GAZOMAT™

an ecotec company

GAS LEAK DETECTION SOLUTIONS

2023

Natural Gas and Biogas

Facilities and Network Monitoring

INSPECTRA® LASER IECEx

Laser Technology
applied to Methane Detection

- Zone 1, IECEx and ATEX certified
- Selectivity to methane (CH_4)
- 1 ppm sensitivity CH_4
- Measurement range from 0ppm to 100% volume CH_4

Using laser spectroscopy technology, the INSPECTRA® LASER IECEx equipment by GAZOMAT™ is a high-performance methane detector offering all the advantages of optical detection.
The device meets latest IECEx and ATEX standards for use in explosive atmospheres as well as in confined zones. It detects methane and locates leaks with precision, across a wide measurement range, down to the smallest concentrations. It is ideal for the monitoring of natural gas and biogas facilities and pipelines, both outdoors and indoors.

Total Selectivity to Methane

- The measuring chamber of the INSPECTRA® LASER analyzer is fitted with a laser diode adjusted to the absorption wavelength specific to methane.
- In the presence of methane molecules, the laser beam is partially absorbed. Thus, only methane is detected.
- The device is insensitive to other hydrocarbon gases, chemicals, water vapours and pollution that may be present in the ambient air in small quantities.

Unique Measuring Precision and Reliablity

- 1 ppm sensitivity (CH_4) thanks to the path length of the multipass cell
- Two measurement scales with simultaneous display
  - PPM scale from 0 ppm to 10,000 ppm
  - GAS scale: from 0 % to 100 % volume gas
- Very quick response time

Zone 1, IECEx and ATEX Certified

Intrinsically safe, the device can be operated in zone 1 explosive atmospheres, both indoors and outdoors.

Easy-to-Use

- Quick start-up, in just a few seconds, with automatic self-test,
- Visual and audio indicators (battery charge level, pump status, alarm on/off, risk of explosion, etc.)
- Access to standard and advanced functions with the 5-key keypad and a scrolling menu
- Four measurement ranges with Autoscale function improving measurement range change
- Measurement in absolute or relative
- GAZOMAT battery pack easy to replace by operator – no return to Service center required
  Note: the INSPECTRA® may be operated with three LR20 dry cells, outside explosive atmospheres exclusively
- Extended set of sampling equipment
- Connects to dedicated survey App for real-time data transmission (option).

Wide Scope of Application

Suitable for any application requiring the measurement of methane and biomethane concentrations:

- Detection and location of gas leaks in any type of configuration: bore holes, confined areas, etc.
- Survey of underground and aboveground pipelines
- Monitoring of compression plants, gas storage plants, high pressure lines, pressure reducing stations, etc.
- Surface emission monitoring of volcano sites, landfills, etc.
- Gas analysis in laboratories.

Accessories and Adds-on

- 100-240VAC 50Hz-60Hz charger
- Rechargeable battery pack (not shown) – fits inside the instrument
- Modular telescopic sampling rod with suction cup
- Storage case for the detector and its accessories
- Set of water-repellent filters and dust filters (not shown)
- Pin wrench to access the water-repellent filter compartment (not shown)
- Optional:
  - 12VDC charger
  - Long semi-rigid sampling probe with its filter fitted handle (not shown)
  - Short flexible probe with its handle (not shown)
  - Gas check kit comprising a gas check cylinder and a pressure regulator
  - Bluetooth communicator (not shown) for wireless data transfer

Sampling Equipment Compatible with the Instrument

Telescopic sampling probe and accessories				Other sampling probes	
					
Modular telescopic carbon sampling probe	Suction cup probe	Gas trap trolley **(optional)**	Single-wheel probe **(optional)**	Long probe **(optional)**	Short probe **(optional)**

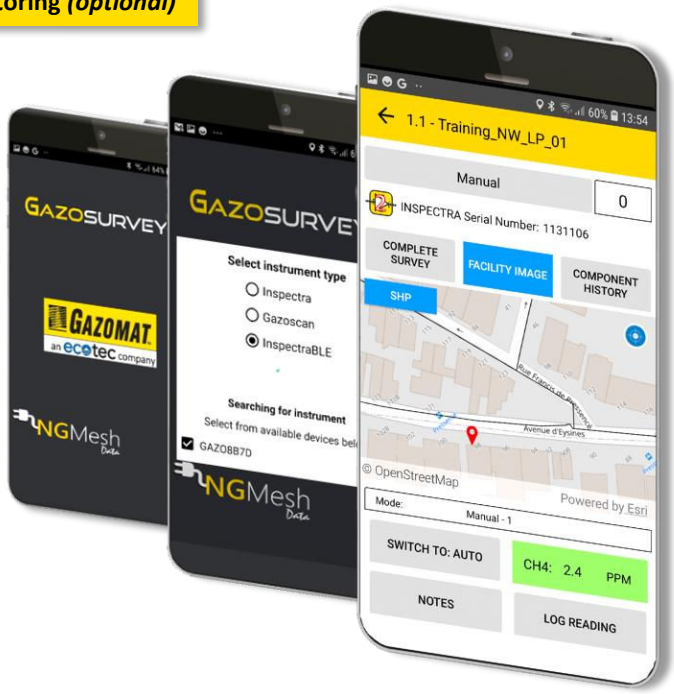
GAZOSURVEY™, the Mobile App Dedicated to Methane Leak Monitoring *(optional)*

Available as an option, GAZOSURVEY [(1)] is a software application running on iOS and Android smart devices. It has been developed for leak monitoring of natural gas and biogas pipelines and installations.

