • Shear rate (with special spindles): SR • Shear stress (with special spindles): SS • Determination of relative viscosity and absolute viscosity compute yield stress • Different menu options • AUTO TEST of the equipment by scanning at different speeds, with audible and visual warning if it is not operating properly • Temperature determined by PT100 probe • Viscosity reading: dynamic viscosity (cP or mPa-s) • Data logger function of the obtained results when an experiment is performed. The equipment is supplied with Windows software which can dump the data obtained to a file in Excel format (.xls) for subsequent processing • Determination of shear rate and shear stress with coaxial spindles • The viscometer and the PT100 can be calibrated by the user • Auto range function to determine the maximum viscosity with each spindle/speed combination • It can work with a micro printer or window software... • Ultra-sensitive front keyboard that allows easy input of all parameters. • "ERROR" message in the screen with sound alarm when the viscosity of the test material exceeds the full scale of the selected combination (SP/r.p.m.) • Sound alarm if the equipment is working at under 10% of selected full scale. • The viscometer is equipped with many speeds, from 0.1 to 800 r.p.m. The user can select another different speed into this margin • Safety protection against sudden rises in the power supply.

Model	Measuring Range	Fixed Speeds in R.P.M
VIS-LDV1P	2-2M cP	0.3-100
VIS-RDV1P	100-13M cP	0.3-100
VIS-HADV1P	200-26M cP	0.3-100
VIS-HBDV1P	200-104M cP	0.3-100
VIS-LDV2P	1-6M cP	0.1-200.0
VIS-RDV2P	100-40M cP	0.1-200.0
VIS-HADV2P	200-80M cP	0.1-200.0
VIS-HBDV2P	800-320M cP	0.1-200.0
VIS-LDV3P	1-6M cP	0.1-250.0
VIS-RDV3P	50-40M cP	0.1-250.0
VIS-HADV3P	100-80M cP	0.1-250.0
VIS-HBDV3P	400-320M cP	0.1-250.0

M=1,000,000 cP

VIS-79 Series, Double Cylinder Digital High Speed Viscometer



Feature:

DvGather Software is for optional • Configure RTD Temperature Probe • Stepping Motor means Accurate, reliable operation • Direct readout of all measurement parameters • Auto Range Showing • Time Function for measurement • Sound alarm at under 20% Torque • Linear calibration • Wide range power supply: 100V-240V.

Applications:

Starch Inks Latex Adhesives (Solvent base) • Polymer Solutions Oils Paints and Coatings Solvents • Cosmetisc Dairy Products Pharmaceuticals Juices, etc.

Optional Accessories:

DvGather Software • Circulating Water Bath • Standard Oils • Micro Printer.

Model	VIS-79	VIS-79A	VIS-79B	VIS-79P
Range(mPa.s)	1-1M	1-1.5M	1-7.5M	1-75M
RPM	7.5, 75, 750	5-750 Step 10RPM	1-800 Step 10RPM	1-800
Temperature	0-120°C			
Spindles	E, F, G, The three spindles are with B container for high viscosity A, B, C, D, the four spindles are with A container for low viscosity			
Accuracy	±1.0% of Range			
Repeatability	±0.5%			

VIS-8, Digital Basic Rotary Viscometers



Direct readout of all measurement parameters on an illuminated Liquid Crystal Display • Data on screen: • Speed selected: Lp.m. • Spindle selected: S.P. • Viscosity reading: cP (mPa-s) • Percentage of full scale: % • Sample temperature: °C • Temperature determined by PT100 probe • Viscosity reading: dynamic viscosity (cP or mPa-s) • The viscometer and the PT100 can be calibrated by the user • Auto range function to determine the maximum viscosity with each spindle/speed combination • It can work with a micro printer • Ultra-sensitive front keyboard that allows easy input of all parameters • "ERROR" message in the screen with sound alarm when the viscosity of the test material exceeds the full scale of the selected combination (SP/r.p.m.) • Sound alarm if the equipment is working at under 20% of selected full scale • The viscometer is equipped with many pre-sets speeds, from 0.3 to 100 r.p.m • Safety protection against sudden rises in the power supply • English language options • Direct reading in cP (mPa-s).

Accuracy	± 1% of the full scale
Resolution	Using LCP (Low Viscosity Adapter): 0.01, When viscosity is lower than 10,000 cP:1, When viscosity is equal or higher than 10,000 cP:1
Repeatability	0.5%
Temperature Range	from 0.0°C to + 100.0°C
Resolution	0.1°C
Accuracy	±0.1°C
Type of Probe	PT 100
Outputs	RS232, Micro Printer
Power	All Models are Supplied with 85/265 VAC
Net Weight	4 kg

Model	Measuring Range	Fixed Speeds in R.P.M
VIS-8	10-2,000,000 Cp	0.3,0.6,1.5,3,6,12,30,60

VIS-S1/S2/S3/AI, Digital Rotary Viscometers, Without Limits

Direct readout of all measurement parameters on an illuminated Liquid Crystal Display • Data on screen: • Speed selected: r.p.m. • Spindle selected: S.P. • Viscosity reading: cP (mPa-s) • Percentage of full scale: % • Sample temperature: °C • Temperature determined by PT100 probe • Viscosity reading: dynamic viscosity (cP or mPa-s) • The viscometer and the PT100 can be calibrated by the user • Auto range function to determine the maximum viscosity with each spindle/speed







combination • It can work with a micro printer • Ultra-sensitive front keyboard that allows easy input of all parameters • "ERROR" message in the screen with sound alarm when the viscosity of the test material exceeds the full scale of the selected combination (Slvr.p.m.) • Sound alarm if the equipment is working at under 20% of selected full scale • The viscometer is equipped with many pre-sets speeds, from 0.1 to 100 r.p.m • Safety protection against sudden rises in the power supply • English language options • Direct reading in cP (mPa-s).



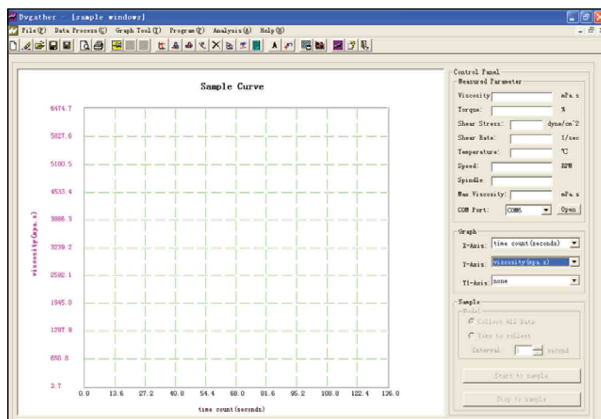
Accuracy	± 1% of the full scale
Resolution	Using LCP (Low Viscosity Adapter): 0.01, When viscosity is lower than 10,000 cP:1, When viscosity is equal or higher than 10,000 cP:1
Repeatability	0.5%
Temperature Range	from 0.0°C to + 100.0°C
Resolution	0.1°C
Accuracy	±0.1°C
Type of Probe	PT 100
Outputs	Computer interface RS232, Micro Printer
Power	All Models are Supplied with 85/265 VAC
Net Weight	4 kg

Model	Measuring Range	Fixed Speeds in R.P.M
VIS-S1	10-600,000 cP	1-60(nonpolar shift)
VIS-S2	10-6,000,000 cP	0.1-99.9
VIS-S3	10-80,000,000 cP	0.1-99.9
VIS-AI	10-1,000,000 cP	0.1-200.0

VIS Accessories

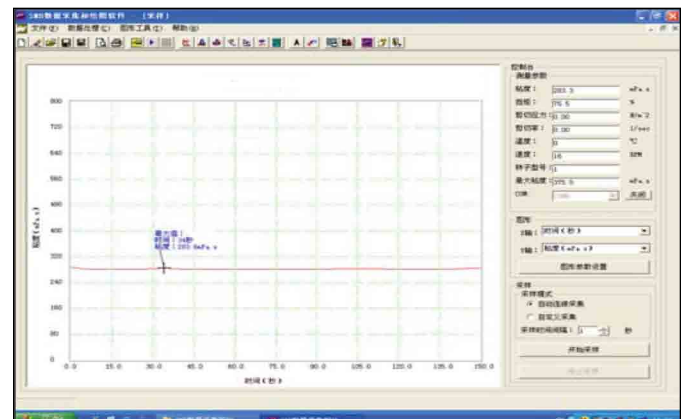
<p>Micro Printer</p>  <p>Time to print measure information, including temperature, rotation speed, spindle, torque, viscosity.</p>	<p>Low Viscosity Adapter</p>  <p>Super low viscosity adapter (0#spindle). Measure range: 1cp-20cp. Small sample size: 30ml. Material: 314 or 316</p>	<p>RTD Temperature Prob</p>  <p>RTD Temperature prob. Temperature display range: 0°C-100°C</p>
<p>Small Sample Adapter</p>  <p>Small sample adapter. Sample volume only from 5ml to 20ml. SC21, SC27, SC28, SC29, four spindles is configured. Material: 304 or 316</p>	<p>Thermosel</p>  <p>Thermosel for elevated temperature testing. The temperature can be used from environment temperature +10°C to 250°C. SC21, SC27, SC28, SC29, four spindles is configured.</p>	<p>Circulating Water Bath (Model: DC-0506)</p>  <p>Specifications: Temperature range: -5°C~+95°C Temperature stability: $\pm 0.1^{\circ}\text{C}$ Heater wattage: 300W Flowrate: 4L/min Compressor size: 100W Interior size(mm): 250W x 200D x 150H Bath opening(mm): 180W x 140D Applicable ambient: 5°C~35°C Power: AC220V$\pm 10\%$, 50Hz</p>

PRO Series Gather Software



PRO Series viscometer can select PRO gather software to gather data, save data, compare many history curves and download custom program to viscometer, analysis curve to compute Yield stress, plastic viscosity etc. Powerful scripting language provides for simple to complex data collection programs. Provides looping functions for repetitive tests. Automatic calculation of yield stress (bingham plastic, casson, power law, consistency index)

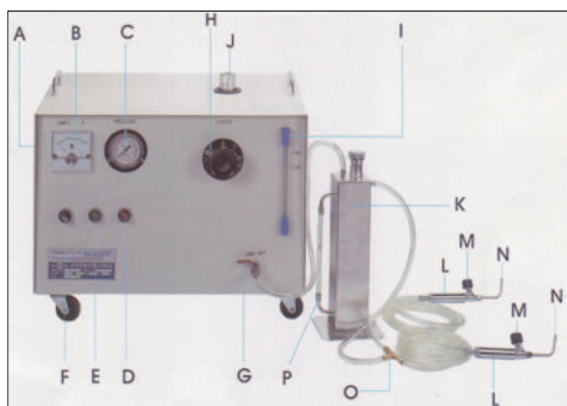
VIS-S1/S2/S3/AI Gather Software



Viscometer can select Gather software to automate collect data, save data, compare many history curve. Data can be saved as a file or exported to excel format.



FWW-270



- | | |
|-----------------------------------|---------------------------------|
| A. Colling fan | I. Electrolyte tank sight glass |
| B. Input a meter | J. Di water add port |
| C. Gas pressure gauge | K. Booster |
| D. Tank hi pressure cut off pilot | L. Defusion stone pipe |
| E. Power on pilot | M. Flame adj. valve |
| F. Power switch | N. Torch tip |
| G. Gas out valve | O. Three way connection |
| H. Output adj. | P. Booster sight glass |

Applications:

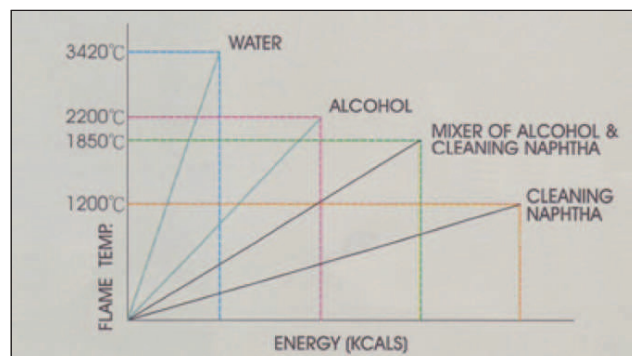
- Metal welding: lead-tin soldering, gold, silver, copper, brass brazing, for spot & plate welding, such as ear-ring, necklace, chains, finger ring, etc.
- Glass process: ampoule sealing, quartz glass process, mercury switch sealing, glass capillary tube forming, bending, etc.
- Motor industry: stator copper-thread welding and no need to peel the cover.

FWW-Series, High Temp. Flame Water Welders

Just add di-water & plug the plug. Then you can get the mixed gas of hydrogen & oxygen which pass through the fan to condense water vapor. The functions of booster are to add the enthalpy, to reduce the flame temperature, to rise the pressure of gas and to increase the energy. It's a very economical method to have a hi-temperature flame.

Features:

- Fuel are water, electric power & a little of solvent. Easy to get and storage safety.
- $2H_2 + O_2$ burn $2H_2O$ (vapor). the vapor left from burning is non toxic and non pollution.
- Good designed machine constructor, for continuous operation.
- Torch with built-in diffusion stone, pressure switch, over-pressure relieve valve, to protect the machine absolutely safety.
- Flame temperature range is up to 3420°C or can be down to 1200°C .
- Easy to change the flame size especially in very fine flame usage area. Tip orifice size are from 0.076mm \leq (30#) to 1.056mm (16#).
- Compact and easy operation.



Booster's Function Diagram

- Hi-melting point metal welding: thermal couple thread welding, led plate connecting, computer stripping teflon tape cable cover peeling and cutting. gold wire ball bonding.
- Sun glasses hing's welding.
- Acrylic surface or edge flame polishing.
- Tooth mold pin hole mending.
- Lead acid battery electrode plate welding.
- Heat treatment for small part and precise craft.

Model	FWW-270	FWW-640	FWW-1200	FWW-1600
Max. KCAL Output	270 Kcal/hr	430 Kcal/hr	800 Kcal/hr	1600 Kcal/hr
Max. Power Input	400 watts	640 watts	1200 watts	2400 watts
Max. Torch Tip Orifice	No.21	No.20	No.19	No.18
Electrolyte Capacity	1.6e	3e	6e	10e
DI Water Consumption Rate	0.02e/hr	0.035e/hr	0.06e/hr	0.12e/hr
DI Water Addition Interval	8hr	8hr	8hr	8hr
Power	110/220V 50/60 Hz 1 ϕ	110/220V 50/60 Hz 1 ϕ	110/220V 50/60 Hz 1 ϕ	110/220V 50/60 Hz 1 ϕ
Packing Dimension(mm)	W370xD370xH340	W510xD410xH400	W580xD500xH560	W680xD540xH560
(N.W)	24kgs	34kgs	55kgs	67kgs
Solvent Consumption Rate (BOOSTER)	0.005e/hr	0.009e/hr	0.015e/hr	0.03e/hr
NO. Of Simultaneous Operation Torch With # 21 Tip	1	2	4	6



Laboratory Equipment Manufacturer
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INSTRUCTION MANUAL FOR **FWW-Series** WATER WELDER



PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

MRC.VER.02-11.10



RA-130

Applications: Measurement of sucrose concentration of fruit juices • Measurement of sucrose concentration of jam and honey • Brix measurement on beverages • Brix measurement on liquid seasonings • Concentration control on pharmaceutical & medical liquid samples.



REF-85

The measurement technique & temp. compensation employ methodology recommended in the ICUMSA Methods Book (Internationally recognized body for Sugar Analysis). Temperature (in °C or °F) is displayed simultaneously with the measurement on the large dual level display along with icons for Low Power and other helpful message codes.

Key features include: Dual-level LCD • Automatic Temp. Compensation (ATC) • Easy setup & storage • Battery operation with Low Power indicator (BEPS) • Automatically turns off after 3 minutes of non-use.

RA-130, Portable Refractometer Data Logger

Features:

- Wide measuring range: Brix 0~85% Refractive index 1.3200~1.5000
- Data storage: Up to 1100 measurements results
- Data transfer to your computer by supplied software via infrared port. Can also output via RS232C with RS converter for infrared (Option).
- Can display measurement results in Refractive Index (RI), Temperature compensated RI, Brix % and the like.
- Automatic data saving and Automatic data output can be chosen.
- Three different sucrose conversion tables Brix and isomerized sugar HFCS42, HFCS55.
- Data can be converted to user-defined concentration and the unit can be used as a concentration meter.

Model	RA-130
Measurement method	Optical detection of critical angle with Na-D line
Measurement objects	Liquids such as water solution like fruit juices or soft drinks and organic solvents
Measurement range	nD 1.32 ~ 1.50 Brix 0 ~ 85% HFCS42 0 ~ 76% HFCS55 0 ~ 80%
Accuracy	nD ± 0.0005 Brix $\pm 0.2\%$ HFCS42 /55 $\pm 0.2\%$
Resolution	nD 0.0001, Brix 0.1%, HFCS42 /55 0.1%
Temperature range	10 ~ 40°C
Display contents	Refractive index, Temp. comp. RI, Brix, HFCS42, HFCS55 and Temperature (°C/°F). Sample number, Data storage, Data output, Data deletion, Battery alarm and the like.
Temperature compensation	Up to 10 kinds of input for temp. compensation coefficients of measured samples & Compensation temperatures
Data storage	1,100 measurement results
External output	Computer or printer (either, not both) can be connected • IrDA connection is standard supplied • RS232C connection requires optional RS converter for infrared (#029-0007)
Weight	Approx. 200g
Power source	DC 3V (2 x 1.5V alkaline AAA dry cells)
Battery life	60 hours (one measurement in one minute)
Sampling method	2 ways selective – Dipping or Dripping method available

REF-85, Portable Refractometer

The REF-85- is an optical instrument that employs the measurement of refractive index to determine the % Brix of sugar in aqueous solutions. The method is both simple & quick. Samples are measured after a simple user calibration with deionized or distilled water. Within seconds the instrument measures the refractive index of the sample and converts it to % Brix concentration units.

The REF-85- digital refractometer eliminates the uncertainty associated with mechanical refractometers and is easily portable for measurements in the field.

Model	REF-85
Range	0 to 85% Brix 0 to 80°C / 32 to 175°F
Resolution	0.1% Brix 0.1°C / 0.1°F
Accuracy	$\pm 0.2\%$ Brix $\pm 0.3^\circ\text{C}$ / $\pm 0.5^\circ\text{F}$
Light Source	Yellow LED
Measurements Time	Approximately 1.5 seconds
Min. Sample Volume	100 μL (cover prism totally)
Sample Cell	SS ring and flint glass prism
Temp. Compensation	Automatic between 10 and 40°C / 50 to 104°F
Case Material	ABS
Enclosure Rating	IP 65
Battery Type	1 x 9V AA (included)
Battery Life	5000 reading
Auto-shut off	after 3 minutes of non-use
Dimensions	192x102x67mm
Weight	420g

R REFRACTOMETERS

Abbe, BenchTop

K7135, ABBE Refractometer

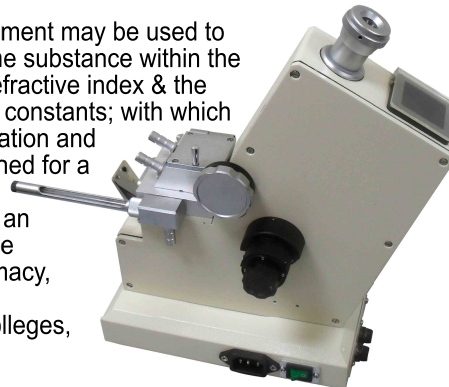


K7135

Uses:

Projection Abbe Refractometer is a kind of instrument which can be used to determine the refractive index n_d and the mean dispersion $n_F - n_C$ for the transparent or semitransparent liquid or solid (mainly used to determine the transparent liquid).

With the help of thermostat, this instrument may be used to determine the refractive index n_d for the substance within the temp. range from 0°C to 50°C . The refractive index & the mean dispersion are important optical constants; with which the optical property of purity, concentration and dispersion power, etc. can be determined for a certain substance. Therefore, this instrument has been used widely; it is an indispensable common one used in the industries of chemicals, grease, pharmacy, painting, food processing, sugaring, etc. by relevant factories, colleges, and scientific research institutes.



Specifications:

Model	K7135
Refractive index (n_d) measuring:	
Measuring range	1.300 ~ 1.700
Scale unit	0.0005
Measuring accuracy	0.0003
2 Measurement for the concentration of sugar solution:	
Measuring range	(0 ~ 95)%
Scale unit	0.25%
Illuminating lamp	High intensity LED
Temperature range	0°C ~ 50°C
Instrument weight	6.5Kg
Dimensions (mm)	370x240x440

Standard accessories:

- Calibrating glass prism
- Monobromonaphthalene standard, bottle
- Stabilised mains adapter
- 2x lamps 6V/5W
- Calibrating screwdriver
- Dust cover.

BRIX Scale (%):

The Brix degree measures the concentration percentage of soluble solid content of a sample (aqueous solution), i.e. the sum of all the solids dissolved in the water (sugar, salt, proteins, acids, etc.); the measurement result is their sum in the sample. Basically, the Brix degree is calibrated to the grams of cane sugar contained in 100 g of solution. For this reason, when a sugar-based solution is measured, the Brix degree precisely calculates real concentration. In the event of the substance to be examined also containing other components different from sugar, a referment should be a conversion table, so as to correct the obtained values and make sure the result represents the exact sample concentration.

Standard Concentration of Known Substances:

	Concentration %
Fruit Fruit Juice	Oranges, pears
	6-13
	Tomato
	3-6
	Apples, melons
	12-18
	Strawberries, peaches
	6-12
	Grape seeds
	13-24
	Concentrated fruit juices
	42-68
Foods	Fruit juice
	12-18
	Strained tomato
	7-16
	Tomato juice
	5-9
	Aerated drinks
	6-15
	Nectars
	16-23
Industry	Drinks with lactic acid
	16.5-21.5
	Condensed milk
	52-68
	Liquid sugar
	58-80
	Canned fruit
	14-28
	Egg yoke
	45-48
	Milk
	12-17
	Marmalade, flour
	60-70
	Vegetable oils
	57-90
	Oily emulsions
	0-7
	Oils for soluble temper
	0-20

**REF-113ATC, Hand Refractometer, 0-32% Brix/ATC**

Designed to measure sugar content. Just a few sample drops are enough to determine the percentage of dissolved solid, according to the principle for which the refraction index of a solid dissolved is proportionate to its concentration. This is a simple and accurate method, extremely useful for controlling the quality of fruit, jam, vegetables, tomatoes, beet sugar, canned foods, etc., in the field or in the factory. This new revolutionary instrument allows to measure without problems due to temp. changes, eliminating the inconvenient of temperature compensation. until now indispensable for refractometric measuring operations.

Model	Range	Precision
REF-113ATC	0-32% Brix/ATC (10°C-30°C)	0.2%

**REF-104, Hand Refractometer, 28-62% Brix**

Ideal for concentrated fruit juices and canned foods that use sugar infusion, and half-scale concentration samples.

In the bright/blue field, the boundary line is clearly visible with good contrast.

Model	Range	Precision
REF-104	28-62% Brix/ATC	0.2%

**REF-105, Hand Refractometer, 45-82% Brix**

Standard refractometer used to measure the sugar content of concentrated fruit juices, condensed milk, liquid sugar and marmalade.

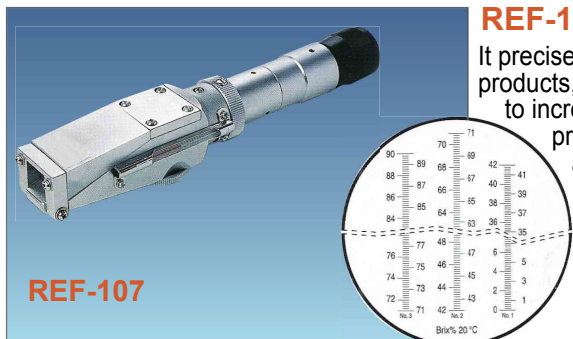
and for very dense products, jams, syrups, concentrated substances, glucose, treacle.

Model	Range	Precision
REF-105	45-82% Brix	0.5%

**REF-116, Hand Refractometer, 58-90% Brix**

Designed to measure the common indexes of HONEY: high sugar content, Barne and water. It determines the percentage of water in the honey by measuring the refraction index. It permits the determination of the collecting period, conservation and commercial value. Useful for preparing the spring mixtures of the bees.

Model	Range	Precision
REF-116	58-90% Brix	1% Brix
	38°Bé-43°Bé	0.5°Bé
	12-27% water	1% water

**REF-107, Hand Refractometer, 0-90% Brix**

It precisely determines the sugar content of each solution; suitable for all products, both diluted & concentrated. It adopts a light transmission system to increase the contrast of the boundary line in the field of vision. The Amici prism, inside situated, has been made to eliminate colour. so as to obtain a clear boundary line in the field of vision. Thanks to the special thermometer with which it is equipped, the measurements can be easily corrected by the relatives tables.

Model	Water percentage	Precision
REF-107	0-90% Brix	0.2%
	3 Ranges: 0-42%; 42-71%; 71-90%	

**REF-117, Hand Refractometer, 12-27% Brix**

Refractometer for honey, for quickly determination of the percentage of water in the honey and relevant Baumé degree.

Manual temperature compensation between 20°C and 40°C.

Model	Water percentage	Precision
REF-117	12-27%	0.2%
	Baumé range	
	38°Bé-43°Bé	1°

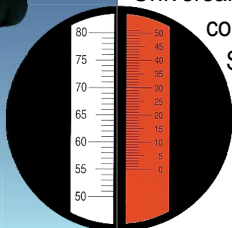


REF-108

REF-108, Hand Refractometer, 0-80° Brix

Universal broad-scale refractometer, able to precisely determine the sugar content of all kinds of products.

