

## Senscient ELDS™ Series 1000 for Multi Hydrocarbons

### Overview

This laser based Open Path Gas Detector (OPGD) can detect a range of Hydrocarbons e.g. Methane, Ethane, Propane, Butane, Pentane, Hexane, Ethylene, Propylene and Butene.

Unlike traditional NDIR hydrocarbon devices, which are calibrated for a single hydrocarbon, Senscient's Multi Hydrocarbon device is factory calibrated to provide accurate gas readings for Methane, Ethane and Ethylene plus a fourth higher hydrocarbon selectable at the time of manufacture.

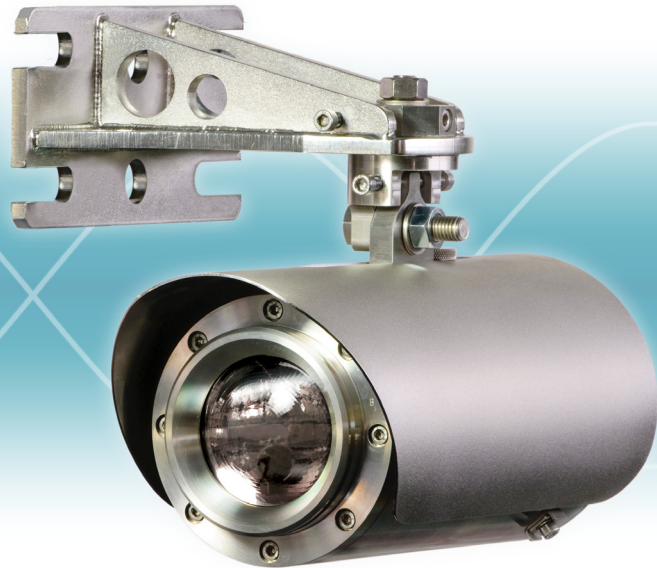
This laser based Multi Hydrocarbon device, provides significant advantages over traditional NDIR devices including: improved accuracy of response to a range of different hydrocarbons, greater resilience to the effects of rain, fog, obscuration and misalignment, plus total immunity to false alarms from oil mist and plastic bag debris.

Combined with the patented daily auto-self testing facility; called SimuGas™; the Senscient ELDS™ Multi Hydrocarbon detector negates the need for manual intervention with plastic filters to validate performance, providing significant operational cost savings.

### Applications:

Multi Hydrocarbon OPGD devices are used to monitor for fugitive emissions and protect plant from the risk of explosion. These devices are typically located to provide a detection barrier around the perimeter of a plant, process or storage area; or positioned in close proximity to specific items of plant, that pose a real risk of gas escape: e.g. compressors, pump sets, pressure reducers, valves and pipe flanges. A Multi Hydrocarbon detector is ideally suited for applications where there is the potential for a number of different hydrocarbons to be present in the same area.

- Petrochemical refineries
- Chemical plants
- Gas conditioning plants
- Metals manufacturing plants



### Multi Hydrocarbon Open Path Gas Detector

### Features:

- Ultra narrow wavelength operation - Improved availability in heavy fog and rain compared to traditional, NDIR devices
- SimuGas™ daily auto gas testing – No manual intervention or on-going cost for routine testing.
- Calibrated with up to 4 hydrocarbons - providing greater accuracy over a wider range of gases.
- Operates up to 60 metres – Significant installation cost savings over multiple fixed point gas detectors.
- Bluetooth™ connectivity – No physical intervention needed for interrogation, event log downloading and trouble shooting.

### About Senscient ELDS™

Senscient's Enhanced Laser Diode Spectroscopy (ELDS™) product range builds upon the proven benefits of laser based gas sensing, taking this sensing principle to the next level, providing significant advances in false alarm rejection and safety integrity in the most challenging operating conditions.