GAZOSURVEY app facilitates survey data collection and transfer. The smart device connects in Bluetooth to the INSPECTRA® detector. Via the app, the field technician can then use the smart device's functions:

- Geolocation and navigation on maps
- Note entry
- Multiple photo storage using the camera

Through an interface with a web platform, georeferenced survey data is transferred, and alerts are automatically sent to emergency personnel or services.



(1) Application marketed separately. Consult GAZOSURVEY brochure

TECHNICAL SPECIFICATIONS
INSPECTRA® LASER IECEx

Measurement principle:	• Laser spectroscopy (TDLAS – Tunable Diode Laser Absorption Spectroscopy)
Gas selectivity:	• Methane gas (CH_4)
Measurement scales: (Simultaneous display)	PPM: 0ppm to 10,000ppm CH_4 — GAS: 0.0% to 100.0% VOL. GAS CH_4 — LEL (on request only): 0.0% LEL to 100.0% LEL CH_4
Measurement range:	• 0ppm-100.0 % VOL. GAS CH_4
Detection threshold:	• 1ppm CH_4
Response time:	• T10 standard: 2 seconds — T10 with suction rod: <3.5 seconds • T90 standard: 4.5 seconds — T90 with suction rod: 6 seconds
Start-up time:	• In less than 30 seconds
Display:	• LCD screen display with green color backlighting visible in daylight • 3 display areas: Measurements/Status indicators/Dialog window • Height of measurement character: 13 mm
Keypad:	• 5 direct-control keys: ON/OFF, pump, alarm, backlighting, menu • Advanced function control with protected access scrolling menu
Power supply: Charger Charge time:	• Ni-MH rechargeable battery pack along manufacturer's references: ○ 3.6V, 23.22Wh / 6.45Ah • Input: 100-240VAC 50Hz-60Hz Max 0.35A • Charge time up to 10 hours
Battery life:	• 12 hours at temperatures within +20°C and +25°C - no accessories and all functions on (backlighting, pump on normal speed) • Battery life reduced by 20% at temperatures below 0°C and above +35°C
Electric pump flowrate:	• 55 l/h (normal flow) and 45 l/h (slow flow)
Alarms:	• They activate the visual (LED and LCD displays) and audio warnings:
	○ Methane (CH4) concentration threshold ○ Explosion risk due to methane concentration ○ Pump: pump stopped, pump error
Status indicators:	• Battery charge level, pump status (2 speeds)
Gas connection:	• Quick-connect inlet coupling with locking mechanism: suction probe on right side • Quick-connect gas outlet coupling
Electrical connections:	• 2.1mm connector for battery charger • Communication connector for connection to: - a PC via an optional dedicated cable - an optional external Bluetooth communicator
Data transfer:	• Via an external wireless Bluetooth communicator (option) and a dedicated application (option)
Housing:	• Housing material: polyamide reinforced with fiber glass and carbon • Material of front side: anodized aluminum
Dimensions:	• Length 263 mm x Width 113 mm x Height 141 mm (10.3 x 4.4 x 5.5 inches)
Weight:	• 2.7 kg with batteries (5.95 lbs)
Conditions of use in stabilized mode:	• Humidity: 5% to 80% relative humidity • Operating temperature range: -15°C to +50°C (+5°F to 122°F) • Atmospheric pressure 1013 mbar (± 100 mbar)
Storage conditions: (excluding batteries)	• Humidity: < 90% relative humidity • Temperature: -20°C to +60°C (-4°F to +140°F)
Protection rating:	• IP54 (complies with IEC 60529)
CE Marking Standard conformity:	• EN 50270 :2015 - Electromagnetic compatibility • EN 61010-1 :2010 + A1:2019/AC 2019-04 - Safety requirements for electrical equipment for measurement, control and laboratory use • IEC 60825-1 :2014 - Safety of laser products CAUTION LASER INVISIBLE RADIATION - CLASSE 1 European standards of use in explosive atmospheres: • EN IEC 60079-0 :2018 - General Requirements — IEC 60079-0 :2017 (Ed. 7.0) • EN 60079-11 :2012 - Intrinsic Safety — IEC 60079-11 :2011 (Ed. 6.0) • EN 60079-28 :2015 – Optical radiation protection — IEC 60079-28 :2015
IECEx Marking: Zone 1	II2G Ex ib op is IIB T3 Gb IECEx INE 19.0017X
ATEX Marking: Zone 1	Ex II 2 G Ex ib op is IIB T3 Gb INERIS 19ATEX0018X
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