Selectionable scales between 0 and 80° Brix.



Model	Range	Precision
REF-108	0-80° Brix	1%

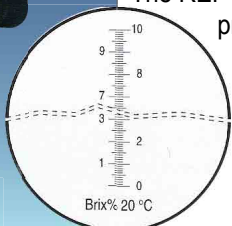


REF-111

REF-111, Hand Refractometer, 0-10% Brix

The REF-111 model features an enlarged Brix scale making possible high-precision measurements.

It can be used to measure the Brix degree in fruit juices, emulsion oils, lubricating oils and all low-concentration substances, with Brix degree of 10% or lower.



Model	Range	Precision
REF-111	0-10% Brix	0.1%

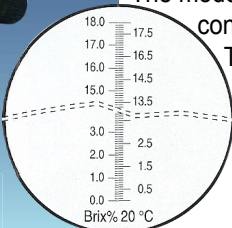


REF-112

REF-112, Hand Refractometer, 0-18% Brix

The model with high-resolution Brix scale has been developed for low concentrations.

The scale can measure the Brix degree in fruit juices, soft drinks, must wine and various types of drinks, lubricating oils, emulsion oils, tomato, etc.



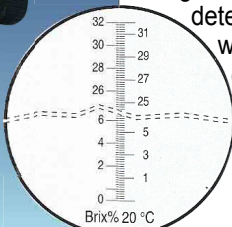
Model	Range	Precision
REF-112	0-18% Brix	0.1%



REF-113

REF-113, Hand Refractometer, 0-32% Brix

Designed to measure sugar content. Just a few sample drops are enough to determine the percentage of dissolved solid: according to the principle for which the refraction index of a solid dissolved is proportionate to its concentration. This is a simple and accurate method, extremely useful for controlling the quality of fruit, jam, vegetables, tomatoes, beet sugar, canned foods, etc., in the field or in the factory.



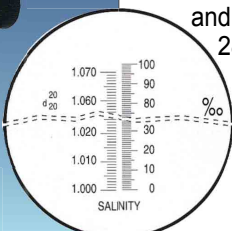
Model	Range	Precision
REF-113	0-32% Brix	0.2%



REF-212 Salinity

REF-212, Hand Refractometer, 0-28% Brix Salinity

Refractometer able to determine the percentage of sodium chloride in sea water and in prepared-food solutions. with salt concentration up to 28%. meaning 28g of salt in 100g of solution. Suitable for controlling refrigerating brines. for food treatment liquids used in the processing industry. for brackish and sea water. Instrument calibrated to the refraction index of sodium chloride.



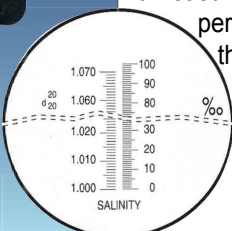
Model	Range	Precision
REF-212	0-28% Brix salinity	0.2%



REF-211 Salinity

REF-211, Hand Refractometer, 0-100‰ Brix Salinity

It measures low-concentration salt content. It adopts scale with unit of salinity per thousand (‰). The refractometer is easy to use and quickly provides the direct measurement of saline density and the specific weight of sea water.



Model	Range	Precision
REF-211	0-100‰	1‰
	1000-1070 sg	0.001 sg

**REF-311, Hand Refractometer, 0-12g/dl Proteins & Urine**

This high-precision and widely-used model has been designed to quickly determine the proteins in blood serum and the specific weight of urine; indispensable for all chemical-clinical test laboratories

Model	Range	Precision
REF-311	0-12g/dl	0.2g/dl
	1000-1040 sg	0.002 sg

**REF-312, Hand Refractometer, 0-12g/dl Proteins & Urine**

Widely used in chemical-clinical test laboratories to determine the proteins in blood serum and the specific weight of urine.

The instrument also features refraction index scale (Nd) to determine the concentration of test reagent solutions, and calibration line (Wt) for instrument control.

Model	Range	Precision
REF-312	0-12g/dl	0.2g/dl
	1000-1050 sg	0.002 sg
	1.3330-13600 RI	0.0005 RI

**REF-414, Hand Refractometer, Measuring The Freezing Point**

It permits measuring the freezing point of glycol ethylene and propylene solutions. Especially suitable for controlling lead battery charges & concentration of heat exchange liquid in cooling systems.

Model	Range	Precision
REF-414	0°C/-50°C	5°C
	1.15-1.30 sg	0.01 sg

**REF-513, Hand Refractometer, Alcohol**

It permits measuring the approximate value of the amount of alcohol in aqueous solutions and the sugar content of grape juice. The scale directly shows measurement results.

Model	Range	Precision
REF-513	0-25%	0.2%

**REF-711, Hand Refractometer, 0-26% Babo**

Manual instrument indispensable for all grape growers and wine-making industries. It features 3 measurement scales (Brix, Babo, Oechsle), for the quick sight determination of the sugar content of grapes and musts.

Model	Range	Precision
REF-711	0-26% Babo	0.2%
	0-140 °Oechsle	1°
	0-32% Brix/ATC	0.2%

**REF-601A, Hand Refractometer, Gemology**

Used to measure the refraction index in gemology. It features inner protection for the light, to obtain enough lighting for measuring, and polariser filter.

Model	Range	Precision
REF-601A	1.30-1.81	0.01



EDX Pocket III

Handheld X-ray Fluorescence Spectrometer

- Alloy Analyzer
- Rapid Minerals Analyzer
- Rapid RoHS Tester



Handheld High-performance On-site Analyzer



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An introduction to EDX Pocket III

EDX Pocket III is a **Handheld X-ray Fluorescence Spectrometer** specifically developed for on-site analysis by Skyray. They include RoHS Analyzers, Alloy Analyzers, Scrap Metals Recycling Analyzers, Mineral Analyzers, Precious Metals Analyzers and Soil Analyzers. They are the smallest, rapidest, most functional and most accurate XRF analyzers available on the market. They can be used widely in fields such as alloy analysis, minerals analysis, geographic analysis, precious metals analysis, scrap metals recycling analysis, RoHS testing and soil analysis. Moreover, it can also be used to perform Positive Material Identification (PMI) and verification.



Years of brewing and development

Persistent efforts in quality pursuit

Optimized integration of high-end configurations

EDX-Pocket III is always outstanding!

- Its streamlined design brings us powerful visual impact
- Its magnificent colors exhibits unique charm
- Its exquisite kernel displays beauty of science and technology
- Its prudent gunlock design provides secure “firewall” at the fullest
- Its portability shows us great concern to humanity

*Rapid Accurate Non-destructive
Intuitive Lightweight Easy-to-use Safe*

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Main characteristics of EDX Pocket III

- * The instrument is small, light and portable, providing rapid and non-destructive on-site analysis of the samples.
- * Figurative interface, flexible software operation, intuitive spectrum display and definite results.
- * Several working curves are provided in the software, which can even be edited and renewed by the users upon test requirements.
- * Optional GPS helps locate the tested sample when mining or surveying mines in the field.
- * SD card with super large capacity is available. There is no limit of data storage.
- * Attractive design and comfortable feel when held in hand.
- * The carrying case has high strength and high sealing capacity, drop and shock proof as well.
- * Faster analysis and better accuracy, delivering lab-quality results.
- * Wide range of measurable elements: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Sn, Hf, Ta, W, Re, Pb, Bi, Se, Sb, Pb, Au and Hg.
- * Broad application fields: RoHS testing, alloy analysis, geographic analysis, minerals analysis, precious metals analysis, heavy metals analysis in soils, and scrap metals recycling analysis.

EDX Pocket III Handheld X-ray Fluorescence Spectrometer is rapid, accurate, non-destructive, portable, safe and reliable.

- ✧ Rapid and accurate on-site analysis, giving a test in tens of seconds and saving time and money significantly.
- ✧ Field based direct surface measurement can be done without sample preparation. Any sample type, including soil, rock, dirt, dreg, solid particles, liquid sediments, etc can be tested.
- ✧ It has maximized flexibility with choice of analysis modes, ensuring good test results.
- ✧ It can withstand all kinds of harsh environment in temperature between -20°C and 50°C. It is ideal for dusty, humid, and high-temperature conditions over long periods.
- ✧ The instrument is easy and comfortable to use. High visualized. Brief training is needed.

An introduction to EDX Pocket III specifications

<i>Working principle</i>	XRF analysis exploiting X-ray Fluorescence Spectrometry
<i>Measurable elements</i>	S-U
<i>Detector</i>	advanced thermoelectric cooling Si-PIN semiconductor X-ray detector with high performance and high energy resolution
<i>Excitation source</i>	mini 40kV/50μA X-ray tube, Ag/W anode target
<i>Data display</i>	high definition and high resolution PDA (Personal Digital Assistant), Windows CE operating system, Bluetooth communication, personal data handling and e-mail sending.
<i>Data storage</i>	Large capacity SD card and SD card reader enable the data to store on PC and print out
<i>Power supply</i>	operating time of two fully-charged Lithium batteries is no less than 8 hours
<i>Weight</i>	1.4 kilos(without battery)
<i>Overall size</i>	260×325×125mm (L×H×W)
<i>Ambient environment</i>	temperature-20℃~+40℃
<i>Safety feature</i>	both PDA and software operations are protected by passwords. Unauthorized people are not allowed to operate.
<i>Standard accessories</i>	shock, pressure & water-proof carrying case with padlocks, 110v/220v general-purpose charger, large capacity SD memory card, SD card reader, two 4000mAh Lithium batteries, Lithium battery charger, PDA accessories, lab test stand (optional), etc.

EDX Pocket III Application fields

An Introduction to Alloy Analysis

EDX Pocket III Handheld X-ray Fluorescence Spectrometer can analyze all kinds of high and low alloy steel, stainless steel, tool steel, Chrome-Molybdenum Steel, Nickel alloy, Cobalt alloy, Nickel-Cobalt heat-resistant alloy, Titanium alloy, Copper alloy, Bronze, Zinc alloy and Tungsten alloy; it can also identify Grades of light Aluminum and Magnesium alloys through measuring other alloy elements.

Steels are alloys in which Iron is mixed with Carbon (major elements) and other elements such as Silicon, Manganese, Sulfur and Phosphor. Other elements are added to produce the chemical specifications for the desired steel grade. By determining the concentration of these elements, we know the properties and types of steels.

◆ **Chromium**—Chromium is added to increase abrasion resistance, hardness and most of all corrosion resistance. Steel with chromium above 13% is regarded as stainless steel.

◆ **Manganese**—Manganese is a very important alloying element in steel, which helps to produce texture and strengthen toughness and abrasion resistance. In the heat treatment and press process, it de-oxidizes the inner side of the liquid steel. Manganese is often seen in steels used to make scissors (except A-2, L-6 and CPM420V).

◆ **Molybdenum**—Molybdenum is a carbonization agent, which is used to prevent embrittlement of certain steels. It keeps the strength of the steel at higher temperature. Molybdenum is seen in many types of steel, e.g. the air-hardening steel (e.g. A-2, ATS-34). Air-hardening steel contains 1% or more Molybdenum. Mo's function is to cause the steel to harden in the air.

◆ **Nickel**—Nickel is used to improve strength, corrosion resistance and ductility of the steels. It is often seen in L-6\AUS-6 and AUS-8.

◆ **Silicon**—Like Manganese, Silicon improves the strength of the steel. Further, it keeps the strength of steel during the production process.

◆ **Vanadium**—Vanadium is added to improve the abrasion resistance and the ductility of the steels. Vanadium appears in many types of steel, such as M-2, Vascowear, CPM T440V and 420VA. The biggest difference between BG-42 and ATS-34 is that the former contains Vanadium.

