

SafEye™ Open Path Gas Detectors

Toxic and Combustible Open Path Gas Detection for Wide Area Coverage



SafEye™

SafEye Quasar Series of open path gas detectors (OPGD) are the highest standard for reliable and rapid detection of fugitive gas releases. Form a comprehensive protection strategy employing point and open path gas detection.

■ Rapid Detection Across Wide Areas

- Detect certain gas releases across distances of up to 660 feet (200 meters)
- Safety Integrity Level (SIL-2) certified for long-term reliability
- Performance approved per FM6325 and tested per EN60079-29-4
- Spectral fingerprint technology using Xenon flash source transmitter Immunity from sunlight and common facility radiation sources

■ Component of a Comprehensive Protection System

- Augments monitoring provided by fixed point gas detections
- Provides early warning of potentially catastrophic events
- Ideal for large area, line of sight applications or fence-line monitoring
- OPGD identifies leaks while point detectors indicate location

■ Easy to Use and Maintain

- Setup via local remote interface under power or via HART communication
- Designed with precision mounts for easy alignment during commissioning
- Continued performance through up to 95% obscuration
- Built-in datalogger maintaining detail records of up to 100 events

Performance, Technology, and Capability Combine for Superior Protection

Spectrex invented the xenon flash lamp design that revolutionized the open-path gas detection market, which, until then, was plagued by false alarms due to the drawbacks of the previous designs. Now, open path detectors complement the use of individual point detectors, take executive action and offer many significant benefits.

Open path gas detections provide wider area coverage likely to detect any large leak in the area with a high rate of response. Point gas detectors installed near high-probability leak sources help identify the location of the source providing facility personnel with the information necessary to make intelligent mitigation decisions. This complementary relationship with point gas monitors makes the installation location for open path systems less critical while continuing to deliver comprehensive protection.



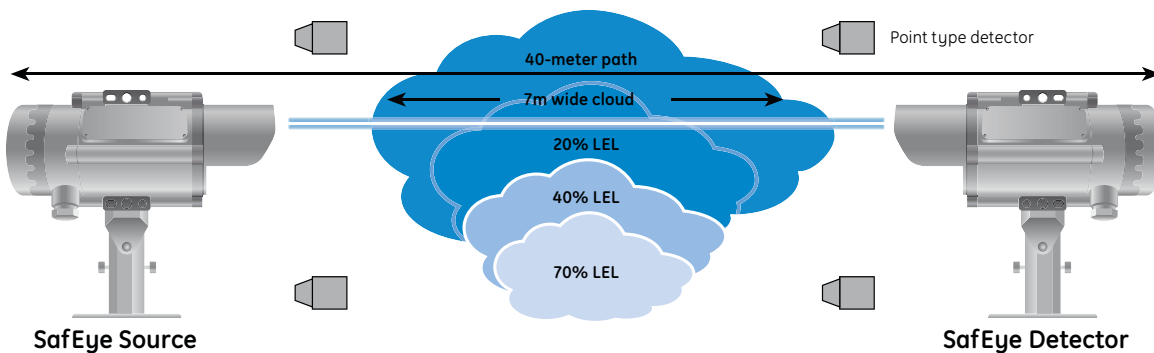
SafEye Quasar 900 (901-904) – Combustible Hydrocarbon Detection

SafEye Quasar 900 quickly and sensitively detects a wide range of gases from distances up to 660 feet (200 meters) – including alkanes (methane to hexane) and ethylene with a minimum detectable level is 0.15 LEL.m. No need for any manual adjustment or standard test gas, due to the built-in calibration of the SafEye Quasar 900.

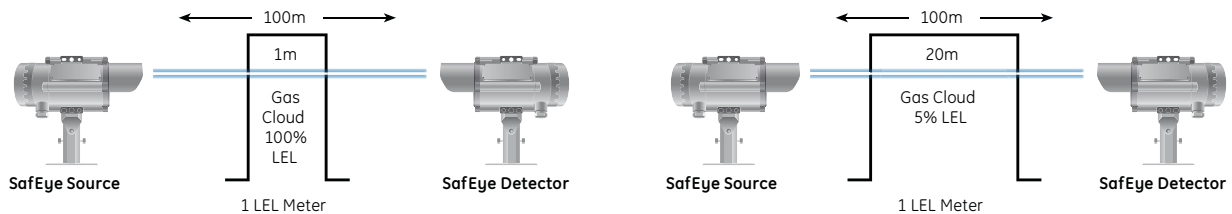


SafEye Quasar 950 & 960 – