

# 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



CALI-350

| Model         | CALI-350      |
|---------------|---------------|
| Range         | 35°C to 300°C |
| Accuracy      | ±1°C          |
| Stability     | ±0.3°C        |
| Heating times | 15 Minutes    |
| Well depth    | 100mm         |
| Power         | 230V/60Hz     |
| Size (mm)     | H57xW125xD150 |
| Weight        | 3 kg          |

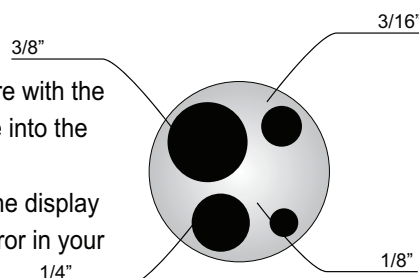
### CALI-350, Portable Dry-Well Calibration, Up To 300°C

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 RTDs, 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 of 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)     | W310xD225xH399                |
| Heated length (mm)          | 150                           |
| Controller                  | eurotherm 2132                |
| Indicator                   | eurotherm 2132                |
| Heating rate                | 20 mins (to 1150°C)           |
| Cavity diameter (mm)        | 20                            |
| Weight (kg)                 | 8.8                           |
| Furnace voltage             | 120/240 externally selectable |
| Max. power (W)              | 1100                          |
| Thermocouple type           | N                             |

The Portable Thermocouple calibrator is a high stability heat source designed for the calibration of thermocouples up to 7.5mm, with a maximum operating temperature of 1200°C. 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 earthed for operator safety 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

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

Using high precision PID microprocessor controller Eurotherm model 3216 with high stability RTD sensor.

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

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



OBH-183

| Model           | OBH-183                      |
|-----------------|------------------------------|
| Temp. range     | Room temp. +5°C to 300°C     |
| Stability       | ±0.1°C                       |
| Setting/readout | Digital                      |
| Heater          | 1.2KW                        |
| Stirring        | By built-in circulation pump |
| Inside dimen.   | W30xD30xH20cm                |
| Outside dimen.  | W66xD40xH39.5cm              |
| Volume          | 18L                          |
| Power source    | 110/220V 50/60Hz, 13A/6.5A   |



CALI-R40

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

Testing and Calibration of Temperature Sensors | Switches, RTD'S, Thermistors (PTC/NTC) | Dial Thermometers | Thermostats.

- Range: -35°C above ambient to 123°C
- Accuracy:  $\pm 0.5^\circ\text{C}$ . Resolution:  $0.1^\circ\text{C}$ .
- Compact Size: W160xH350xD300mm. Weight: 8kg.
- Stability:  $\pm 0.05^\circ\text{C}$ , Well Dia/Depth 19/100mm, Single/Multi-hole Inserts.
- 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:  $0.1^\circ\text{C}$ .
- Compact Size: W155xH355xD295mm. Weight: 10kg.
- Working Area: Well Dia 19mm/170mm
- Auto-tune PID Temperature Control.
- Stirrer to ensure Temperature Uniformity.
- (Oil) Spill Proof Transport Lid.
- Optional: RS 232.



CALI-650H1/2

### CALI-650H1/2, Temperature Calibrator

Medium Temperature Dry Block Calibrator.

- Range: RT+20°C to 650°C.
- Stability:  $\pm 0.1^\circ\text{C}$ .
- Accuracy:  $\pm 1.5^\circ\text{C}$ . Resolution:  $0.1^\circ\text{C}$ .
- Size for H1: W160xH280xD325mm. for H2: W160xH350xD325mm. Weight: 8.5/11kg.
- Working Area: Depth - 110/190mm
- Heavy Duty Bench Top Model with carrying Handle.
- Auto Tune PID Control action. Switch test Capability.
- Fast and Reliable.
- Interchangeable Thermowell Inserts, Single/Multi-hole.
- Switch Test Capability.



CALI-600

### CALI-600, Temperature Economy Calibrator

Portable | Bench-Top Dry Block. Medium Temperature Calibrators.

- Range: RT+50°C to 600°C.
- Stability:  $\pm 0.05^\circ\text{C}$ .
- Accuracy:  $\pm 0.1^\circ\text{C}$ . Resolution:  $1^\circ\text{C}$ .
- Size: W270xL124xH240mm. Weight: 7kg.
- Well - 120mm (200mm optional).
- Analog Output. Provision for Thermostat Switch Testing.
- Interchangeable Thermowell inserts, Single/Multi-hole.



CALI-D350

### CALI-D350, Temperature Calibrator

Dual Dry Block (Hot Cold), Temperature Calibrator

- Truly Portable - for Field & Lab use.
- Most Cost Effective Model in the International Market to Calibrate over a wide range: -35°C from Ambient to 350°C.
- Stability:  $\pm 0.05^\circ\text{C}$ .
- Accuracy:  $\pm 0.5^\circ\text{C}$ . Resolution:  $0.1^\circ\text{C}$ .
- Size: W244xH430xD341mm. Weight: 8kg.
- Well - Cold 100mm, Hot 120mm.
- Common Display & Dual PO Control Function - for simultaneous Control &
- Calibration time reduced by 50%.
- Housed in elegant sturdy Case.





### CALI-1200HN, High Temperature Calibrator

High Temperature Ceramic Dry Block: Calibrator. Stable High (1200°C) Temp. Source for Calibration of 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:  $1^\circ\text{C}$ .
- Size: W205xD365xH480mm. Weight: 13kg.
- Well Depth - 150mm.
- High Stability.
- RS - 232 Interface.
- Multi-Hole 1 Interchangeable (Thermowell) Inserts - to suit.
- High Accuracy.
- Auto - Tune PID Control. Semi Portable.



### CALI-1500HN, Very High Temperature Calibrator

Very High Temperature Ceramic Dry Block: Calibrator

- Temperature Range: 500 to 1500°C.
- Stability:  $\pm 2^\circ\text{C}$ .
- Accuracy:  $\pm 0.5\%$  of Span. Resolution:  $1^\circ\text{C}$ .
- Size: W345xD510xH830mm (with wheel).
- Fast, Stable & Accurate. Autotune PID Controller.
- Heating Element: Silicon Carbide.
- Dry Block: - High Alumina Ceramic
- Single (Interchangeable) & Multi Hole (Fixed).
- Immersion Depth - 250mm.
- Interchangeable Single Hole Thermowells-ID 7/11 & 15 mm\*.
- Semi Portable - Castor Wheels. RS-232 Computer Interface.



### CALI-FB600L, Temperature Calibrator

Fluidised bath switch test facility.

- Ideal for calibration of Multi Type odd shaped sensor.
- Temperature Range: RT+20 to 600°C.
- Stability:  $\pm 0.5^\circ\text{C}$ .
- Accuracy:  $\pm 1.5^\circ\text{C}$ . Resolution:  $1^\circ\text{C}$ .
- Size: W730xD470xH780mm.
- Fast, Stable & Accurate.
- Immersion Depth - 250mm/400mm.
- Semi Portable - Castor Wheels optional.
- RS-232 Computer Interface.



### CALI-PP/PPH, Semi-Portable Pressure Calibrators

PP: Ranges: -0.85 to 2/7/10/20 Bar PPH: Ranges: -0 to 200/400 Bar

- Temperature Range: 0 to 50°C (Automatic).
- Accuracy: PP ( $\pm 0.05\%$  F.S. + 1digit). PPH ( $\pm 0.025\%$  F.S. + 1digit)
- Size: L330xB230xH125mm for 2/7/10 bar. L330xB230xH175mm for 20 bar.
- Advanced Microprocessor Based. Light Weight 1 Compact.
- Trendy, Elegant 'Rugged' Case - Truly Portable.
- Resolution: Minimum 5 digits. Large Graphic Display.
- Touch Membrane Keypad with 15 Selectable Pressure Units eg mbar, bar, Kg/cm<sup>2</sup>, Psi, in Hg, mm Hg, mm H<sub>2</sub>O, cm H<sub>2</sub>O, m H<sub>2</sub>O, in H<sub>2</sub>O, ft H<sub>2</sub>O, Pa, MPa, KPa, atm.
- DC Current Measurement: Active Loop: 50 mA, Passive Loop: 25 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- NI- MH 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.





CALI-PPD

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

- Ranges: Pneumatic: -0.85 to 20 Bar, Hydraulic: 0 to 400 Bar
- 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.
- Trendy, Elegant 'Rugged' Case - Truly Portable.
- Resolution: Minimum 5 digits. Large Graphic Display.
- Touch Membrane Keypad with 15 Selectable Pressure Units eg mbar, bar, Kg/cm<sup>2</sup>, Psi, in Hg, mm Hg, mm H<sub>2</sub>O, cm H<sub>2</sub>O, m H<sub>2</sub>O, in H<sub>2</sub>O...
- DC Current Measurement: Active Loop: 50 mA. Passive Loop: 25 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- NI - MH 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 Several - Ranges: -0.85 to 2 / 10 / 25 / 40 bar. Hydraulic 0-700bar.
- Accuracy:  $\pm 0.1\%$  F.S.
- 2 line alpha - numeric display.
- Touch Membrane Keypad with Selectable Pressure Units eg mbar, bar, Kg/cm<sup>2</sup>, Psi, in Hg, mm Hg, mm H<sub>2</sub>O, cm H<sub>2</sub>O, m H<sub>2</sub>O, in H<sub>2</sub>O, ft H<sub>2</sub>O, Pa, MPa, KPa, atm.
- DC Current Measurement: 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.
- Digital Pressure Indicator with Matching Pneumatic Hand Pump with vernier.



CALI-PPC

### CALI-PPC, Smart Pressure Calibrator (Pneumatic)

- Advanced Microprocessor based.
- Pneumatic - Several Ranges -0.85 to 2 / 10 / 25 / 40 Bar. Hydraulic 0-700bar.
- Accuracy:  $\pm 0.05\%$  ES.
- Size: 170x100x60mm.
- Automatic Temperature Compensation (0 to 50°C).
- 2 line alpha - numeric display.
- Touch Membrane Keypad with 15 Selectable Pressure Units eg mbar, bar, Kg/cm<sup>2</sup>, Psi, in Hg, mm Hg, mm H<sub>2</sub>O, cm H<sub>2</sub>O, m H<sub>2</sub>O, in H<sub>2</sub>O, ft H<sub>2</sub>O, Pa, MPa, KPa, atm.
- DC Current Measurement: 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.
- Digital Pressure Indicator with Matching Pneumatic Hand Pumps with verniers.



CALI-6600/6900

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

- Ranges: upto 700 bar.
- Standard Accuracies: 0.1% /  $\pm 0.05\%$  /  $\pm 0.025\%$  /  $\pm 0.015\%$  of Rdg.
- Size: L530xW325xD230mm.
- Oil Operated. Single & Dual Piston. Bench/Table Top.
- 4 levels of Accuracy:  $\pm 0.015\%$  of Rdg. (Ultra High),  $\pm 0.025\%$  of Rdg. (Very High),  $\pm 0.05\%$  of Rdg. (High),  $\pm 0.1\%$  of Rdg. (Medium).
- Adjustable feet & Spirit Level.
- Calibrated to Standard Gravity (to user specified Gravity on request).
- Piston Calibrated Thru 'Cross Floating' Techniques.
- Accuracies Traceable to International Standards.



CLC-570

**Standard accessories:**

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

**Optional accessories:**

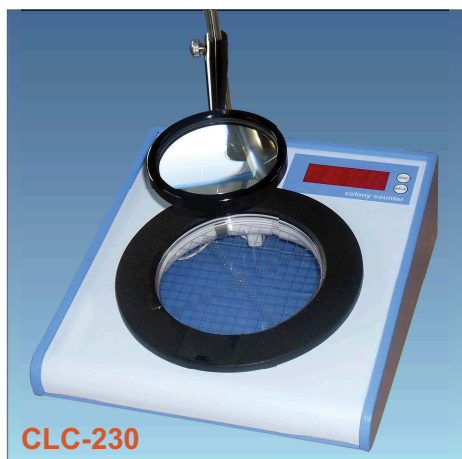
- Switch pen 8-02-1

**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                   |

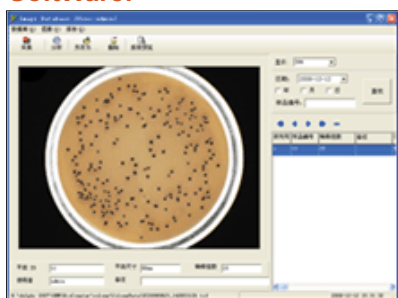


COLONY-1200

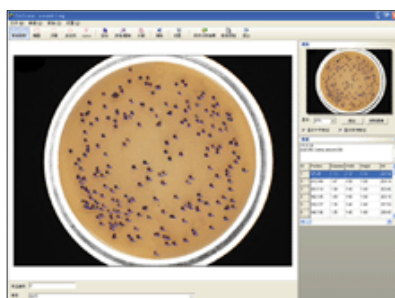
**COLONY-1200/1600, Automatic Colony Counter System**

Colony Counter automatic colony counters provide fast and accurate colony counting and calculation. Typical users can be found widely in laboratories engaged in food, drink and milk testing, drug production and testing and Public Health departments as well as environmental monitoring. It can be used for colony counting (spiral, pour and spread plates), inhibition zone measurement and antibiotic susceptibility testing, etc.

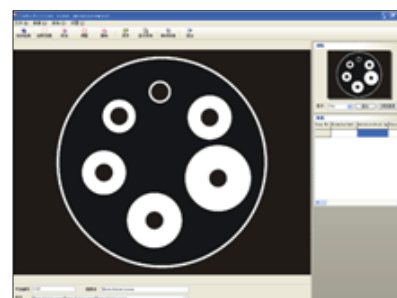
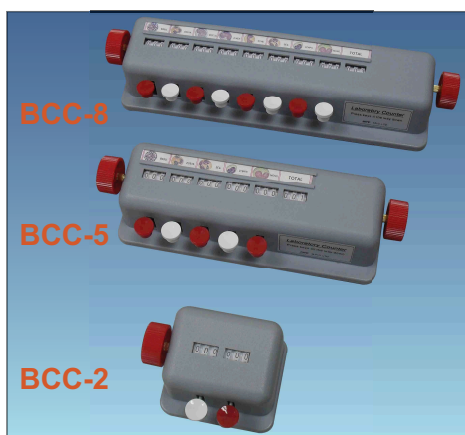
| Model                              | COLONY-1200  | COLONY-1600   |
|------------------------------------|--|---|
| CCD camera                         | Professional Colour digital CCD  |   |
| Pixels                             | 1.4 million  | 5 million   |
| A/D converter                      | 12bit  |   |
| Camera Lens                        | 8mm high resolution  |   |
| Illumination                       | Long-life upper incident and bottom transmitted LED arrays, with dark field and bright field (selectable suspended LED arrays) |   |
| Petri dish diameter                | Standard 50mm ~ 100mm  |   |
| Testing method                     | Fully automatic with manual option   |   |
| Counting time/<br>Measurement time | Over 300 colonies per sec<br>Over 1 plate per sec  |   |
| Resolution                         | For colony counting, smallest detectable colony better than 0.1mm, for zone sizing, detectable colony better than 0.05mm       | For colony counting, smallest detectable colony better than 0.05mm, for zone sizing, detectable colony better than 0.03mm |
| Data interface                     | Single USB2.0  |   |
| Power                              | 220V/110V, 50/60Hz   |   |

**SoftWare:**

Database management



Colony count and analysis

Inhibition zone  
automatic/manual measurement**BCC-2/5/8, Differential Blood Cell Counter****Features:**

- ABS outer shell can resist collision
- Color charts of white blood cells are supplied. (BCC-5 including BASO., EOSIN., SEG., LYMPH., MONO.; BCC-8 including BASO., EOSIN., MYELO., JUVEN., STAB., SEG., LYMPH., MONO.)
- At one hundred increment of the total record, the bell sound "DON" will be heard (for BCC-5, BCC-8)
- Reset knob can easily clear all figures.

| Model | Total of keys | Total of windows | Totalizer | Figure range | Overall dimensions(mm) / Weight (g) |
|-------|---------------|------------------|-----------|--------------|-------------------------------------|
| BCC-2 | 2             | 2                | No        | 0~999        | W100xD80xH50 / 325g                 |
| BCC-5 | 5             | 6                | Yes       | 0~999        | W250xD80xH50 / 690g                 |
| BCC-8 | 8             | 9                | Yes       | 0~999        | W320xD80xH50 / 800g                 |



BCCD-8

**BCCD-8, Digital Differential Blood Cell Counter**

**Features:** 8 units lab-count with totalizer. For simplifying differential blood cell counts

- The 8 keys represent the normal Schilling Groups of Leucocytes. The above keys are the name and picture of particular cell
- Each stroke registers both in the unit corresponding to its pressed key & in the window
- When a total of every 100 cells are counted, a bell rings. BCCD-8 features the percentage of each type of cell to be read from the window above each key. Manually count and display from 0 - 999
- Counter clockwise rotate handle, it will clear figures.

| Model        | BCCD-8                  |
|--------------|-------------------------|
| Leucocytes   | 8 Units                 |
| Totalizer    | Yes                     |
| Control      | Microprocessor          |
| Display      | LED 0-999               |
| Alarm at 100 | Buzzer                  |
| %Display     | Yes                     |
| Clear        | Yes                     |
| Net weight   | 2.0kg                   |
| Functions    | Clear, lock decrease, % |



**D-LogMate-2TC, 2 Channels, K Thermocouple Datalogger**

Monitors temp. 2 separate type K, thermocouple to store measure! • High temp. measurement • 5 start modes to activate logger's recording (immediate, schedule, on-line, key start, repeat) • LCD displaying data being stored & viewing current recording status.



| Model              | D-LogMate-2TC                                       |
|--------------------|---|
| Range              | -200~1370°C/-328-2498°F                             |
| Power bat.         | 3.6V Lithium battery (ER3)                          |
| Accuracy           | ±0.3%rdg±0.7°C(1.3°F)                               |
| Resolution         | 0.1°C/°F  |
| Bat. low display   | "BAT" icon display                                  |
| Sample rate        | 16000   |
| LCD display        | SIZE: 20x40 mm                                      |
| Dimensions(mm)     | 90x60x26.5 (H)                                      |
| Optional accessory | USB Converter with cable & connector (RS232 to USB) |
| LED signal         | Red (HI,LO Alarm)/Yellow(Record)                    |

**Features:**

- Pressing Start/Stop button to activate logger.
- Features contacting measurement versatile K type sensors.
- Output: Big LCD display, RS232 interface connection to PC or uses USB converter to connect to USB port.
- Memory capacity : Total 16,000 points. K type : Dual K sensor inputs T1 and T2.
- Sample rate: User defined : From 1 second to 2 hours. Standards: CE and Rohs/WEEE compliance.

