

■ Natural Gas and Biogas Facilities and Network Monitoring ■

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INSPECTRA[®] LASER IECEX

Laser Technology applied to Methane Detection

- Zone 1, IECEX and ATEX certified
- Selectivity to methane (CH₄)
- 1 ppm sensitivity CH₄
- Measurement range from 0ppm to 100% volume CH₄

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 Reliability

- 1 ppm sensitivity (CH₄) 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
 - Battery easy to replace with manufacturer's battery pack– 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.

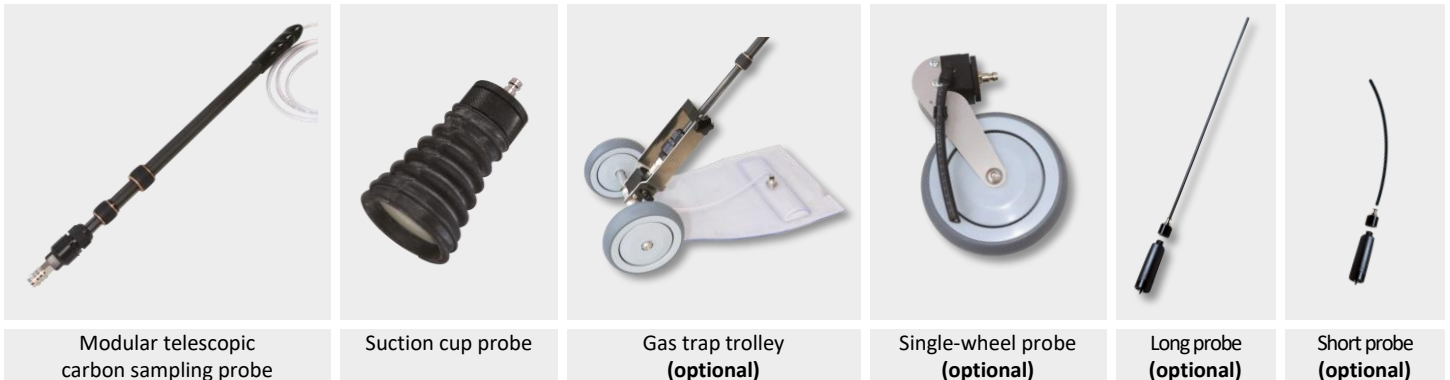


Accessories and Add-on

- 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 GAZOMAT's Telescopic Sampling Probe



GAZOSURVEY™, the Mobile App Dedicated to Methane Leak Monitoring

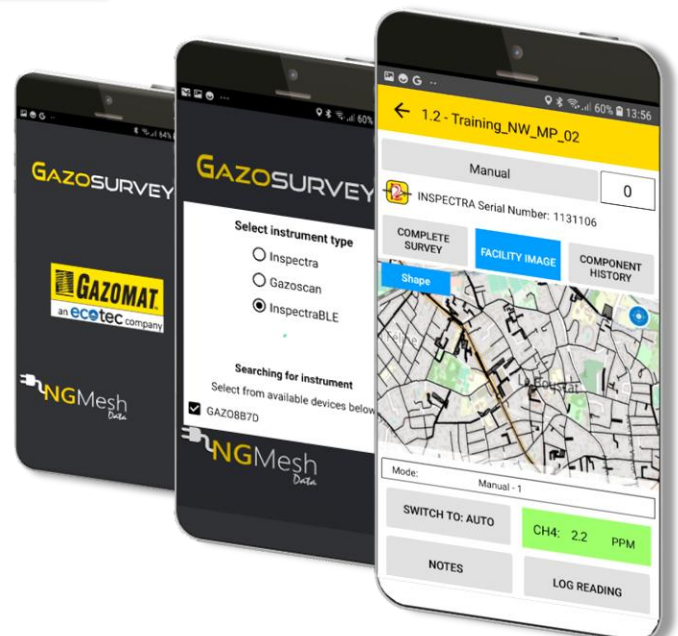
GAZOSURVEY⁽¹⁾ is a software application running on iOS and Android smart devices. It has been developed for leak monitoring of natural gas and biogas pipelines and installations.

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
- Sending and receiving of text messages and emails
- Multiple photo storage using the camera

Through an interface with a secured server, georeferenced survey data is transferred, in real-time, and alerts are automatically sent to emergency personnel or services.

