MultiDetek2

LDetek

FLEXIBLE COMPACT GAS CHROMATOGRAPH
FOR INDUSTRIAL AND LAB APPLICATIONS

With its plug and play philosophy and offering more features than ever, LDetek pushes further the possibilities with its new chromatograph system. It provides an attractive and cost effective solution for the industrial and laboratory market.

Based on the LDetek high performance detection technology, this stand-alone Gas Chromatograph is a flexible and customized platform providing the best solution for any type of gas analysis.

FEATURES & DESIGN:

- One chassis configuration (6U Rackmount)
- Multichannels
- Multimethods
- Multidetectors
- Up to 6 isothermal or 3 programmable oven combination
- Up to 5 high purity proportional diaphragm valves (carrier-sample)
- Easy maintenance with its slide out design and front opening door
- ppt, ppb, ppm and % gas analysis
- Built in PC with 8.4'' touch screen LCD & user-friendly interface
- Up to 10 high performance diaphragm valves
- Ethernet connectivity for remote control
- Integrated compact purifier with real end of life monitoring
- Serial/Profibus/Modbus communication protocols
- Fast parallel chromatography
- Multi heated zones to avoid cold points
- Purged & real time monitored zones for hazardous gases
- Multi sample injection techniques

BUILT IN PC WITH 8.4'' TOUCHSCREEN LCD & USER-FRIENDLY INTERFACE

The Multidetek-2 offers an easy and complete interface working on Windows 7 embedded. With its 8.4'' clear LCD touch screen, it allows the operator to navigate easily through the different menus. Moreover, the system includes an Ethernet port for remote control.

PUSH BUTTON

Friendly push button to open the front door.

KEYBOARD OPERATION

Beside the touch screen panel PC, each system is provided with a USB keyboard to operate the user interface.

COMPACT AND RACK MOUNT DESIGN

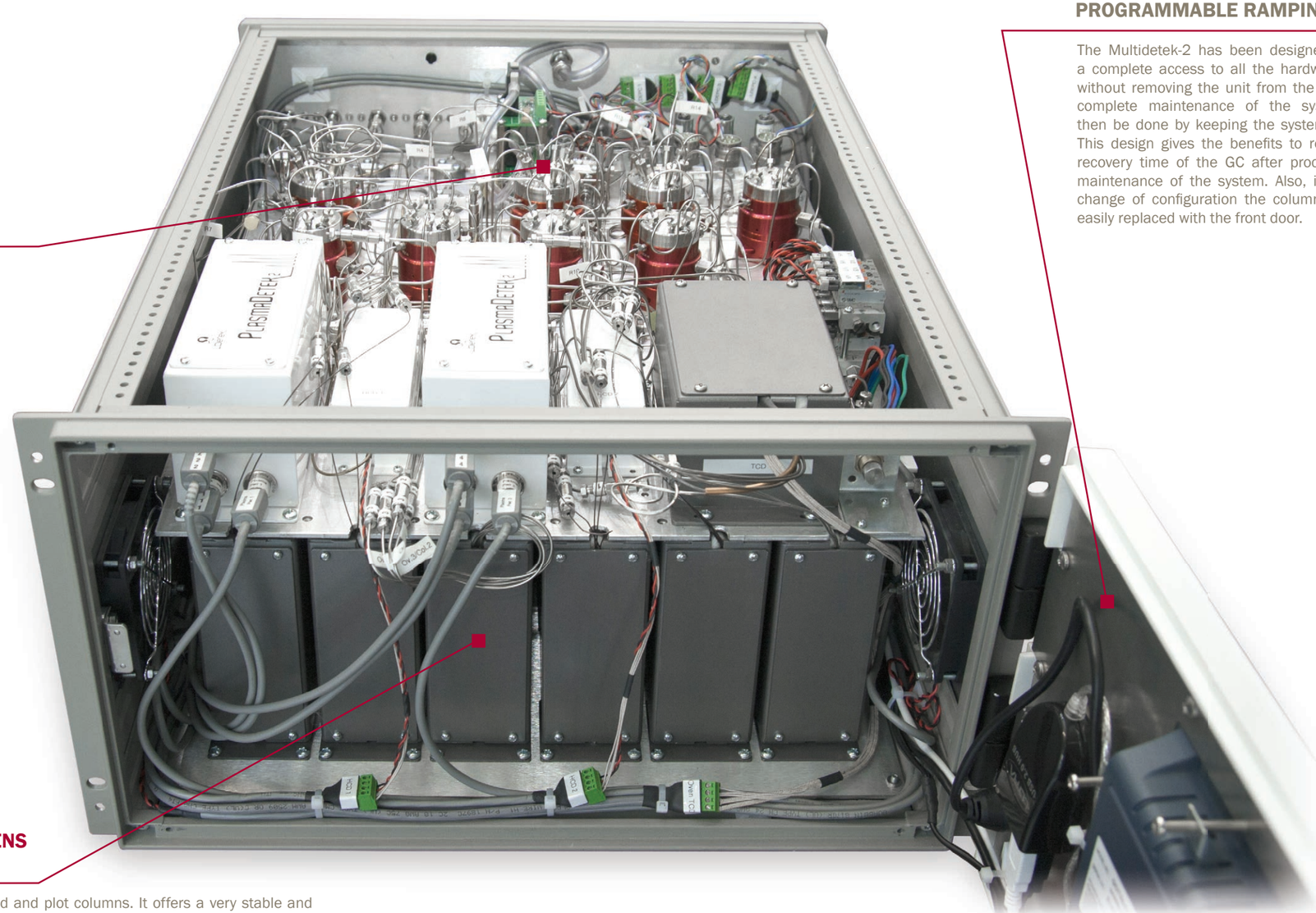
With a 6U rack mount chassis, this compact GC design can be installed in many different areas going from industrial to laboratory. It can be installed where available space is limited as well as transportable unit.

