



# SENSCIENT ELDS™

ENHANCED LASER DIODE SPECTROSCOPY GAS DETECTION



SAFEGUARDING  
**PEOPLE, PLACES & THE PLANET**

# YOUR MOST DIFFICULT TOXIC GAS DETECTION PROBLEMS...



**COSTLY SENSOR  
REPLACEMENTS**



**FREQUENT MAINTENANCE  
CYCLES**



**INTERFERENT GASES**

# LOWER OPERATIONAL COSTS BY MORE THAN 80%

## TOXIC GASES

DETECTS UP TO **120 m [394 ft.]**

**AMMONIA**  
NH<sub>3</sub>

DETECTS UP TO **60 m [197 ft.]**

**CARBON DIOXIDE**  
CO<sub>2</sub>

**HYDROGEN CHLORIDE**  
HCl

**HYDROGEN SULFIDE**  
H<sub>2</sub>S

# ...SOLVED



No consumable parts.



SimuGas™ automated full system integrity checks eliminates need for gas checks.



Senscient ELDS™ is immune to the cross-interferents that plague electrochemical sensors, thanks to target gas specific Harmonic Fingerprint detection.



**Keep workers out of harms way.**  
SimuGas™ self testing verifies operation.  
No gas checks required.

# FINDS GAS, NOT FAULTS. EVEN THROUGH THE FOG.



**TUNEABLE LASERS**

Class 1 eye safe lasers penetrate thick fog, heavy rain, and snow further than differential infrared based detectors.



**LOCK CELL**

Part of the laser light is reflected through a sample of the target gas contained by a hermetically sealed Lock Cell. This ensures the laser remains locked on the selected wavelength for the target gas.

# LASERS FOCUSED ON GAS, NOT WEATHER.

**FLAMMABLE GASES** DETECTS UP TO **200 m [656 ft.]**

**METHANE**  
CH<sub>4</sub>

**ETHYLENE**  
C<sub>2</sub>H<sub>4</sub>

DETECTS UP TO **60 m [197 ft.]**

**SOUR GAS**  
CH<sub>4</sub> + H<sub>2</sub>S

# HARMONIC FINGERPRINT™

CONVENTIONAL LASER

SENSCIENT ELDS™



**Single point verification**  
Low false alarm rejection

**Four point verification**  
Highest false alarm rejection

- NO GAS
- TARGET GAS
- INTERFERENT GAS
- HARMONIC IDENTIFIER

WAVELENGTH ABSORPTION

ABSORPTION ANALYSIS

# TECHNOLOGY YIELDS RETURN ON INVESTMENT

## HARMONIC FINGERPRINT™



### HARMONIC FINGERPRINT™ DETECTION

Only multiple harmonic detection reduces costly nuisance false alarms that plague other open path detectors.

### SIMUGAS™ DAILY SELF TESTING

The only open path detector that can check and record functional tests, automatically.



### LOCK CELL

Real target gas sample ensures laser is locked on target wavelength.



### ZERO MAINTENANCE

Increased uptime availability and lower OPEX costs.



### WIDER COVERAGE AREA FOR TOXICS

Improved leak detection coverage with less capital expense.



### STAY CONNECTED. WORK SMARTER.

Bluetooth® wireless technology for faster commissioning and troubleshooting while keeping workers out of harms way.





# TECHNICAL SPECIFICATIONS

## Performance

<b>RESPONSE TIME</b>	T90 ≤ 3 SECONDS (TYPICALLY)
<b>REPEATABILITY</b>	<± 5% FSD
<b>LINEARITY</b>	<± 5% FSD

## Environmental

<b>INGRESS PROTECTION</b>	IP66/67 NEMA TYPE 4/4X/6
<b>ENCLOSURE MATERIAL</b>	316L STAINLESS STEEL
<b>LENS MATERIAL TX</b>	FACETED OPTICAL GLASS
<b>LENS MATERIAL RX</b>	ASPHERIC OPTICAL GLASS
<b>OPERATING TEMPERATURE</b>	-40°C to +60°C (AMBIENT) [-40°F to 140°F]
<b>HUMIDITY</b>	0 - 100% RH (NON-CONDENSING)
<b>VIBRATION</b>	10 - 150 Hz, 2 G
<b>EMC</b>	EN50270

## Certification/Approvals

<b>CSA AND UL</b>	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 [-40°F to 140°F] ENTRY: 3/4" NPT
<b>ATEX/UKCA/ IECEX/INMTERO</b>	II GD Ex db IIC T5 Gb Ex tb IIIC T100°C Db IP66/67 Tamb -40°C to +60°C ENTRY: M25
<b>CUSTOMS UNION OF RUSSIA, KAZAKHSTAN &amp; BELARUS</b>	EAC EX TR CU CoC IExdIIBT5/H2X ENTRY: M25

## Safety Integrity

SUITABLE FOR USE IN SIL2 SAFETY SYSTEMS PER IEC 61508

## Electrical

<b>OPERATING VOLTAGE</b>	Tx & Rx +24VDC (18 to 32 VDC)
<b>POWER CONSUMPTION</b>	Tx = 12 W (MAX), Rx = 10 W (MAX)
<b>OUTPUTS (ANALOG X 2)</b>	4-20 mA, CONFIGURABLE FOR 2 WIRE ISOLATED OR SINGLE WIRE, SINK OR SOURCE
<b>DIAGNOSTICS</b>	LOW SIGNAL, BEAM BLOCK, INHIBIT, FAULT, OVER RANGE
<b>DIGITAL OUTPUTS</b>	HART 7.1 & MODBUS RTU SUPPORTED

## Mechanical

<b>SIZE</b>	Tx/Rx 140 mm DIA. x 300 mm (5.5" DIA. x 11.8")
<b>WEIGHT</b>	Tx/Rx 12 KG (26.5 lb.) EACH (C/W BRACKET)
<b>SUN / DELUGE PROTECTION</b>	Tx & Rx SUPPLIED WITH SUN /DELUGE PROTECTION
<b>MOUNTING</b>	Tx & Rx SUPPLIED WITH MOUNTING BRACKETS SUITABLE FOR FLAT SURFACE OR POLE MOUNTING

## Optical

USES HARMONIC FINGERPRINT™ TO ENSURE FALSE ALARM IMMUNITY DURING ADVERSE ENVIRONMENTAL CONDITIONS, MISALIGNMENT OR PARTIAL OBSCURATION.

<b>ALIGNMENT</b>	± 0.5°
<b>OBSCURATION</b>	OPERATES UP TO 95%
<b>HEATED OPTICS</b>	Tx & Rx LENSES ARE CONTINUOUSLY HEATED
<b>LASER BEAM</b>	CLASS 1 (EYE SAFE) IEC 60825-1
<b>FDA ACCESSION NO.</b>	1410373-000 (FOR IMPORTS INTO USA)

## Calibration

FACTORY CALIBRATED FOR LIFE, NO ROUTINE CALIBRATION REQUIRED.

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