**D-LogMate Series, Temperature & Temperature Humidity Dataloggers****D LOGMATE-T**

- Model 1T is without display.
- Up to 8000 readings.
- Wide operating range:Temp.: -40 to 85°C.

**D LOGMATE-TD**

- Up to 8000 readings.
- View temp. on LCD display.
- Wide operating range: Temp.: -40 to 85°C.

**D LOGMATE-THD**

- Up to 16,000 readings. (8000 readings for each parameter).
- View temp. & Humidity on LCD display.
- Wide operating range:Humidity: 0 to 100% RH, Temp.: -40 to 85°C.

| Model            | D LogMate TD   | D LogMate THD  |
|------------------|--|--|
| Temp. range      | -40~85°C/-40~185°F   |  |
| Humidity range   | N/A  | 0~100% RH  |
| Power bat.       | ER3 or CR2 lithium battery x1                                  |  |
| Accuracy         | Temp. ±0.6°C(-20~50°C)<br>±1.2°C(-40~20°C, 51~85°C)            | Temp. ±0.6°C(-20~50°C)<br>±1.2°C(-40~20°C, 51~85°C), Humidity: ±3%RH |
| Bat. low display | "Lo" dosplay   |  |
| Sample data      | Up to 16000  |  |
| LCD display      | Size: 12x25.5mm  |  |
| Housing          | Waterproof   |  |
| Dimensions (mm)  | L124xW92xT37 (Interface), L80xW55xT22, L124xW92 (Complete set) |  |
| LED signal       | Red (hi,lo alarm)/yellow (record)                              |  |
| Resolution       | 0.1°C(0.1°F)   |  |
| Cable length     | 150cm with DB9 connector                                       |  |



## HT-3007SD, Humidity/temp. Meter, + type K/J Temp. With DataLogger

- Real time data logger, save the data into the SD memory card & can be down load to the Excel, extra software is no need.
- Humidity/%RH : 10 to 95 %RH.
- Humidity/Temp. : 0 to 50.0 DC, °C/°F.
- Type K Thermometer: -100 to 1300 DC, °C/°F.
- Type J Thermometer: -100 to 1200 DC, °C/°F.
- Data hold, Record ( Max., Min. ).
- RS232/USB computer interface .
- Patented.



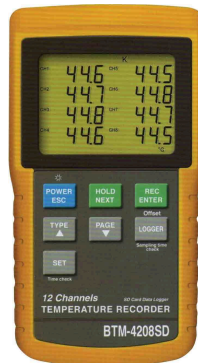
## TM-747D, Datalogger Thermometer 4 Channels Include Software/Cable

- Multi function for K/J/E/T/R/S/N types.
- Single / Dual / Triple / Four Channels.
- Programmable Hi / Lo audible alarm function.
- With built-in "time" function, RS-232 interface with window software.
- 10000 records data logger for each channel.



## TM-947SD, T/C & PT-100ohm 4 Channels Thermometer DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel.
- Type K/J/RIS/EIT, Pt 100 ohm, 4 display.
- 4 channels (T1, T2, T3, T4), T1-T2, °C/°F.
- Display 4 channels Temp. at the same time.
- Type K: -100 to 1300°C.
- Type J: -100 to 1200°C.
- Pt 100 ohm: -199 to 850°C.
- °C/°F, 0.1 degree/1 degree.
- Data hold, Record (max., min.).
- RS232/USB computer interface, Patented.
- Optional Type K & Pt-100 ohm Temp. probe.



## BTM-4208SD, 12 channels Temp. Recorder DataLogger

- 12 channels Temperature recorder, use SD card to save the data along with time information, paperless
- 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 software is no need
- Channels no.: 12 channels (CH1 to CH12) temperature measurement
- Sensor type: Type J/K/I/T/E/R/S thermocouple
- Auto datalogger or manual datalogger
- Data logger sampling time range: 1 to 3600 seconds
- Type K thermometer: -100 to 1300°C
- Show CH1 to CH8 or CH9 to CH12

in the same LCD • Display resolution: 1 degree/0.1 • Time information: Year, Month, Minute and Second • Memory card size: 1 GB to 16 • Supper large LCD with reading • Data hold, Record (Max., Min.) • RS232/USB computer interface • Optional type K temperature probe: TP-01, TP-02A, TP-03, TP-04 • DC: 1.5. (UM-3, AA) x 8pcs or DC 9V adapter in.



## TP-01/02/03/04, Temp. Probes

TP-01: Bead wire, length 1.2 meter, wire diam. approx. 1.75mm. Subminiature type K connector. -40°C to 250°C, teflon insulation. TP-01: Glass, glass/silica insulation. -40°C to 480°C • TP-02A: High temperature, Immersion/penetration probe 200mm, diameter 3.2mm, type K, -40°C to 500°C, 1 meter cable, subminiature connector • TP-03: 87mm penetration probe, 3.2mm diameter, -40°C to 260°C, 673mm cable, subminiature type K connector • TP-04: SHORT-Surface probe -50°C to 400°C, sensing head 15mm diameter, probe length 120mm (up to 15°O) 1.5 cable, subminiature type K connector.



## VB-8205SD, Vibration Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Acceleration: 200 m/s<sup>2</sup>. Velocity: 200 mm/s.
- Max hold, peak value, data hold.
- Memory (Max., Min.).
- RS232/USB computer interface, Patented.
- Vibration sensor is the standard accessory.

## Model : VB-8206SD

- The function are same as VB-8205SD but with the Displacement measurement.

SD Memory Card for all DataLoggers





**PS-9303SD**

### PS-9303SD, Pressure Meter, With DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- 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/cm<sup>2</sup>, inch Hg, mm Hg, inch H<sub>2</sub>O, meter H<sub>2</sub>O, Atmosphere.
- Data hold, Memory (Max., Min.).
- RS232/USB computer interface.
- Optional pressure sensor, PS100-xxBAR.
- Patented, SD Card real time datalogger.



**PS100-xxBAR**

### PS100-xxBAR, Pressure Sensor for PS-9303SD

- Optional pressure sensor PS-9303SD
- 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.



**PH-230SD**



**CD-4307SD**



**DO-5512SD**



### PH-230SD, pH Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- pH: 0 to 14.00 pH.
- mV (ORP): -1999 mV to 1999 mV.
- Manual temperature compensation.
- ATC (automatical temperature compensation) via optional Temp. probe (TP-07).
- Auto calibration for pH 7.0, pH 4.0 and pH 10.0.
- Data hold, Record (Max., Min.).
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.

### CD-4307SD, Conductivity Meter TDS, Salt With DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- 3 function: Conductivity, TDS, Salt measurement.
- Conductivity: 200 uS/2 mS/20 mS/200 mS.
- Salt: 0 to 12 % salt (% weight).
- Automatic temp. compensation.
- It can select Temp. Coefficient of measurement solution.
- Separate probe, easy for operation.
- Carbon rod electrode for long life.
- Record (Max., Min.), Data hold, zero adjust.
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.

### DO-5512SD, Dissolved Oxygen Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Dissolved oxygen range: 0 to 20 mg/l.
- Auto temp. compensation, Auto Calibration.
- % salt and height value compensation adj ..
- The polarographic type oxygen probe with an incorporated temperature sensor.
- Probe head with diaphragm set and electrolyte are included.
- Record (Max., Min.), Data hold, zero adjust.
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.

### WA-2017SD, pH/ORP, DO, CD/TDS, Salt Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need
- Multi-function: pH/ ORP, Conductivity/TDS, Dissolved oxygen, Salt
- pH: 0 to 14.00 pH • ORP (mV):  $\pm 1,999$  mV • Conductivity: 200 uS/2 mS/20 mS/200 mS • TDS : 200/2,000/20,000/200,000 PPM • Salt: 0 to 12.0% salt (% weight) • Dissolved oxygen: 0 to 20.0 mg/L
- ATC (automatic temperature compensation) • Data hold, Record (Max., Min.) • RS232/USB computer interface • Optional electrode: pH electrode, ORP electrode, CD/TDS/SALT probe, Dissolved oxygen probe, pH ATC probe • Patented, SD Card real time datalogger.

**SD Memory Card for all DataLoggers**







**AM-4207SD**

### AM-4207SD, Anemometer, + type K/J Temp. With DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Air velocity/Temp. measurement, professional.
- 0.5 to 25.0 m/s, ft/min., km/h. knots, mile/h.
- Low friction ball-bearing vane.
- Separate probe, high reliability.
- Type K Thermometer: -100 to 1300 DC, °C/°F.
- Type J Thermometer: -100 to 1200 DC, °C/°F.
- Data hold, Record (Max., Min.).
- RS232/USB computer interface .
- Patented, SD Card real time datalogger.



**AM-4214SD**

### AM-4214SD, Hot Wire Anemometer, + type K/J Temp. With DataLogger

- Real time data logger, save the data into the SD memory card & can be down load to the Excel, extra software is no need.
- 0.2 - 20.0 m/s, high precision for low air velocity measurement.
- m/s, ft/min, km/h, knots, mile/h, °C/°F.
- Type K Thermometer: -100 to 1300 DC, °C/°F.
- Type J Thermometer: -100 to 1200 DC, °C/°F.
- Data hold, Record (Max., Min.).
- RS232/USB computer interface .
- Patented, SD Card real time datalogger.



### YK-37UVSD, UVA, UVC Light Meter DataLogger

- Real time data logger, save the data into the SD memory card & 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<sup>2</sup> x 0.001 mW/cm<sup>2</sup>.  
20 mW/cm<sup>2</sup> x 0.01 mW/cm<sup>2</sup>.
- Data hold, Record (Max., Min.).
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.



### LX-1128SD, Light Meter + type K/J Temp. With DataLogger

- Real time data logger, save the data memory card and can be down load to the Excel.
- 3 ranges, 2,000/20,000/100,000 lux.
- Lux & Foot Candle unit selection With default.
- Auto range for light measurement.
- Sensor meet C.I.E. spectrum, 2 filters.
- Separate probe, easy operation.
- Type K Thermometer: -100 to 1300 DC, °C/°F.
- Type J Thermometer: -100 to 1200 DC, °C/°F.
- Data hold, Record (Max., Min.).
- RS232/USB, Zero adjust.
- Patented, SD Card real time datalogger.



### SL-4023SD, Sound Level Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Meet IEC61672 class 2
- Auto range: 30 to 130 dB.
- Manual range: 3 ranges 30 to 80 dB, 50 to 100 dB, 80 to 130 dB .
- A/C frequency weighting.
- Fast/slow time weighting,
- Peak hold, Data hold.
- Record (Max., Min.).
- RS232/USB computer interface.
- Optional wind shield ball, SB-01.
- Patented, SD Card real time datalogger.



### EM-9300SD, Environment Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need
- 4 in 1: Humidity meter, Light meter, Anemometer, Type KIJ thermometer
- Humidity: 10 to 95 %RH, 0 to 50°C
- Light: 0 to 20,000 Lux
- Anemometer: 0.5 to 25 m/s
- Type KIJ thermometer, °C/°F
- Data hold, Record (Max., Min.)
- RS232/USB computer interface
- Optional type K Temp. probes: TP-01, TP-02, TP-03, TP-04
- Optional sound level adapter: SL-417
- Patented, SD Card real time datalogger.

**SD Memory Card for all DataLoggers**





DBA-001



DBD-003



DBD-003E

## DB-Series, Dry Bath Incubator

### Features:

- Applications for incubating DNA specimens, cross matching and screens in blood bank, incubating melted agar, Enzyme assays, digestions, Residue tests for milk & also great for serology, hematology, pathology and biochemistry etc.
- Choose from various heating blocks that accommodate test tubes, cuvettes, and micro centrifuge tubes.
- Each block has a well to accommodate a removable thermometer, which monitors temperature of blocks.
- When solid block (no holes) is used, it can function as HOT PLATE.

| Model                           | DBD-003           | DBD-003E          | DBA-001     |
|---------------------------------|-------------------|-------------------|-------------|
| Overall dimension (mm)          | 370x245x135       | 290x290x110       | 210x235x115 |
| Net weight (Not include blocks) | 3.9kg             | 6.0kg             | 2.1kg       |
| Temp. setting                   | Digital (3-digit) | Digital (3-digit) | Analog      |
| Temp. reading                   | Digital LED       | Digital LED       | thermometer |
| Temp. range                     | Ambient to 99.9°C | Ambient to 150°C  | 25-105°C    |
| Temp. accuracy                  | ±0.1°C            | ±0.1°C            | ±0.2°C      |
| Uniformity (at 37°C)            | ±0.2°C            | ±0.2°C            | ±0.5°C      |
| Temp. sensor                    | PT-100            | K-Type            | *NTC        |
| Temp. control                   | PID               | PID               | PID         |
| Overheat alarm                  | Yes               | Yes               | No          |
| Heating element                 | 450W              | 450W              | 200W        |
| Timer                           | Digital 99hr59min | Digital 99hr59min | No          |
| Insulation                      | No                | Yes               | No          |

\*NTC: Negative Temperature Coefficient

### DBD-003 & DBD-003E

- Activate auto-off function to automatically shut out heater at the end of timed cycle.
- Digital temperature display for actual temperature PV and setting Sv.
- Timer start working when the preset temperature has been stabilized ensures an accurate incubation effect.
- When complete the heat cycling, the timer will alarm and display "END".
- Memory stores the set temperature and time of previous operation, use these set points to repeat the new operation and save time, or preset your new desired set points.

- DB-006E-150 features double wall construction with insulator by fiberglass for durability and good heat retention. Maximum temperature is designed up to 150°C capable of functioning more applications.
- Safety devices: Over temperature alarm; Heating failure alarm; Double overheating protection.