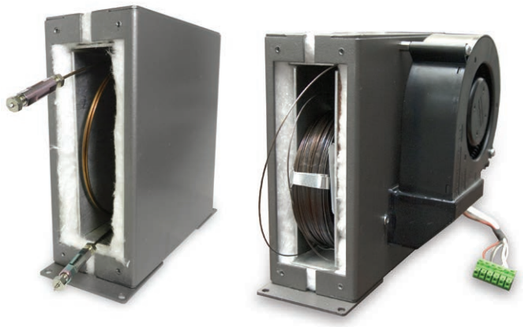
USB CONNECTOR / EXTERNAL STORAGE

Data can be stored on an external drive and/ or move to any other system or computer to be visualized at any time. This USB port is also available for software update or any other windows 7 interfacing.

HIGH PERFORMANCE DIAPHRAGM VALVE

The use of high performance diaphragm valve bring outstanding measurement performance. A longer lifetime and better performance on common GC techniques are achieved. They also allow new analysis methods. 1/16" and/or 1/32" diaphragm valve connections, tubing and columns are used. Using 1/32" can reduce carrier gas consumption reducing operation cost. Consult LDetek application notes for more information.



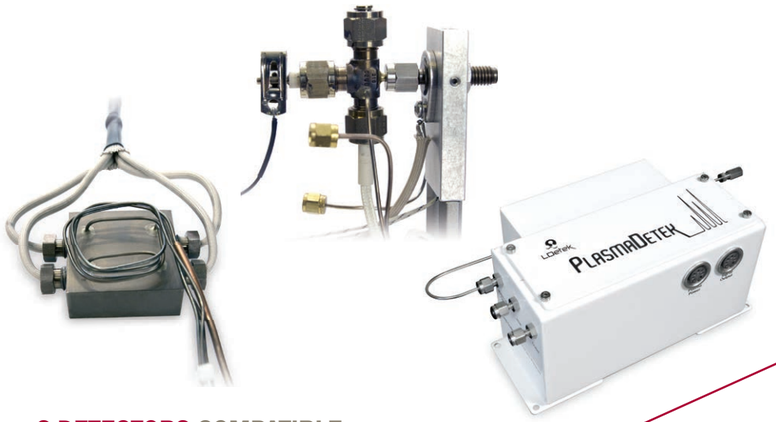


ISOTHERMAL AND/OR PROGRAMMABLE OVENS FOR ANY TYPE OF COLUMNS

The oven design can accept any type of packed, micro packed and plot columns. It offers a very stable and quick temperature controllable to proceed to high temperature column regeneration in the unit. With its multiple programmable ovens, more applications are feasible with reduced analysis time.

FRONT ACCESS TO THE ISOTHERMAL AND/OR PROGRAMMABLE RAMPING OVENS

The Multidetek-2 has been designed to give a complete access to all the hardware parts without removing the unit from the rack. The complete maintenance of the system can then be done by keeping the system on gas. This design gives the benefits to reduce the recovery time of the GC after proceeding to maintenance of the system. Also, in case of change of configuration the columns can be easily replaced with the front door.

