

SENSCIENT ELDS™

ENHANCED LASER DIODE SPECTROSCOPY GAS DETECTION



LOWER OPERATIONAL COSTS BY MORE THAN 80%

TOXIC GASES

DETECTS
UP TO 120M [394FT]

AMMONIA
 NH_3

HYDROGEN FLUORIDE
HF

DETECTS
UP TO 60M [197FT]

CARBON DIOXIDE
 CO_2

HYDROGEN CHLORIDE
HCl

HYDROGEN SULFIDE
 H_2S



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

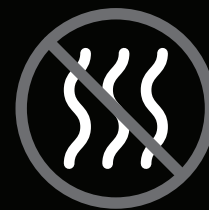
YOUR MOST DIFFICULT TOXIC GAS DETECTION PROBLEMS...



Costly Sensor Replacements



Frequent Maintenance Cycles



Interferent Gases

...SOLVED.



No consumable parts. Nothing to replace. Laser sources last over 15 years.



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

HARMONIC FINGERPRINT™

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

LASERS FOCUSED ON GAS, NOT WEATHER.

FLAMMABLE GASES

DETECTS
UP TO 200M [656FT]

METHANE
 CH_4

ETHYLENE
 C_2H_4

DETECTS
UP TO 60M [197FT]

SOUR GAS
 $\text{CH}_4 + \text{H}_2\text{S}$

FINDS GAS, NOT FAULTS. EVEN THROUGH THE FOG.



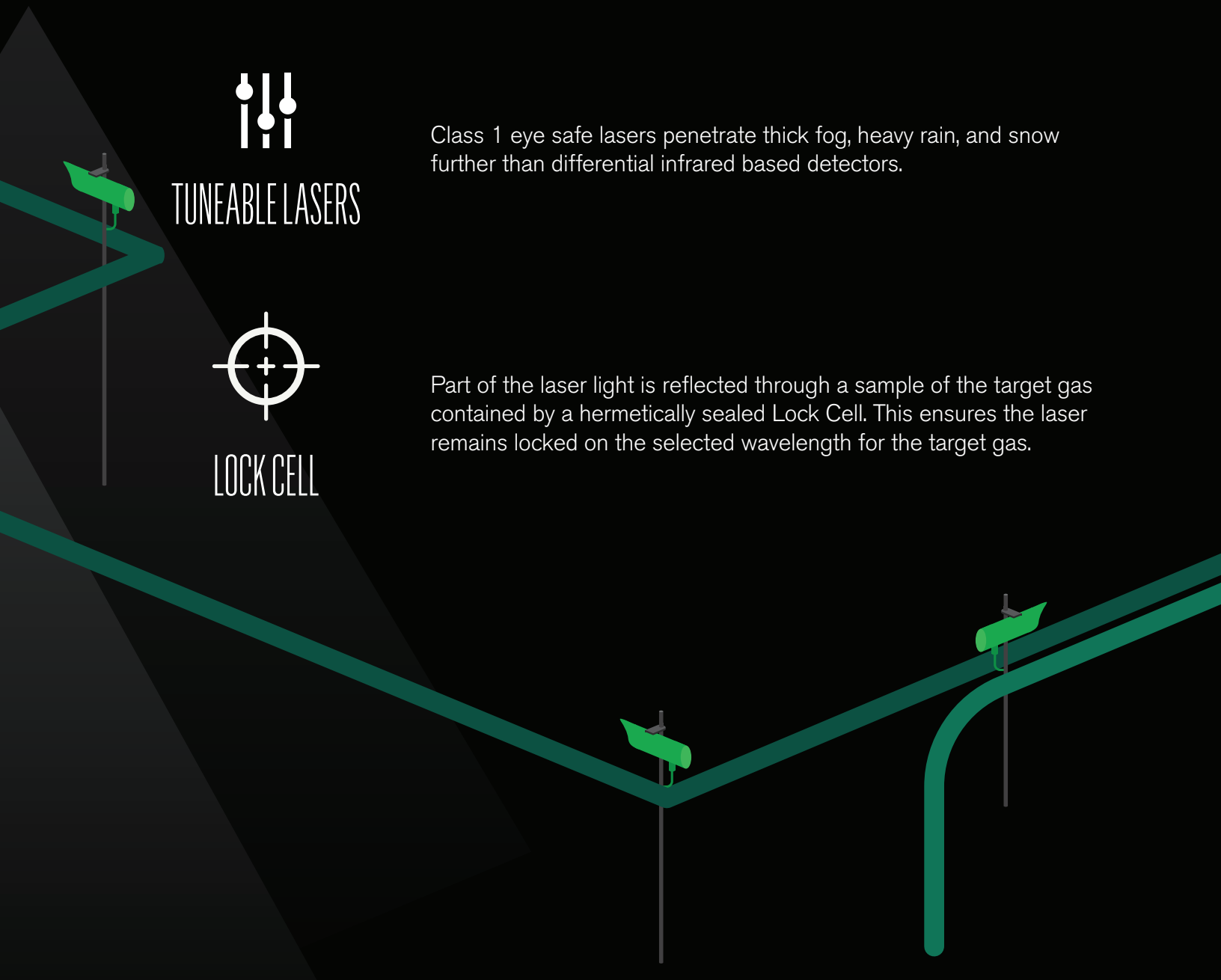
TUNEABLE LASERS

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.