### Application:

- Solid anodized aluminium blocks resist the hardest environments and provide maximum heat retention.
- All blocks include thermometer well for easily measuring block temperature.

| Number       | Tube size                          | Openings No. / Ø |
|--------------|------------------------------------|------------------|
| 302-1-111101 | 6mm                                | 30/6.5mm         |
| 302-1-111112 | 10mm                               | 20/10.5mm        |
| 302-1-111113 | 12 or 13mm                         | 20/13.5mm        |
| 302-1-111114 | 15 or 16mm                         | 12/16.6mm        |
| 302-1-111115 | 18mm                               | 12/18.6mm        |
| 302-1-111116 | 20mm                               | 12/20.7mm        |
| 302-1-111117 | 25mm                               | 6/25.7mm         |
| 302-1-111118 | 1.5ml Eppendorf                    | 20               |
| 302-1-111119 | 0.5ml Eppendorf                    | 20               |
| 302-1-111110 | 25+12+6mm or your request          | 3+5+6 holes      |
| 302-1-111111 | Solid (no holes) used as HOT PLATE |                  |
| Block size   | W100xD75xL50 (mm)                  |                  |


**DBD-001**

**DBD-002**

### DBD-001/002, Dry Bath Incubators

Useful for a variety of applications in molecular biology, histology, clinical, environmental and industrial settings, including restriction digests, denaturing DNA, BUN, melting agar, coagulation studies, hybridization and Hot Start thermo-cycled reaction the dry baths feature a broad temperature range, up to 150°C, and excellent uniformity. A microprocessor regulates the high wattage heater to provide precise, accurate control and rapid heating.

The Aluminium block chamber ensures an even transfer of heat from the heating element to the block. Temperature is easily set using arrow keys while the value is shown on the large display. The user calibration function allows for easy calibration to in-house standards when required. Interchangeable blocks are available to accommodate a wide variety of tubes, plates and slides. Solid blocks are also available for custom machining. Each dry bath is supplied with a block lifter that enables the user to exchange blocks easily, even when the block is hot.

#### Features:

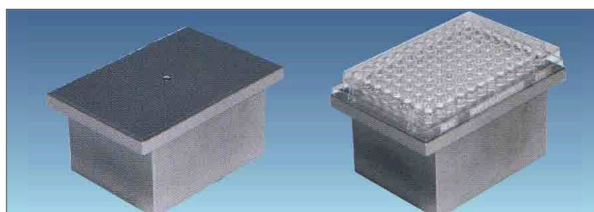
- Precise microprocessor control.
- Broad temperature range, to 150°C.
- Large digital display.
- Easy user calibration.
- Single and dual block models.
- Rapid temperature increasing rate.
- Large Digital LED display & timer.
- Used as a water bath.
- Molded aluminum alloy chamber.
- Function Control software available.

| Model  | DBD-001  | DBD-002       |
|--|--|---------------|
| Display  | LED Display  |               |
| Heating power                                  | 125W   | 200W          |
| Unit dimension (WxLxH)                         | 200x290x80 mm  |               |
| Controller                                     | Digital microprocessor controller  |               |
| Heating chamber                                | Molded aluminum alloy chamber  |               |
| Temperature control range                      | 5°C Above ambient to 150°C   |               |
| Temperature increment                          | 0.1°C  |               |
| Temperature uniformity in working area at 37°C | ±0.2°C   |               |
| Temperature accuracy in working area at 37°C   | ±0.2°C   |               |
| Temperature calibration                        | Yes  |               |
| Timer  | 1~999 mins, continuous   |               |
| Safety device                                  | Leakage proof for heating chamber,<br>Over temperature protection, SSR failure detection |               |
| Operating temperature                          | Ambient to 40°C  |               |
| Special feature                                | Used as water bath incubator   |               |
| Block material                                 | Aluminum alloy   |               |
| Block type                                     | Standard and customized type are available   |               |
| Data log                                       | RS232  |               |
| Weight   | approx. 2.6kg  | approx. 2.8kg |
| Rated voltage                                  | 110V or 220V selectable  |               |

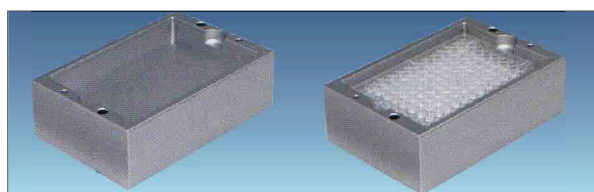


Dry Bath Blocks are designed for Dry Bath Incubator. The precision machined aluminum alloy blocks, which are suitable for microplate and different test tubes, range from 0.2ml tube to 50ml centrifuge tube, deliver efficient heat transfer. In addition to the standard blocks, customized blocks are also available for specified user requirement.

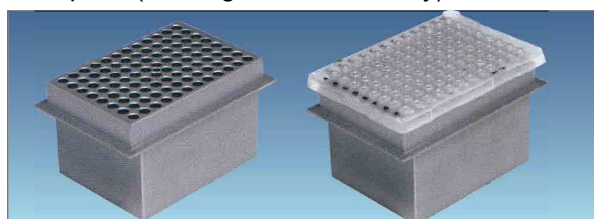
**300-1-111101:** For Microplate;Titerplate (Plain Block for Single Block unit only)



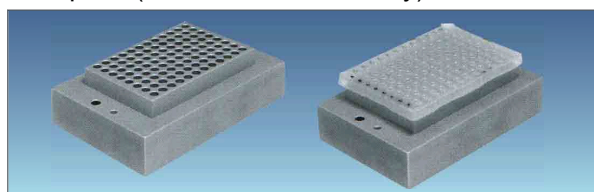
**300-1-111102:** For Microplate;Titerplate (Dual Block unit only)



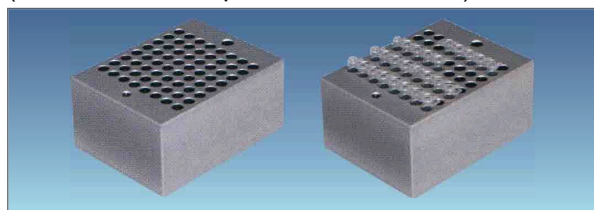
**300-1-111103:** For 96 wells Deep Microplate or PCR plate (for Single Block unit only)



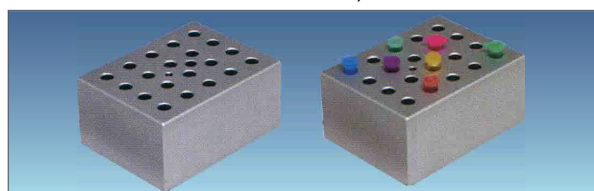
**300-1-111104:** For 96 wells Deep Microplate or PCR plate (for Dual Block unit only)



**300-1-111105:** For 0.2ml tube, 64 wells (or 0.2ml PCR Strip tube for 8 weirs x 8)



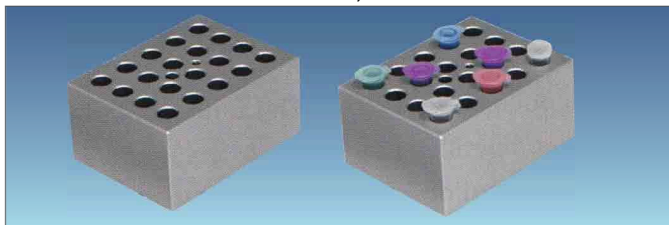
**300-1-111106:** For 0.5ml tube, 20 wells



## Specifications:

|                          |                                |
|--------------------------|--------------------------------|
| <b>Block material</b>    | Aluminum alloy                 |
| <b>Dimensions (mm)</b>   | W79xL104xH50                   |
| <b>Block lifter well</b> | Yes                            |
| <b>Thermometer well</b>  | Yes (except microplate blocks) |

**300-1-111107:** For 1.5ml tube, 20 wells



**300-1-111108:** Well size 13mm,20 wells



**300-1-111109:** For 15ml centrifuge tube, 12 wells



**300-1-111110:** Well size 20mm, 12 wells



**300-1-111111:** Well size 25mm, 6 wells



**300-1-111112:** For 50ml centrifuge tube,4 wells



## DBC-001, Cool-Heater Dry Bath Incubator

Cool-Hotter Dry Bath Incubator is available with different temperature performance, along with a competitive range of interchangeable block. It is designed for a variety of applications including ligation, storage, restriction digests, denaturing DNA, BUN, melting agar, coagulation studies, hybridization and Hot Start thermo-cycled reaction.

The fully programmability contains Constant Operation, Programmable Mode, and Annealing Mode. A 2.6" LCD screen, showing all the running / setting conditions. Microprocessor controller offers easy temperature selection, rapid heat up and cooling down with an excellent stability. The temperature can be set in 0.1°C increments from -10°C to 100°C. Optional Function Control software is available for the control & real time data recording through a PC for specified user requirement.



DBC-001

### Features:

- Microprocessor control with digital performance for precise, accurate control.
- Wide temperature control range & great temperature controlled performance.
- Rapid temperature increasing rate.
- LCD screen shows all the parameters during run.
- User temp. calibration.
- Used as a water bath.
- Function Control software available.



Back Panel  
DBC-001

| Model                                    | DBC-001  |
|--|--|
| Chamber dimensions (mm)                  | W125xL90xH50   |
| Display                                  | 2.6" LED   |
| Heating power                            | 400W   |
| Unit dimension (mm)                      | W200xL295xH140   |
| Controller                               | Digital microprocessor controller  |
| Heating chamber                          | Water-proof aluminum   |
| Temperature control range                | -10°C~100°C In the environment of 25°C   |
| Temperature increment                    | 0.1°C  |
| Temp. uniformity in working area at 37°C | ±0.2°C   |
| Temp. accuracy in working area at 37°C   | ±0.2°C   |
| Temperature calibration                  | Yes  |
| Operation mode                           | Constant operation: constant temperature (-10°C~100°C), Timer: 1~9999 mins, Program operation: 1~4 steps and up to 9 cycles, Timer: 1~9999 mins, Annealing program |
| Safety device                            | Leakage proof for heating chamber  |
| Operating temperature                    | Ambient to 40°C  |
| Special feature                          | Used as water bath incubator   |
| Block material                           | Aluminum alloy   |
| Block type                               | Standard and customized type are available   |
| Data log                                 | RS232  |
| Weight                                   | approx. 8kg  |
| Rated voltage                            | 110V or 220V selectable  |

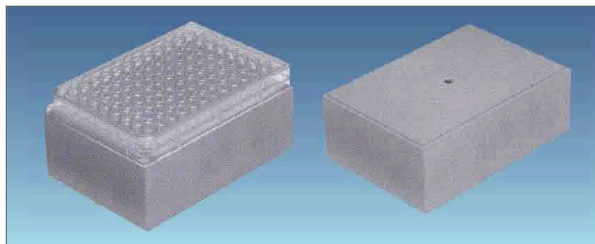
## Cool-Heater Dry Bath Blocks

Non-porous aluminium for fast & efficient heat transfer, include a position for a thermometer, a hole for use with the block lifter tool.

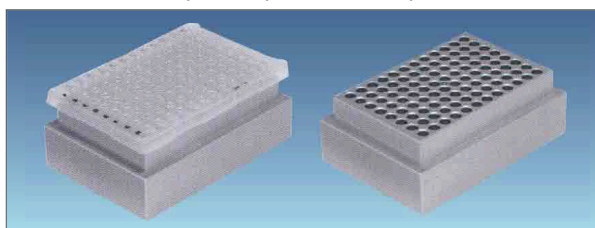
- Corrosion resistant, anodized aluminium.
- Blocks for tubes from 0.2ml to 0.5ml, plates & slides.
- Precision machined for a close fit and efficient heat transfer.
- Solid block available for custom machining.

| Model             | 300-1-11120x                   |
|-------------------|--------------------------------|
| Block material    | Aluminum alloy                 |
| Dimensions (mm)   | W90xL127xH50                   |
| Block lifter well | Yes                            |
| Thermometer well  | Yes (except microplate blocks) |

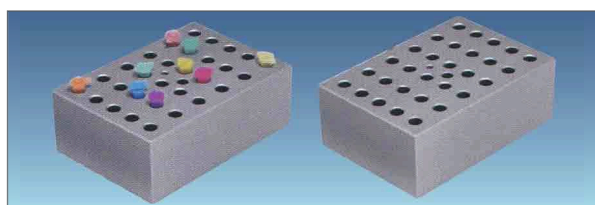
**300-1-111201:** For Microplate;Titerplate (Plain Block)



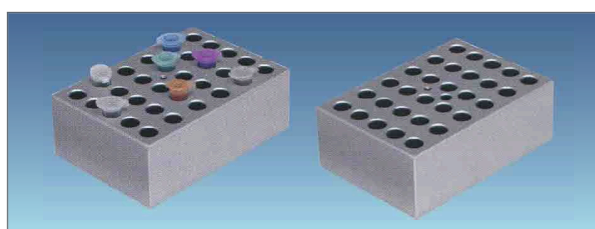
**300-1-111202:**  
For 96 wells Deep Microplate or PCR plate



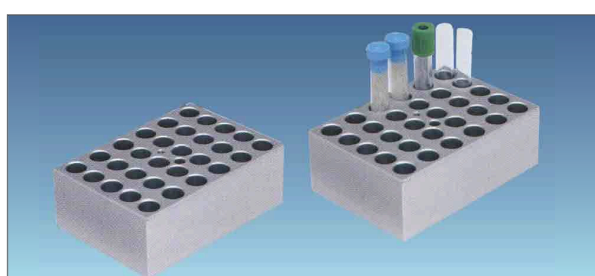
**300-1-111203:** For 0.5ml, 30 wells



**300-1-111204:** For 1.5 or 2.0ml, 30 wells



**300-1-111205:** Well size 13mm,30 wells



**300-1-111206:** For 15ml centrifuge tube,15 wells



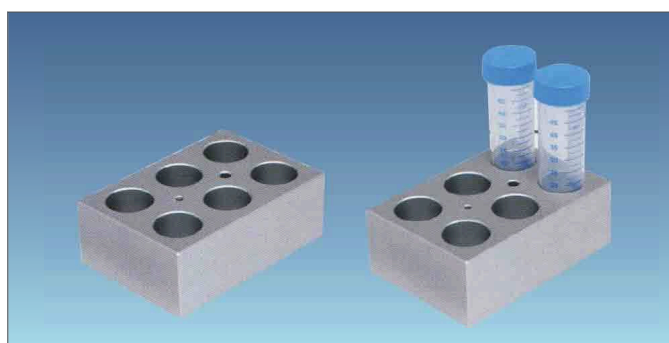
**300-1-111207:** Well size 20mm,15 wells



**300-1-111208:** Well size 25mm,6 wells



**300-1-111209:** For 50ml centrifuge tube,6 wells







**DBG-002**

### DBD-004, 4 Blocks Large Dry Bath DBG-002, Sample Constriction

The instrument consists of a base and stand assembly, sample holder and gas distribution system. Test tubes are held in a block. The gas at 5 to 10 psig passes through the distribution manifold. Depending on the test-tube size and solvent volume they can be individually raised or lowered to the correct height. Needles or glass pipets blow gas onto the surface of the solution resulting in rapid evaporation of the solvent. All materials used are laboratory quality and can withstand contact with organic solvents. Acid resistant models are available for corrosive application.

#### Features:

- High precision and wide range of temperature control.
- Blowing a large number of samples at one time.
- Blowing each sample independently.
- Amount of airflow can be adjusted.
- Easy operation; safe and reliable to use.

#### Blocks for DBG-002/DBD-004

| Type         | Parameter | Capacity | Dimension (mm) |
|--------------|-----------|----------|----------------|
| 301-1-111201 | 6mm       | 49       | 96x96x49       |
| 301-1-111202 | 7mm       | 49       | 96x96x49       |
| 301-1-111203 | 10mm      | 25       | 96x96x49       |
| 301-1-111204 | 12mm      | 25       | 96x96x49       |
| 301-1-111205 | 13mm      | 25       | 96x96x49       |
| 301-1-111206 | 15mm      | 12       | 96x96x49       |
| 301-1-111207 | 15mm      | 16       | 96x96x49       |
| 301-1-111208 | 16mm      | 12       | 96x96x49       |
| 301-1-111209 | 16mm      | 16       | 96x96x49       |
| 301-1-111210 | 19mm      | 12       | 96x96x49       |
| 301-1-111211 | 19mm      | 16       | 96x96x49       |
| 301-1-111212 | 20mm      | 9        | 96x96x49       |
| 301-1-111213 | 26mm      | 9        | 96x96x49       |
| 301-1-111214 | 28mm      | 4        | 96x96x49       |
| 301-1-111215 | 40mm      | 4        | 96x96x49       |
| 301-1-111216 | 0.5ml     | 49       | 96x96x49       |
| 301-1-111217 | 1.5ml     | 25       | 96x96x49       |
| 301-1-111218 | 2.0ml     | 25       | 96x96x49       |



**DBD-004**



**Blocks**

| Type                                 | DBG-002        | DBD-004        |
|--------------------------------------|----------------|----------------|
| Temp. control range                  | RT.+5°C~150°C  | RT.+5°C~120°C  |
| Homogeneity control discrepancy      | 1min~99h59min  | 1min~99h59min  |
| Display                              | ±0.3°C         | ±0.3°C         |
| Temp. control discrepancy @40~100°C  | ±0.5°C         | ±0.5°C         |
| Temp. control discrepancy @100~150°C | ±1°C           | ±1°C           |
| Display accuracy                     | 0.1°C          | 0.1°C          |
| Heating time 40~150°C                | ≤30min         | ≤30min         |
| Standard blocks                      | 2              | 4              |
| Nitrogen consumption                 | 0-10L/min      | -              |
| Dimension (mm)                       | L280xW240xH110 | L380xW240xH110 |
| Needles length                       | 150mm          |                |



Chemical digestion of the samples is a prerequisite for, among other tests, determination of COD, TOC, total phosphate and total nitrogen. The required temperature and reaction time are programmed using the membrane keypad on the front of the reactor. When digestion is complete, the reactor automatically switches off and sounds an alarm. DBR-001 COD reactor is designed to meet USEPA 410.4 method. It can be used to digest closed 1 micro reflux COD vial and other samples which diameter is 16mm.