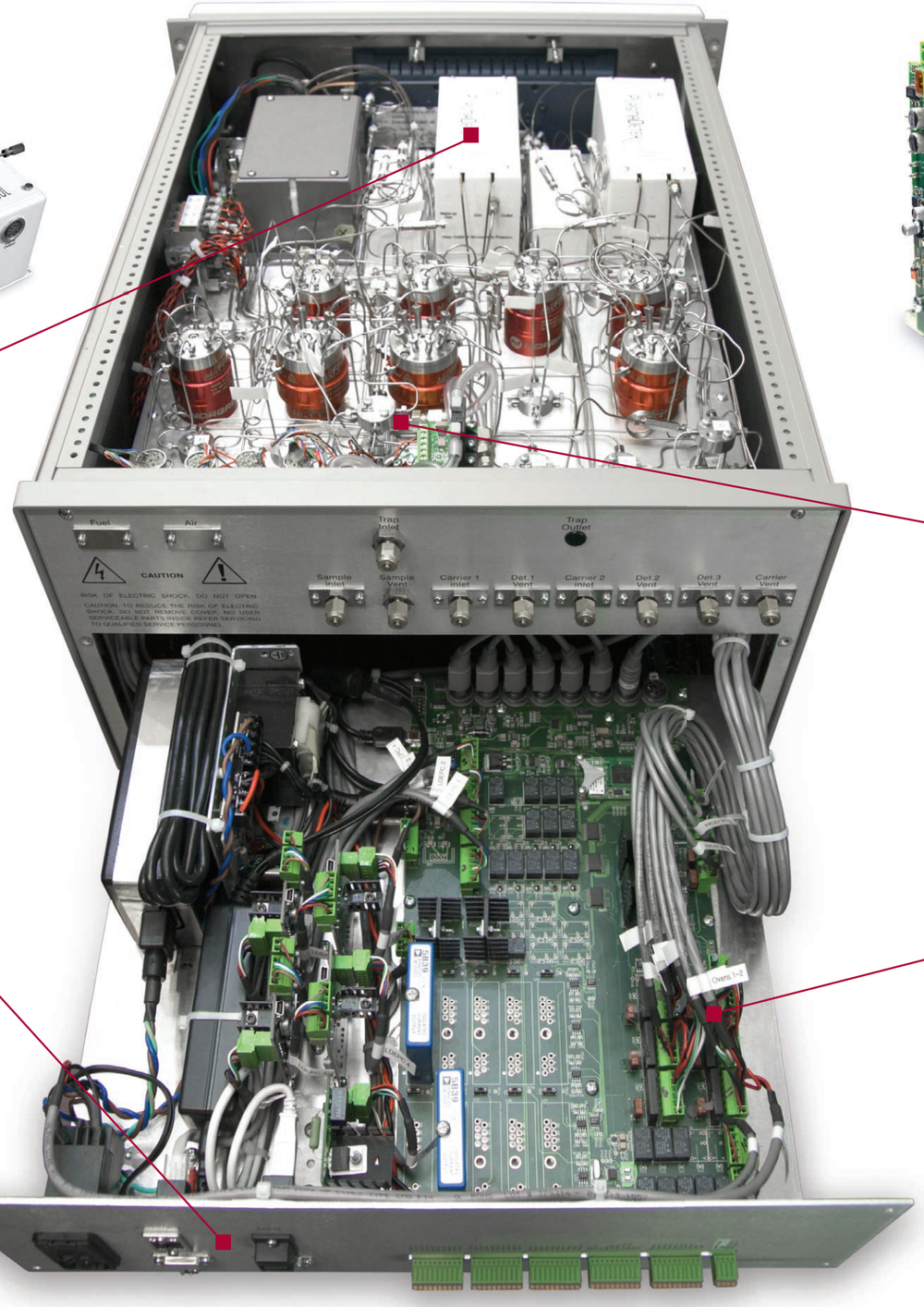


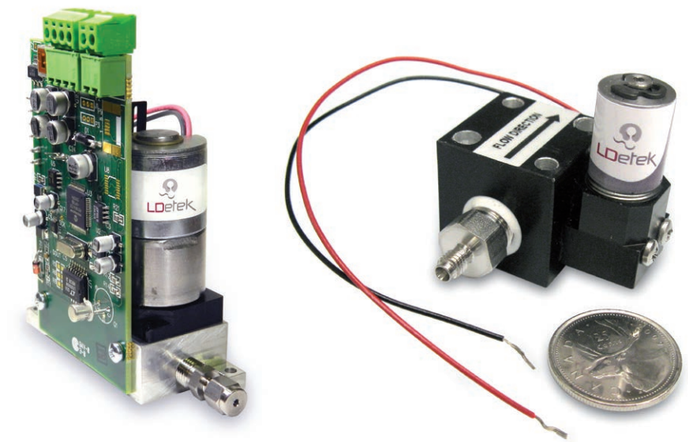
3 DETECTORS COMPATIBLE

Three detectors can be installed in the same chassis with a combination of any PED,TCD and FID detector. It gives more flexibility and the possibility to measure more components with one system.

INPUTS/OUTPUTS INTERFACE

Many inputs/outputs are available to be able to communicate and receive information from the device: Digital outputs for device status, serial communication (RS-232/485, Profibus, Modbus), analog inputs to acquire external device signal, 4-20 mA output for results information, ethernet for remote control, USB port. The MultiDetek2 is also compatible with Clarity from Data Apex.





ELECTRONIC FLOW CONTROLLER

With its electronic flow controller, the MultiDetek 2 offers the possibility to have automatic flow adjustment. LDetek has developed its own valve design offering low dead volume and fast response time. A manual version is also available.

EASY MAINTENANCE WITH ITS SLIDE OUT DESIGN

The same approach has been done on the back side of the unit. Other critical components can be reached from the back for maintenance purpose using its pull out rail system. Again, it gives the benefit to perform system maintenance with reduced recovery time without removing the gas lines from the unit.

MULTIPLE SAMPLE INJECTION AND COLLECTION TECHNIQUES

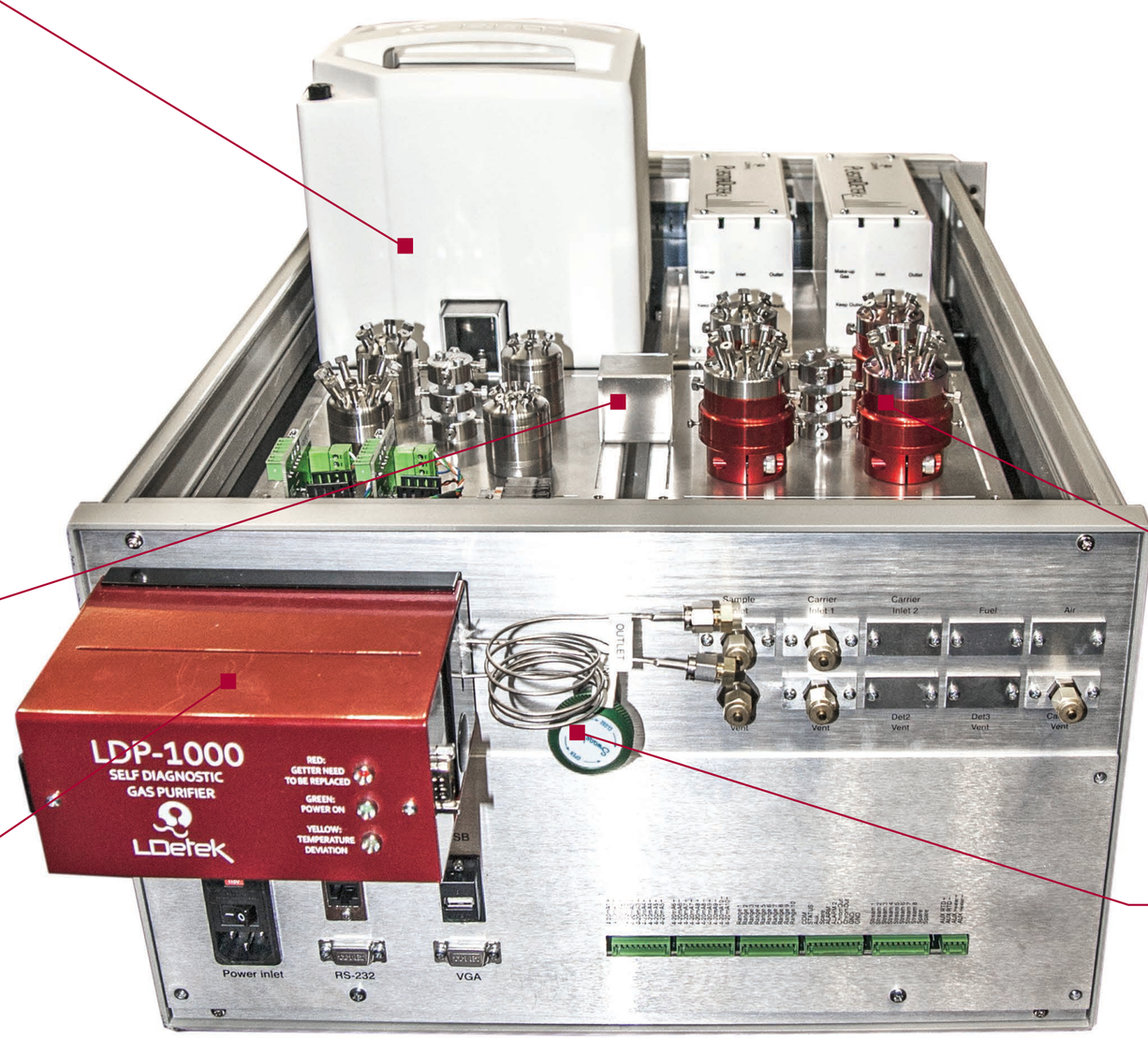
The most common sample injection techniques used in gas chromatography can be combined in the same platform. The use of a syringe, a micro pump, a proportional sample valve or a headspace auto sampler is possible with this modular philosophy.