In addition to this Multi Hydrocarbon device, gas species specific devices are available using patented Harmonic Fingerprint™ technology for the detection of: Methane (CH<sub>4</sub>), Ethylene (C<sub>2</sub>H<sub>4</sub>), Ammonia (NH<sub>3</sub>), Carbon Dioxide (CO<sub>2</sub>), Hydrogen Sulphide (H<sub>2</sub>S), Hydrogen Chloride (HCl) and Hydrogen Fluoride (HF). Other gases to be added.

## Specifications:

Gas	Multi Hydrocarbon (Responding to Methane, Ethane, Propane, Butane, Pentane, Hexane, Ethylene, Propylene & Butene)
Factory calibrated with	Methane, Ethane, Ethylene
Additional calibration option	Butane or Propane or Propylene or Hexane
Range	0-5 LEL.m
Path Length	5-60 m
Format	Individual Transmitter (Tx) & Receiver (Rx)

## Performance:

Response Time	T90 =Typically 5 seconds
Repeatability	< ± 5% FSD
Linearity	< ± 5% FSD

## Environmental:

Ingress Protection	IP66/67 NEMA type 4/4X/6
Enclosure Material	316L stainless steel
Lens Material Tx	Faceted Optical Glass
Lens Material Rx	Aspheric Optical Glass
Operating Temperature	-55°C to +60°C (ambient)
Humidity	0 – 100% RH (non-condensing)
Vibration	10 – 150 Hz, 2 g
EMC	EN50270

## Certification/Approvals:

### CSA and UL

Class I Div 1 Groups B C & D T5  
Class II Div 1 Groups E F & G T5  
Class III Div 1  
Ex d IIB + H<sub>2</sub> T5  
Class I, Zone 1, AEx d IIB + H<sub>2</sub> T5  
Tamb = -40°C to +60°C  
Entry: ¾" NPT

### ATEX / IECEx

II 2 GD Exd IIB + H<sub>2</sub> T5  
Tamb -40°C to +60°C Gb  
and Ex tb IIIC T100°C  
Tamb = -40°C to +60°C Db IP66/67  
Entry: M25

## Safety Integrity

Suitable for use in SIL2 Safety Systems per IEC 61508

## Electrical:

Operating Voltage	Tx & Rx +24V DC, (+18 to +32V DC)
Power Consumption	Tx = 12 W (max), Rx = 10 W (max)
Outputs (Analog x 2)	4-20 mA, Configurable for 2 wire isolated or single wire, sink or source. Primary range on 4-20mA(1) Secondary range on 4-20mA(2), Note: Secondary range is typically greater than the primary. 3 mA (configurable 1 to 4 mA) 2.5 mA (configurable 0 to 3.5 mA) 2 mA (configurable 1 to 3.5 mA) 0.5 mA (configurable 0 to 1 mA) 21.5 mA (configurable 20 to 21.9 mA)
Low Signal	HART 7.1 & MODBUS RTU supported
Beam Block	
Inhibit	
Fault	
Over range	
Output (Digital)	

## Mechanical:

Size	Tx/Rx 140 mm dia. x 300 mm
Weight	Tx/Rx 12 kg each (c/w bracket)
Sun / Deluge Protection	Tx & Rx supplied with sun / deluge protection
Mounting	Tx & Rx supplied with mounting brackets incorporating fixing holes / slots for flat surface or metal pole mounting. (Note: mounting poles should be of 4" to 6" [100 mm to 150mm] diameter. Fixing bolts / U bolts are not supplied)

## Optical:

Uses HARMONIC FINGERPRINT™ to ensure no false alarms during adverse environmental conditions, misalignment or partial obscuration.

Alignment	+/- 0.5°
Obscuration	> 95%
Heated Optics	Tx & Rx lenses are continuously heated.
Laser Beam	Class 1 (Eye Safe) IEC 60825-1

## Calibration :

Factory calibrated for life, no routine calibration required.

## Ordering Information:

To order / specify:	Senscient ELDS 1000,
Calibrated option:	e.g Butane (see specification section)
Measuring Range:	0-5 LEL.m
Path length:	5-60m
Certification:	e.g. ATEX/IECEx

## Accessories:

Optical alignment scope with transport case  
Approved industrial computer, c/w SITE software

Distributed by:

