

LD MAG

2014 EDITION

- **PLASMADETEK 2**
When detection becomes intelligent!
- **LD8000**
The state-of-the-art trace nitrogen in argon,
helium or crude argon analyzer
- **LDP1000 GAS PURIFIER**
Improve your gas chromatograph measurements
- **MULTIDETEK 2**
A micro GC with huge capabilities
- **NEW DIRECTOR**
of International Sales

MORE THAN EVER
IN CHINA!

Where innovation leads to success



LDETEK COMPANY PROFILE

LDetek is a Canadian based company specialized in manufacturing, developing and integrating online gas analyzer, gas chromatograph system and many other accessories. Our mission is to provide reliable and performing systems with the best technology on the market.

With its commitment for continuous improvement, LDetek philosophy and members always push the technology limit further. It brings innovative products and solutions to a market in a severe need of new and better quality materials. The wide range of products, applications and patents developed, make LDetek products portfolio attractive to many different spheres of gas analysis activities. With a constant objective of offering quality products, LDetek always makes all effort to get rigorous quality control and all necessary level of approbation and/or certification.

Our products and services are provided by a team of specialists with a strong experience involved in gas analysis business.

With a well established network of offices and partners in over 20 countries, a complete and pro active worldwide support is provided.

CONTACT INFORMATION

Head office (Thetford Mines, Canada)

Sales and general request: info@ldetek.com

Technical support: support@ldetek.com

Phone : + 1 418 755 1319

Fax : + 1 418 755 1329

Chinese office

rli@ldetek.com

Phone: 010-87806892

Fax: 010-87806892

Mobile: 13911632686



Offices/Partners Listing

Thetford Mines, Canada (*Head Office*)

Beijing, China (*China Office*)

France (*Europe Office*)

Houston, Texas, USA

Portland, Oregon, USA

Denver, Colorado, USA

Rio De Janeiro, Brasil

Bueno Aires, Argentina

Frankfurt, Germany

Montiglio, Italy

Madrid, Spain

Oxfordshire, United Kingdom

Helsinki, Finland

St-Petersburg, Russia

Istanbul, Turkey

Wroclaw, Poland

Singapore

Seoul, Korea

Taipei, Taiwan

Tokyo, Japan

Bangkok, Thailand

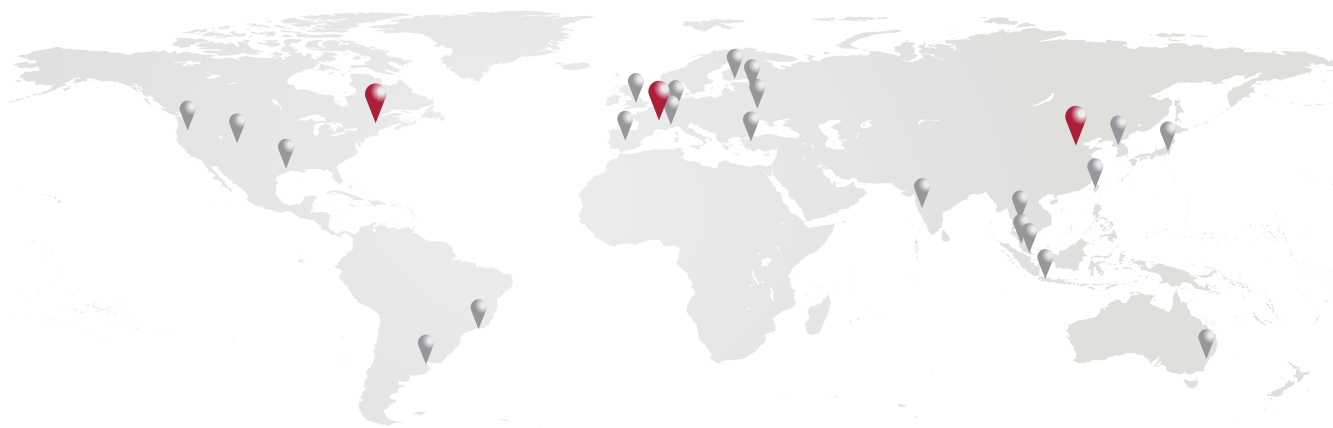
Peakhurst, Australia

Selangor, Malaysia

Jakarta, Indonesia

Akurdi, India

Kiev, Ukraine

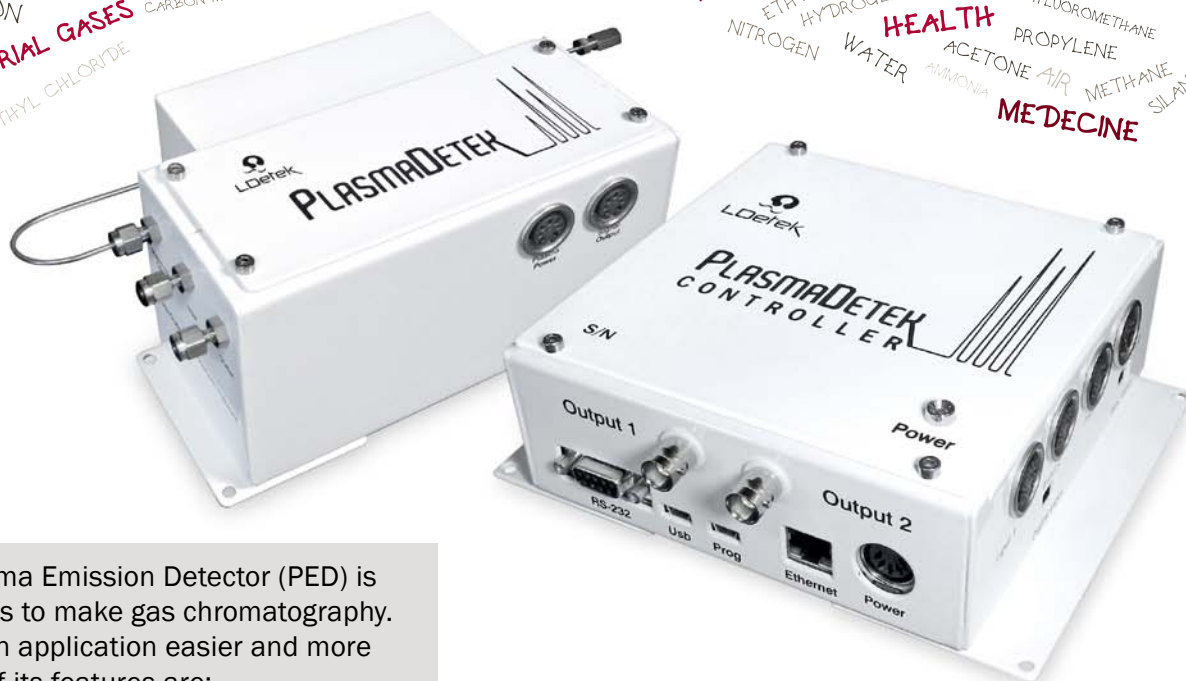


PLASMADETEK 2

When detection becomes intelligent!