Applied to:

- High-temperature and high-pressure industries: steel melting, boiler, pipeline and vessel manufacturing
- Industries such as non-ferrous metals, space and aviation, weaponry and shipbuilding

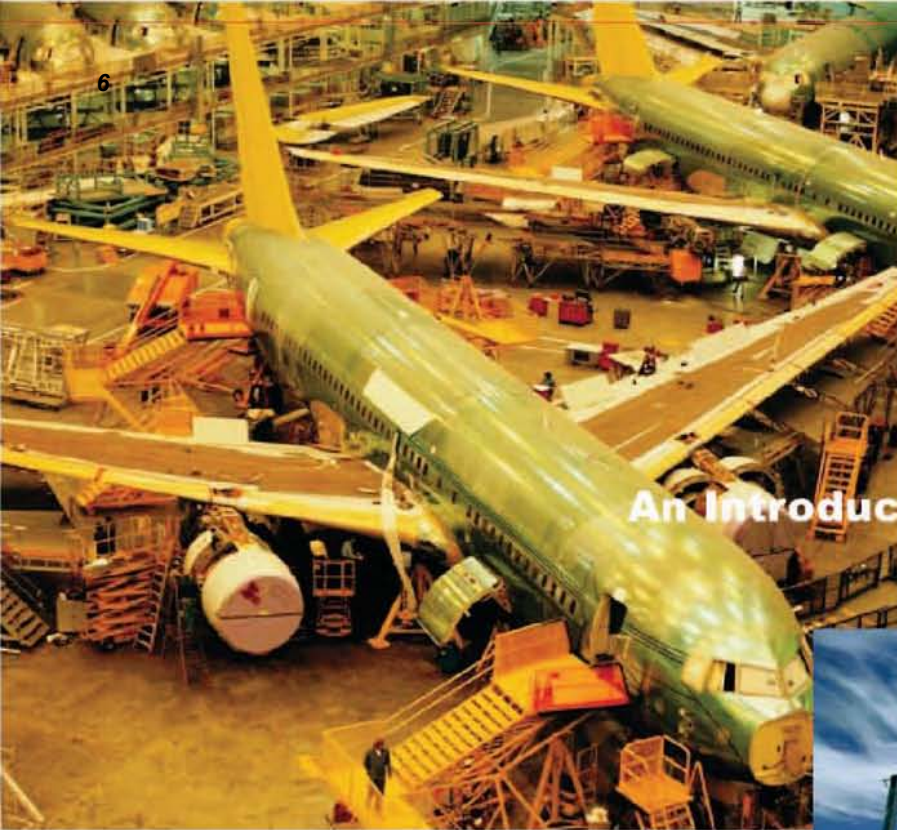
Material identification and quality assurance of high-temperature and high-pressure industries such as steel melting and boiler.



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EDX Pocket III Application fields

An Introduction to Alloy Analysis



Alloy composition identification and quality assurance of high-tech industries such as shipbuilding and space and aviation industries

Alloy Grade Library and Measurable Standard Elements :

Extensive Alloy Grade Libraries: standard libraries of countries such as China (GB), USA (AISI, UNS, ASTM), Japan (JIS), France (NF), Russia (TOCT), Sweden (SS14), Britain (BS) and Germany (DIN). EDX Pocket III allows easy editing of grade libraries. The measurable standard elements include 26 elements Al, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Se, Zr, Nb, Mo, Pd, Cd, In, Sb, Hf, Ta, Pt, Pb, Ag, Sn, Bi and Au.

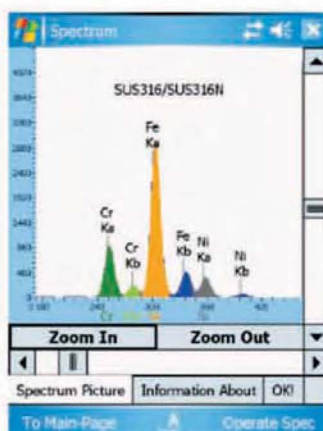


▲ Compliance and safety tests of spare parts in power and power station industries

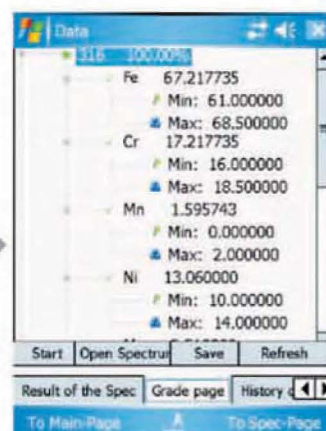


EDX Pocket III Test Example and Analysis

As for finished products such as stainless steel, the users are more concerned about the concentration of Cr, Mn, Ni, Mo and Ti, for their varying concentrations may result in different uses of the steels. These alloying elements can be measured in the air.



▲ Spectrum of grade analysis



▲ Grade analysis display

Corresponding grades

SUS316J1/SUS316J11



The test sample is a national standard, with grade name 316. The measurement time is 30s and test environment is standard. The following are the measured results:

Element	316 Range of the content	Standard value	Tested value
Cr	16%~18%	17.07	17.22
Mn	0~2%	1.14	0.79
Fe	66%~72%	65.57	65.6
Ni	10%~14%	12.1	12.08
Cu	0~0.8%	0.073	0.054
Mo	2%~3%	2.92	2.92
Ti	0~0.05%	0.032	0.045
V	0~0.055	0.036	0.053
Co	0~0.1%	0.081	0.074
Al	0.00	0.00	0.05
Zn	0.00	0.00	0.00
Se	0.00	0.00	0.00
Zr	0.00	0.00	0.00
Nb	0.00	0.00	0.00
Pd	0.00	0.00	0.00
Ag	0.00	0.00	0.00
Cd	0.00	0.00	0.00
In	0.00	0.00	0.00
Sn	0.00	0.00	0.00
Sb	0.00	0.00	0.00
Hf	0.00	0.00	0.00
Ta	0.00	0.00	0.00
Pt	0.00	0.00	0.00
Au	0.00	0.00	0.00
Pb	0.00	0.00	0.00
Bi	0.00	0.00	0.00

The main compositions of the stainless steel are Fe, Cr, Ni, Mo and Mn.

EDX Pocket III Application fields

An Introduction to Minerals Analysis

EDX Pocket III Handheld X-ray Fluorescence Spectrometer features rapid identification of mineral categories, auto qualitative and quantitative analysis of multi elements, different test options, free and unlimited adding of test modes and in-built intensity correction mode correcting deviation caused by different geometric shapes or uneven structural density. It is widely used in geography, metallurgy, rare earth, petroleum, environment monitoring, non-ferrous metals, food, agriculture, research institutes, colleges and mining enterprises.

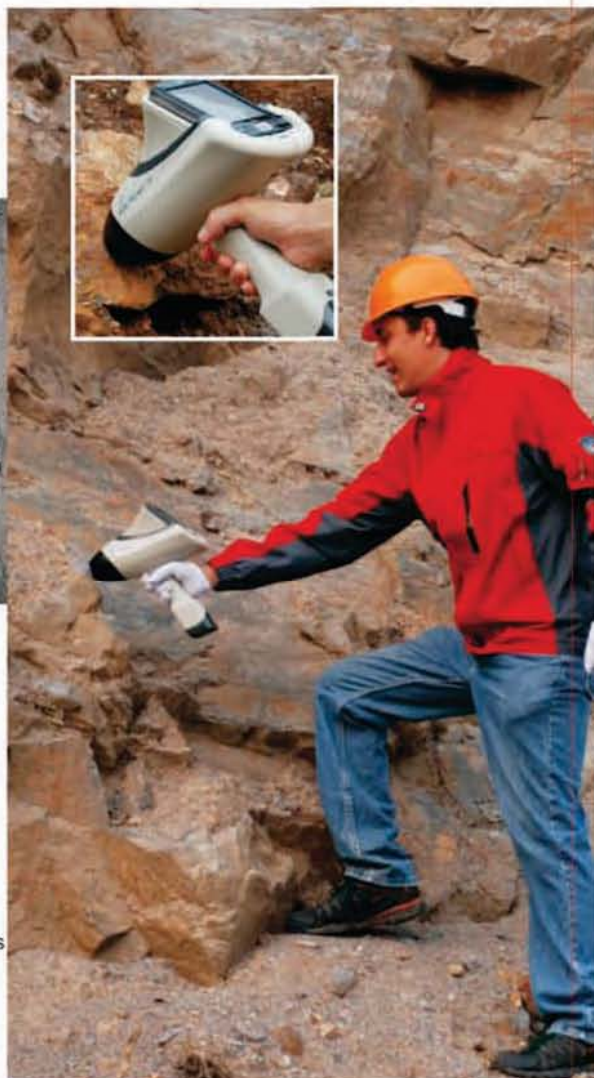


▲ Ore tail analysis



▲ Vein analysis

▲ Crude ore and ore concentrates analysis



▲ In-field minerals exploration and survey

Applied to:

- Mineral exploration and survey
- In-situ inspection of rocks, soil, sediments and ores
- Drawing of atlas of mineral resources
- Analysis of crude ore, ore concentrates and tails in washing process
- Determination of grade of ores during the purchase of crude ores and ore concentrate
- In-field measurement of archeology

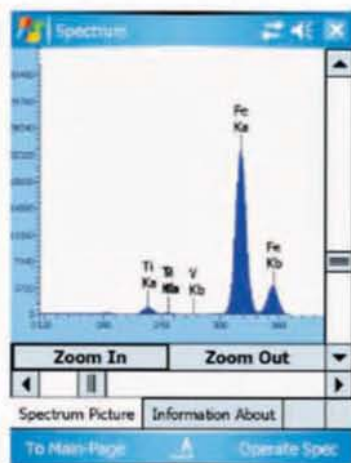
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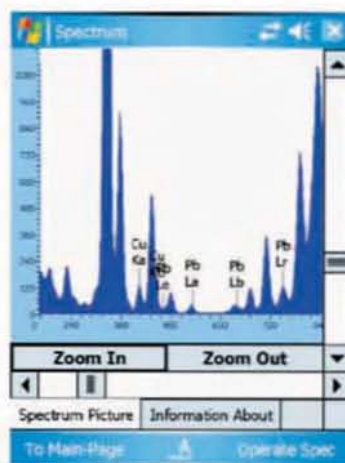
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EDX Pocket III Test Example and Analysis

An Introduction to Minerals Analysis



▲ Vanadium-Iron sample GBW07224



▲ Sediment sample GBW07318



Element	Intensity	Content
Cr	5.11	0.0243
Fe	355.955	11.9
Ni	9.909124	0.0087
Cu	9.690593	0.0011
Zn	48.669674	0.0165
Ba	8.81	0.076
Pb	5.78	0.0066
V	4.805	0.019
Zr	27.215	0.0524
As	1.505	0.001029

Result of the Spec History of the Mode

To Main-Page To Spec-Page

▲ Measurement results

The major compositions of the ores are Fe, Ba, Zr, and Ca.

● There is a wide range of samples in the geographic and mineral industries: rocks, soil, sediment, ores, etc. They have complicated compositions and require rapid and accurate qualitative and quantitative analysis on the site or in the field. Besides, if tests are to be carried out before large-scale production, they must produce results as quickly as possible. Therefore, two features are ascribed to this industry: sample complexity and measurement rapidness.

EDX Pocket III Application fields

An Introduction to Scrap Metals Recycling and Utilization

Scrap metals recycling is an indispensable aspect of circular economy, which has positive influence on environment protection and resources economization. Nowadays, nations around the world are propelling the cause of scrap metals recycling, waste electronic products reuse and circular economy transformation of steel and non-ferrous industries. China is currently making experiments on circular economy in key industries, areas, industrial parks, and cities.

Skyray **EDX Pocket III Handheld X-ray Fluorescence Spectrometer** is designed for on-site measurement and rapid sorting of volume scrap metals. It allows the scrap dealers to make rapid and reliable judgment on the raw material deals. As a powerful weapon used for metal identification in scrap and regeneration metals recycling, it has contributed significantly to the development of renewable material industry.



▲ Overstock steels recycling in warehouses



▲ Sorting of metals in salvage station

Applied to:

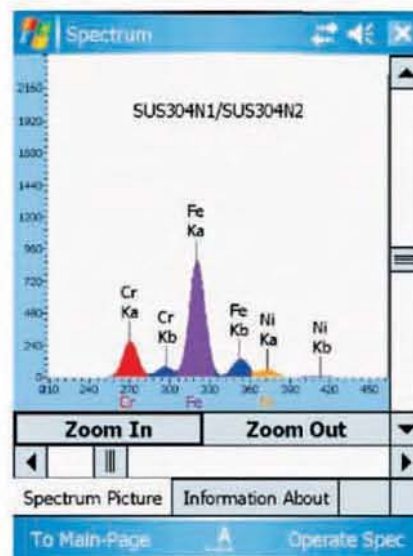
- **Scrap metals recycling:** Rare metals: gilt, silver plating, silver point, Hg, Mo, Ni and W; Non-ferrous metals: Cu, Al, stainless steel, lead soldering tin, tin dross, zinc, etc
- **Waste electric appliances recycling:** household appliances such as air-conditioner, refrigerator, washing machine, TV and refrigerator
- **Waste commercial units recycling:** central air conditioning system, refrigeration equipment, electric wire and cable, battery cell, electric motor, machine tool, elevator, jack box, transformer and boiler



▲ Test of cutting scraps or shavings

EDX Pocket III Test Example and Analysis

An Introduction to Scrap Metals Recycling and Utilization



▲ Spectral analysis



Element	Intensity	Content
Cr	193.05	19.513111
Fe	654.203495	70.939709
Mn	22.601495	2.076465
Ni	58.2	7.460715
Cu	3.155911	ND
Mo	23.277595	ND

Result of the Spec, History of the Mode, To Main-Page, To Spec-Page

▲ Measurement Results

The major compositions of the scrap metals are Fe, Cr, Ni and Mn.