NO COLD POINT

An interconnection channel network between each zone offers an environment without any cold point. An easy access to the tubing offers high flexibility.

COMPACT GAS PURIFIER

A compact gas purifier can be mounted on the back panel, reducing cost and simplifying the installation. The communication with the MultiDetek2 is then possible to give the status of the purifier. It can even use the PlasmaDetek to monitor the carrier gas purity to offer a real time measurement that indicates the purifier performances.



MULTI HEATED ZONES DESIGN

Using the same compact main frame, LDetek extends the MultiDetek2 by integrating a multi heated zone philosophy. Four independent heated zones can be mounted to extend the gas analysis possibilities. Each one is independently heated and can combine different types of detectors, valves and split/split less injector. Different operating temperatures are possible, ranging from ambient up to 200 Celsius isothermal. Each zone is easily accessible by removing its plastic cube cover using 2 finger screws. Each one offers a universal base plate that can fit multiple interchangeable components. The temperature controlled zone allows the stability of the detector environment. PlasmaDetek series, FID and TCD can be used in the same chassis to cover a broader spectrum of analysis.

PURGED ZONES

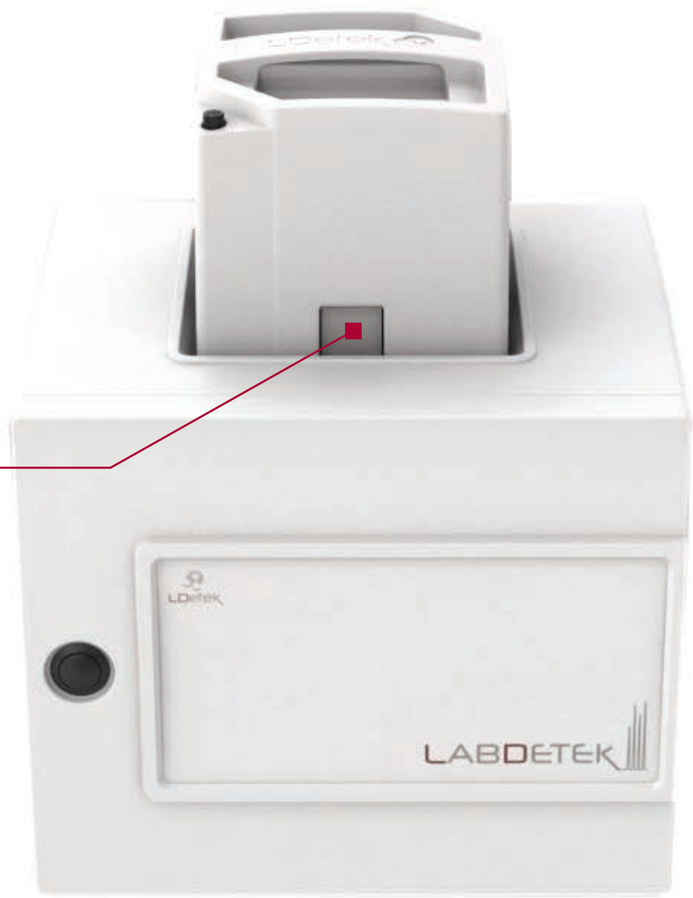
A purged environment can be mounted in each zone independently to allow analysis of any kind of sample, including corrosive, aggressive and toxic gases. Suitable components are then used according to the specific needs. Combined with the Plasmadetek technology, the purged environment can be monitored for troubleshooting and safety.