(1) Application marketed separately. Consult GAZOSURVEY brochure



**TECHNICAL SPECIFICATIONS
INSPECTRA® LASER IECEx**

Measurement principle:	<ul style="list-style-type: none"> Laser spectroscopy (TDLAS – Tunable Diode Laser Absorption Spectroscopy) 	
Gas selectivity:	<ul style="list-style-type: none"> Methane gas (CH₄) 	
Measurement scales: (Simultaneous display)	PPM 0ppm-10,000ppm CH ₄	GAS 0.0% to 100.0% VOL. GAS CH ₄
Measurement range:	<ul style="list-style-type: none"> 0ppm-100.0 % VOL. GAS CH₄ 	
Detection threshold:	<ul style="list-style-type: none"> 1ppm CH₄ 	
Response time:	<ul style="list-style-type: none"> 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:	<ul style="list-style-type: none"> In less than 30 seconds 	
Display:	<ul style="list-style-type: none"> 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:	<ul style="list-style-type: none"> 5 direct-control keys: ON/OFF, pump, alarm, backlighting, menu Advanced function control with protected access scrolling menu 	
Power supply:	<ul style="list-style-type: none"> ATEX certified Ni-Mh rechargeable battery pack along manufacturer's references: <ul style="list-style-type: none"> 3 x 1.2V – 6450mAh 	
Charger and charge time:	<ul style="list-style-type: none"> 100-240VAC 50Hz-60Hz battery charger for ATEX battery pack Charge time up to 10 hours at 1Ah 	
Battery life:	<ul style="list-style-type: none"> 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 output:	<ul style="list-style-type: none"> 35 l/h (on low speed) et 70 l/h (on normal speed) 	
Alarms:	<ul style="list-style-type: none"> They activate the visual (LED and LCD displays) and audio warnings: <ul style="list-style-type: none"> Methane (CH₄) concentration threshold Geiger Explosion risk due to methane concentration Pump: pump stopped, pump error 	
Status indicators:	<ul style="list-style-type: none"> Battery charge level, pump status (2 speeds) 	
Gas connection:	<ul style="list-style-type: none"> Quick-connect inlet coupling with locking mechanism: suction probe on right side Quick-connect gas outlet coupling 	
Electrical connections:	<ul style="list-style-type: none"> 2.1mm connector for battery charger Communication connector for connection to: <ul style="list-style-type: none"> a PC via an optional dedicated cable an optional external Bluetooth communicator 	
Data transfer:	<ul style="list-style-type: none"> Via an external wireless Bluetooth communicator (option) and a dedicated application (option) 	
Housing:	<ul style="list-style-type: none"> Housing material: polyamide reinforced with fiber glass and carbon Material of front side: anodized aluminum 	
Dimensions:	<ul style="list-style-type: none"> Length 263 mm x Width 113 mm x Height 141 mm (10.3 x 4.4 x 5.5 inches) 	
Weight:	<ul style="list-style-type: none"> 2.7 kg with batteries (5.95 lbs) 	
Conditions of use in stabilized mode:	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> Humidity: < 90% relative humidity Temperature: -20°C to +60°C (-4°F to +140°F) 	
Protection rating:	<ul style="list-style-type: none"> IP54 (complies with IEC 60529 : 2001+AC1 : 2003+AC2 :2007) 	
CE Marking Standard conformity:	<ul style="list-style-type: none"> 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 European standards of use in explosive atmospheres: <ul style="list-style-type: none"> EN IEC 60079-0 :2018 - General Requirements EN 60079-11 :2012 - Intrinsic Safety EN 60079-28 :2015 – Optical radiation protection 	<ul style="list-style-type: none"> IEC 60079-0 :2017 (Ed. 7.0) IEC 60079-11 :2011 (Ed. 6.0) IEC 60079-28 :2015
IECEx Marking: Zone 1	II 2G Ex ib op is IIB T3 Gb IECEx INE 19.0017X	
ATEX Marking: Zone 1	II 2 G Ex ib op is IIB T3 Gb INERIS 19ATEX0018X	
Patents:	No 7352463 and No 1647820	
Country of origin:	Made in France	