CARBONYL SULFIDE
 HYDROCARBONS PROCESSING
 PROPANE
 OXYGEN
 NITRIC OXIDE
 KRYPTON
 DIFLUOROETHANE
 ETHANE
 XENON
 N-BUTANE
 PHOSPHINE
 TORMAL DEHYDE
 ISOBUTANE
 NITROUS OXIDE
 ARGON
 HELIUM
 CARBON DIOXIDE
 CARBON MONOXIDE
 NEON
 ARSINE
 METHYL CHLORIDE
 ACETALDEHYDE
 SULFUR DIOXIDE
 METHYL CHLORIDE
 ENVIRONMENT
 HYDROGEN
 ACETYLENE
 NITRIC DIOXYDE
 BEVERAGE
 INDUSTRIAL GASES
 GREENHOUSE GASES
 PETROCHEMICAL
 AGRICULTURE
 PHARMACEUTICAL
 FOOD

XENON
 ETHYLENE
 HYDROGEN SULFIDE
 TETRAFLUOROMETHANE
 PROPYLENE
 METHANE
 SILANE
 AMMONIA
 ACETONE
 AIR
 WATER
 NITROGEN
 HEALTH
 MEDICINE



This LDetek Plasma Emission Detector (PED) is bringing new ways to make gas chromatography. It makes common application easier and more efficient. Some of its features are:

SELECTIVITY

By using a wide range choice of optical filters and doping agents, this PED gives more flexibility to be selective on the impurities of interest. That makes the measurement easier to achieve and gives better results.

ARGON AS CARRIER GAS

As opposite of conventional ionization detectors, the PED can be used with argon as carrier gas. With the worldwide shortage of helium and price increasing constantly, the argon becomes the ideal choice to obtain a sensitive detector at low operation cost.



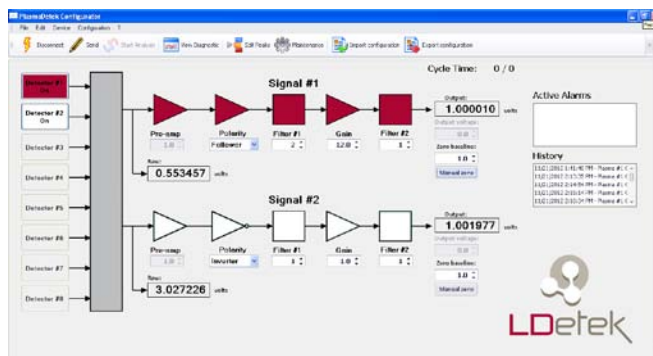
WIDE RANGE OF MEASUREMENT

This patent pending PED has a unique design that makes possible to have a wider range of measurement from ppb to % with the same detector. It brings the PED technology to a stage never achieved before in terms of stability, sensitivity and accuracy.

INTELLIGENT DETECTOR

With the plasma Controller, configuring the PED system as the user wants becomes easy. Filtering, signal amplification, output assignment and much more are possible with a simple software interface. Even more, the same controller can drive two different plasmas.

Two analog outputs are provided as standard on every controller, but data can also be sent digitally to any chromatograph software by using the serial, USB or Ethernet port. This avoids any analog acquisition board.





ANALYSIS OF PERMANENT GASES IN DIFFERENT MATRIX USING PLASMADETEK

The goal of this application is to analyze permanent gases in different matrix used for electronic industry. The investigation of these impurities is important for gas providers to ensure the high purity of their products to their customers.

This analyzer has been configured with two independent channels, each one dedicated to one matrix. The system is based on a GC Clarus 580 from Perkin Elmer equipped with electronic pressure regulators. Two high quality 10 ports diaphragm valves with internal purge ensure sample injection directly on-column and matrix backflush. The precolumn is a semi-capillary Plot Q 30m x 530um column. The analytical column is a Molsieve 5A 30m x 530um column with a by-pass flow to elute CO₂. Two detectors Plasmadetek with two internal detectors each are used to quantify the components. The signal coming from each PED is sent to the acquisition software Totalchrom.

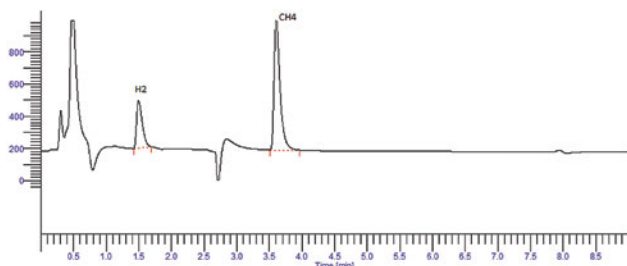


Figure 2

COMPONENT	CONC. (PPM)	PEAK HEIGHT	NOISE	S/N	LOD (PPB) S/N=3	LOQ (PPB) S/N=5
H ₂	5	296	0.02	14800	1.0	1.7
CH ₄	5	808	0.02	40400	0.4	0.6
CO ₂	5	223	0.02	11150	1.3	2.2
N ₂	5	793	0.02	39650	0.4	0.6
CO	5	110	0.02	5500	2.7	4.5

Figure 4

The use of Plasmadetek in this system provides excellent results regarding sensibility and selectivity. The Plasmadetek is ideal for this kind of analyses because it can support high volume of sample injection and we can adjust Make Up gas flow to obtain a suitable chromatogram. The installation of Plasmadetek on a Clarus GC is easy and don't need physical modification of the GC. Its design is in full harmony with the GC whose all parts are accessible for an easy modification (figure 5).

One of the main advantages of Plasmadetek is that it is maintenance free, so that gives a robust system for long analyses sequences in the laboratory or for on-line measuring analyzers. The large range of concentrations (from ppb to %) and the available selectivity of Plasmadetek make this detector ideal to work in a lot of domains where GC is necessary.

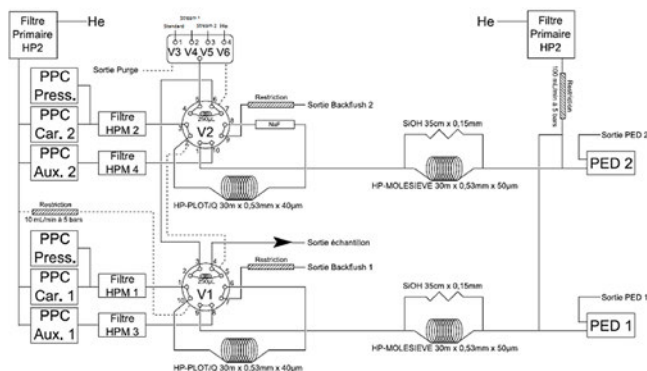


Figure 1

A 5 ppm standard of each permanent gas has been used to calibrate the system and determine LOQ for each component. The chromatograms shown below illustrate the results we can obtain from this configuration. The chromatogram in figure 2 is obtained with the detector optimized for H₂ and CH₄. The chromatogram in figure 3 is obtained with the detector optimized for N₂, CO and CO₂.