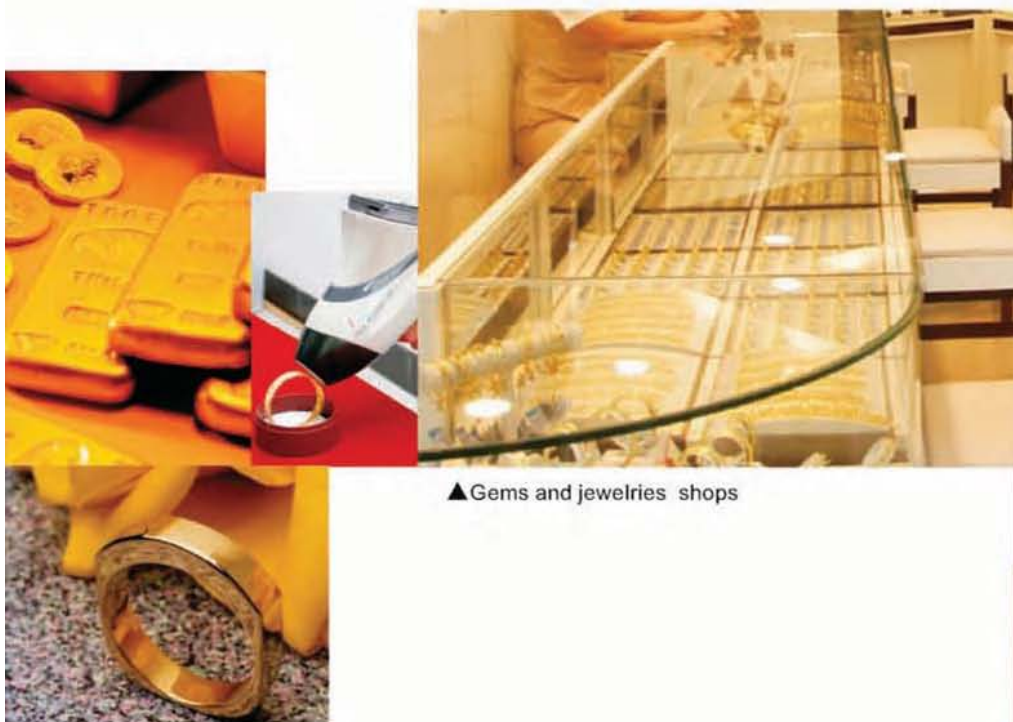


EDX Pocket III Application fields

An Introduction to Precious Metals Analysis

Precious metals refer to the eight metal elements Au, Ag and Ru, Rh, Pd, Os, Ir, Pt in Pt family. Most of these metals have beautiful colors. They are normally un-reactive as they have strong resistance to chemicals. They are usually made into jewelries or souvenirs. They also have wide industrial application.

Skyray EDX Pocket III Handheld X-ray Fluorescence Spectrometer can test grades and purity of the precious metals, identify grades of gemstones and conduct routine physical, compositional and structural analysis of jewelries.



▲Gems and jewelries shops



▲Test institutes of precious metals jewelries

Applied to:

- Measure concentration of precious metals Au, Pt, Ag and other jewelries
- Precious metals and jewelries processing industries
- Jewelry shops and test institutes
- Banks and electro plating industry

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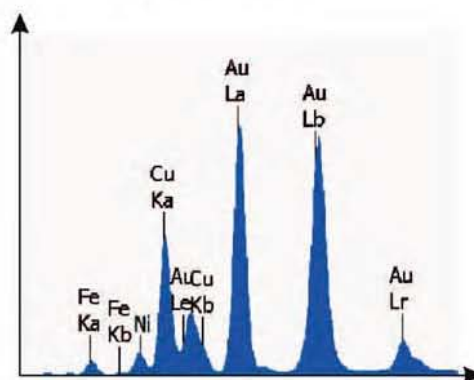
EDX Pocket III Test Example and Analysis

An Introduction to Precious Metals Analysis

EDX Pocket III tests precious metal fineness for gold, silver, platinum, palladium, etc in accordance with National Standard GB 1887 *Jewelry--Fineness of Precious Metal Alloys and Designation* and GB/T 18043 *Precious Metals Jewellery Content Non-destructive Test Method X-ray Fluorescence Spectrometry*.



▲Jewelry test example



Spectral analysis

The major constituents of this jewelry are: Au, Zn, Ni, Ag and Cu; the Au content is 74.495%

Element	Intensity	Content
Au	0.484258	74.492227
Cu	0.196015	15.420389
Ni	0.122583	6.225294
Fe	0.090834	1.902314
Zn	0.080972	1.535448
Ag	0.012456	0.316642

Corresponding Jewelry Type

18k gold

Name of the precious metals jewelry	Types of jewelry	Content of metal elements	Type identifier
Au jewelry	18k gold	Au≥750‰	18K, G18K, G750, Au750
	Pure gold	Au≥990‰	Pure gold, G990, Au990
	Gold999	Au≥999‰	Gold999, G999, Au999
Ag jewelry	Ag jewelry	Ag≥925‰	S925, Ag925
	925 silver	Ag≥990‰	S990, Ag990
Pt jewelry	PT900	PT≥900‰	PT900
	PT950	PT≥950‰	PT950
	PT990	PT≥990‰	PT990
Pd jewelry	Pd950	Pd≥950‰	Pd950
	Pd990	Pd≥990‰	Pd990

▲Precious metals jewelrys currently sold on the market

Name of the imitation jewelrys	Remarks
Gold filled	gold-filled jewelry is usually composed of a layer of thin gold leaf bonded to base metals such as brass, silver, zinc and nickel. Some gold-filled pieces have the look and feel of the gold. Jewelrys of this kind are usually stamped with 34kf or 18kf.
Gold plating	gold plating is to deposit a thin layer of gold with thickness of about 10 micrometer onto the surface of another base metal, most often copper, silver, zinc, nickel or their alloys, by electrolyzing means. Jewelrys of this kind are usually stamped with 18KGP and 24KG.
Pinchbeck	pinchbeck is a gold imitation material made by brass, most often plated with gold on the surface.
Rare-earth gold	rare-earth gold does not contain gold. It is an alloy composed of copper, nickel and a small amount of rare earth elements.



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Human activity will produce different wastes, which are transported to the soils through different ways. The quantity and generation speed of the wastes might exceed the purifying ability of the soils. Then the ecological balance of the soils may be destroyed by the dominant accumulation of wastes within it. Therefore, soils lose functions and qualities, bringing a harmful effect on the growth, production and quality of the crops and that on human health, existence and development.

EDX Pocket III Application fields

▲soil cutaway view

An introduction to heavy metals in soils

Soils may be polluted by liquid and solid wastes from cities and industries dealing with heavy metals. The surface soil full of high intensity heavy metals, driven by wind or water forces, may continue to pollute the air, the surface water, the underground water and the ecological system, which altogether pose a great threat to human life and health. This is especially true when the pollutants are Hg, Cd, Pb, As, Cu, Zn, Ni, Co and V. Hg is usually found in waste water released by some plants. They will continue to exit in the soils for a very long time. Pb is usually found in car exhausts and steel melting industry. They are most often discovered in the soils on both sides of the roads. Arsenic is usually found in pesticide, antiseptic, rodenticide, weed killer and vulcanization ores exploration, separation and melting industry.

As a powerful weapon to keep soils safe, **EDX Pocket III Handheld X-ray Fluorescence Spectrometer** is widely used to provide multi-elemental analysis of all types of soils. It can also be used in archeology. The samples can be solids, dust, powder, scraps, slurry filtered substances and membranes.



▲On-site analysis of suspicious polluted area



▲Area identification of landfills

Applied to:

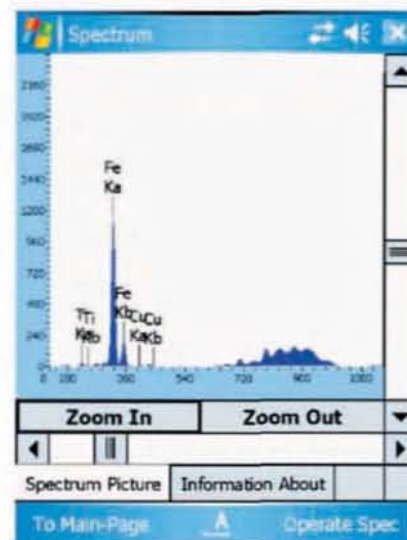
- Pre-sorting of contaminated soil before landfill
- Protection of water resource
- Environment protection institutes
- Archeology and soil research



▲Evaluation of soil ecological balance influenced by industrial liquid wastes

EDX Pocket III Test Example and Analysis

An Introduction to Precious Metals Analysis



▲ Spectrum of soil test



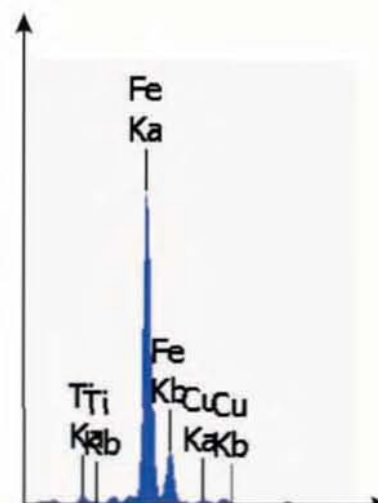
Data			
Element	Intensity	Content	
Ca	0.011259	0.528252	
Ti	0.028632	0.918795	
V	0.005475	0.017697	
Cr	0.040963	0.082305	
Mn	0.048252	0.033808	
Co	0	0	
Fe	1.68686	6.339775	
Ni	0.021085	0.001014	
Cu	0.030997	0.011775	
Zn	0.03379	0.017276	
Br	0.00825	0	
Zr	0.103853	0.105714	

Result of the Spec History of the Mode

To Main-Page To Spec-Page

▲ Results of soil test

Heavy metals contained in the soils are Fe, Ti, Ca, Zr, Cr, and Mn.



▲ Heavy metals spectrum in soils

EDX Pocket III Application fields

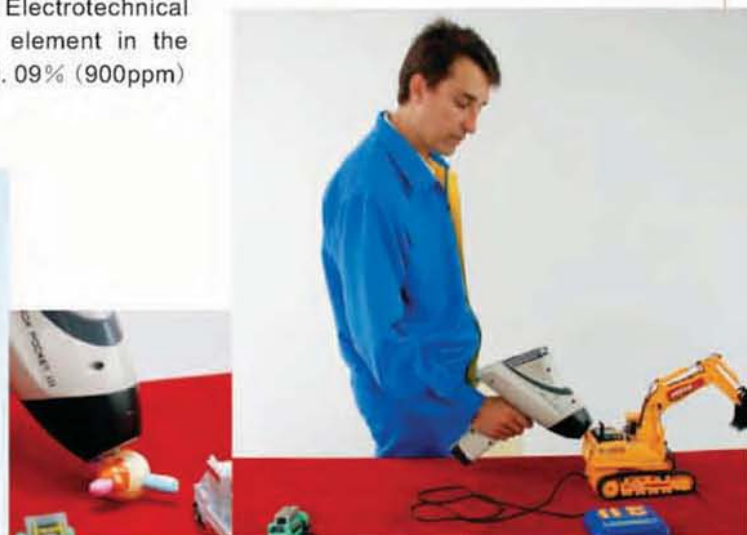
An Introduction to RoHS/Non-halogen Testing of Electric and Electronic Appliances and Toys

RoHS directive is also called green directive, which covers a wide range of products: electronic, electric, medical, communication, toys, and safety protection equipments. They include not only the whole machine products, but also the related spare parts, raw materials and packing materials.

RoHS directive restricts the amount of Pb, Hg, Cr⁶⁺, PBB and PBDE contained in the related products to be less than 0.1%(1000ppm) and Cd 0.01%(100ppm). These restriction values are the legislative basis for determining whether the products comply with the directive or not.

According to Non-halogen Standard of International Electrotechnical Commission (IEC 61249-2-21), the maximum amount of Br element in the related products is restricted to 0.09% (900ppm), Cl to 0.09% (900ppm) and Br+Cl to 0.15% (1500ppm) .

Skyray instrument has been engaged in the research, production and sales of X-ray fluorescence spectrometers since its establishment. Our **EDX Pocket Series Handheld X-ray Fluorescence Spectrometers** have received warm repercussion from the manufacturers of electric and electronic products for RoHS testing. After the enforcement of EU Toy Directive, they have become a powerful weapon of toy safety testing.



▲ Toy safety testing

Applied to:

- Production of electric components and parts
- Third party evaluation of electric spare parts and raw material suppliers
- Testing and verification of packing material
- Testing and identification of hazardous elements in batteries
- Testing of toys, stationeries, children goods and gifts

Large-sized articles: tested without barrier or limitation.



Precision parts: accurate positioning, interference eliminated.



