

# SENSCIENT ELDS™

ENHANCED LASER DIODE SPECTROSCOPY GAS DETECTION



# YOUR MOST DIFFICULT TOXIC GAS DETECTION PROBLEMS...



**Costly Sensor Replacements**



**Frequent Maintenance Cycles**



**Interferent Gases**

## ...SOLVED.



No consumable parts.



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.

# LOWER OPERATIONAL COSTS BY MORE THAN 80%

## TOXIC GASES

DETECTS UP TO 120M [394FT]

AMMONIA  
 $\text{NH}_3$

HYDROGEN FLUORIDE  
 $\text{HF}$

DETECTS UP TO 60M [197FT]

CARBON DIOXIDE  
 $\text{CO}_2$

HYDROGEN CHLORIDE  
 $\text{HCl}$

HYDROGEN SULFIDE  
 $\text{H}_2\text{S}$

**SimuGas™**  
SAFETY INTEGRITY

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

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



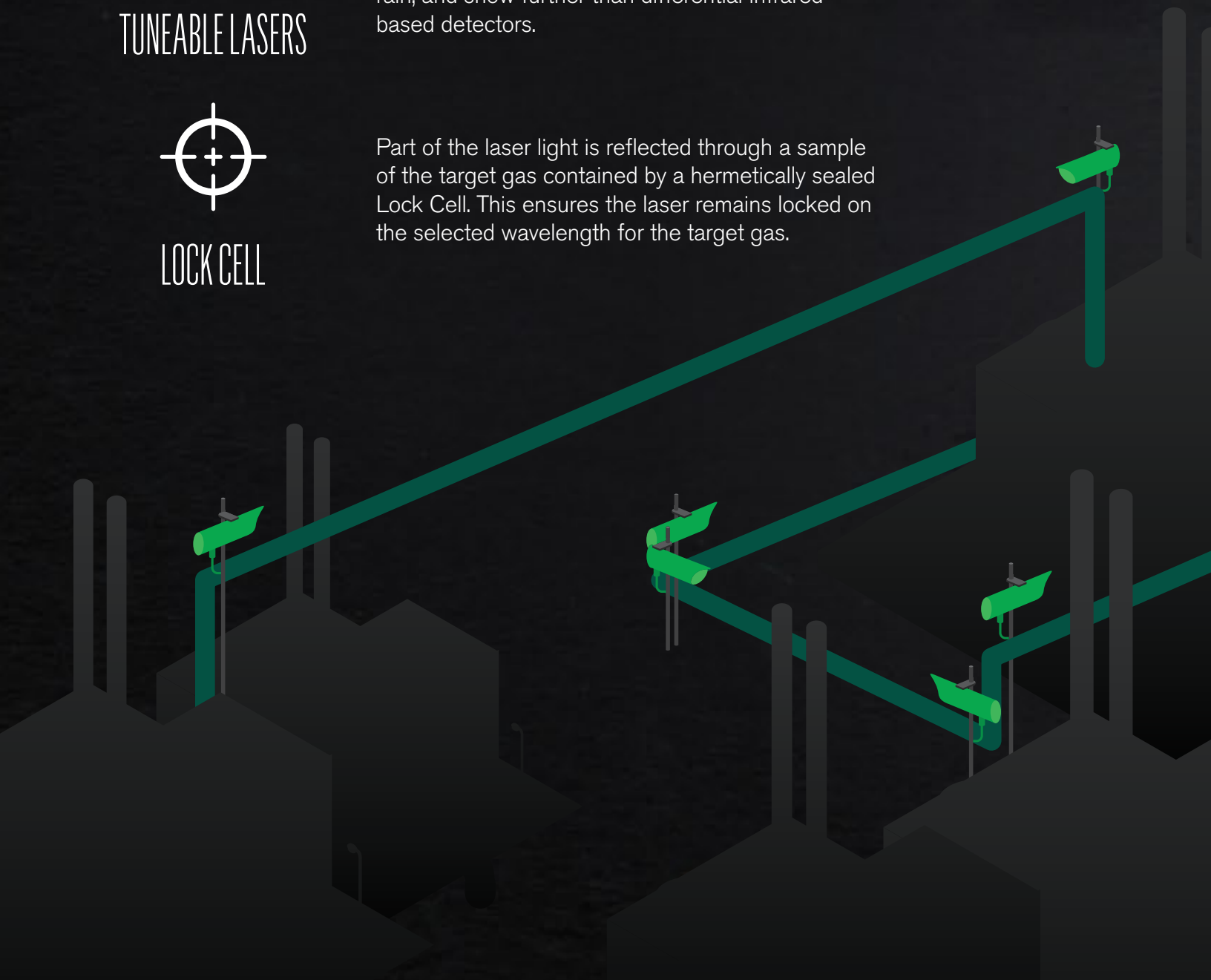
TUNEABLE LASERS

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 200M [656FT]

METHANE  
 $\text{CH}_4$

ETHYLENE  
 $\text{C}_2\text{H}_4$

DETECTS UP TO 60M [197FT]

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

I N T R O D U C I N G

# HARMONIC FINGERPRINT™

CONVENTIONAL LASER

SENSICIENT ELDS™



**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™ 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 <sub>2</sub> T5	ENTRY: M25
CLASS I, ZONE 1, AEx d IIB + H <sub>2</sub> T5	
Tamb = -40°C to +60°C [-40°F to 140°F]	INMETRO:
ENTRY: 3/4" NPT	Ex d IIB + H <sub>2</sub> T5 Gb
	Ex tb IIIC T100°C Db IP66/67
ATEX / IECEx:	Tamb: -40°C to +60°C [-40°F to 140°F]
II 2 GD Exd IIB + H <sub>2</sub> 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

## 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.

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice.

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