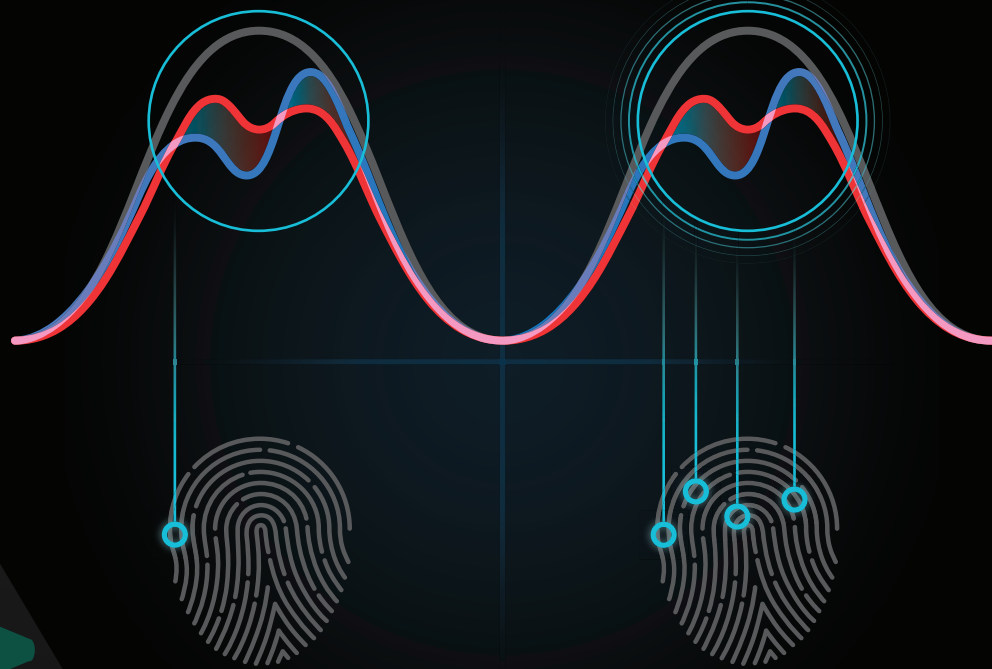


I N T R O D U C I N G

HARMONIC FINGERPRINT™

CONVENTIONAL LASER

SENSICIENT ELDS™



WAVELENGTH ABSORPTION

ABSORPTION ANALYSIS

Single point verification

Low false alarm rejection

Four point verification

Highest false alarm rejection

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

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.



LOCK CELL

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



WIDER COVERAGE AREA FOR TOXICS

Improved leak detection coverage with less capital expense.

SimuGas™
SAFETY INTEGRITY

SIMUGAS™ DAILY SELF TESTING

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



ZERO MAINTENANCE

Increased uptime availability and lower OPEX costs.



STAY CONNECTED. WORK SMARTER.

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

TECHNICAL SPECIFICATIONS



Performance

| | |
|---------------|-----------------------------|
| RESPONSE TIME | T90 ≤ 3 SECONDS (TYPICALLY) |
| 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) [-67°F to 140°F] |
| HUMIDITY | 0 - 100% RH (NON-CONDENSING) |
| VIBRATION | 10 - 150 Hz, 2 G |
| EMC | EN50270 |

Certification/Approvals

| | |
|--|---------------------------------------|
| CSA AND UL: | CUSTOMS UNION OF RUSSIA, |
| CLASS I DIV 1 GROUPS B, C & D T5 | KAZAKHSTAN & BELARUS: |
| CLASS II DIV 1 GROUPS E, F & G T5 | EAC EX TR CU CoC |
| CLASS III DIV 1 | IExdIIBT5/H2X |
| Ex d IIB + H ₂ T5 | ENTRY: M25 |
| CLASS I, ZONE 1, AEx d IIB + H ₂ T5 | |
| Tamb = -40°C to +60°C [-40°F to 140°F] | INMETRO: |
| ENTRY: 3/4" NPT | Ex d IIB + H ₂ T5 Gb |
| | Extb IIIC T100°C [212°F] Db IP66/67 |
| ATEX / IECEx: | Tamb: -40°C to +60°C [-40°F to 140°F] |
| II 2 GD Exd IIB + H ₂ T5 | ENTRY: M25 |
| Tamb -40°C to +60°C Gb [-40°F to 140°F] | |
| Ex tb IIIC T100°C [212°F] | |
| Tamb = -40°C to +60°C [-40°F to 140°F] | |
| Db IP66/67 | |
| ENTRY: M25 | |

Safety Integrity

SUITABLE FOR USE IN SIL2 SAFETY SYSTEMS PER IEC 61508

Note: This bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products. Specifications subject to change without notice.

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Electrical

| | |
|----------------------|---|
| OPERATING VOLTAGE | Tx & Rx +24VDC (18 to 32 VDC) |
| 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. |
| DIAGNOSTICS | LOW SIGNAL, BEAM BLOCK, INHIBIT, FAULT, OVER RANGE |
| DIGITAL OUTPUTS | HART 7.1 & MODBUS RTU SUPPORTED |

Mechanical

| | |
|-------------------------|---|
| SIZE | Tx/Rx 140 MM DIA. X 300 MM (5.5" DIA X 11.8") |
| WEIGHT | Tx/Rx 12 KG (26.5 LB) EACH (C/W BRACKET) |
| SUN / DELUGE PROTECTION | Tx & Rx SUPPLIED WITH SUN /DELUGE PROTECTION |
| MOUNTING | 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.

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

Calibration

FACTORY CALIBRATED FOR LIFE, NO ROUTINE CALIBRATION REQUIRED.