Further, it is safer and easier than traditional open macro reflux method.

Unique COD program let DBR-001 to be a truly automatic reactor.

When the reactor is powered on, just click the start/stop button, then it starts to heat to 150°C and keep for 2 hours then stop heating with a audio alarm.

Samples are ready to be measured by colorimeter when they cool down.

DBR-001 COD reactor is compatible with any COD detectors which use 16mm COD vials. In addition to COD program, DBR-001 is a microprocessor controlled block heater, with temperature range from 60°C to 200°C and timer from 0 to 999 minutes or continuous operation, and 3 extra self-made heating programs can be stored.

#### For The Digestion Of:

- COD (150°C)
- TOC (120°C)
- Total chromium (100°C)
- Total nitrogen (100°C)
- Total phosphate (100°C)

#### Features:

- Approved by ERA (method 410.4) of USA and most of the countries in the world.
- Safer and easier than traditional open reflux method.
- Save lab top space, power and water consumption.
- Reduce waste & maximize safety.
- Unique COD program makes it truly automatic.

| Model          | DBR-001 COD REACTOR  |
|----------------|--|
| Read out       | 4 Digital LED of set temperature, set time, process temperature, residual time display                                     |
| Timer          | 1~999 minutes with audible alarm and automatic shut off or continuous operation  |
| Accuracy       | ±2°C (at 150°C)  |
| Temperature    | Fixed 150°C (COD program) 60°C~200°C, adjustable   |
| Safety         | Hot top indicator (flashing when block temperature is over 70°C), Automatic shut off when block temperature is over 210°C) |
| Block capacity | 25 of 16mm Ø sample vials, Option block(with 8x20mm Ø and 6x25mm Ø vial holes) is available                                |
| Structure      | Housing: stainless steel with power paint coating, Block: Anodized aluminum  |
| Power          | AC110 or AC220V, 50/60Hz, 220Watt  |
| Dimensions     | W18.9xH11.6xD31.5mm  |
| Weight         | Net 4.5kg Gross 6.1kg  |



### DBS-001/DBSC-001, Thermo Shaker

Designed for simultaneous heating, cooling and mixing of small samples. Both DBS-001 and DBSC-001 are supplied with interchangeable platforms for various tubes. Mixing, heating and cooling modes can be used either simultaneously or independently. The main body housing the mixing and heating platform can accommodate different kinds of blocks.



#### Features:

- Clear, easy to use LCD display.
- Soft touch key pads.
- Small footprint.
- Accurately control and display time, temperature and speed.
- Over-heating protection device ensures safety & reliability.
- Audible signal to indicate end of run after program completion.
- Temperature can be calibrated to meet user's needs.
- Low noise working even under the speed of 1,500rpm.
- Conforms to CE safety standards.

| Model                             | DBS-001            | DBSC-001  |
|-----------------------------------|--------------------|---|
| Temp. setting range               | 5°C ~100°C         | 0°C ~ 100°C   |
| Temp. control range               | RT.+5°C ~ 100°C    | 0°C~100°C ambient temp.≤20°C<br>4°C~100°C ambient temp.≤25°C<br>10°C~100°C ambient temp.≤30°C |
| Timing range                      | 1 min ~ 99h59min   | 1 min ~ 99h59min  |
| Mixing speed                      | 200 rpm ~ 1500 rpm | 200 rpm ~ 1500 rpm  |
| Mixing orbit                      | 2 mm               | 2 mm  |
| Temp. control accuracy            | ≤±0.3°C            | ≤±0.3°C   |
| Display accuracy                  | 0.1°C              | 0.1°C   |
| Heating time (from 20°C to 100°C) | ≤20 min            | ≤15 min   |
| Cooling time                      | -                  | ≤30 min (from RT. to RT.-20°C)<br>≤15 min (from 100°C to 20°C)                                |
| Dimension (mm)                    | L300xW220xH170     | L300xW220xH170  |
| Net weight                        | 7 kg               | 8.5 kg  |

#### Blocks for MS-100 / MSC-100

| Type         | Parameter                  | Max. Temp | Max. Speed (rpm) |
|--------------|----------------------------|-----------|------------------|
| 301-1-111101 | 96x0.2 ml                  | 100°C     | 1500             |
| 301-1-111102 | 54x0.5 ml                  | 100°C     | 1500             |
| 301-1-111103 | 35x1.5 ml                  | 100°C     | 1500             |
| 301-1-111104 | 35x2.0 ml                  | 100°C     | 1500             |
| 301-1-111105 | 15x0.5 ml+20x1.5 ml        | 100°C     | 1500             |
| 301-1-111106 | 24xDia.≤Ø12 mm tube        | 100°C     | 1200             |
| 301-1-111107 | 12x15 ml falcon            | 100°C     | 750              |
| 301-1-111108 | 6x50 ml falcon             | 100°C     | 750              |
| 301-1-111109 | 103x67x30 water bath block | 100°C     | 1500             |
| 301-1-111110 | 96 well microplate         | 100°C     | 1500             |





**PWR-1560, 150V/600mA Power Supply**  
**PWR-3040, 300V/400mA Power Supply**

PWR-1560/3040 power supplies have been developed specifically for horizontal gel electrophoresis systems.

These ultra compact power units with dual outlets, are recognised as amongst the most compact & inexpensive power supplies currently available & are designed & constructed to the most rigorous safety standards.

Compact Size • Safety Design: Shrouded plug & socket, no load detection • Constant Voltage • Low Cost & Economical.



The PWR-1560/3040 power supplies are microprocessor-controlled power supplies with universal rated voltage with up to 150/300 voltage output. The ultracompact sized unit provides power needed to run horizontal agarose or vertical polyacrylamide electrophoresis.

The PWR-1560/3040 series provide 6 different constant voltage selections in timed or continuous operation.

Easy to operate, dual output terminators, 6 constant voltages, and compact size are the features.

The PWR-1560/3040 series is also designed and constructed to the most rigorous safety standards.

The packages with 10 x 10 cm vertical electrophoresis or mild sized horizontal electrophoresis systems are valuable choices for educational market and personal use.

#### Features

**PWR-1560:** 25V, 50V, 75V, 100V, 125V, 150V constant voltage output, 600mA maximum current.

**PWR-3040:** 50V, 100V, 150V, 200V, 250V, 300V constant voltage output, 400mA maximum current • 60W maximum power • 2 pairs of outlet terminator • Timer with alarm function • Safety device • Compact size and lightweight • Competitive pricing choice • Packages with mild sized horizontal electrophoresis systems and vertical electrophoresis systems.

| Specifications        | PWR-1560  | PWR-3040                          |
|-----------------------|---|-----------------------------------|
| Appearance            | Blue color faceplate  |                                   |
| Max. voltage          | 150V  | 300V                              |
| Max. current          | 600mA   | 400mA                             |
| Max. watt             | 60W   |                                   |
| Output type           | Constant voltage  |                                   |
| Control               | Microprocessor controller   |                                   |
| Voltage selection     | 25V, 50V, 75V, 100V, 125V, 150V   | 50V, 100V, 150V, 200V, 250V, 300V |
| Terminator pairs      | 2 Pairs   |                                   |
| Timers                | 1 ~ 999 mins with alarm, continuous   |                                   |
| Safety device         | No load detection; shrouded plugs and sockets   |                                   |
| Operation temperature | Ambient to 40 °C  |                                   |
| Unit dimension        | 115x150x80mm (WxLxH)  |                                   |
| Construction material | Frame retard ABS and aluminium rare and bottom plates   |                                   |
| Weight                | approx. 0.6kg   |                                   |
| Rated voltage         | 100 ~ 240V  |                                   |
| Applications          | Sufficient for mild sized horizontal electrophoresis systems & vertical electrophoresis systems |                                   |

### PWR-2570, 250V/700mA Power Supply & PWR-3070, 300V/700mA Power Supply

Four gel chambers can be connected at any one time. An optional timer can be set to end the run & sound an alarm. Run in Constant Voltage and Current • Alarm can be set at the end of program • Auto cut-off function • Current up to 700ma.

The MRC PWR-2570/PWR-3070 power supplies are designed to meet most electrophoresis needs, running horizontal & vertical electrophoresis, & two-dimensional electrophoresis SDS-PAGE applications. They are recognized as the most powerful units, running 4 cells simultaneously. Microprocessor control offers easy to use operation, constant voltage or constant current output & pause/resume run capability during timed or continuous operation. The safety devices include no load detection, leakage detection, sudden load change detection, over temp. protection, & over load detection.



**PWR-2570/3070**

#### Features

- 250V maximum voltage for **PWR-2570**  
300V maximum voltage for **PWR-3070**
- 700mA maximum current for PWR-2570 and PWR-3070
- 150W maximum power for PWR-2570 and PWR-3070
- Four pairs of outlet terminator
- Timer with alarm function
- Constant voltage or constant current operation
- Advanced safety device design
- Compact size
- Stackable case
- Wide applications for DNA, RNA and protein electrophoresis

### PWR-5080, 500V/800mA Power Supply & PWR-3030, 300V/3000mA Power Supply

Its design provides a compact and modern stackable case, and a 2.6" LCD screen, showing all the running / setting conditions. Safety devices include no load detection, leakage detection, sudden load change, over temperature protection, and over load detection.

It offers constant voltage, constant current or constant wattage and pause/resume run capability during timed or continuous operation. PWR-5080 is a fully programmable mode, offering up to 6 multi-step setting and saving up to 30 programs, and



**PWR-5080/3030**

capable for running 4 cells simultaneously.

Its microprocessor control offers constant voltage, constant current or constant wattage and pause/resume run capability during timed or continuous operation. PWR-3030 is a fully programmable mode, offering up to 6 multi-step setting and saving up to 30 programs, and capable for running 4 cells simultaneously.

**PWR-5080** power supply is a microprocessor-controlled power supply to cover the broadest range of applications.

**PWR-3030** power supply is the high current mode. In addition to running standard horizontal agarose and vertical polyacrylamide gels, the PWR-3030 power supply easily handles all your blotting applications.

#### Features

**PWR-5080:** Wide applications for DNA, RNA & protein electrophoresis.

**PWR-3030:** Wide applications for DNA, RNA & protein electrophoresis & blotting

| Model                 | PWR-2570   | PWR-3070  | PWR-5080  | PWR-3030       |
|-----------------------|--|-----------|---|----------------|
| Display               | LED  | LED       | 2.6" LCD  |                |
| Output voltage / Inc  | 2~250V/1V  | 2~300V/1V | 5~500V/1V   | 5~300V/1V      |
| Output current / Inc  | 1~700mA/1mA  |           | 1~800mA/1mA                                       | 10~3000mA/10mA |
| Output watt / Inc     | 150W   |           | 300W/1W   |                |
| Operating constant    | Voltage or current   |           | Voltage or current or power                       |                |
| Control               | Microprocessor controller  |           |   |                |
| Program storage       |  |           | 30 Programmed files                               |                |
| Program multi-step    |  |           | Up to 6 steps                                     |                |
| Terminator pairs      | 4 Pairs  |           |   |                |
| Timer                 | 1~999 mins with alarm, continuous  |           | Constant mode: 1~9999 mins with alarm, continuous |                |
| Pause function        | Yes  |           |   |                |
| Safety device         | No load detection; Leakage detection; Sudden load change detection; Over temperature protection; Over-load detection; Shrouded plug and sockets; |           |   |                |
| Crossover             | Yes  |           |   |                |
| Operation temperature | Ambient to 40 °C   |           |   |                |
| Unit dimension        | 190x305x95mm (WxLxH)   |           |   |                |
| Construction material | Frame retard ABS plates and aluminium  |           |   |                |
| Weight                | approx. 2.5kg  |           |   |                |
| Rated voltage         | 100~240V   |           |   |                |
| Stackable             | Yes  |           |   |                |

### GEF-1006, Shorter Mini Horizontal Gel Electrophoresis System

GEF-1006 Horizontal Cell offers many advantages for nucleic acid separation. Agarose gels are easy to cast and samples are easy to be loaded. It is the most recognizable mini horizontal cell on the market, and two colors are offered for the better visual distinguishing. Its molded design prevents cracks or leakages, and its sturdy PC provides up to 130°C temperature capacity. A safety interlock cover is designed to prevent electrical hazards during electrophoresis. It is ideal for many applications, including Northern and Southern blotting, Cosmid library restriction analysis, STS screening, Microsatellite analysis, PCR fragment analysis, RFLP analysis, DNA fingerprinting and High-throughput analysis.



#### Features:

- Less Agarose consumption • Less running buffer consumption • Multichannel pipet-compatible • Single molded tank • Two tray options available • Two cell color options available • Safety & Ventilation lid • Contain 2 sets of gel maker stand • No direct heat impact from power supply unit • Cast 6 pcs of agarose gel in one time • High temperature capability, 130°C • Easy sample loading • Great indications for gel making and running • No tapes, clamps or springs needed for gel casting.

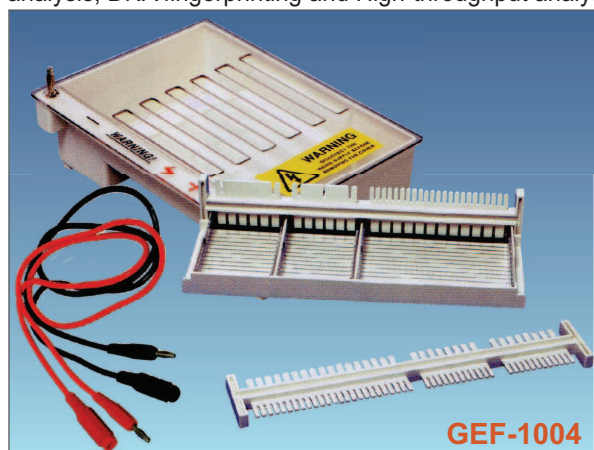
This product is offered as a complete system for the user to cast, and run electrophoresis, including:

- 1 x Electrophoresis Tank & Cover
- 2 x MJ-G01 (Gel Maker Stand)
- 2 x MJ-T02 (107 x 60mm Tray)
- 4 x MJ-T01 (52 x 60mm Tray)
- 2 x MJ-C01 (Double Size Comb: 8 teeth x 2 & 17 teeth, 12 teeth x 2 & 25 teeth)
- 1 x Black & Red Power Cord

| Model               | GEF-1006  |
|---------------------|---|
| Appearance          | Snow tank & transparent lid   |
| Construction        | PC (Plycarbonate)   |
| Temp. Capacity      | 130°C   |
| Unit Dimension (mm) | W140xD140xH53   |
| Gel Dimension (mm)  | W52xL60<br>W107xL60   |
| Max. Gel Thickness  | 10mm  |
| Maximum Sample      | 25  |
| Buffer Volume       | 200ml   |
| Lid                 | Safety and ventilation  |
| Tray                | Black well-visualization strip<br>/Migration distance index line<br>/Agarose level, 5mm |
| Rapid Casting Gel   | Use gel maker stand   |

### GEF-1004, Wide Mini Horizontal Gel Electrophoresis System

GEF-1004 Horizontal Cell offers many advantages for nucleic acid separation. Agarose gels are easy to cast and samples are easy to be loaded. MT-1 08's longer tray allows running bigger fragments and the better separation. Its molded design prevents cracks or leakages, and its sturdy PC provides up to 130°C temperature capacity. A safety interlock cover is designed to prevent electrical hazards during electrophoresis. It is ideal for many applications, including Northern and Southern blotting, Cosmid library restriction analysis, STS screening, Microsatellite analysis, PCR fragment analysis, RFLP analysis, DNA fingerprinting and High-throughput analysis.