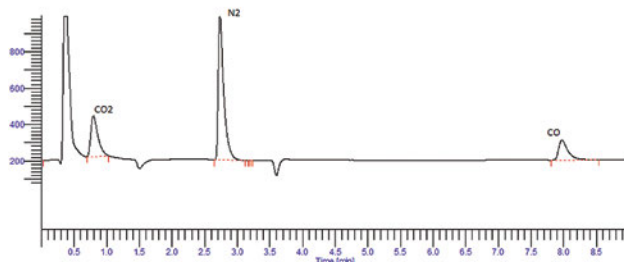


Figure 3

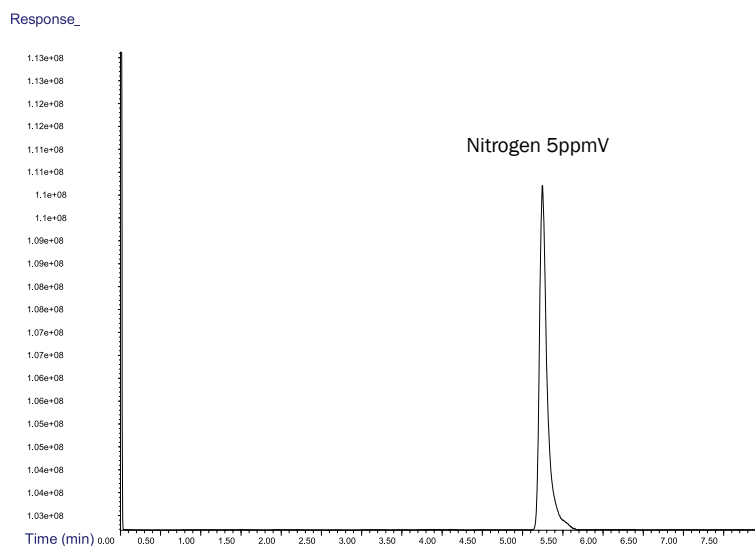


Figure 5

Application: Online analysis of four different streams. Monitoring nitrogen and impurities (H_2 , CH_4 , HCs, O_2 and CO_2) at low level in Helium matrix with the PlasmaDetek.



The online analysis controller software (SRA Prochem) manages and anticipates the selection of the next stream. Alarms are generated when impurities concentration becomes critical. Peak reproducibility using the complete system is close to 1% (RSD; n=5).



SRAINSTRUMENTS
150 rue des Sources
69280 Marcy l'Etoile
France

T : 04.78.44.29.47
F : 04.78.44.29.62
info@sra-instruments.com
www.sra-instruments.com

SA à Directoire et Conseil de surveillance
au capital de 150.000 €
RCS Lyon B 342 068 731
APE 4669B
SIRET: 342 068 731 00039
Code TVA FR 40342068731

 **Agilent Technologies**
Premier Solution Partner

ANALYSIS OF IMPURITIES IN ARGON USING COMPACTGC WITH PLASMADETEK-2

Due to Helium shortage, gas suppliers see an increased request for alternative gases. Their clients demand high purity with exact specification for various applications like instrumental use and industrial production. Often PDD (Pulsed Discharge Detector) is used for measuring impurities in bulk gases. But in case of determining the purity of Argon, separation problems arise with this detector because Helium is used as carrier gas and the bulk Argon elutes close to Oxygen. The Plasmadetek-2 from LDetek offers the perfect solution here, since Argon is used as carrier gas, and therefore the bulk peak is not seen at all.

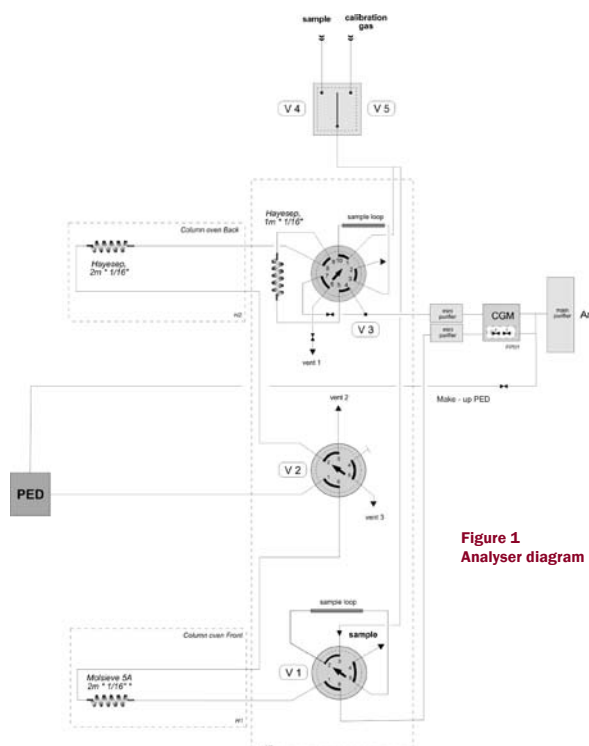


Figure 1
Analyser diagram

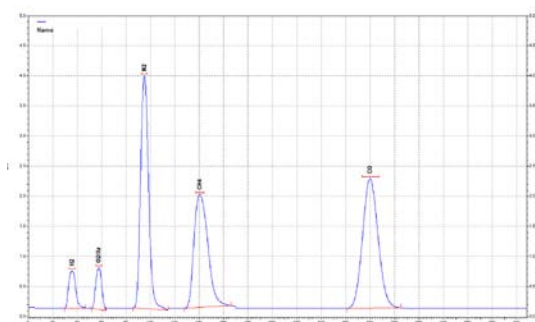


Figure 2
Chromatogram
Molsieve column

Agilent 35900E Inte...	H2 Area	O2/Ar Area	N2 Area	CH4 Area	CO Area
molsieve testFATHel...	203067.00	194281.00	1452795.00	1218724.00	1591571.00
molsieve testFATHel...	202392.00	195591.00	1452917.00	1219249.00	1590896.00
molsieve testFATHel...	205617.00	194085.00	1455726.00	1216440.00	1592798.00
molsieve testFATHel...	204789.00	195496.00	1455690.00	1223070.00	1582777.00
molsieve testFATHel...	205039.00	193859.00	1455817.00	1227535.00	1587183.00
molsieve testFATHel...	205447.00	195147.00	1455831.00	1220549.00	1584348.00
molsieve testFATHel...	205320.00	196256.00	1454897.00	1224674.00	1592919.00
molsieve testFATHel...	203894.00	195299.00	1455741.00	1226357.00	1573995.00
molsieve testFATHel...	206239.00	196406.00	1456723.00	1225968.00	1590468.00
molsieve testFATHel...	205231.00	194874.00	1457012.00	1227555.00	1587986.00
Min:	202392.00	193859.00	1452795.00	1216440.00	1573995.00
Max:	206239.00	196406.00	1457012.00	1227555.00	1592919.00
Mean:	204703.50	195129.40	1455314.90	1223012.10	1587494.10
Std Dev:	1211.05	867.00	1419.98	4022.07	5862.43
%RSD:	0.59	0.44	0.10	0.33	0.37

Figure 3 - Repeatability

Figure 1 shows a two-channel analyser with single Plasma Emission Detector. Valve V1 and Molsieve column analyse H₂, N₂, O₂, CH₄ and CO in Ar. A second channel around valve V3 is present for analysing CH₄, CO₂, N₂O and Ethane in Ar. For analysis of impurities in N₂, a fore-flush column switching option is added to this channel to vent the bulk N₂. Figure 2 shows the Molsieve chromatogram of an 11 ppm calibration standard. Figure 3 demonstrates the obtained repeatability, which is excellent. Valve V2 combines both channels to a single PlasmaDetect-2 detector, which contains up to four optical sensors for optimal sensitivity for each individual component, see figure 4. Figure 5 shows the integrated analyser using CompactGC^{4.0}.

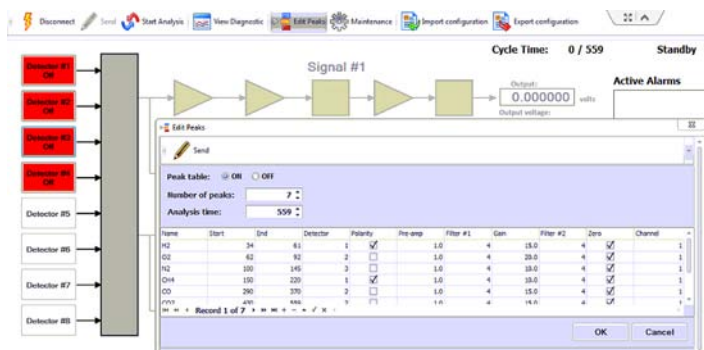


Figure 4 - programming 4 optical sensors in one PlasmaDetect-2 detector



Figure 5 - CompactGC^{4.0}

GLOBAL ANALYSER SOLUTIONS
P.O. Box 2148, 4800 CC Breda, The Netherlands
T: +31 (0)76 5411800 F: +31 (0)842 206757
info@gas-site.com www.gas-site.com



LD8000

The **state-of-the-art** trace nitrogen in argon, helium or crude argon analyzer



LDetek has brought the measurement of trace nitrogen to another level. The LD8000 is now an instrument offering many possibilities that the market was looking for a long time:

ZERO GAS FREE CALIBRATION

With a unique design, you can avoid the need of providing zero gas to the analyzer during calibration. By having a zero gas generator in the analyzer, only span and sample gases are required to operate the unit. The zero generator system ensures stability at low ppb level. It also avoids presence of negative readings seen in common trace nitrogen instrument when bad zero calibration is performed.

An automatic system is managed by the software of the analyzer. When choosing zero gas calibration, the zero gas system is automatically selected to provide the zero reference needed to calibrate it. The measurement can now be more accurate than ever at low concentration without using an external gas heated purifier.

This is also a cost effective configuration since savings are done on the installation of the zero gas (tubing, valves, gas cylinder, gas regulators, etc) and the need of an outside gas purifier.

PLASMADETEK

By using the PlasmaDetek technology, the LD8000 is equipped with the state of the art detector for such analysis. Noise level, accuracy and stability has reached performance that makes such trace nitrogen analyzer the ideal tool for any argon production plant, laboratories or any other needs.

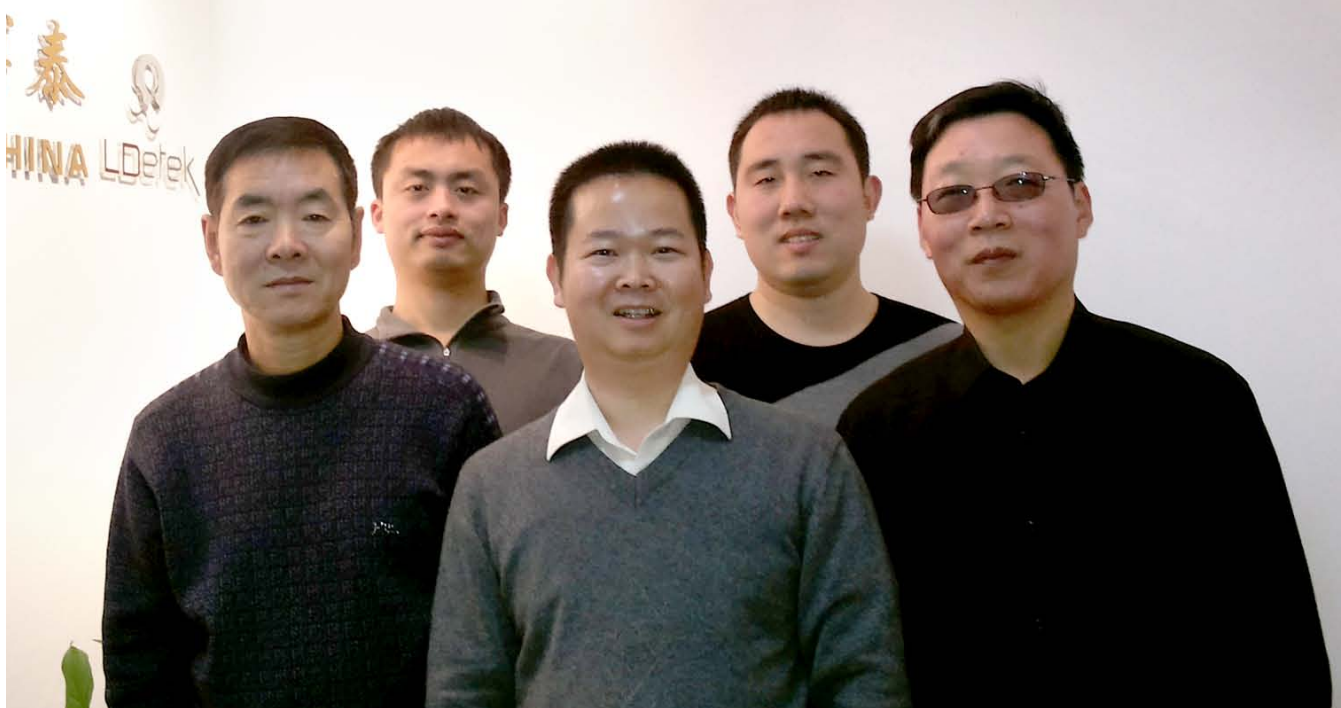
Be sure to look at the LD8000 design report on our web site for more details.

CRUDE ARGON ANALYSIS

The LD8000 can now measure trace nitrogen in a mixture of argon and oxygen. The use of gas chromatograph is then avoided and response time is faster by having reading almost instantly.

A few ppm up to % N₂ can be measured with this unique device developed by LDetek. Now all CLAR (Crude Liquid Argon) producers and users have the right tool to monitor the level of this critical component.





LDETEK IS **MORE THAN EVER IN CHINA!**

LDetek为了更好的服务中国客户，现在LDetek已经建立了LDetek中国区办公室。它承担着中国市场开拓，产品售前、售后技术服务，零备件供应。代理商和经销商的开拓和管理等业务也由这个唯一的机构管理并实现高效化运作。我们的宗旨是：给客户提供一个一流的分析方案，及时到位的技术服务，共享国际高端的分析仪器技术。

LDetek产品可以覆盖很多领域的气体分析需求，所以LDetek中国有责任去发展所有的可能的市场，如气体生产，石油化工、空分、煤化工、特种电子气体和高纯气体等。

LDetek中国位于北京，并由黎文字先生管理，但我们的技术人员覆盖整个大陆地区。LDetek技术服务中心具有提供仪器演示，仪器维修以及对客户和经销商进行应用培训的功能。我们的每位技术人员均经过LDetek总部的培训。

由于中国对LDetek产品的越来越多的需求，建立LDetek中国办公室将大大提高我们的支持速度，提高服务和零部件的供应。项目跟踪也会得到完善。终端用户和经销商可以用中文和LDetek中国相关人员进行交流和沟通。

如有任何问题，请随时和我们联系：

CHINA

Room 1229-1230, East-Asia Xinhua Business Building, No.6 Guoyuan Road, Fengtai District, Beijing, China.