ISOLATION VALVES

In/Out isolation valves are directly mounted on the back panel to give more flexibility when moving the instrument, replacing the gas purifier or changing the carrier gas bottles.

PLASMADETEK3

The PlasmaDetek 3 is shown here to demonstrate how easy it is to replace or change the optical configuration of the detector. The sectional pen design allows replacing the optical filter in a few seconds. This gives the capability to upgrade or change the detector application. This PlasmaDetek 3 can also be heated up to 200 Celsius to extend the fields of application. The modular approach of this detector makes it suitable to any kind of application where sensitivity, selectivity and flexibility are required.

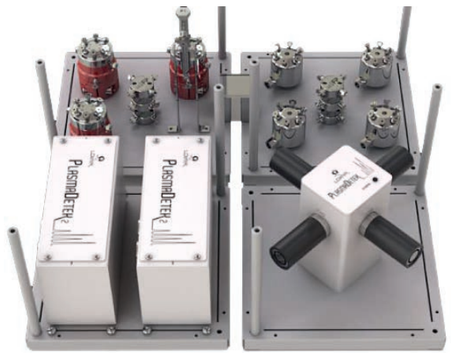


LABDETEK

The LabDetek module offers extra heated zones to extend the gas analysis possibilities. It can be combined with the MultiDetek2 compact gas chromatograph system. This external module can be controlled from the MultiDetek2 user friendly interface to change the settings. It offers a large programmable oven that can reach up to 350 Celsius and an additional isothermal zone for extra hardware like columns, detectors and valves.

ISOTHERMAL HEATED ZONES

Based on a universal heated mounting plate system, this extra area can accept detectors, valves and columns in an isothermal environment that can achieve an operating temperature up to 200 Celsius. An injection port is also accessible on top of this zone to inject using a syringe or a headspace auto sampler system.



MULTIDETEK2 CHART V2:

	Backgrounds →	Air	Ar	He	Ne	Kr	Xe	H_2	O_2	N_2	CH_4	CO	CO_2	N_2O	C_2H_4	C_3H_6	NH_3	CF_4	C_2F_6	SF_6	NF_3	C_4F_8	C_3F_8	C_3F_7	C_2F_5	SiH_4	HCl	Cl_2	WF_6	SiF_4	Syngas	Natural gas	← Back
Gas Types	Impurities	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	Impurities
↓	↓	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	↓
noble	Ar (argon)	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	Ar
noble	He (helium)	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	He
noble	Ne (neon)	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	Ne
noble	Kr (krypton)	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	Kr
noble	Xe (xenon)	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	Xe
permanent	H_2 (hydrogen)	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	H_2
permanent	O_2 (oxygen)	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	O_2
permanent	N_2 (nitrogen)	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	N_2
permanent	CO (carbon monoxide)	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	CO
permanent	CO_2 (carbon dioxide)	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	CO_2
permanent	H_2O (moisture)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	–	X	–	–	X	–	–	–	–	–	–	–	–	–	–	–	H_2O
fluorocarbon	CF_4 (tetrafluoromethane)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	–	–	CF_4
fluorocarbon	C_2F_6 (hexafluoroethane)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	–	X	X	X	–	–	–	–	–	–	–	C_2F_6
greenhouse	SF_6 (sulfur hexafluoride)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	–	X	X	X	X	X	X	X	X	–	–	SF_6
greenhouse	N_2O (nitrous oxide)	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	N_2O
inorganic	NF_3 (nitrogen trifluoride)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	–	X	X	X	X	X	X	X	X	X	–	–	NF_3
inorganic/toxic	NH_3 (ammonia)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	–	X	–	–	X	–	–	–	–	–	–	–	–	–	X	–	NH_3
inorganic/toxic	PH_3 (phosphine)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	–	–	–	–	–	–	–	–	–	X	–	PH_3
inorganic/toxic	AsH_3 (arsine)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	–	–	–	–	–	–	–	X	–	AsH_3
toxic	CH_2O (formaldehyde)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	–	X	–	–	X	–	–	–	–	–	–	–	–	–	X	–	CH_2O
toxic	C_2H_4O (acetaldehyde)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	–	X	–	–	X	–	–	–	–	–	–	–	–	–	X	–	C_2H_4O
hydrocarbon	CH_4 (methane)	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	CH_4
hydrocarbon	NMHC (non methane hydrocarbon)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	X	X	X	X	X	X	X	X	X	–	–	–	–	–	–	–	NMHC
hydrocarbon	C_2H_2 (acetylene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_2H_2
hydrocarbon	C_2H_4 (ethylene)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_2H_4
hydrocarbon	C_2H_6 (ethane)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_2H_6
hydrocarbon	C_3H_6 (propylene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_3H_6
hydrocarbon	C_3H_8 (propane)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_3H_8
hydrocarbon	C_3H_4 (propadiene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_3H_4
hydrocarbon	C_3H_4 (propyne)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_3H_4
hydrocarbon	C_4H_6 (1,3 butadiene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_4H_6
hydrocarbon	C_4H_8 (butylene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_4H_8
hydrocarbon	C_4H_{10} (isobutane)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_4H_{10}
hydrocarbon	C_5H_8 (pentadiene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_5H_8
hydrocarbon	C_5H_{10} (pentene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_5H_{10}
hydrocarbon	C_5H_{12} (isopentane)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_5H_{12}
hydrocarbon	C_6H_{12} (hexene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_6H_{12}
hydrocarbon	C_6H_{14} (hexane)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_6H_{14}
hydrocarbon	C_7H_{14} (heptene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_7H_{14}
hydrocarbon	C_7H_{16} (heptane)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_7H_{16}
hydrocarbon	C_8H_{16} (octene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_8H_{16}
hydrocarbon	C_8H_{18} (octane)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_8H_{18}
btex/aromatic	C_6H_6 (benzene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_6H_6
btex/aromatic	C_7H_8 (toluene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_7H_8
btex/aromatic	C_8H_{10} (xylene)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	C_8H_{10}
sulfur	H_2S (hydrogen sulfide)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	–	–	–	–	–	–	–	–	–	X	–	H_2S
sulfur	COS (carbonyl sulfide)	X	X	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	–	–	–	–	–	–	–	–	–	X	–	COS
sulfur	SO_2 (sulfur dioxide)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	–	–	–	–	–	–	–	X	–	SO_2
sulfur	CS_2 (carbon difulfide)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	–	–	–	–	–	–	–	X	–	CS_2
sulfur	CH_4S (methyl mercaptan)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	–	–	–	–	–	–	–	–	X	–	CH_4S
sulfur	THT (tetrahydrothiophene)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	THT
sulfur	TBM (tert-butylthiol)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	TBM
	Backgrounds →	Air	Ar	He	Ne	Kr	Xe	H_2	O_2	N_2	CH_4	CO	CO_2	N_2O	C_2H_4	C_3H_6	NH_3	CF_4	C_2F_6	SF_6	NF_3	C_4F_8	C_3F_8	C_3F_7	C_2F_5	SiH_4	HCl	Cl_2	WF_6	SiF_4	Syngas	Natural gas	← Back