Non-destructive test of precious goods:



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Application fields

Testing standard of substances restricted by RoHS Directive

Hazardous substances	Standards (mg/kg)
Cd	100
Pb	1000
Hg	1000
Cr⁶⁺	1000
PBBs	1000
PBDEs	1000

Non-halogen Standard

Hazardous substances	Standards (mg/kg)
Br	900
Cl	900
Br+Cl	1500

Restricted substances and their typical uses

Pb	
Solders	
Paints	Pigments and driers
Glass materials	Pb is allowed in fluorescent lamp
Ceramic materials	Pb is allowed in certain electronic ceramic materials
Iron, aluminum & copper materials	A certain amount of Pb is allowed
Plastics	PVC stabilizer and pigments
Batteries	Pb is allowed in acidic batteries for vehicles

Cd	
Plastics	Stabilizer and pigments
Solders	Seldom used
Ceramics	Seldom used
Connectors	Relays and switches
Batteries	Cd is allowed in Ni-Cd batteries
Semiconductors	Optical sensors and solar cell panels

Hg	
Batteries	Prohibited (see battery directive)
Connectors	Relays and sensitive switches
Fluorescent lamps	A certain amount of Hg is allowed

Cr⁶⁺	
Passivation layers	Commonly used for naked metal surfaces to enhance adhesion of plating layers
Anti-corrosive plating layers	Painting and plating layers
Chrome plating layers	Plating layer of chromium metal is not under control
Plasticizer	Commonly used to plastics plating process but not final products

PBBs & PBDEs	
Plastics	Brominated flame retardants

What are RoHS and WEEE Directives?

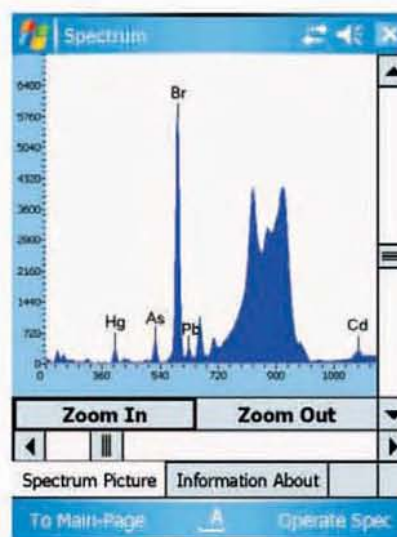
The European Union has adopted Directive 2002/95/EC on the restriction of certain hazardous substances (RoHS) and Directive 2002/95/EC on waste electrical and electronic equipment (WEEE) with their publication in the Official Journal of the European Union on February 13, 2003, which stipulates that the producer responsibility principle of WEEE comes into effect on August 13, 2005, and six hazardous substances are restricted to use in new electrical and electronic equipments put on market from July 1, 2006.



EDX Pocket III

Test Example and Analysis

An Introduction to RoHS/Non-halogen Testing of Electric and Electronic Appliances and Toys



▲ Spectrum of toy test



Data		
Element	Intensity	Content
Br	494.715	808
Cd	14.295	140.8
Hg	24.4	25.3
Pb	13.905	107.6
As	34.62	30.9

Result of the Spec History of the Mode

To Main-Page To Spec-Page

▲ Results of toy test

Cd in this toy is RoHS incompliant:
Content of Cd is 140.8ppm > 100ppm
CBR in this toy is Non-halogen compliant:
Content of Br is 808ppm < 1500ppm





EDX Pocket III

Handheld X-ray Fluorescence Spectrometer

- Alloy Analyzer
- Rapid Minerals Analyzer
- Rapid RoHS Tester



Handheld High-performance On-site Analyzer



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An introduction to EDX Pocket III

EDX Pocket III is a **Handheld X-ray Fluorescence Spectrometer** specifically developed for on-site analysis by Skyray. They include RoHS Analyzers, Alloy Analyzers, Scrap Metals Recycling Analyzers, Mineral Analyzers, Precious Metals Analyzers and Soil Analyzers. They are the smallest, rapidest, most functional and most accurate XRF analyzers available on the market. They can be used widely in fields such as alloy analysis, minerals analysis, geographic analysis, precious metals analysis, scrap metals recycling analysis, RoHS testing and soil analysis. Moreover, it can also be used to perform Positive Material Identification (PMI) and verification.



Years of brewing and development

Persistent efforts in quality pursuit

Optimized integration of high-end configurations

EDX-Pocket III is always outstanding!

- Its streamlined design brings us powerful visual impact
- Its magnificent colors exhibits unique charm
- Its exquisite kernel displays beauty of science and technology
- Its prudent gunlock design provides secure “firewall” at the fullest
- Its portability shows us great concern to humanity

*Rapid Accurate Non-destructive
Intuitive Lightweight Easy-to-use Safe*

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Main characteristics of EDX Pocket III

- * The instrument is small, light and portable, providing rapid and non-destructive on-site analysis of the samples.
- * Figurative interface, flexible software operation, intuitive spectrum display and definite results.
- * Several working curves are provided in the software, which can even be edited and renewed by the users upon test requirements.
- * Optional GPS helps locate the tested sample when mining or surveying mines in the field.
- * SD card with super large capacity is available. There is no limit of data storage.
- * Attractive design and comfortable feel when held in hand.
- * The carrying case has high strength and high sealing capacity, drop and shock proof as well.
- * Faster analysis and better accuracy, delivering lab-quality results.
- * Wide range of measurable elements: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Sn, Hf, Ta, W, Re, Pb, Bi, Se, Sb, Pb, Au and Hg.
- * Broad application fields: RoHS testing, alloy analysis, geographic analysis, minerals analysis, precious metals analysis, heavy metals analysis in soils, and scrap metals recycling analysis.

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<i>Measurable elements</i>	S-U
<i>Detector</i>	advanced thermoelectric cooling Si-PIN semiconductor X-ray detector with high performance and high energy resolution
<i>Excitation source</i>	mini 40kV/50µA X-ray tube, Ag/W anode target
<i>Data display</i>	high definition and high resolution PDA (Personal Digital Assistant), Windows CE operating system, Bluetooth communication, personal data handling and e-mail sending.
<i>Data storage</i>	Large capacity SD card and SD card reader enable the data to store on PC and print out
<i>Power supply</i>	operating time of two fully-charged Lithium batteries is no less than 8 hours
<i>Weight</i>	1.4 kilos(without battery)
<i>Overall size</i>	260×325×125mm (L×H×W)
<i>Ambient environment</i>	temperature-20℃~+40℃
<i>Safety feature</i>	both PDA and software operations are protected by passwords. Unauthorized people are not allowed to operate.
<i>Standard accessories</i>	shock, pressure & water-proof carrying case with padlocks, 110v/220v general-purpose charger, large capacity SD memory card, SD card reader, two 4000mAh Lithium batteries, Lithium battery charger, PDA accessories, lab test stand (optional), etc.

EDX Pocket III Application fields

An Introduction to Alloy Analysis

EDX Pocket III Handheld X-ray Fluorescence Spectrometer can analyze all kinds of high and low alloy steel, stainless steel, tool steel, Chrome-Molybdenum Steel, Nickel alloy, Cobalt alloy, Nickel-Cobalt heat-resistant alloy, Titanium alloy, Copper alloy, Bronze, Zinc alloy and Tungsten alloy; it can also identify Grades of light Aluminum and Magnesium alloys through measuring other alloy elements.

Steels are alloys in which Iron is mixed with Carbon (major elements) and other elements such as Silicon, Manganese, Sulfur and Phosphor. Other elements are added to produce the chemical specifications for the desired steel grade. By determining the concentration of these elements, we know the properties and types of steels.

◆ **Chromium**—Chromium is added to increase abrasion resistance, hardness and most of all corrosion resistance. Steel with chromium above 13% is regarded as stainless steel.

◆ **Manganese**—Manganese is a very important alloying element in steel, which helps to produce texture and strengthen toughness and abrasion resistance. In the heat treatment and press process, it de-oxidizes the inner side of the liquid steel. Manganese is often seen in steels used to make scissors (except A-2, L-6 and CPM420V).

◆ **Molybdenum**—Molybdenum is a carbonization agent, which is used to prevent embrittlement of certain steels. It keeps the strength of the steel at higher temperature. Molybdenum is seen in many types of steel, e.g. the air-hardening steel (e.g. A-2, ATS-34). Air-hardening steel contains 1% or more Molybdenum. Mo's function is to cause the steel to harden in the air.

◆ **Nickel**—Nickel is used to improve strength, corrosion resistance and ductility of the steels. It is often seen in L-6\AUS-6 and AUS-8.

◆ **Silicon**—Like Manganese, Silicon improves the strength of the steel. Further, it keeps the strength of steel during the production process.

◆ **Vanadium**—Vanadium is added to improve the abrasion resistance and the ductility of the steels. Vanadium appears in many types of steel, such as M-2, Vascowear, CPM T440V and 420VA. The biggest difference between BG-42 and ATS-34 is that the former contains Vanadium.

Applied to:

- High-temperature and high-pressure industries: steel melting, boiler, pipeline and vessel manufacturing
- Industries such as non-ferrous metals, space and aviation, weaponry and shipbuilding

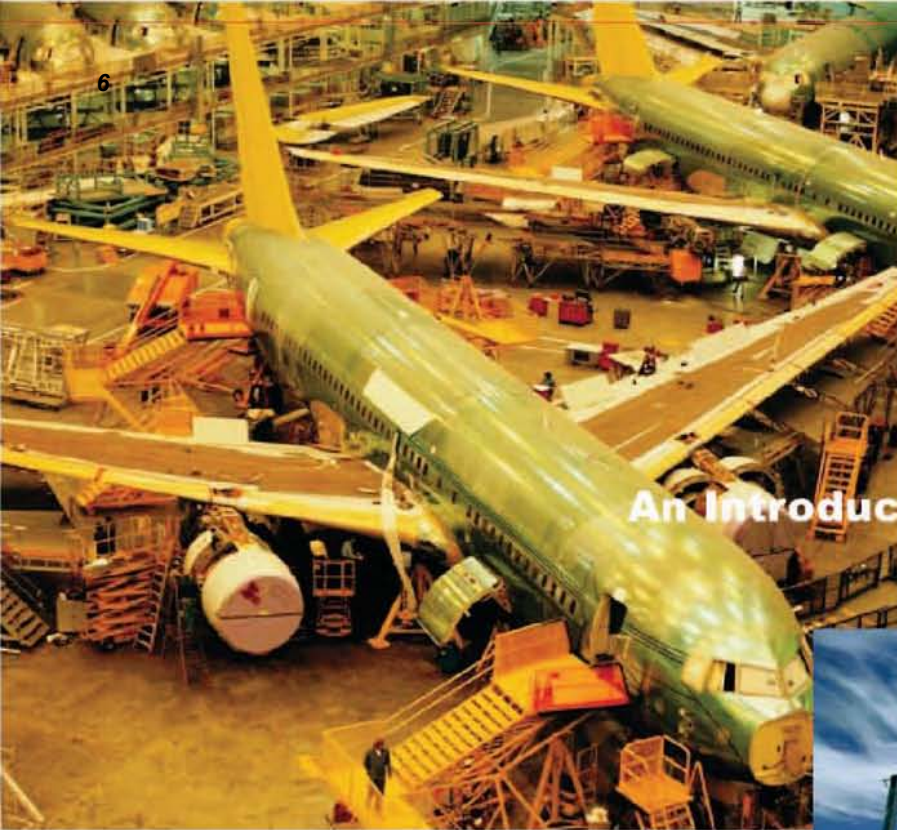
Material identification and quality assurance of high-temperature and high-pressure industries such as steel melting and boiler.



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EDX Pocket III Application fields

An Introduction to Alloy Analysis



Alloy composition identification and quality assurance of high-tech industries such as shipbuilding and space and aviation industries

Alloy Grade Library and Measurable Standard Elements :

Extensive Alloy Grade Libraries: standard libraries of countries such as China (GB), USA (AISI, UNS, ASTM), Japan (JIS), France (NF), Russia (TOCT), Sweden (SS14), Britain (BS) and Germany (DIN). EDX Pocket III allows easy editing of grade libraries. The measurable standard elements include 26 elements Al, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Se, Zr, Nb, Mo, Pd, Cd, In, Sb, Hf, Ta, Pt, Pb, Ag, Sn, Bi and Au.



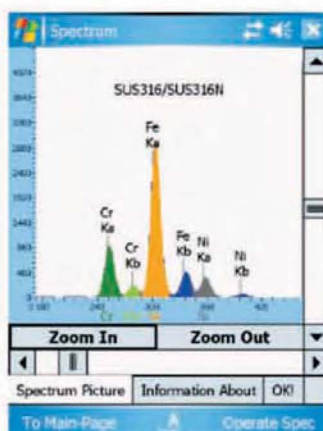
▲ Compliance and safety tests of spare parts in power and power station industries



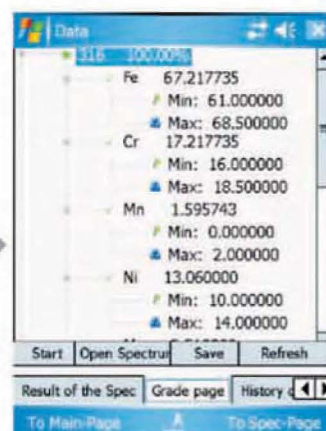
EDX Pocket III

Test Example and Analysis

As for finished products such as stainless steel, the users are more concerned about the concentration of Cr, Mn, Ni, Mo and Ti, for their varying concentrations may result in different uses of the steels. These alloying elements can be measured in the air.