Phone: 010-87806892 | **Fax:** 010-87806892 | **Mobile:** 13911632686

Email: rli@ldetek.com | **Contact:** 黎文字 (Rain)

LDetek has now an office in China to serve better its Chinese customers in terms of market development, technical service of pre-sales and after sales, and spare parts supply. The distribution network will also be managed by this unique channel to make it more effective. LDetek China office goal is to provide on-time and in place technical service and offering high-end gas analyzer technology to the Chinese market.

LDetek can cover many fields of gas analysis need. So LDetek China will be responsible to develop all possible markets for our technology such as gas production, petrochemical, air separation, coal-chemical, special electronic gas and UHP.

Managed by Mr. Rain Li, LDetek china office is located in Beijing but have technicians covering the whole mainland. The technical service center has the capabilities to offer analyzer demonstration, analyzer repair and application training for customers and distributors. Each technician has been trained by LDetek headquarter.

Because of the increasing demand of LDetek products in China, having this office will enhance the speed of support, service and spare parts supply. Projects follow up will also be improved. Customers and distributors will be able to communicate with LDetek personnel in Chinese.

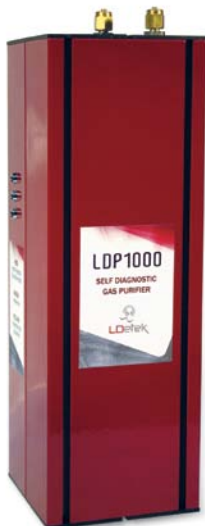
Do not hesitate to contact us for any questions :

CANADA (head Office)

271 Saint-Alphonse Sud, Thetford Mines, Québec, Canada G6G 3V7

Phone: + 1 418 755 1319 | **Fax:** + 1 418 755 1329

Email: info@ldetek.com



LDP1000

Improve your gas chromatograph measurement

The LDP1000 purifies noble gases, nitrogen or hydrogen at level that give the best reference for any gas chromatograph and GC/MS. Its non-evaporable zirconium-based getter alloy is contained in a 316L Stainless Steel bloc to ensure high purity and safe operating mode. It removes impurities down to ppt level (total impurities).

SENSITIVITY IMPROVED

Having a contaminated carrier gas, sensitivity of the impurities that need to be measured will be affected. By using the LDP1000, you ensure that your GC has the best reference gas to be able to get the maximum performance of your detection system.

Contamination brings also an undesired level of noise that affects as well the detection limit of your system. The LDP1000 ensures to keep this signal/noise ratio as high as possible.

It is even worse when the contamination is higher than the sample to measure. Since the sample is more pure than the carrier gas, you get a negative peak for the impurity. The measurement is completely erroneous and cannot be used.

TWO BEDS OF PURIFICATION

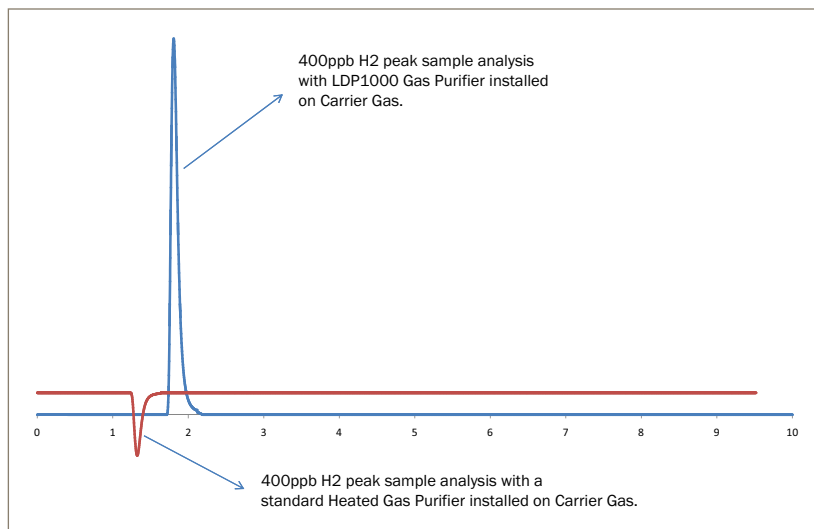
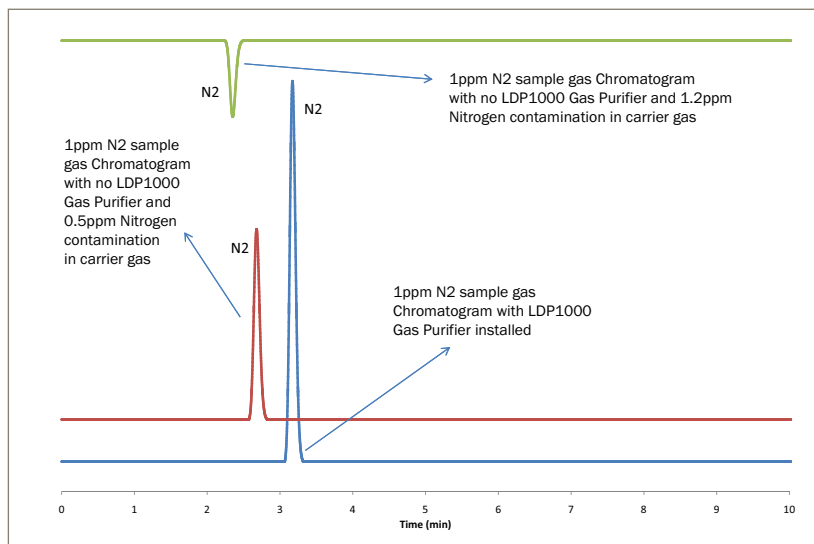
To ensure high purity, the LDP1000 noble gas version has two beds of purification. The first stage has an elevated temperature grabbing all components except some low level hydrogen. At this temperature, some H_2 can be released from this bed. The amount of H_2 can be as high as a few hundred ppb with the use of one stage of purification only.

By having a second bed of purification operating at a different temperature, the hydrogen out of the first stage can then be totally trapped.

Both bed temperatures are controlled by a microprocessor ensuring stability and efficiency of the purifier.

Features :

- Interchangeable getter
- Auto Diagnostic LEDs
- Serial port
- Extended lifetime



TOXIC GASES
REFINERY ANALYSIS
FUEL CELL
TOGA
ASU

MULTIDETEK 2

A micro GC with huge capabilities



HALOGENATED GASES ANALYSIS
UHP CO₂
NATURAL GAS
SEMICONDUCTOR GASES
COAL CHEMICALS PLANT
STEAM REFORMING
BEVERAGE

The newest MultiDetek micro GC series, the MultiDetek 2 (MD2) offer, more capabilities than ever. With its unique design that is suitable for the industrial and laboratories world, a wide range of application can be achieved.