#### Features:

- Less Agarose consumption • Less running buffer consumption • Multichannel pipette-compatible • Single molded tank • Two tray options available • Safety & Ventilation lid • Cast 3 pcs of agarose gel in one time • No direct heat impact from power supply unit • High temperature capability, 130°C • Easy sample loading • Great indications for gel making and running.
- No tapes, clamps or springs needed for gel casting

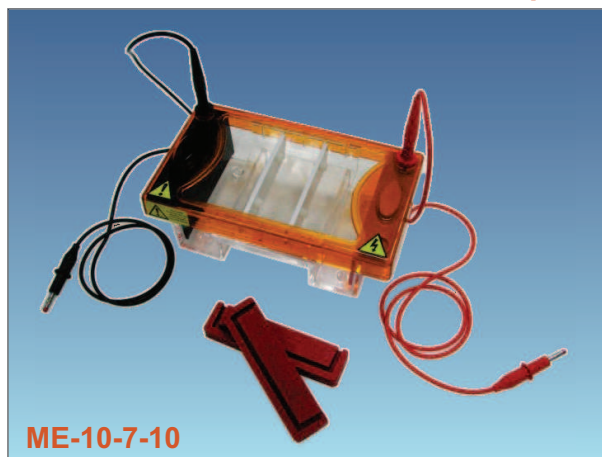
This product is offered as a complete system for the user to cast, and run electrophoresis, including:

- 1 x Electrophoresis Tank & Cover
- 1 x MT-G01 (Gel Maker Stand)
- 1 x MT-T01 (105x83mmTray)
- 2 x MT-T02 (50 x 83mm Tray)
- 1 x MJ-C01 (Double Size Comb: 8 teeth x 2 & 17 teeth, 12 teeth x 2 & 25 teeth)
- 1 x MT-C03 (multiple pipette compatible 23 teeth, Prep 1 & Marker 2, Prep 2 & Marker 2 on one side;
- 6 teeth x 2 for mini gel & 13 teeth for midi gel on the other side)
- 1 x Black & Red Power Cord

| Model                | GEF-1004  |
|----------------------|---|
| Construction         | PC (Plycarbonate)   |
| Temperature Capacity | 130°C   |
| Unit Dimension (mm)  | W136xD188xH58   |
| Gel Dimension (mm)   | W105xL83 / W50xL83  |
| Max. Gel Thickness   | 10mm  |
| Maximum Sample       | 25  |
| Buffer Volume        | 400ml   |
| Lid                  | Safety and ventilation  |
| Tray                 | Black well-visualization strip<br>Migration distance index line |
| Rapid Casting Gel    | Use gel maker stand   |



### ME-10-7-10, Horizontal Gel Electrophoresis System



ME-10-7-10

ME-10-7-10 has been designed for routine horizontal gel electrophoresis with gel tray options of 10 x 7cm and 10 x 10cm. Extending only the width of this unit allows more samples to be resolved per gel. A maximum of 100 samples per gel can be resolved making this unit ideal for those routinely checking medium numbers of samples over short to medium gel run lengths.

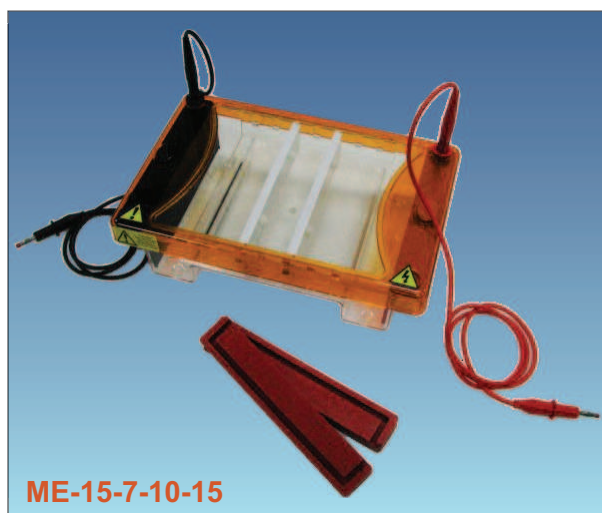
#### Features:

- Low buffer consumption.
- Single molded tank.
- Two tray options available.
- Easy sample loading.
- Great indications for gel making and running.
- No tapes, clamps or springs needed.

| Model                    | ME-10-7-10  |
|--------------------------|---|
| Unit dimension (WxLxH)   | 220x125x90mm  |
| Gel dimension (WxL)      | 100x70mm  |
| Maximum sample           | 50 for 100x70mm tray, 100 for 100x100mm tray  |
| Buffer volume            | 300ml   |
| Construction             | Injection molded construction durable, leak proof environment for complete safety and long life |
| Cassette type electrodes | Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum                  |
| Electrical safety        | Lid can be located in one way only, on removal- power is disconnected from buffer chamber       |
| Rapid casting gel        | Use casting dams  |

### ME-15-7-10-15, Horizontal Gel Electrophoresis System

offers a wide degree of versatility. Three tray options are available, 15 x 7cm, 15 x 10 cm and 15 x 15cm allowing the choice of one, two or all three gel length options at the time of purchase. Further purchases of additional accessories are no longer required.



ME-15-7-10-15

Maximizing comb and tray options allow up to 210 samples to be resolved per gel. The 15 cm total run length allows restriction fragment or other close MW sample bands to be easily separated and identified.

Speed loading is accomplished using 10, 14, 16, 18, 28 and 30 sample multi-channel pipette compatible combs. In addition, the packages with Minis 300V power supply series are ideally offered to individuals in the laboratory at a competitive and acceptable pricing to avoid time waiting for those basic instruments and to accelerate the experimental progress.

#### Features

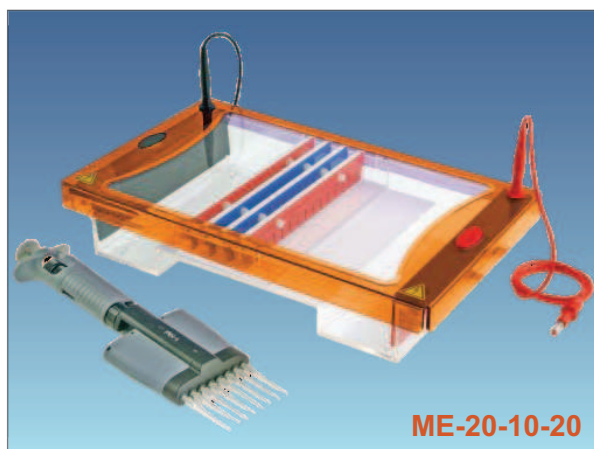
- Low buffer consumption.
- Single molded tank.
- Three tray options available.
- Multi-channel pipette compatibility.
- Great indications for gel making and running.
- No tapes, clamps or springs needed.

| Model                    | ME-15-7-10-15   |
|--------------------------|---|
| Unit dimension (WxLxH)   | 265x175x90mm  |
| Gel dimension (WxL)      | 150x70mm, 150x100mm, 150x150mm  |
| Maximum sample           | 70 for 750x70mm tray, 140 for 150x100mm tray, 210 for 150x150mm tray                            |
| Buffer volume            | 500ml   |
| Construction             | Injection molded construction durable, leak proof environment for complete safety and long life |
| Cassette type electrodes | Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum                  |
| Electrical safety        | Lid can be located in one way only, on removal- power is disconnected from buffer chamber       |
| Rapid casting gel        | Use casting dams  |

## ME-20-10-20, Maxi Horizontal Gel Electrophoresis System

ME-20-10-20 is primarily designed for resolution of high numbers of samples like cloning or PCR experiments.

ME-20-10-20 allows ultra high-resolution separations over extended runs. Tray sizes correspond to standard blotter sizes.



ME-20-10-20

It also allows easy sample transfer onto a membrane for further analysis. Three tray sizes are available, 20 x 20cm, 20 x 25cm and a half length, 20 x 10cm. Multi-channel pipette compatible combs up to 40 sample facilitate speed loading of up to 440 samples per gel. 50 sample combs allow maximum sample capability of 550 samples per gel.

### Features:

- Low buffer consumption.
- Single molded tank.
- Three tray options available.
- Multi-channel pipette compatibility.
- Great indications for gel making and running.
- Up to 450 samples per tray.
- No tapes, clamps or springs needed.

| Model                    | ME-20-10-20   |
|--------------------------|---|
| Unit dimension (WxLxH)   | 395x230x90mm  |
| Gel dimension (WxL)      | 200x100mm, 200x200mm, 200x250mm   |
| Maximum sample           | 200 for 200x100mm tray, 450 for 200x200mm tray, 550 for 200x250mm tray                          |
| Buffer volume            | 1200ml  |
| Construction             | Injection molded construction durable, leak proof environment for complete safety and long life |
| Cassette type electrodes | Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum                  |
| Electrical safety        | Lid can be located in one way only, on removal- power is disconnected from buffer chamber       |
| Rapid casting gel        | Use casting dams  |

## ME-26-16-24-32, Maxi Plus Horizontal Gel Electrophoresis System

ME-26-16-24-32 is designed for rapid screening of very large numbers of cloning or PCR samples, and it has the maximum capacity of 672 samples per gel. This allows loading and analysis of exactly seven 96 well format micro titer plates. The large gel run length of 32cm also allows resolution of samples over a long distance for separation of complex sample bands such as in restriction fragment analysis.



ME-26-16-24-32

Maxi-plus is available with a full length tray or with other tray length options of 16 or 24cm so that user's exact requirements can be matched. In addition to options for single length gel trays, Maxi-plus is available with all three gel tray lengths to provide the maximum in flexibility, versatility and value. Buffer recirculation ports are included as standard to allow enhanced resolution over extended runs while loading guides enhance well visibility for easy sample loading.

### Features

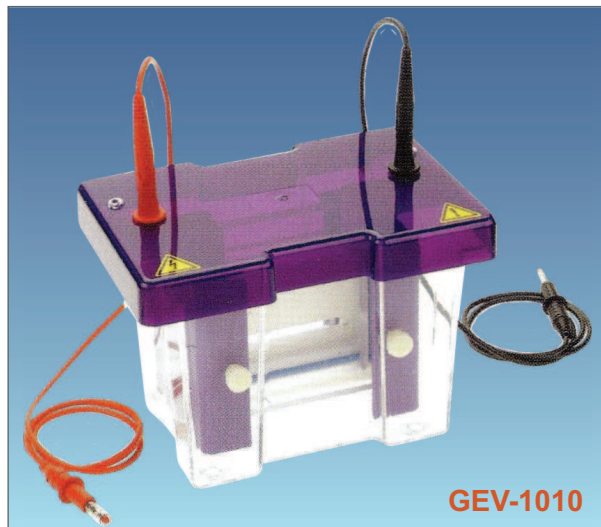
- Low buffer consumption.
- Single molded tank.
- Three tray options available.
- Multi-channel pipette compatibility.
- Great indications for gel making & running.
- Up to 672 samples per tray.
- No tapes, clamps or springs needed

| Model                    | ME-26-16-24-32  |
|--------------------------|---|
| Unit dimension (WxLxH)   | 500x280x90mm  |
| Gel dimension (WxL)      | 260x160mm, 260x240mm, 260x320mm   |
| Maximum sample           | 336 for 260x160mm tray, 504 for 260x240mm tray, 672 for 260x320mm tray                          |
| Buffer volume            | 1400ml  |
| Construction             | Injection molded construction durable, leak proof environment for complete safety and long life |
| Cassette type electrodes | Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum                  |
| Electrical safety        | Lid can be located in one way only, on removal- power is disconnected from buffer chamber       |
| Rapid casting gel        | Use flexi caster (optional accessory)   |

### GEV-1010, Mini Vertical Gel Electrophoresis Apparatus

- Injection moulded construction • Compatible with all 8x10 & 10x10cm precast gels • Rapid gel casting & loading • Low Buffer volumes • Rapid set up cooling • Run up to four gels.

Mini SDS Page, Native Page, Gradient, Second dimensions & Nucleic acid separations.



GEV-1010

Mini Vertical is an injection molded vertical electrophoresis system providing leak-proof environment and safety concerns. In addition, its vertical tank is designed for blotting compatibly. Dual 10x10cm plates is the most popular application and it also has the capability of up to 2 plates. In addition, packages with Minis 300V power supply series are ideally offered to individuals in the laboratory at a competitive and acceptable pricing to avoid time waiting for those basic instrument and to accelerate the experimental progress.

#### Features

Low buffer consumption • Single molded tank • Compatible with all major types of precast gel • Up to 4 gels run at one time • Great indications for gel making and running • Ice cooling block • No tapes, clamps or springs needed

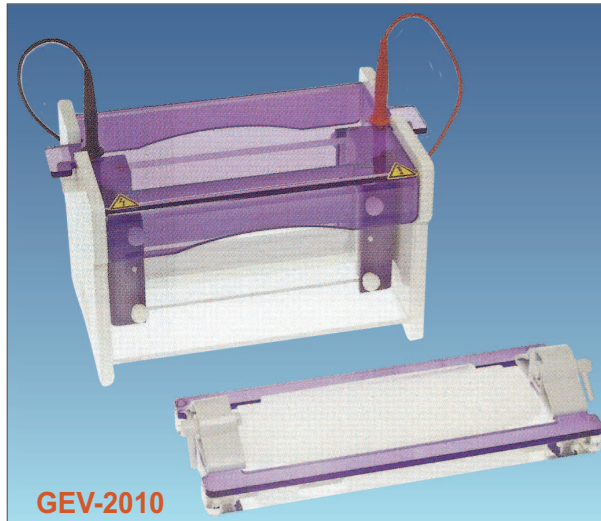
**GEV-1010** Complete mini vertical gel electrophoresis apparatus. Mini 10x10cm dual, 2 sets of glass plate with 1mm thick bonded spacers. 2x12 samples, 1mm thick combs, cooling pack, dummy plate and casting base.

| Model                        | GEV-1010  | GEV-2010                        |
|------------------------------|---|---------------------------------|
| Unit dimension (WxLxH)       | 190x130x150mm   | 260x160x160mm                   |
| Plate dimension (WxL)        | 100x100mm   | 200x100mm                       |
| Gel dimension (WxL)          | 75x80mm   | 180x80mm                        |
| Maximum sample               | 80 samples, 20 samples per gel  | 192 samples, 48 samples per gel |
| Buffer volume                | 250 ~ 1200ml  | 600 ~ 2800ml                    |
| Ice cooling pack             | Yes   |                                 |
| Dummy plate and casting base | Yes   |                                 |
| Construction                 | Injection molded construction durable, leak proof environment for complete safety and long life |                                 |
| Cassette type electrodes     | Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum                  |                                 |
| Electrical safety            | Lid can be located in one way only, on removal- power is disconnected from buffer chamber       |                                 |
| Rapid casting gel            | Use gel maker stand   |                                 |

### GEV-2010, Mini Vertical Gel Electrophoresis Apparatus

- Offers the capacity of 2 mini gels on a single gel • Rapid gel casting & loading • Optional low or high buffer volumes • Rapid set up cooling. Mini SDS Page, Native Page, Gradient, Second dimensions & Nucleic acid separations.

Mini Wide Vertical Electrophoresis System with a gel width of 20cm effectively allows double the number of samples to be resolved as the Mini Vertical Electrophoresis System. This allows consistency of sample comparison on a single gel & is designed for those with greater than 20 samples to compare & resolve. Simple set up using ultra soft silicone seals guarantees trouble free glass plate loading & gel casting.



GEV-2010

Dual gasket on the gel running insert along with notched and plain glass plates ensure leak proof gel running. Rapid set up cooling retains resolution in extended separations and also saves on buffer volume without affecting run quality. 4mm thick glass plates reduce breakage and have bonded spacers for added convenience. A wide range of accessories is available allowing many techniques to be performed using the same unit. Prep combs can be used to maximize sample loading and recovery.

#### Features

Offers the capacity of two mini gels on a single gel • Rapid gel casting and loading • Low buffer consumption • Single molded tank • Up to 4 gels run at one time • Great indications for gel making & running • Ice cooling pack • Easy gel casting & no gel leakage • Competitive pricing.