▲ Spectrum of grade analysis



▲ Grade analysis display

Corresponding grades

SUS316J1/SUS316J11

The test sample is a national standard, with grade name 316. The measurement time is 30s and test environment is standard. The following are the measured results:

Element	316 Range of the content	Standard value	Tested value
Cr	16%~18%	17.07	17.22
Mn	0~2%	1.14	0.79
Fe	66%~72%	65.57	65.6
Ni	10%~14%	12.1	12.08
Cu	0~0.8%	0.073	0.054
Mo	2%~3%	2.92	2.92
Ti	0~0.05%	0.032	0.045
V	0~0.055	0.036	0.053
Co	0~0.1%	0.081	0.074
Al	0.00	0.00	0.05
Zn	0.00	0.00	0.00
Se	0.00	0.00	0.00
Zr	0.00	0.00	0.00
Nb	0.00	0.00	0.00
Pd	0.00	0.00	0.00
Ag	0.00	0.00	0.00
Cd	0.00	0.00	0.00
In	0.00	0.00	0.00
Sn	0.00	0.00	0.00
Sb	0.00	0.00	0.00
Hf	0.00	0.00	0.00
Ta	0.00	0.00	0.00
Pt	0.00	0.00	0.00
Au	0.00	0.00	0.00
Pb	0.00	0.00	0.00
Bi	0.00	0.00	0.00

The main compositions of the stainless steel are Fe, Cr, Ni, Mo and Mn.

EDX Pocket III Application fields

An Introduction to Minerals Analysis

EDX Pocket III Handheld X-ray Fluorescence Spectrometer features rapid identification of mineral categories, auto qualitative and quantitative analysis of multi elements, different test options, free and unlimited adding of test modes and in-built intensity correction mode correcting deviation caused by different geometric shapes or uneven structural density. It is widely used in geography, metallurgy, rare earth, petroleum, environment monitoring, non-ferrous metals, food, agriculture, research institutes, colleges and mining enterprises.

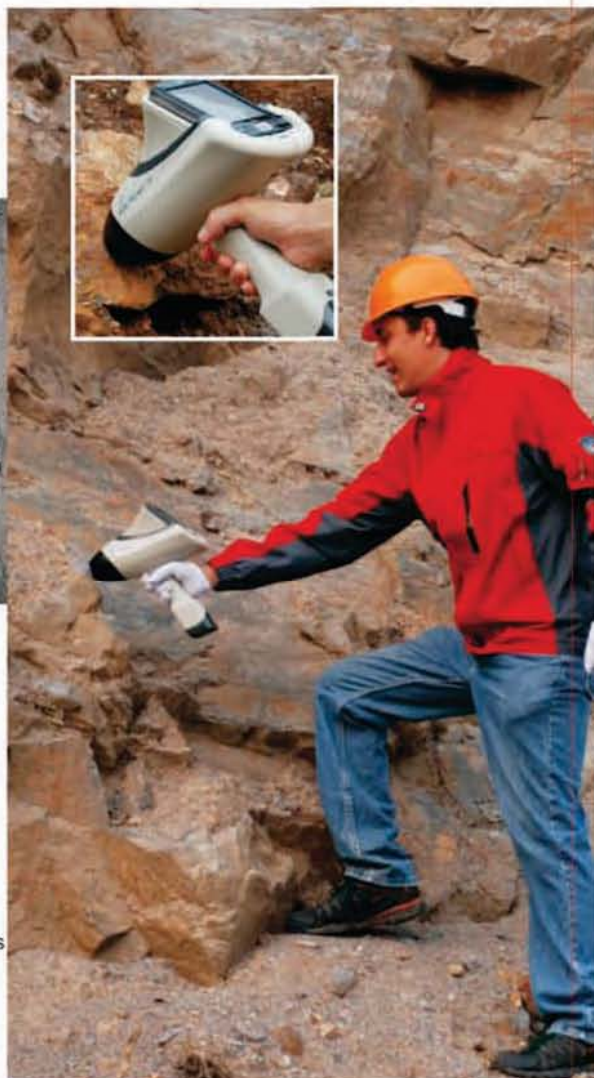


▲ Ore tail analysis



▲ Vein analysis

▲ Crude ore and ore concentrates analysis



▲ In-field minerals exploration and survey

Applied to:

- Mineral exploration and survey
- In-situ inspection of rocks, soil, sediments and ores
- Drawing of atlas of mineral resources
- Analysis of crude ore, ore concentrates and tails in washing process
- Determination of grade of ores during the purchase of crude ores and ore concentrate
- In-field measurement of archeology

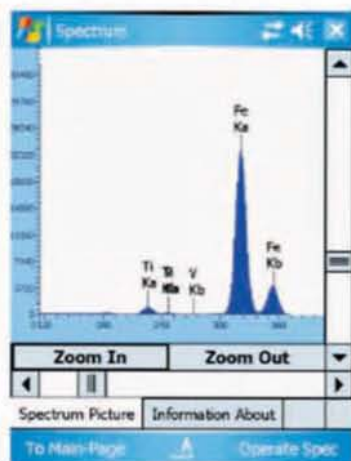
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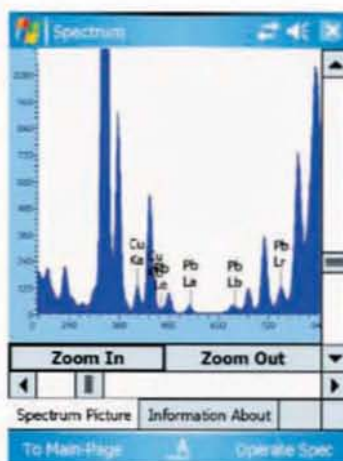
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EDX Pocket III Test Example and Analysis

An Introduction to Minerals Analysis



▲ Vanadium-Iron sample GBW07224



▲ Sediment sample GBW07318



Element	Intensity	Content
Cr	5.11	0.0243
Fe	355.955	11.9
Ni	9.909124	0.0087
Cu	9.690593	0.0011
Zn	48.669674	0.0165
Ba	8.81	0.076
Pb	5.78	0.0066
V	4.805	0.019
Zr	27.215	0.0524
As	1.505	0.001029

Result of the Spec History of the Mode

To Main-Page To Spec-Page

▲ Measurement results

The major compositions of the ores are Fe, Ba, Zr, and Ca.

● There is a wide range of samples in the geographic and mineral industries: rocks, soil, sediment, ores, etc. They have complicated compositions and require rapid and accurate qualitative and quantitative analysis on the site or in the field. Besides, if tests are to be carried out before large-scale production, they must produce results as quickly as possible. Therefore, two features are ascribed to this industry: sample complexity and measurement rapidness.

EDX Pocket III Application fields

An Introduction to Scrap Metals Recycling and Utilization

Scrap metals recycling is an indispensable aspect of circular economy, which has positive influence on environment protection and resources economization. Nowadays, nations around the world are propelling the cause of scrap metals recycling, waste electronic products reuse and circular economy transformation of steel and non-ferrous industries. China is currently making experiments on circular economy in key industries, areas, industrial parks, and cities.

Skyray **EDX Pocket III Handheld X-ray Fluorescence Spectrometer** is designed for on-site measurement and rapid sorting of volume scrap metals. It allows the scrap dealers to make rapid and reliable judgment on the raw material deals. As a powerful weapon used for metal identification in scrap and regeneration metals recycling, it has contributed significantly to the development of renewable material industry.



▲ Overstock steels recycling in warehouses



▲ Sorting of metals in salvage station

Applied to:

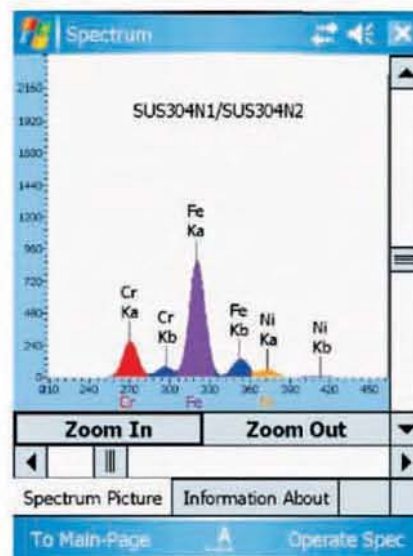
- **Scrap metals recycling:** Rare metals: gilt, silver plating, silver point, Hg, Mo, Ni and W; Non-ferrous metals: Cu, Al, stainless steel, lead soldering tin, tin dross, zinc, etc
- **Waste electric appliances recycling:** household appliances such as air-conditioner, refrigerator, washing machine, TV and refrigerator
- **Waste commercial units recycling:** central air conditioning system, refrigeration equipment, electric wire and cable, battery cell, electric motor, machine tool, elevator, jack box, transformer and boiler



▲ Test of cutting scraps or shavings

EDX Pocket III Test Example and Analysis

An Introduction to Scrap Metals Recycling and Utilization



▲ Spectral analysis



Element	Intensity	Content
Cr	193.05	19.513111
Fe	654.203495	70.939709
Mn	22.601495	2.076465
Ni	58.2	7.460715
Cu	3.155911	ND
Mo	23.277595	ND

Result of the Spec, History of the Mode, To Main-Page, To Spec-Page

▲ Measurement Results

The major compositions of the scrap metals are Fe, Cr, Ni and Mn.

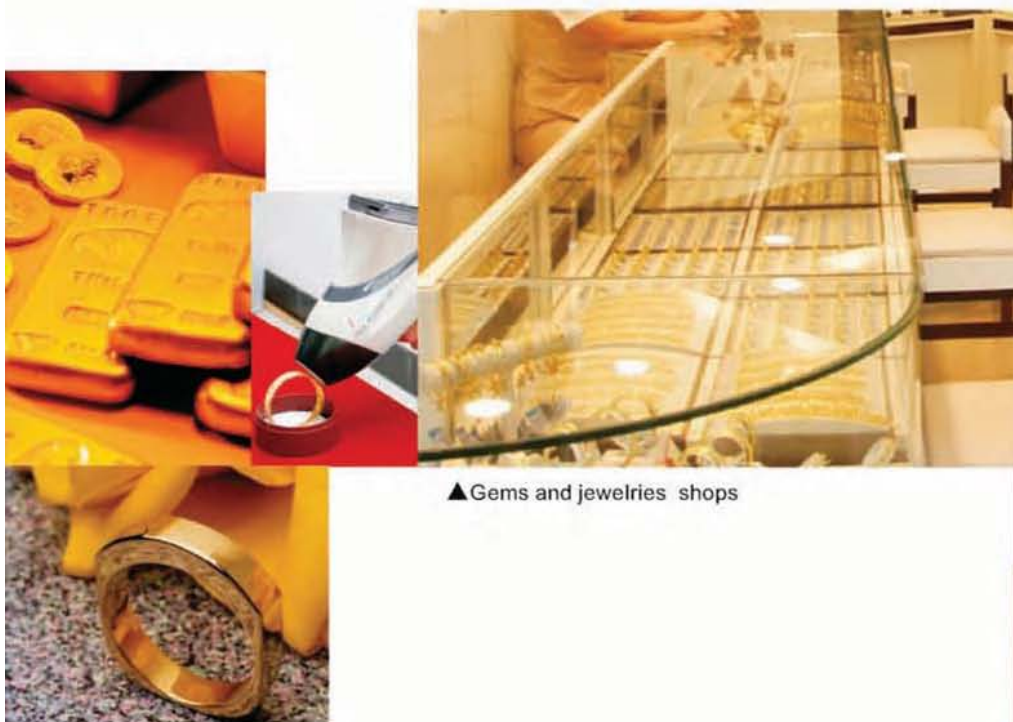


EDX Pocket III Application fields

An Introduction to Precious Metals Analysis

Precious metals refer to the eight metal elements Au, Ag and Ru, Rh, Pd, Os, Ir, Pt in Pt family. Most of these metals have beautiful colors. They are normally un-reactive as they have strong resistance to chemicals. They are usually made into jewelries or souvenirs. They also have wide industrial application.

Skyray EDX Pocket III Handheld X-ray Fluorescence Spectrometer can test grades and purity of the precious metals, identify grades of gemstones and conduct routine physical, compositional and structural analysis of jewelries.