ENVIRONMENT



HYDROCARBONS PROCESSING



INDUSTRIAL GAS



FOOD AND BEVERAGE



PETROCHEMICAL



PHARMACEUTICAL AND MEDICINE



AGRICULTURE



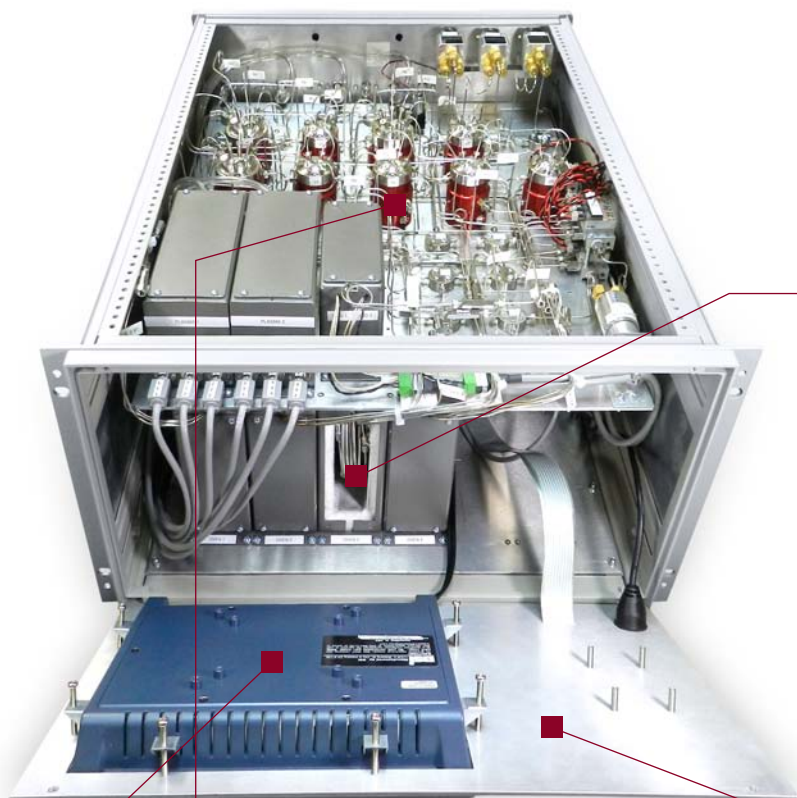
HEALTH AND SAFETY

Where innovation leads to success

www.ldetek.com

MULTIDETEK 2

A micro GC with huge capabilities



■ ISOTHERMAL AND PROGRAMMABLE OVEN FOR ANY TYPE OF COLUMNS

The oven design can accept any type of packed, micro packed and capillary columns. It offers a very stable and quick temperature control able to proceed to high temperature column regeneration in the unit. The front access to the ovens can be done without removing unit from its rack. With its optional ramping and programmed oven, some more applications are feasible with reduced analysis time.

■ HIGH PERFORMANCE VALVE

The combination of the PlasmaDetek and the high performance GC valve bring outstanding measurement performance. A longer lifetime and better performance on common GC techniques are achieved. They also allow new methods that are not possible with other commercial detectors and valves. Consult LDetek application notes for more information.

■ FRONT ACCESS TO THE ISOTHERMAL AND/OR PROGRAMMED 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.

■ LARGE 8.4" TOUCH SCREEN & USER FRIENDLY INTERFACE

The Multidetek-2 offers an easy and complete interface working on Windows XP 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.



MULTIDETEK 2

A micro GC with huge capabilities



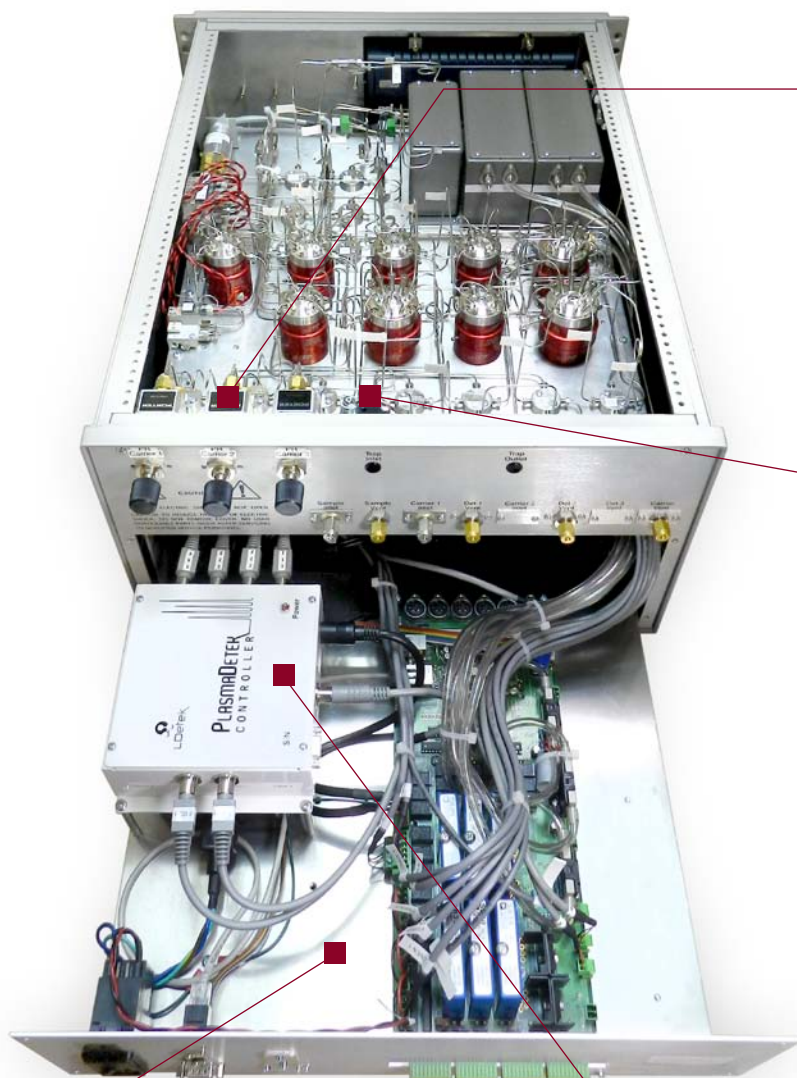
■ ELECTRONIC FLOW CONTROLLER (LDETEK DESIGN)

With its electronic flow controller, the Multidetek-2 offers the possibility to have automatic carrier flow adjustment. LDetek has developed its own valve design offering low dead volume and fast response time to allow accurate carrier flow. A manual version of the carrier flow regulator can also be used.



■ ELECTRONIC SAMPLE VALVE (LDETEK DESIGN)

Keeping its already proven LD8000 micro valve design for sample control, the Multidetek-2 guarantee no leak and no dead volume with this high performance electronic controlled online valve to achieve ppb levels.



■ 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 rails system. Again, it gives the benefit to perform system maintenance with reduced recovery time without removing the gas lines from the unit. Also offering its optional integrated mounted in gas purifier module, the Multidetek-2 bring some more benefits by reducing installation cost and space. Its compact design, which can introduce multiple configurations with an integrated purifier and stream selector system in one chassis, pushes further the possibilities of this GC system.