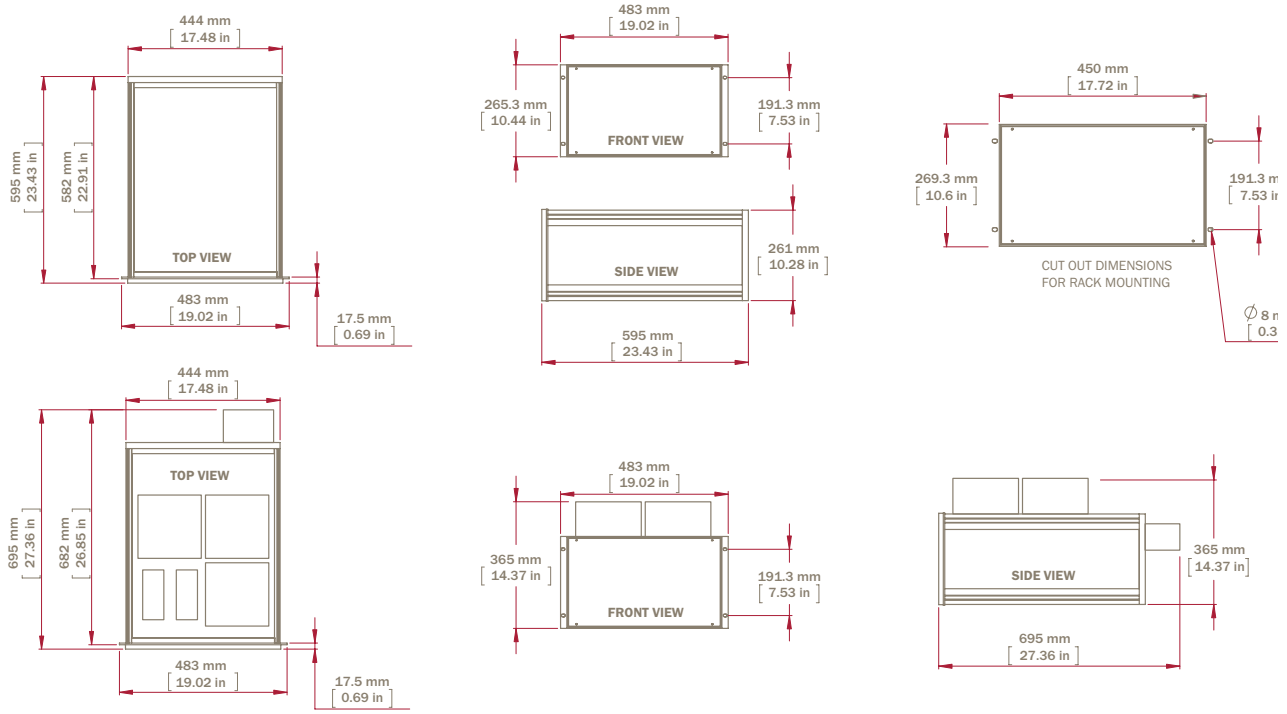
SPECIFICATIONS:

DETECTOR TYPE	PED, TCD, FID	
STANDARD FEATURES	• Manual or auto-ranging (user selectable) • Microprocessor controlled • Windows 7 embedded user-friendly interface • Ethernet port for remote control • Isothermal and/or programmable ramping ovens • Electronic flow control regulators for carrier & sample gases • 8.4'' LCD large touch screen	• Self diagnosis system with auto-resolve alarm • 4-20 mA isolated outputs • Alarm Historic • Digital system status output for remote monitoring (dry relay contact) • 2 alarms contact • High resolution Chromatogram output
OPTIONS	• Serial communication (RS232/485) / Profibus / Modbus / Ethernet • Compact purifier attached to the chassis for generating high purity carrier gas • Integrated stream selector system • Digital inputs for remote starting • Analog inputs for connecting external instruments • Remote control for stream selector (LDGSS)	• Purged zones for hazardous gases • Heated zones to avoid cold points • Monitoring system for hazardous gases • Split/split less injector (can be heated) • Integrated dilution system • Data Apex (Clarity) chromatography software
GAS CONNECTIONS	Sample: 1/8'' compression fittings or 1/8 VCR Vent: 1/8'' compression fitting	
CARRIER PRESSURE REQUIREMENTS	100 PSIG	
OPERATING TEMPERATURE	10 °C to 45 °C	
SUPPLY	115 VAC, 50 – 60 Hz or 220 VAC, 50 – 60 Hz	
POWER CONSUMPTION	Maximum 500W	

CERTIFICATION:

CE In compliance with EMC directive 2004/108/EC, EN 61000-6-2:2005 for immunity & EN 61000-6-4:2007 for emissions.

DIMENSIONS:



APPLICATIONS:

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INDUSTRIAL GAS

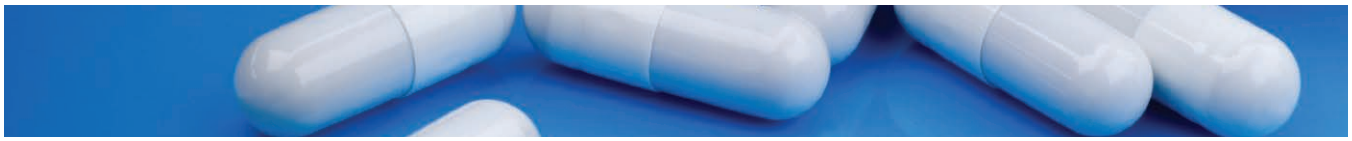
PETROCHEMICAL

AGRICULTURE

ELECTRONIC GASES & SEMICONDUCTOR

HYDROCARBONS PROCESSING

FOOD AND BEVERAGE



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