**GEV-2010** Mini wide vertical gel electrophoresis apparatus. Mini wide 20x10cm dual, 2 sets of glass plate with 1mm thick bonded spacers. 2x24 samples, 1mm thick combs, cooling pack, dummy plate and casting base



### UV-26, Dual-Wavelength UV Transilluminator, 302nm/365nm

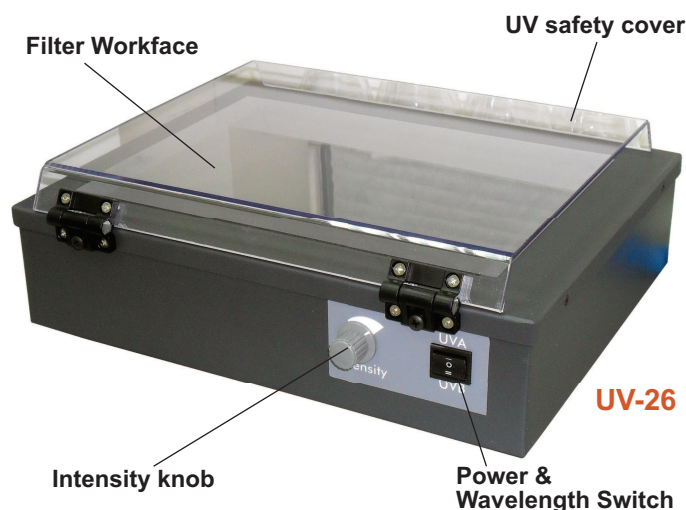
UV Transilluminators are designed for viewing DNA/RNA in agarose gels stained with ethidium bromide (EB) or other dyes.

Transparent hinged cover, with UV-safety cover to protect users from exposure to hazardous UV radiation, is mounted by slip-hinges for easily adjusting to user's visual angle.

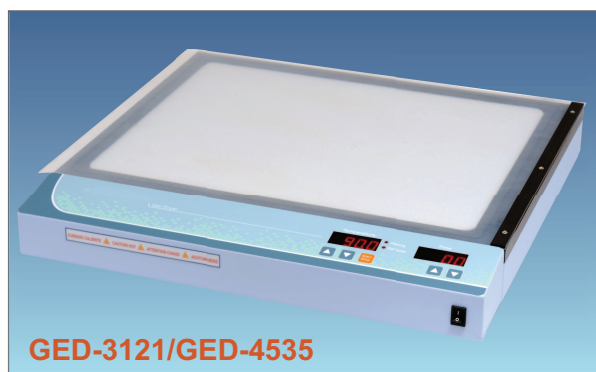
UV-26 Dual-wavelength UV transilluminator provides a uniform & intense source of 302nm & 365nm ultraviolet lights to back-illuminate transparent fluorescent materials.

Nucleic acids stained with fluorescent dyes such as ethidium bromide and acridine orange can be detected under UV illumination.

The filter surface is 210 x 260 mm. The light intensity level can be set from 0%-100% continuously. Either transilluminator can be converted from 302/365nm to 254nm by replacing the UV lamps as described in the Care and maintenance section.



| Model                    | UV-26                             |
|--------------------------|-----------------------------------|
| UV Lamps                 | 5-302nm lamp(8W) & 4x365 lamp(8W) |
| Intensity                | Variable intensity 5% ~ 100%      |
| Filter Size(mm)          | L260xW210                         |
| UV Safety Cover Size(mm) | L320xW280                         |
| Dimensions(mm)           | L340xW290xH85                     |
| Weight                   | 5kg                               |
| Power                    | 220V/50Hz                         |



### GED-3121/GED-4535, Midi Gel Dryer

The microprocessor of Midi Gel Dryer controls temperature from ambient +5°C to 90°C with timer from 0 to 999 mins to heat gels from base plate and connect with a vacuum pump to remove the moisture to dry gels homogeneously.

The surrounding groove design and the optimal sealing silicon rubber with mask ensure the optimal sealing when connecting with a vacuum pump.

#### Features:

- Drying Area: 210x310mm (LxW), 350x450mm (LxW)
- Microprocessor for temperature control
- User temperature calibration
- Timer with alarm
- 2 digital LED display.

#### Specifications:

| Model                          | GED-3121                          | GED-4535       |
|--------------------------------|-----------------------------------|----------------|
| Drying Area (mm)               | L210xW310                         | L350xW450      |
| Display                        | Two of 4 digital LED              |                |
| Control                        | Digital Microprocessor controller |                |
| Temperature Control Range      | ambient to 90°C                   |                |
| Temperature Increment          | 0.1°C                             |                |
| Temperature Uniformity at 37°C | ±0.2°C                            |                |
| Temperature Calibration        | Yes                               |                |
| Timer                          | 0~999 mins                        |                |
| Operating Temperature          | ambient to 40°C                   |                |
| Weight                         | approx. 9.0kg                     | approx. 15.0kg |



**GDS-01**

## GDS-01, Digimage System

The Digimage System is a simple, compact gel documentation system with a rear digital control panel. It contains a digital camera with a superb resolution of 14.7 megapixels. The image is viewed from a large 8" TFT colorful screen. For limited space, low budget requirements, the Digimage System can be operated computer free.

A variety of images can be captured from agarose and other fluorescent gels, colorimetric gels, auto radiography film, and blotting membrane. A safety switch is equipped to turn off the UV Transilluminator automatically when the front door is opened. Files can be saved in a variety of formats, including RAW format, for transfer to a computer for storage and analysis. The Digimage System can also directly connect to a thermal printer for printing the result immediately.

**This product is offered as a complete system for the user to perform image capture, including:** 1 x Digimage System hood • 1 x 147 mega pixels digital camera • 1 x DC coupler • 1 x lens adaptor • 1 x 8" colorful TFT screen • 1 x 2GB memory card • 1 x memory card reader • 1 x EtBr filter or SYBR Filter optional).







## Specifications:





| Model               | GDS-01  |
|---------------------|---|
| Camera              | Cannon ® Power SHop G11                                     |
| Type                | 5 x optical 14 x digital zoom digital camera                |
| Effective Pixels    | approx. 14.7 megapixels                                     |
| CCD                 | 1/1 7" high-density CCD, total pixels 15.0 million          |
| Maximum Aperature   | f/2.8 (W) - f/4.5 (T)                                       |
| Shutter Speed       | 15 ~ 1/4000 sec.  |
| Filters             | +3 Close up filter and EtBr or SYBR Green filter (optional) |
| Storage Media       | memory card   |
| Computer Interface  | USB 2.0 Hi-Speed (mini-B jack)                              |
| Video Out           | NTSC 1 PAL  |
| Darkroom            |   |
| Multi-power Source  | For camera, inner white LED, TFT screen                     |
| Inner White light   | 2 x 3 watt white LED  |
| Safety Device       | Safety door switch  |
| Unit Dimension (mm) | W290xD220xH320  |
| Rated Voltage       | 110V ~ 240V   |
| Unit Weight         | approx. 6.1 kg  |
| 8" TFT Screen       |   |
| Type                | 8" TFT crystal screen                                       |
| Resolution          | 800x600pixels   |
| Brightness          | 350cd / m <sup>2</sup>                                      |
| Constant Ratio      | 300 : 1   |
| Display Mode        | NTSC / PAL / SECAM mode auto switching                      |

Bench top freeze dry system offer an economical solution for processing light loads of aqueous samples specially designed for use by researchers small footprint simple operation.

## FDL-10N-50-Series, Bench Top Freeze Dryers



| FDL-10N-50: 50°C lyophilizer(freeze-dryer) |  |   |  |   |
|--|--|---|--|---|
|  | FDL-10N-50-BA  | FDL-10N-50-8M   | FDL-10N-50-TD  | FDL-10N-50-TD-MM  |
| Picture                                    |   |  |  |  |
| Freeze temperature                         | -50°C  |   |  |   |
| Vacuum degree                              | <15Pa  |   |  |   |
| Freeze-dry area                            | 0.12 m²  |   | 0.07 m²  |   |
| Tray load                                  | 1.2L   |   | 0.7L   |   |
| Water capture                              | 3kg/24h  |   |  |   |
| Sample tray                                | Φ200mm x4  |   | Φ180mm x3  |   |
| Power supply                               | 220V 50Hz 800W   |   |  |   |
| Machine size (mm)                          | L380xW500xH340   |   |  |   |
| Character                                  | Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust transparent plastic cover for dry chamber, security and direct-viewing stainless sample shelf, the distance between trays is adjustable international standard interface to pump |   |  |   |

## FDL-10N-80-Series, Floor Freeze Dryers

| FDL-10N-80: 80°C lyophilizer(freeze-dryer) |  |   |  |   |
|--|--|---|--|---|
|  | FDL-10N-80-BA  | FDL-10N-80-8M   | FDL-10N-80-TD  | FDL-10N-80-TD-MM  |
| Picture                                    |   |  |  |  |
| Freeze temperature                         | -80°C  |   |  |   |
| Vacuum degree                              | <15Pa  |   |  |   |
| Freeze-dry area                            | 0.12 m <sup>2</sup>  |   | 0.07 m <sup>2</sup>  |   |
| Tray load                                  | 1.2L   |   | 0.7L   |   |
| Water capture                              | 3kg/24h  | 4kg/24h   | 3kg/24h  |   |
| Sample tray                                | Φ200mm x4 lays   |   | Φ180mm x3 lays   |   |
| Power supply                               | 220V 50Hz 800W   | 220V 50Hz 1300W   | 220V 50Hz 800W   |   |
| Machine size (mm)                          | L500xW500xH750   | L492xW540xH800  | L492xW500xH750   | L500xW500xH750  |
| Character                                  | Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust transparent plastic cover for dry chamber, security and direct-viewing stainless sample shelf, the distance between trays is adjustable international standard interface to pump |   |  |   |



## FDL-10N-50/80T, Bench Top Freeze Dryers

| FDL-10N-50 T type for multi-manifolds |  |   |
|---------------------------------------|--|---|
|                                       | FDL-10N-50T  | FDL-10N-80T   |
| Picture                               |   |  |
| Brief                                 | Basic components: 2L vacuum pump, 24pcs "T" shelf, 24pcs rubber valves.<br>This type can be customized for your request                        |   |
| Freeze temperature                    | -50°C  | -80°C   |
| Vacuum degree                         | <15Pa  |   |
| Water capture                         | 3kg/24h  |   |
| Freeze-dry area                       | 0.12m <sup>2</sup>   |   |
| Power supply                          | 220V 50Hz 800W   |   |
| Machine size (mm)                     | L380xW500xH340   | L500xW500xH750  |
| Character                             | Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust international standard interface to pump |   |

## FDL-18N-70-Series, Floor Freeze Dryers

| FDL-18N-70: -70°C lyophilizer(freeze-dryer)   |                 |               |                     |                               |                                       |
|---|-----------------|---------------|---------------------|-------------------------------|---------------------------------------|
| <div></div> |                 |               |                     |                               |                                       |
|   | FDL-18N-70-NH   | FDL-18N-70-BA | FDL-18N-70-TD       | FDL-18N-70-8M                 | FDL-18N-70-TD-MM                      |
| Heat  | Without heating | Basic type    | Top-down stoppering | Multi-manifolds (8 manifolds) | Top-down stoppering & Multi-manifolds |
| Heating function  | No              | Yes           |                     |                               |                                       |
| Freeze temperature  | < -70°C         |               |                     |                               |                                       |
| Vacuum degree   | <13Pa           |               |                     |                               |                                       |
| Freeze-dry area   | 0.27m²          | 0.18          | 0.11                | 0.18                          | 0.11                                  |
| Tray load capacity  | 2.7L            | 1.8L          | 1.1L                | 1.8L                          | 1.1L                                  |
| Water capture   | 6kg/24h         |               |                     |                               |                                       |
| Sample tray   | Φ200mm x6       | Φ200mm x4     | Φ200mm x3           | Φ200mm x4                     | Φ200mm x3                             |
| Power supply  | 220V 50Hz 1800W |               |                     |                               |                                       |
| Machine size (mm)   | L540xW640xH920  |               |                     |                               |                                       |



GC3400

### GC3400, Gas Chromatograph

**Applications:** GC3400 Gas Chromatograph, made according to international standards, its technical feature and index are in the world high level. The key components are imported from world famous suppliers. It is widely used for petrol-chemistry, environmental protection, epidemic prevention, pharmacology, scientific research, etc.

#### Features:

• **Self-diagnostic function:** 1) Core tests; 2) Automatic tests; 3) Extended tests; 4) Basic tests; Monitor the status of GC continuously. Once finding faults, it'll display the information and show the wrong zone and the settling method • **Self-protective function:** 1) Overrun temperature protection; 2) Short circuit hint; 3) TCD filament protection; 4) FID flameout hint; 5) PFD exposed-light protection; 6) Keyboard locking with password; etc., ensuring

normal running • **Simple operation, powerful automation:** 1) All parameters can be entered through keyboard with prompt function; 2) 4 sets of complete chromatography analysis methods can be stored and recalled automatically; An autosampler can be connected; Parameters can be modified instantly while the GC is running; 5) Chromatography analysis method can be activated for 99 times repeatedly at the same time. It's especially suitable for unattended operation • **More choices of injectors:** 1) On-Column Injector for Packed Column; 2) Flash Vaporization Injector for Packed Column 3) Automatic or manual gas inject valve; 4) Headspace sampler; 5) Thermal desorption system 6) Split/Splitless Capillary Injector; Three Injectors or two Split/Splitless Capillary Injectors can be fixed on GC • **More choices of detectors:** 1) TCD; 2) FID; 3) ECD; 4) FPD; 5) TSD Maximum of two TCDs or three different kinds of detectors can be installed • **Reactor:** 1) Internal; 2) external • **Time programming of detectors:** Each of detectors has 5-ramp programmable time control. Output-signal, attenuation range, and polarity can be set automatically • **Time programming of external events:** Providing 4 external events with 20-ramp, programmable time control. The optional GC relays may be used to automate valves, operate split/splitless capillary injectors, drive auxiliary devices, or switch signals between detector A and detector B in a run • **Many kind of special-purpose GC can be provided according to user's request.**



GC3420A

### GC3420A, Gas Chromatograph

#### Features:

• **Self-diagnostic function:** 1) Core tests; 2) Automatic tests; 3) Extended tests; 4) Basic tests; Monitor the status of GC continuously. Once finding faults, it'll display the information and show the wrong zone and the settling method • **Self-protective function:** 1) Overrun temperature protection; 2) Short circuit hint; 3) TCD filament protection; 4) FID flameout hint; 5) PFD exposed-light protection; 6) Keyboard locking with password; etc., ensuring normal running • **Simple operation, powerful automation:** 1) All parameters can be entered through keyboard with prompt function; 2) 4 sets of complete chromatography analysis methods can be stored and recalled automatically; Maximum of two TCDs or three different kinds of detectors can be installed • **Reactor:** 1) Internal; 2) external • **Time programming of detectors:** Each of detectors has 5-ramp programmable time control. Output-signal, attenuation range, and polarity can be set automatically • **Time programming of external events:** Providing 4 external events with 20-ramp programmable time control. The optional GC relays may be used to automate valves, operate split/splitless capillary injectors, drive auxiliary devices, or switch signals between detector A and detector B in a run. • **Many kind of special-purpose GC can be provided according to user's request.**



HPLC8100

### HPLC8100, High Performance Liquid Chromatograph

#### Description:

• Scientific and reasonable function and structure design satisfy your needs for accuracy and reproducibility to the maximum • Building-block modular design enables easy use and convenient maintenance • Rich function PC control and chromatograph data processing software make it simple for instrument control and data processing.

#### Innovation:

• High pressure solvent delivery pump adopting electronic pulsation suppression technology displacing traditional mechanical buffer to thoroughly solve the problem caused by frequent leakage of mechanical buffer, and to reduce the dead volume of solvent delivery system to the minimum • The wavelength positioning of Multi-wavelength UV-Vis detector is realized via the grating's turning which is directly controlled by the SCM(Single Chip Micryoco). It takes place the conventional sine-pole mechanism (monochromator), eliminating the error of wavelength positioning brought by the mechanical abrasion and returning error of the Guide-screw transmission, and also avoiding the monochromator's hitting accident which might be brought by false operation.

For detailed information look on our website: [www.mrclab.com](http://www.mrclab.com)

## Specialty Heating Mantles



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%.



**KJL-Series, Multi Unit Macro Kjeldahl Apparatus****KJL-6100****Model KJL-6100, 6 Positions**

Up to 6 flasks • 220 Volt (or 110V), 6x550 Watt • Dimensions: (WxHxD) 80x19x20 cm (D includes rear bracket for support rod) • Nett weight: 6.8 Kgs.

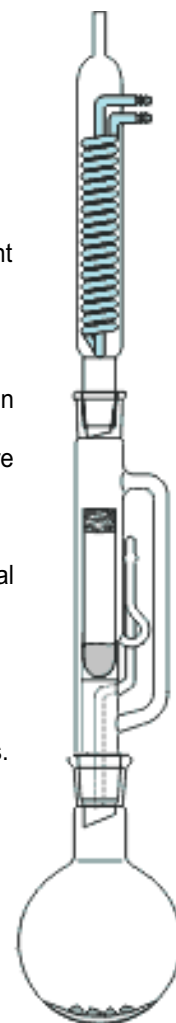
**KJL-4100****Model: KJL-4100, 4 Positions**

Up to 4 flasks • 220 Volt (or 110 V), 4 x 550 Watt • Dimensions: (WxHxD) 60x19x20cm (D includes rear bracket for support rod) • Net weight: 4.8 Kgs.