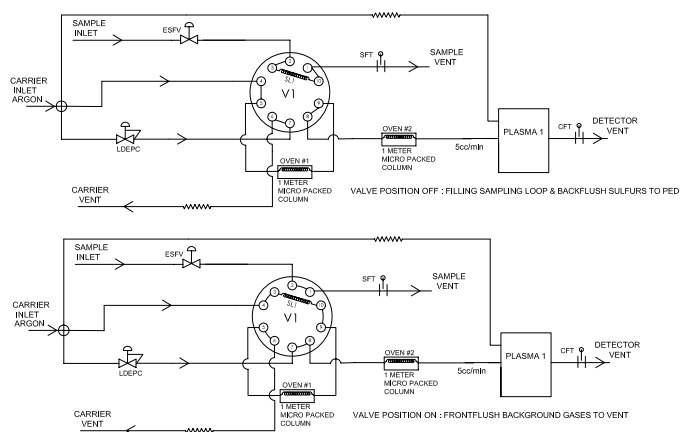
■ LDETEK HIGH PERFORMANCE PLASMA DETECTOR

Using its redesigned Plasma Emission Detector, The MultiDetek-2 can now achieve lower detection limit and can also extend its range of application. Its plasma detector has the benefit to be a clean and maintenance free system. It can easily achieve low ppb detection limit using either argon or helium as carrier gas. The detector can be configured for low ppb as well as high percentage level. It then gives the opportunity to configure the Multidetek-2 system for any kind of gas analysis applications.

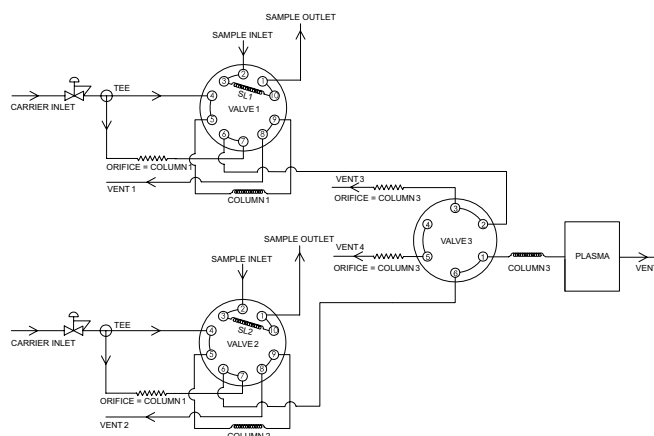
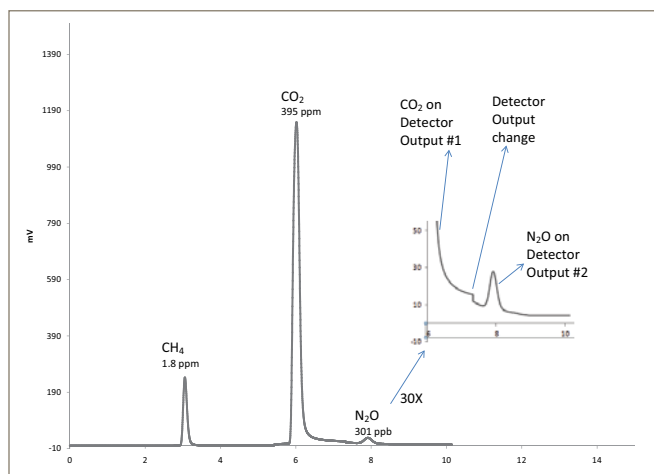


APPLICATIONS AND DESIGNS EXAMPLE

H₂S AND COS IN SYNGAS



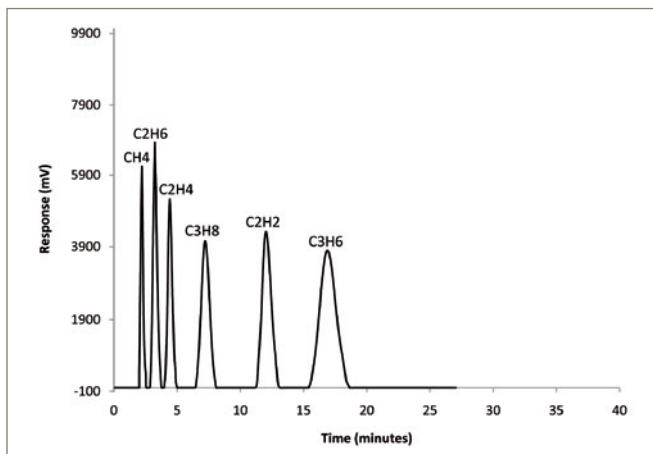
GREENHOUSE



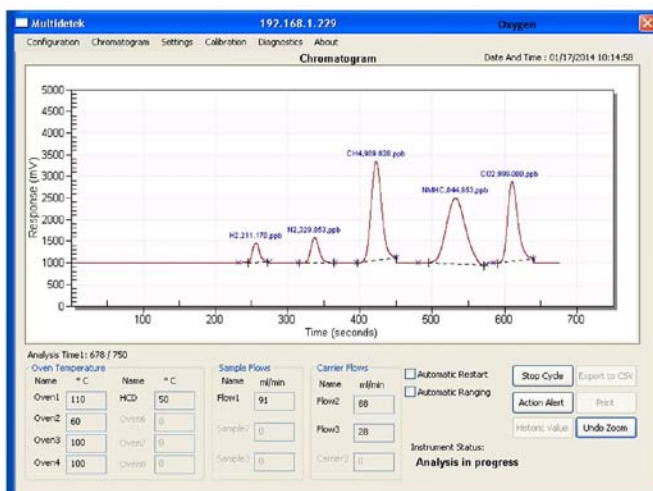
PERMANENTS AND LIGHTS HYDROCARBONS IN OXYGEN USING ARGON CARRIER GAS ONLY



MD 2 HIGH RESOLUTION CHROMATOGRAM OUTPUT



MD 2 USER INTERFACE CHROMATOGRAM



VISIT OUR WEB SITE TO CONSULTS SOME OF OUR APPLICATION NOTES

LD12-1	Greenhouse analysis with PlasmaDetek
LD12-2	Permanent and light hydrocarbon analysis with PlasmaDetek
LD12-3	Analysis of argon in pure oxygen with PlasmaDetek and Argotek
LD12-4	Analysis of nitrogen in oxygen and hydrogen bulk
LD12-5	Improving Gas Chromatograph measurements with the use of the LDP1000 gas purifier
LD12-6	Increasing argon production with the MultiDetek
LD12-7	Analysis of Neon-Hydrogen-Argon-Krypton-Nitrogen with the PlasmaDetek & the HSR-Etek column
LD12-8	Analysis of Sulfurs with the PlasmaDetek
LD12-9	Hydrocarbons measurement for Oxygen production using PlasmaDetek & Multidetek-2
LD13-1	Analysis of UHP Hydrogen production using PlasmaDetek-2 & micro GC Multidetek-2
LD13-2	Measurement of nitrogen in a mixture of Argon/Oxygen (crude argon) online with the LD8000-Crude
LD13-3	Measurement of H2S and COS in Syngas



NEW DIRECTOR OF INTERNATIONAL SALES

LDetek is proud to announce the appointment of **Ciro Granato** as **Director of International Sales**. Mr. Granato will be in charge of managing the worldwide distribution network, supporting our current customers and developing new markets. His 20 years of experience in international sales and business development, along with his solid technical background and multilingual skills (English, Portuguese, Spanish and French) will bring to LDetek the help needed to continue to be a world-class supplier of gas analytical solutions and to move the company to the next level of commercial success.

