

# Sensor News

More than 30 Years of Focus on Innovation and Quality Leadership



## Nothing Remains Undetected

The PYROMID® LRM-292 For Your Safety



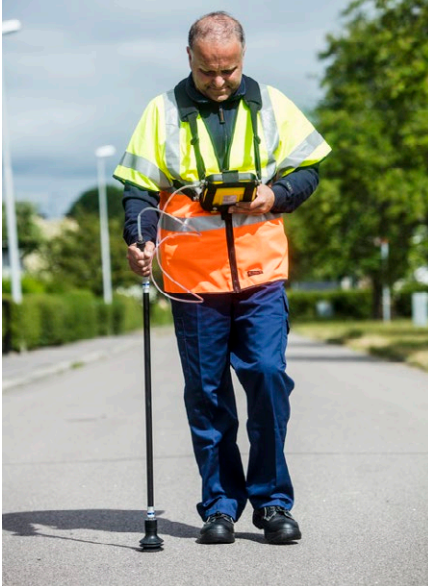
Success Story  
Leak Detective  
in Action For  
More Safety

Success Story  
Special Detector  
For Fuel Analysis

PYROMID® Family  
Miniaturized  
Detectors

# Leak Detective in Action For More Safety

The INFICON company develops and produces, among other things, gas detection and concentration measurement devices. The IRwin® portable natural gas detector is one of them. A product for use in gas pipelines leak detection survey, commissioning and emergency, as well as for Landfill Surface Emission Monitoring. On board: a pyroelectric detector from InfraTec.



Monitoring natural gas plants and gas pipelines is an absolute necessity in the gas supply industry to ensure the safety of people and the environment. Therefore, INFICON has developed the mobile methane measurement device IRwin®, which detects and locates natural gas and methane leaks even in challenging surface structures.

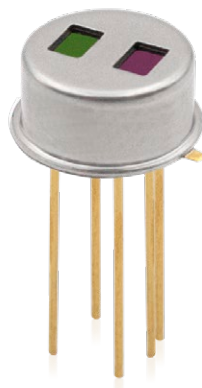
IRwin® exists in various versions in which it can distinguish, for example, between gas from leaking pipes and naturally occurring swamp gas. Another version is equipped with hazardous material sensors to protect users before they enter shafts or other potentially dangerous areas.

### Mastering Challenges

Prerequisite to safely exclude hazards to people and the environment is high-precision technology. For this reason, INFICON uses the LIM-262 pyroelectric detector from InfraTec for IRwin®. The planar, multi channel detector responds very quickly to fluctuating gas concentrations and requires an extremely short regeneration phase. This feature is particularly important as gas concentrations between 1ppm up to 100Vol% are measured during leak detection. Another

challenge mastered by the LIM-262 is the ability to selectively distinguish between natural gas from leaking pipes and swamp gas. This is done by a patented method based on the LIM-262 signal from several sample concentrations fitted to curves recorded during a factory calibration of the individual detectors. This process measures the amount of non-methane hydrocarbons. Natural gas has such non-methane hydrocarbons whereas swamp gas does not.

With its small size in a TO39 housing, the sensor is optimally suited for use in mobile test equipment.



LIM-262 from InfraTec

An additional bonus is the LIM-262's low microphonics, so that external interference factors have no influence on the transmission of the output signal. Embedded in a robust and easy-to-use device, the detector from InfraTec reliably fulfils its task.

When compared to other detection methods, e. g. flame ionization detection (FID), this procedure offers more certainty and no room for vague assumptions. Gas leaks are clearly identified without costly boreholes and without a great time expenditure - even under harsh environmental influences and weather conditions.

IRwin® is used by gas suppliers worldwide in emergency situations or for monitoring natural gas pipelines.



Are you interested in more success stories?  
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# Special Detector For Fuel Analysis

Since 2007, the eralytics company has been developing and manufacturing analytical instruments for quality control in the mineral oil as well as the flavor and fragrance industry. One of the multi-fuel analyzers is ERASPEC. It allows the measurement of different properties of fuels. ERASPEC is equipped with a pyroelectric detector from InfraTec – the special detector LIE-312.



ERASPEC, the portable multi-fuel FT-IR spectrometer for fuel analysis, measures a spectrum in the mid-infrared range and provides highly accurate results of up to hundred fuel parameters such as benzene, oxygenates as well as complex properties such as octane numbers within a few seconds. ERASPEC convinces with its ease of use and at the same time provides access to the

entire range of information. As a portable device, it can be used in stationary and mobile labs and in outdoor operation. Measurements are taken during fuel production, blending and quality control of petrol, diesel, jet fuel and biofuels, among others. Public authorities, for example, use ERASPEC in mobile laboratories to combat fuel adulteration. Because of its size and robustness, the analyzer is predestined for on-site use to test for petrol contamination or fuel quality.

Compared to instruments that use a similar principle, eralytics' measurement devices focus on simplified operation while providing the full range of information. Furthermore, the instruments can be used to predict fuel properties (in addition to composition) within a single measurement of 1-2 minutes, whereas full-scale analysis of these properties would require additional equipment and, most importantly, time (~30-60 minutes per analysis).

## Special Detector in Use

ERASPEC uses the special detector LIE-312 from InfraTec to record an FTIR spectrum of different fuels and complies with common international standards.