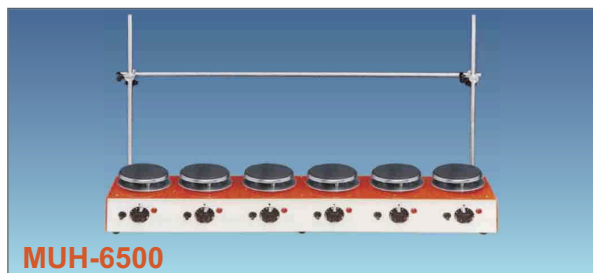
- For flasks 250 up to 1000 ml.
- Spillproof—Stainless Steel Heater.
- Stepless—heat control.
- Operating temperature: up to 750°C.
- Includes 4 support rods and 4 clamps.
- Durable housing is chemically resistant.
- Built-in electronic controller regulates element temperature to 750°C, 2 ranges: low & high.
- Robust aluminium construction permits operation of the units as required by extraction and distillation processes.
- “Heat on” light for each recess indicates when power is being supplied to the heater.
- 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 and mechanical protection against spillage & enables easy cleaning.
- Lower profile for space-saving convenience.
- Ideal for repetitive extracting (kjeldahl, soxhlet, and other extraction procedure), refluxing and distilling laboratory applications.
- Analog controller built-in system.
- Rods & clamps are offered as standard.
- Ideal for all brands round flasks.
- Highly-processed aluminium case offers robust standing, easy handling.

**Extraction Apparatus, Soxhlet**

For cold extraction from consisting of round bottom flask with sicket NS 29/32.



| Model     | Extractor Capacity | Flask Capacity | Cone/Condenser Socket/Extr |
|-----------|--------------------|----------------|----------------------------|
| 21-452-49 | 70ml               | 100ml          | 34/35NS                    |
| 21-452-55 | 100ml              | 250ml          | 45/40NS                    |
| 21-452-59 | 150ml              | 250ml          | 45/40NS                    |
| 21-452-63 | 200ml              | 250ml          | 45/40NS                    |
| 21-452-65 | 250ml              | 500ml          | 45/40NS                    |
| 21-452-67 | 300ml              | 500ml          | 60/46NS                    |
| 21-452-73 | 500ml              | 1000ml         | 60/46NS                    |

**MUH-Series, Multi Position Round Top Extraction Heater****MUH-6500****Application:**

- Allows you to run different projects concurrently or to make simultaneous multiple runs of the same project.
- Ideal for extraction, distillation, and digestion.
- Optional: Aluminium top mould for round bottom flasks up to 250ml/500ml for extraction apparatus soxhlet

The Multi Heating Apparatus offers such versatility that is suitable for many laboratory purposes: extractions, distillations, digestions, evaporation etc. The 6 separate heat controls allow the heaters to be used for several different projects or multiple runs of the same project. The Multi Heating Apparatus in conjunction with inter-changable top mould for round bottom flasks - solves the most varied heating problems.

**Model MUH-6500** Six individual heat controls with pilot lights • Built-in temperature regulator • For 6 places, 220 Volt (on request 115 V), 2700 Watts (6x450 W) • Approximate temp.: 40 - 450°C • Hotplate top 85 mm. dia. • Dimensions (WxHxD): 80x17x20 cm • Accesories: Optional: 6 interchangeable aluminum top moulds for round bottom flasks up to 100 ml or 250 to 500ml (Kjeldahl flasks 500-800 ml) • 4 support rods 800x12 mm. with 4 clamps.

**Model MUH-4500** as described above, but for 4 places 220 Volts 1800Watts (4x450 W). Dimen. (WxHxD): 60x17x20 cm.

# H HEATING MANTLES

Digital & Analog

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



| Model<br>Manual Control | Model<br>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 and around the rim and 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.



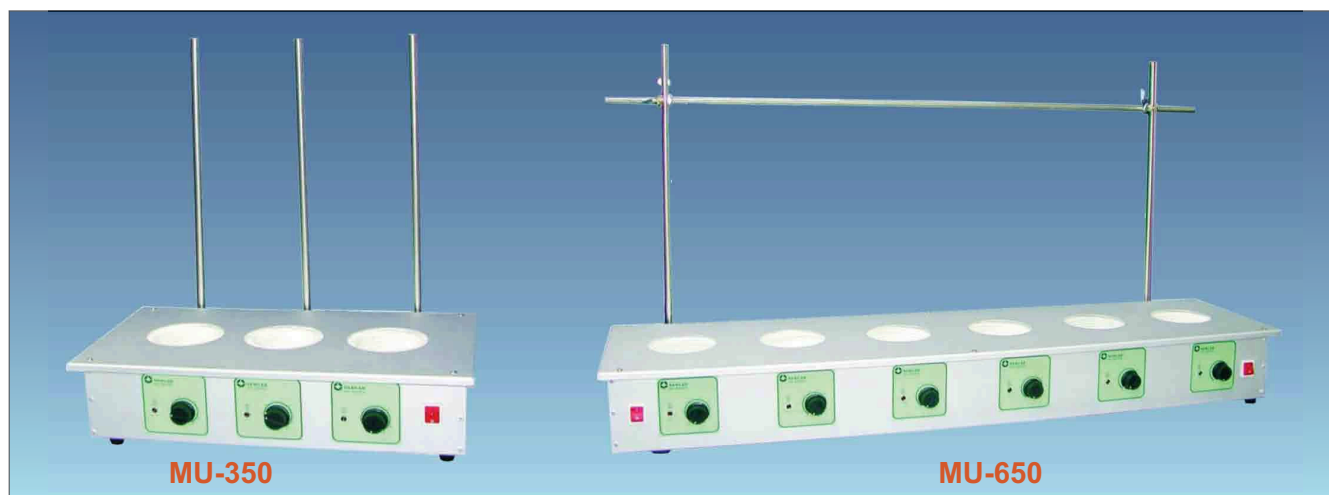
## MNS Serie, Heat And Stir Cool Case Heating Mantle



| 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.



### Multi-position Heaters

Choice of three or six recesses • Build-in electronic controller • Choice of heater only or heater/stirrer combination • Vented case ensures case remains “cool to the touch”.

### Product Description:

- Individual built-in solid state electronic controls enable easy regulation of each heater, while removing sparking associated with mechanical switching.
- Units include three 0.5" (12.7mm) diameter support rods.
- The robust construction permits continuous operation of the units as required by routine extraction tests.
- MUS models incorporate a stirring module that allows the solution to be stirred and heated at the same time.
- MUS stirrer models include stirring control for each heater.
- Element temperature range to 450°C.
- Stirrer models include a stirring speed range of 50-1000 rpm.
- The coiled heating element is suspended within a thermal insulating cartridge to provide maximum heat transfer and support while removing sparking associated with mechanical switching.
- Heater cartridge can readily be replaced when necessary.
- For additional operator protection a safety earth (ground) screen encloses the heaters.
- Unique air flow ensures unit is safe to the touch.
- Pilot lights indicate when power is on, supplied to heaters and supplied to stirrers.

| Models  | Capacity | Units | Total watts | Dimension(mm) |     |      |
|---------|----------|-------|-------------|---------------|-----|------|
|         |          |       |             | H             | W   | L    |
| MU-325  | 250 ml   | 3     | 600W        | 135           | 300 | 660  |
| MU-350  | 500 ml   | 3     | 900W        | 135           | 300 | 660  |
| MU-3100 | 1000 ml  | 3     | 1200W       | 170           | 300 | 750  |
| MU-625  | 250 ml   | 6     | 1200W       | 135           | 300 | 1200 |
| MU-650  | 500 ml   | 6     | 1800W       | 110           | 300 | 1200 |
| MU-6100 | 1000 ml  | 6     | 2400W       | 170           | 300 | 1500 |

| Models with stirrers | Capacity | Units | Speed Range | Total watts | Dimension(mm) |     |      |
|----------------------|----------|-------|-------------|-------------|---------------|-----|------|
|                      |          |       |             |             | H             | W   | L    |
| MUS-325              | 250 ml   | 3     | 0~1200 rpm  | 600W        | 210           | 300 | 660  |
| MUS-350              | 500 ml   | 3     | 0~1200 rpm  | 900W        | 210           | 300 | 660  |
| MUS-3100             | 1000 ml  | 3     | 0~1200 rpm  | 1200W       | 245           | 300 | 750  |
| MUS-625              | 250 ml   | 6     | 0~1200 rpm  | 1200W       | 210           | 300 | 1200 |
| MUS-650              | 500 ml   | 6     | 0~1200 rpm  | 1800W       | 210           | 300 | 1200 |
| MUS-6100             | 1000 ml  | 6     | 0~1200 rpm  | 2400W       | 245           | 300 | 1500 |



## 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+1digit)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)<br>0.00~(19.99*f)ppm 0.0~(199.9*f)ppm<br>0~(1999*f)ppm<br>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)<br>±4°C(>50°C)        |
| Temp. (°F)  | 32 to 150°F | 0.1°F      | ±1.8°F(32-122°F)<br>±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.<br>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)<br>Probe: Round, 22mm Dia. x 120mm length       |
| Accessories Included | Instruction Manual - 1 PC. Sensor Probe - 1 PC.<br>Carrying case - 1 PC.                                 |

**Conductivity:**

| Range                                  | Measurement     | Resolution | Accuracy                            |
|--|-----------------|------------|-------------------------------------|
| 200 uS                                 | 0.1 to 199.9 uS | 0.1 uS     | ±(2%F.S. +1d)<br>*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.<br>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, UPCB-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)<br>*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)<br>*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, Dissolved Oxygen Meter

**Features:** The polarographic type oxygen probe with an incorporated Temp. sensor, high precision measurement for Dissolved Oxygen(DO), Oxygen in air(O<sub>2</sub>) & 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 <sub>2</sub>   |
|                           | Temperature  | 0.1                   |
| Accuracy (23±5°C)         | Dissolved Oxygen   | ±0.4mg/L              |
|                           | Oxygen in Air  | ±0.7% O <sub>2</sub>  |
|                           | 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.



### 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)<br>* 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)<br>* 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 <sub>2</sub> |
|                      | 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 <sub>2</sub>  | ± 0.7% O <sub>2</sub> |
|                      | 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 |                       |                       |

### 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                                       |



**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, 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)<br>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<br>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

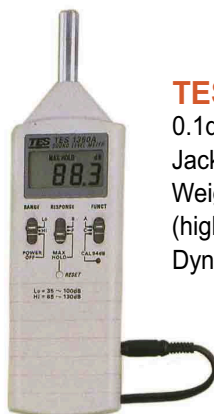
Anemometer With Air Flow & Air Velocity • CMM (m3/min.) • CFM (ftVmin. • m/s, ft/min, km/h, mile/h, knots, Temp. (°C/°F) 0.4 to 25.0 m/s., ±-P circuit • Max., Min., Memory recall button • Size: 180x72x32mm • RS-232, Metal Vane.



**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.

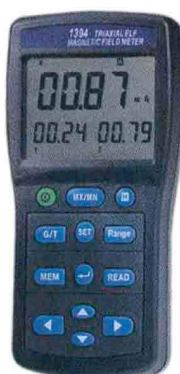


### EMF-810, MicroWave Leakage Detector

- 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.





## 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).



## 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, 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.



## 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 • RS2321USB 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.

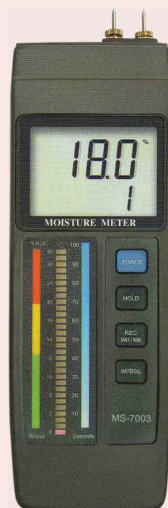
• Dimension: 120Lx93W x42Tmm, Programmable parameters:Sample points,logger sample interval start I stop date and time hi/lo alarm threshold unit selection, real time • Optional accessories: Salt calibration 0033AZ1,0075AZ1, 9 volt adaptor.



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.



### 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.



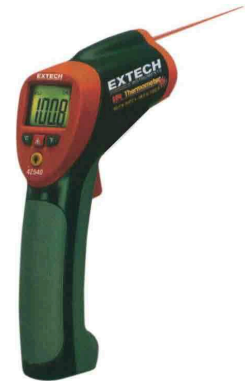
### 42510A, IR Temp. Meter, -50 to 650°C

• 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/cm<sup>2</sup>, mm Hg, inch Hg, meter H<sub>2</sub>O, inch H<sub>2</sub>O, 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/cm<sup>2</sup>, inch/Hg, mm/Hg, inch/H<sub>2</sub>O, meter/H<sub>2</sub>O, 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

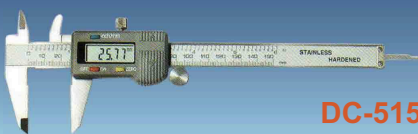
Measuring Range: 0-50mil •  
Resolution: 0.5mil • Accuracy: 1~3%  
• Min. Measuring area: 6mm • Min.  
Sample Thickness: 0.3mm.



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/s<sup>2</sup>. RMS,  
Peak, RS232, Hold, Record (Max., Min.) • Build-in  
Metric & Imperial display unit.

**VB-8213:** Acceleration : 200 m/s<sup>2</sup>. 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 • Bnglncsp 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-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.

#### 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.

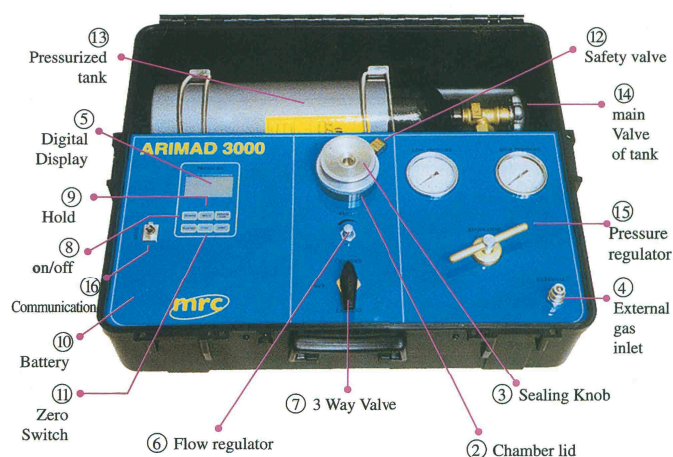
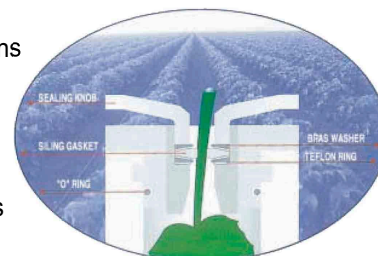
Warranty - one year (excluding damage).

Spare parts - supply guaranteed.

#### 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-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<br>W.D. 324mm<br>AX6602607  | 0.5X<br>W.D. 192mm<br>AX6602608 | 0.63X<br>W.D. 156mm<br>AX6602643 |
| 0.75X<br>W.D. 127mm<br>AX6602609 | 1.5X<br>W.D. 50mm<br>AX6602610  | 2X<br>W.D. 34.5mm<br>AX6602611   |

#### Camera Adapters

|  |   |  |
|--|---|--|
|  |   |  |
| 2X Photo Adapter<br>35mm SLR Camera<br>AX6602603 | 0.35X CCD Adapter<br>1/3" CCD Camera<br>AX6602602 | 0.65X CCD Adapter<br>1/2" CCD Camera<br>SW0113R5 |

#### Mechanical Stage

|  |  |
|--|--|
| Base stand mountable<br>Max. X distance: 75mm<br>Max. Y distance: 50mm<br>Dimension in mm:<br>222.8(w) x 170(l) x 29.5(h)<br>SW010338K |  |
|--|--|

## 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 Alighting 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

|                              |                                   |                |
|------------------------------|-----------------------------------|----------------|
| <b>Power Input</b>           | 90V-265V                          |                |
| <b>Power Output</b>          | 5V-21V                            |                |
| <b>Power Consumption</b>     | 150W                              |                |
| <b>Dimensions(mm)</b>        | 210×170×130                       |                |
| <b>Filter</b>                | Filter Red/Blue/Green/Yellow      |                |
| <b>Reflector Lamp</b>        | 21V/150W                          |                |
| <b>Fiber Adapter</b>         | F20                               |                |
| <b>Option Specification</b>  | Twin-Arm Fibre                    | Ring Fibre     |
|                              | 2-F5X500mm                        | F55XF10X1000mm |
| <b>Option</b>                | Microscope Adapter for Ring Fiber |                |
| <b>Adapter Specification</b> | M44X0.75                          | M50X0.75       |
|                              | M48X0.75                          | M54X0.75       |

### Eyepieces

WF6.25X/23mm  
WF10X/23mm  
WF15X/17mm  
WF20X/13mm  
WF32X/8mm

SG02T0103  
SG02T0218  
SG02T0318  
SG02T0406  
SG02T0502



### Measuring Eyepieces

|                        |                        |                        |                        |
|------------------------|------------------------|------------------------|------------------------|
|                        |                        |                        |                        |
| 360° : 10°<br>SG060314 | 10mm:0.1mm<br>SG060312 | 14mm:0.2mm<br>SG060320 | 14mm:0.1mm<br>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 to the field of electronic industry, precision mold.

plastic shop, medical diagnosis, public security system, and so on.