LDetek est fier d'annoncer la nomination de **Ciro Granato** comme **Directeur des Ventes Internationales**. M. Granato sera en charge de gérer le réseau de distribution mondial, supporter nos clients actuels et développer de nouveaux marchés. Ses 20 ans d'expérience en ventes internationales et développement d'entreprises, ainsi que ses solides connaissances techniques et ses compétences multilingues (Portugais, Espagnol, Anglais et Français) apporteront à LDetek l'aide nécessaire pour continuer d'être un fournisseur de classe mondiale en solutions analytiques gazeuses et élever à un niveau supérieur les succès commerciaux.

LDetek se complace en anunciar el nombramiento del Sr. **Ciro Granato** como **Director de Ventas Internacionales**. **Ciro Granato** se encargará de la gestión de la red de distribución en todo el mundo, apoyando a nuestros clientes actuales y desarrollando nuevos mercados. Sus 20 años de experiencia en ventas internacionales y desarrollo de negocios, además de su sólida formación técnica y habilidades multilingües (español, inglés, portugués y francés) traerán a LDetek la ayuda necesaria para continuar siendo un proveedor de clase mundial de soluciones de análisis de gases y para llevar a la compañía al siguiente nivel de éxito comercial.

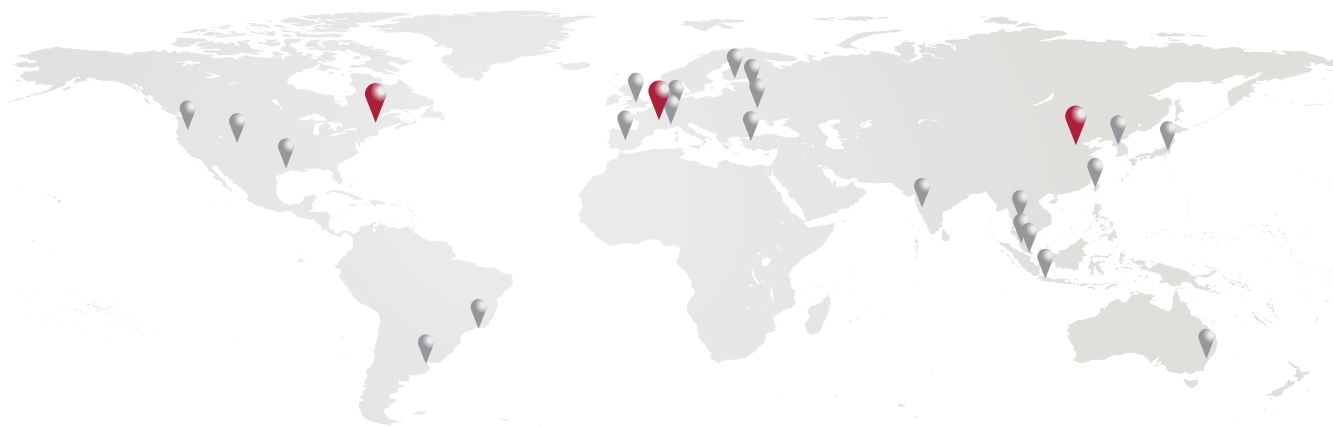
LDetek tem o prazer de anunciar a indicação de **Ciro Granato** como **Diretor de Vendas Internacionais**. **Ciro Granato** será responsável pela gestão da rede de distribuição em todo o mundo, apoiando nossos clientes atuais e desenvolvendo novos mercados. Seus 20 anos de experiência em vendas internacionais e desenvolvimento de negócios, juntamente com sua sólida formação técnica e competências multilingues (português, inglês, espanhol e francês) contribuirão para que a LDetek continue sendo um fornecedor de soluções analíticas de gás da mais alta qualidade, elevando a empresa ao próximo nível de sucesso comercial.

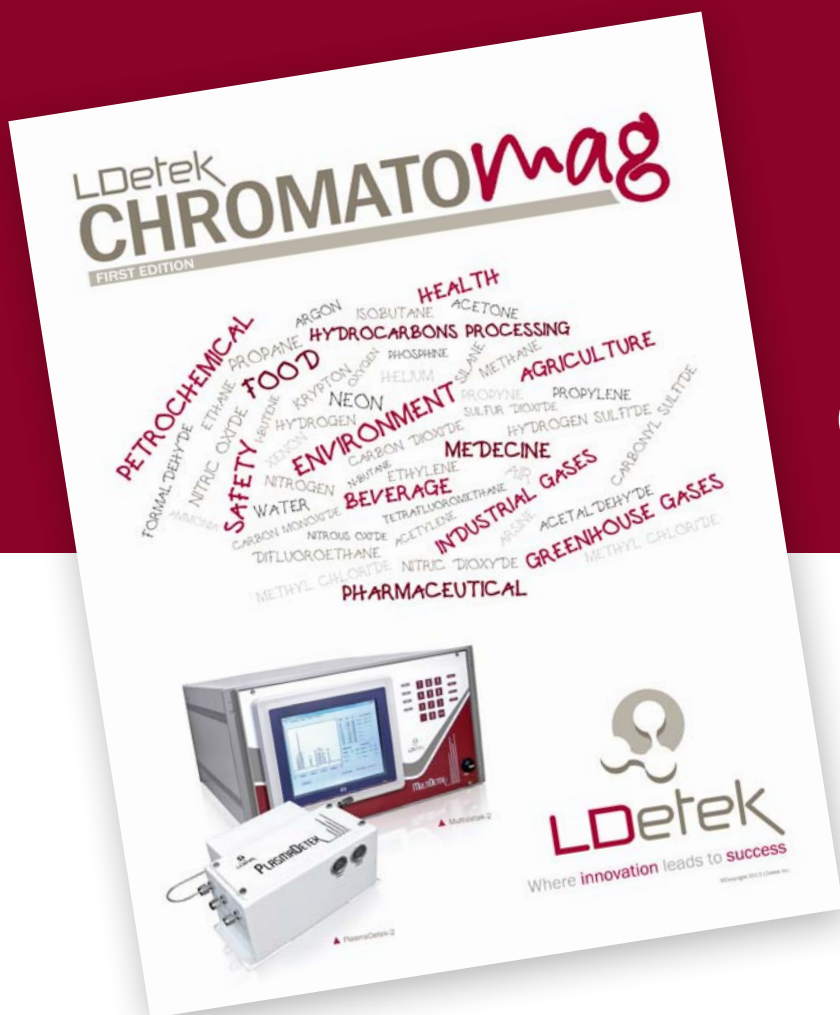
CONTACT INFORMATION

cgranato@ldetek.com

Office : +1-418-755-1319

Mobile : +1-418-332-5842





Be sure to download our
CHROMATOMAG
 from our web site

www.ldetek.com



Where innovation leads to success

271 St-Alphonse Sud, Thetford Mines, (Qc), Canada, G6G 3V7

Phone: 418 755-1319 • Fax: 418 755-1329

info@ldetek.com • www.ldetek.com