LIE-312 from InfraTec

The use of compact components thus creates the conditions for a portable measuring device while guaranteeing highly precise measurement results. Even at low frequencies, InfraTec's pyroelectric detector has a very high detectivity and an extremely low response time. In addition, the pyroelectric crystal inside the LIE-312 is coated with a metal black layer. This enables uniform absorption over the entire wavelength and the recording of different infrared spectra over a wide wavelength range.

In addition, different window materials are available for the LIE-312, as the choice of material depends on the measurement task. Other reasons for using a pyroelectric detector from InfraTec are the customer-oriented support and service provided by InfraTec, the price-performance ratio and the reasonable delivery time.

## About eralytics

Over the years, eralytics has grown steadily to meet consequently the needs of its customers. The main focus of eralytics' instruments is to reduce complexity and develop intuitive, easy-to-use instruments that deliver fast results with maximum precision and reliability in the laboratory and on-site in mobile laboratories.



# Nothing Remains Undetected with the LRM-292

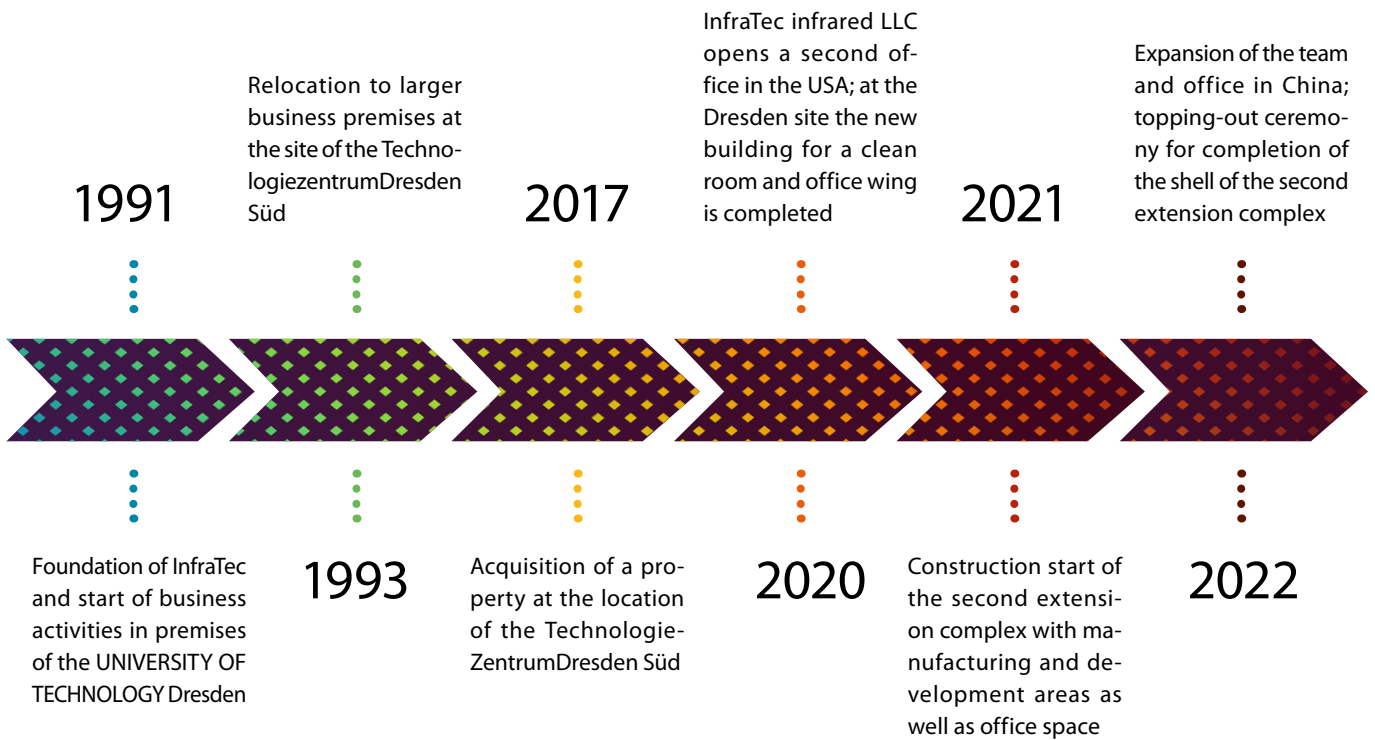
„Small“ addition to the innovative PYROMID® series from InfraTec  
Fast gas changes, low gas concentrations, and short gas exchange times are not a challenge for the latest detector in the PYROMID® series. With the LRM-292 pyroelectric detector in a TO46 housing, InfraTec offers the world’s smallest multi-channel detector with integrated operational amplifier and thermal compensation. Measuring only 4.7 mm in diameter,

the LRM-292 is predestined for measuring low gas concentrations at small measurement volumes. As a member of the PYROMID® series, this detector is also a true „high stacker“ which, like its siblings, has a compact stacking design. This miniaturized design allows the number of channels to be increased while maintaining the same package size. Likewise, the same number of channels can be integrated into much smaller housings.



## InfraTec – Always in Action

From the „production laboratory“ in the basement of the former kindergarten of the Technical University of Dresden to the opening of the first real clean room, InfraTec developed into a powerful high-tech company. To date, InfraTec is growing not only at its headquarters in Dresden, but also worldwide through its subsidiaries. In 2007, for example, InfraTec infrared LLC was founded as a subsidiary of InfraTec in the USA, and in 2012 a representative office was established in China.



## Imprint

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You will find us at these trade shows: <https://bit.ly/3M0uLDB>