SMZ-430 with magnification 4-30x and stereo image; rotary turret can together 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**

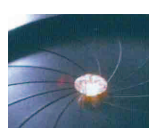
The GEM-250 utilizes the optical performance of MRC's GEM-250 stereomicroscope to enhance distinct three-dimensional details with a zoom function. Rugged and precise, the optics of the GEM-250 performs enlargements, analyses, & measurements more accurately & efficient! thus reducing your workload. At 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

**Eyeieces:**

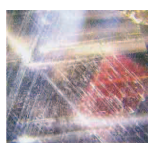
- Magnification range: 0.75x-5x
- Zoom Ratio: 1: 6.7
- Observation angle: 35°
- Working distance: 113mm
- Magnification: 10x
- Field of View range: 30.7mm-4.6mm
- Mount Diameter: Ø30mm
- Reticules: Ø25mm

**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.

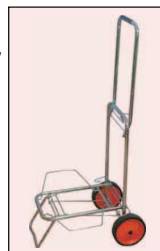
**Accessories: Case**

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

**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-XPHp10A/WB-XPHn10A   |
|  | PH 40X/0.70 ∞/0.17, WD0.76 (Spring)  | •      | •      | WB-XPHp40A/WB-XPHn40A   |
|  | PH 100X/1.25 ∞/0.17, WD0.12 (Spring,Oil)   | •      | •      | WB-XPHp100A/WB-XPHn100A |
| 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-XP10A               |
|  | 40X PH   | •      | •      | PCB-XP40A               |
|  | 100X PH  | •      | •      | PCB-XP100A              |
| 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 contrl 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 Kholer) 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:

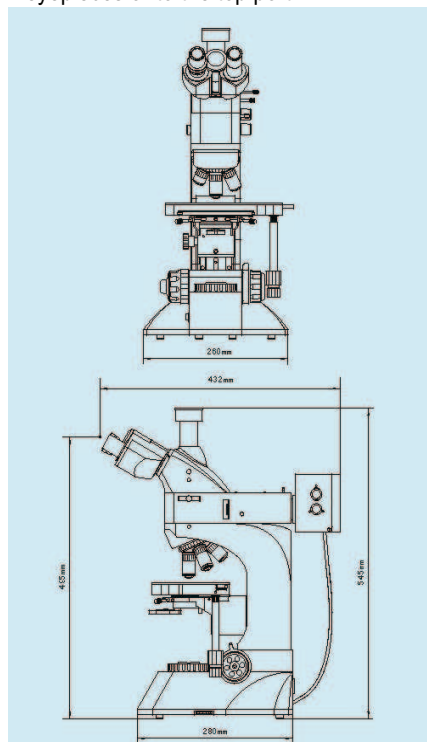
- High eye-point up to 21mm • Abbe condenser • Dry dark-field condenser
- Simple polarizing observation • Phase-contrast condenser • Reflected light fluorescence • Mechanical stage • Rackless stage with enhanced operability
- Nward-facing revolving nosepiece • Observation tub • Comfortable ergolift
- 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   |        |        |                         |
| Seidentopf Observation Tube   | Binocular Tube, Interpupillary distance 52-74mm, 30° inclined, 360° rotateable  | •      |        | MS2                     |
|   | Trinocular tube, Interpupillary distance 52-74mm, 30° inclined, trinocular light is split 20/80 by a high quality prism                             |        | •      | MT2                     |
| 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                 |
| Centering Telescope   | Reticule Eyepiece: CROSSWF10X/22  | ○      | ○      | E1022RC                 |
|   | 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-XP10A               |
|   | 40X PH  | ○      | ○      | PCB-XP40A               |
|   | 100X PH   | ○      | ○      | PCB-XP100A              |
| 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<br>Infinity plan achromatic objectives with long working distance (no cover glass)                       |
|                            | PL L10X/0.25<br>Infinity plan achromatic objectives with long working distance (no cover glass)                      |
|                            | PL L40X/0.60 (spring)<br>Infinity plan achromatic objectives with long working distance (no cover glass)             |
|                            | PL L60X/0.75 (spring)<br>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<br>(Size:210mmX140mm,movingrange: 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<br>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 stopenables 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 B1-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 distinguish 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 B1 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:**

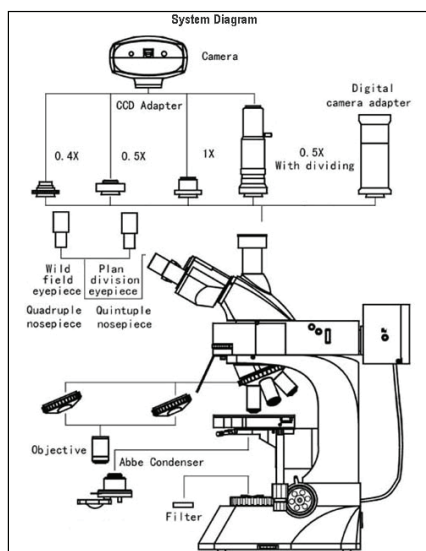
Requires a USB2.0 connection • Windows XP, Vista or OSX • Intel Centrino Recommended • Mrc Images Plus 2.0 software for PC and Mac (OSX).



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 $30^\circ$ )   |
| 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<br>(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).<br>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.<br>Stage height: 207mm from table.  |   |
| Focusing          | Coaxial/via nosepiece up I down movement<br>Coarse/fine movement - 42mm/0.2mm<br>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<br>LWO N.A. 0.50 (WO. 28mm) Focusable for objectives 4X to 40X   |   |
| Collector         | Aspherically 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 CCIS 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 10XI22 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   | ●*   | ●*   |
| <b>Notes:</b> ● represents the standard accessories.<br>○ represents the optional accessories.<br>* 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 x 475mm x 310mm • 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 )                           | ○                |

200



MIP101

**MIP101, Metallurgical Microscope**

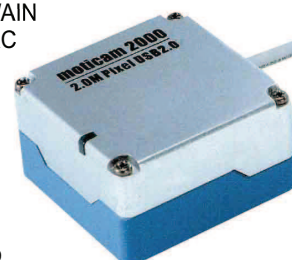
MIP101, the reflected light microscope is suitable to observe the microscopical surfaces of non-transparent object. It is equipped with large move range stage, vertical illumination, plan achromatic objectives and wide-field eyepieces. It provides clear and high-contrast picture, and with polarizer device. 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<br>(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         |
|-------------------------------|-----------------|------------------|------------------|------------------|
| <b>Magnification</b>          | 20x             | 40x              | 50x              | 100x             |
| <b>Eyepiece</b>               | 10x             | 10x              | 10x              | 10x              |
| <b>Objective</b>              | 2x              | 4x               | 5x               | 10x              |
| <b>Numerical Aperture</b>     | 0.05            | 0.10             | 0.12             | 0.25             |
| <b>Min. readable division</b> | 0.002" (0.05mm) | 0.001" (0.025mm) | 0.001" (0.025mm) | 0.0004" (0.01mm) |
| <b>Working distance</b>       | 0.68" (17.2mm)  | 0.71" (18mm)     | 0.69" (17.6mm)   | 0.27" (6.93mm)   |
| <b>Focus range</b>            | 0.65" (16.5mm)  |                  |                  |                  |
| <b>Battery</b>                | 2 AAA Batteries |                  |                  |                  |
| <b>Height of Microscope</b>   | 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         |
|-------------------------------|-----------------|-----------------|------------------|------------------|
| <b>Magnification</b>          | 20x             | 40x             | 60x              | 100x             |
| <b>Eyepiece</b>               | 10x             | 10x             | 10x              | 10x              |
| <b>Objective</b>              | 2x              | 4x              | 6x               | 10x              |
| <b>Numerical Aperture</b>     | 0.05            | 0.10            | 0.15             | 0.25             |
| <b>Min. readable division</b> | 0.005" (0.1mm)  | 0.002" (0.05mm) | 0.0012" (0.02mm) | 0.0005" (0.01mm) |
| <b>Working distance</b>       | 0.63" (16mm)    | 0.59" (15mm)    | 0.39" (10mm)     | 0.22" (5.5mm)    |
| <b>Focus range</b>            | 1.42" (36mm)    |                 |                  |                  |
| <b>Battery</b>                | 2 AAA Batteries |                 |                  |                  |
| <b>Height of Microscope</b>   | 7.4" (188mm)    |                 |                  |                  |



#### 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.

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#### 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.

#### Specifications:

- Either 45° indined or 0 -1800 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

USB2.0

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<B> 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

**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.

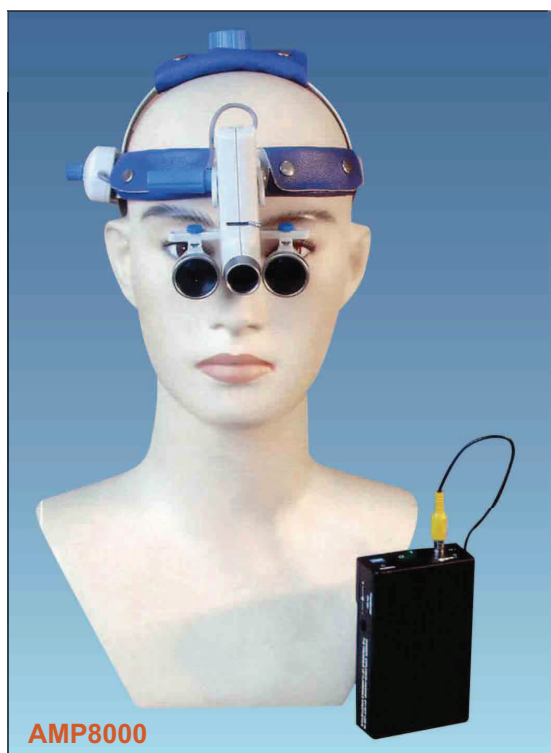


COL-3900

**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.

| 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 requirments   |                         |   |
| 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



USB2.0



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

### 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.

#### 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.

| Model                         | BR200                               |
|-------------------------------|-------------------------------------|
| <b>Pixels</b>                 | 712x486 (NTSC)/704x576 (PAL)        |
| <b>Transmission Frequency</b> | 2.4GHz                              |
| <b>Modulation Type</b>        | FM                                  |
| <b>Bandwidth</b>              | 18MHz                               |
| <b>Transmission Range</b>     | 32ft (10m) unobstructed view        |
| <b>Viewing direction</b>      | Viewing Angle 50°                   |
| <b>Viewing distance</b>       | 5.9" to 9.8" (15 to 25cm)           |
| <b>Shaft diameter</b>         | 0.66" (17mm)                        |
| <b>Minimum bend radius</b>    | 2.36" (60mm)                        |
| <b>Working length</b>         | 39" (1m)                            |
| <b>Camera Dimensions</b>      | 7.3 x 5.7 x 1.6" (186 x 145 x 41mm) |
| <b>Weight</b>                 | 18.7oz (530g)                       |
| <b>Monitor</b>                |                                     |
| <b>LCD Screen Type</b>        | 3.5" TFT                            |
| <b>Pixels</b>                 | 320 x 240                           |
| <b>Video Output Level</b>     | 0.9 to 1.3V@75Ω                     |
| <b>Frame Rate</b>             | 10, 15, 20, 25, 30FPS               |
| <b>Video Resolution</b>       | 960 x 240 (avi format)              |
| <b>Image Resolution</b>       | 640x 480 (jpeg format)              |
| <b>Monitor Dimensions</b>     | 3.9 x 2.7 x 1" (100 x 70 x 25mm)    |
| <b>Operating/Charge Time</b>  | 1.5 hours/3 hours                   |
| <b>Weight</b>                 | 4.9oz (140g)                        |



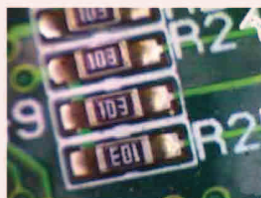
MC108

### MC108, Digital Mini Microscope

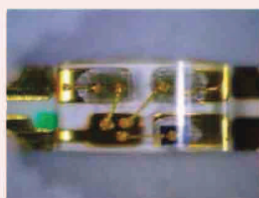
#### Features:

- 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.

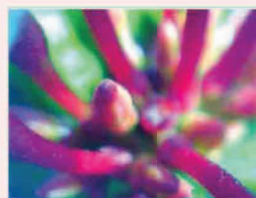
- Dimensions: 4.7x2.2x0.8" (120x56x20mm). Weight: 2.5oz (70g) without batteries.
- Complete with stand, three AAA Ni-MH rechargeable batteries, 100 to 240VAC (50/60Hz) adaptor/charger, Windows® compatible PC software with mini USB cable, cleaning cloth, and wrist strap.



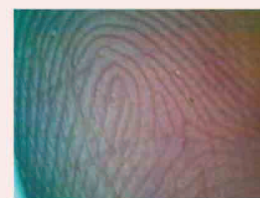
PC board inspection



Soldering check



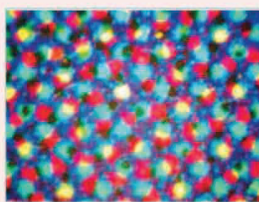
Plant research



Fingerprint verification



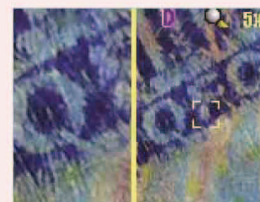
Fabric inspection



Analysis of printing



Check for counterfeit money



Dual Window view simultaneously displays magnified image next to the original image





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, YZ1115, YZ1125 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, YZ1115, YZ1125, 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, YZ1115, YZ1125, 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, YZ1115, YZ1125, 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  $\mu\text{L}/\text{min}$  • 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<br>(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

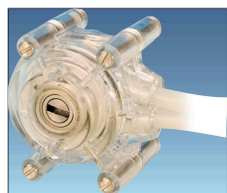


#### DMD25

- 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 $\leq 3.17$ mm<br>wall thickness 0.8-1 (mm) | 48 (per channel)        | 32 (per channel) | $\leq 100$  | 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"<br>16" 17"<br>18" 19"<br>25" | 2200                     | $\leq 600$  | PESU             |
| YZ II 25 | 15" 24"<br>35" 36"                   | 3000                     |             |                  |

| Type    | Tubing                            | Max. flow rates (mL/min) | Speed (rpm) | Housing material |
|---------|-----------------------------------|--------------------------|-------------|------------------|
| YZ1515x | 13# 14# 16#<br>17# 18# 19#<br>25" | 2200                     | $\leq 600$  | PESU             |
| YZ2525x | 15# 24#                           | 1600                     |             |                  |

## VP-Series, Oil-Free Vacuum Pump/Compressor



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<br>=110Torr=146milibar | -650mmHg=85.5kPa<br>=110Torr=146milibar | -730mmHg=97.33kPa<br>=30Torr=40milibar | -650mmHg=85.5kPa<br>=110Torr=146milibar | -730mmHg=97.33kPa<br>=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/<br>2uf/450V                   | 10uf/250V/<br>3uf/450V                  | 10uf/250V/<br>3uf/450V                 | 16uf/250V/<br>5uf/400V                  | 16uf/250V/<br>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****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 <sup>2</sup> =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<br>=110Torr=146milibar | -650mmHg=85.5kPa<br>=110Torr=146milibar | -750mmHg=98.68kPa<br>=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 innovative 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).

**290**

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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

**Features:**

- Equipped with oil-less piston vacuum pump ensures lubrication free and maintenance free.
- A 1000ml autoclaveable polycarbonate collection jar graduated in "rnl" 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-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<br>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 (±10mmHg)                    | 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<br>1000ml jar x 1 | Suction tubing<br>1000ml jar x 1 | Suction tubing<br>1000ml jar x 1 | Suction tubing x 1<br>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 2 pcs                              |           |
| 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