▲Gems and jewelries shops



▲Test institutes of precious metals jewelries

Applied to:

- Measure concentration of precious metals Au, Pt, Ag and other jewelries
- Precious metals and jewelries processing industries
- Jewelry shops and test institutes
- Banks and electro plating industry

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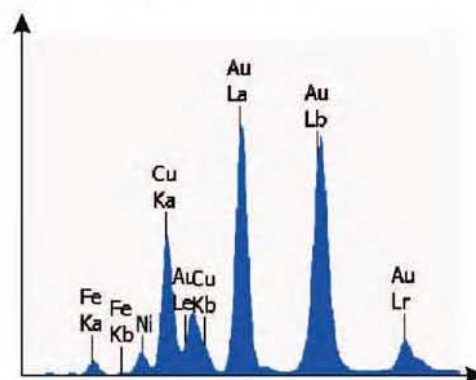
EDX Pocket III Test Example and Analysis

An Introduction to Precious Metals Analysis

EDX Pocket III tests precious metal fineness for gold, silver, platinum, palladium, etc in accordance with National Standard GB 1887 *Jewelry--Fineness of Precious Metal Alloys and Designation* and GB/T 18043 *Precious Metals Jewellery Content Non-destructive Test Method X-ray Fluorescence Spectrometry*.



▲Jewelry test example



Spectral analysis

The major constituents of this jewelry are: Au, Zn, Ni, Ag and Cu; the Au content is 74.495%

Element	Intensity	Content
Au	0.484258	74.492227
Cu	0.196015	15.420389
Ni	0.122583	6.225294
Fe	0.090834	1.902314
Zn	0.080972	1.535448
Ag	0.012456	0.316642

Corresponding Jewelry Type

18k gold

Name of the precious metals jewelry	Types of jewelry	Content of metal elements	Type identifier
Au jewelry	18k gold	Au≥750‰	18K, G18K, G750, Au750
	Pure gold	Au≥990‰	Pure gold, G990, Au990
	Gold999	Au≥999‰	Gold999, G999, Au999
Ag jewelry	Ag jewelry	Ag≥925‰	S925, Ag925
	925 silver	Ag≥990‰	S990, Ag990
Pt jewelry	PT900	PT≥900‰	PT900
	PT950	PT≥950‰	PT950
	PT990	PT≥990‰	PT990
Pd jewelry	Pd950	Pd≥950‰	Pd950
	Pd990	Pd≥990‰	Pd990

▲Precious metals jewelry currently sold on the market

Name of the imitation jewelry	Remarks
Gold filled	gold-filled jewelry is usually composed of a layer of thin gold leaf bonded to base metals such as brass, silver, zinc and nickel. Some gold-filled pieces have the look and feel of the gold. Jewellery of this kind are usually stamped with 34kf or 18kf.
Gold plating	gold plating is to deposit a thin layer of gold with thickness of about 10 micrometer onto the surface of another base metal, most often copper, silver, zinc, nickel or their alloys, by electrolyzing means. Jewellery of this kind are usually stamped with 18KGP and 24KG.
Pinchbeck	pinchbeck is a gold imitation material made by brass, most often plated with gold on the surface.
Rare-earth gold	rare-earth gold does not contain gold. It is an alloy composed of copper, nickel and a small amount of rare earth elements.



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Human activity will produce different wastes, which are transported to the soils through different ways. The quantity and generation speed of the wastes might exceed the purifying ability of the soils. Then the ecological balance of the soils may be destroyed by the dominant accumulation of wastes within it. Therefore, soils lose functions and qualities, bringing a harmful effect on the growth, production and quality of the crops and that on human health, existence and development.

EDX Pocket III Application fields

▲soil cutaway view

An introduction to heavy metals in soils

Soils may be polluted by liquid and solid wastes from cities and industries dealing with heavy metals. The surface soil full of high intensity heavy metals, driven by wind or water forces, may continue to pollute the air, the surface water, the underground water and the ecological system, which altogether pose a great threat to human life and health. This is especially true when the pollutants are Hg, Cd, Pb, As, Cu, Zn, Ni, Co and V. Hg is usually found in waste water released by some plants. They will continue to exit in the soils for a very long time. Pb is usually found in car exhausts and steel melting industry. They are most often discovered in the soils on both sides of the roads. Arsenic is usually found in pesticide, antiseptic, rodenticide, weed killer and vulcanization ores exploration, separation and melting industry.

As a powerful weapon to keep soils safe, **EDX Pocket III Handheld X-ray Fluorescence Spectrometer** is widely used to provide multi-elemental analysis of all types of soils. It can also be used in archeology. The samples can be solids, dust, powder, scraps, slurry filtered substances and membranes.



▲On-site analysis of suspicious polluted area



▲Area identification of landfills

Applied to:

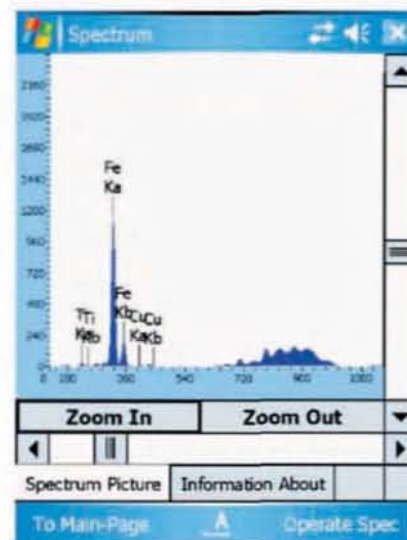
- Pre-sorting of contaminated soil before landfill
- Protection of water resource
- Environment protection institutes
- Archeology and soil research



▲Evaluation of soil ecological balance influenced by industrial liquid wastes

EDX Pocket III Test Example and Analysis

An Introduction to Precious Metals Analysis



▲ Spectrum of soil test



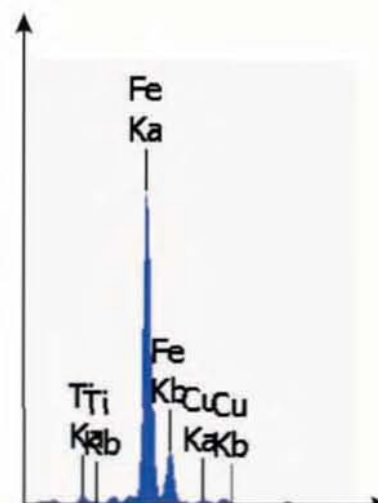
Data			
Element	Intensity	Content	
Ca	0.011259	0.528252	
Ti	0.028632	0.918795	
V	0.005475	0.017697	
Cr	0.040963	0.082305	
Mn	0.048252	0.033808	
Co	0	0	
Fe	1.68686	6.339775	
Ni	0.021085	0.001014	
Cu	0.030997	0.011775	
Zn	0.03379	0.017276	
Br	0.00825	0	
Zr	0.103853	0.105714	

Result of the Spec History of the Mode

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▲ Results of soil test

Heavy metals contained in the soils are Fe, Ti, Ca, Zr, Cr, and Mn.



▲ Heavy metals spectrum in soils

EDX Pocket III Application fields

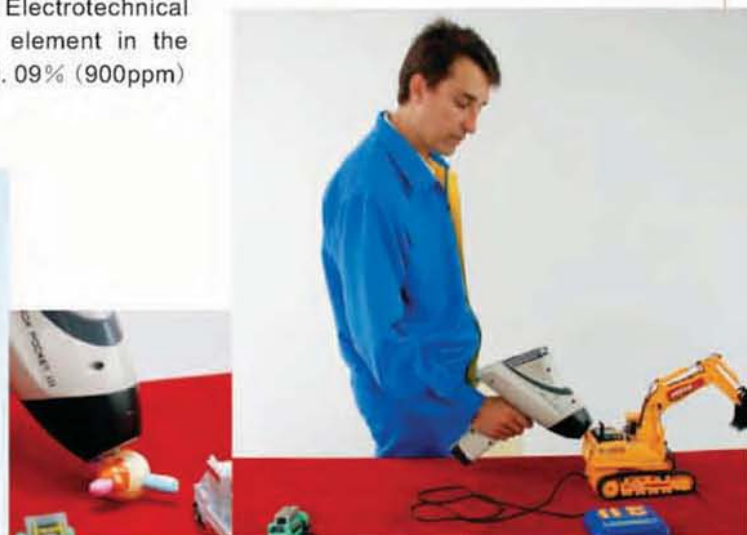
An Introduction to RoHS/Non-halogen Testing of Electric and Electronic Appliances and Toys

RoHS directive is also called green directive, which covers a wide range of products: electronic, electric, medical, communication, toys, and safety protection equipments. They include not only the whole machine products, but also the related spare parts, raw materials and packing materials.

RoHS directive restricts the amount of Pb, Hg, Cr⁶⁺, PBB and PBDE contained in the related products to be less than 0.1%(1000ppm) and Cd 0.01%(100ppm). These restriction values are the legislative basis for determining whether the products comply with the directive or not.

According to Non-halogen Standard of International Electrotechnical Commission (IEC 61249-2-21), the maximum amount of Br element in the related products is restricted to 0.09% (900ppm), Cl to 0.09% (900ppm) and Br+Cl to 0.15% (1500ppm).

Skyray instrument has been engaged in the research, production and sales of X-ray fluorescence spectrometers since its establishment. Our **EDX Pocket Series Handheld X-ray Fluorescence Spectrometers** have received warm repercussion from the manufacturers of electric and electronic products for RoHS testing. After the enforcement of EU Toy Directive, they have become a powerful weapon of toy safety testing.



▲ Toy safety testing

Applied to:

- Production of electric components and parts
- Third party evaluation of electric spare parts and raw material suppliers
- Testing and verification of packing material
- Testing and identification of hazardous elements in batteries
- Testing of toys, stationeries, children goods and gifts

Large-sized articles: tested without barrier or limitation.



Precision parts: accurate positioning, interference eliminated.



Non-destructive test of precious goods:



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EDX Pocket III

Application fields

Testing standard of substances restricted by RoHS Directive

Hazardous substances	Standards (mg/kg)
Cd	100
Pb	1000
Hg	1000
Cr⁶⁺	1000
PBBs	1000
PBDEs	1000

Non-halogen Standard

Hazardous substances	Standards (mg/kg)
Br	900
Cl	900
Br+Cl	1500

Restricted substances and their typical uses

Pb	
Solders	
Paints	Pigments and driers
Glass materials	Pb is allowed in fluorescent lamp
Ceramic materials	Pb is allowed in certain electronic ceramic materials
Iron, aluminum & copper materials	A certain amount of Pb is allowed
Plastics	PVC stabilizer and pigments
Batteries	Pb is allowed in acidic batteries for vehicles

Cd	
Plastics	Stabilizer and pigments
Solders	Seldom used
Ceramics	Seldom used
Connectors	Relays and switches
Batteries	Cd is allowed in Ni-Cd batteries
Semiconductors	Optical sensors and solar cell panels

Hg	
Batteries	Prohibited (see battery directive)
Connectors	Relays and sensitive switches
Fluorescent lamps	A certain amount of Hg is allowed

Cr⁶⁺	
Passivation layers	Commonly used for naked metal surfaces to enhance adhesion of plating layers
Anti-corrosive plating layers	Painting and plating layers
Chrome plating layers	Plating layer of chromium metal is not under control
Plasticizer	Commonly used to plastics plating process but not final products

PBBs & PBDEs	
Plastics	Brominated flame retardants

What are RoHS and WEEE Directives?

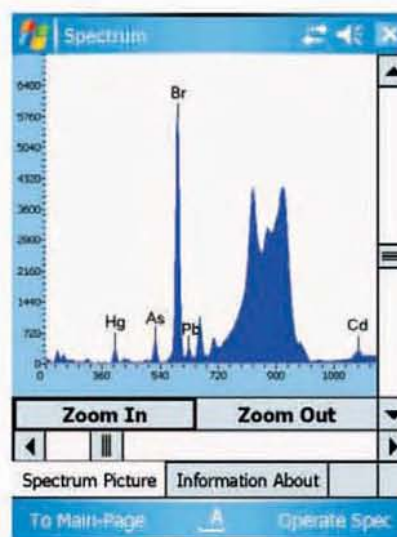
The European Union has adopted Directive 2002/95/EC on the restriction of certain hazardous substances (RoHS) and Directive 2002/95/EC on waste electrical and electronic equipment (WEEE) with their publication in the Official Journal of the European Union on February 13, 2003, which stipulates that the producer responsibility principle of WEEE comes into effect on August 13, 2005, and six hazardous substances are restricted to use in new electrical and electronic equipments put on market from July 1, 2006.



EDX Pocket III

Test Example and Analysis

An Introduction to RoHS/Non-halogen Testing of Electric and Electronic Appliances and Toys



▲ Spectrum of toy test



Data		
Element	Intensity	Content
Br	494.715	808
Cd	14.295	140.8
Hg	24.4	25.3
Pb	13.905	107.6
As	34.62	30.9

Result of the Spec History of the Mode

To Main-Page To Spec-Page

▲ Results of toy test

Cd in this toy is RoHS incompliant:
Content of Cd is 140.8ppm > 100ppm
CBR in this toy is Non-halogen compliant:
Content of Br is 808ppm < 1500ppm

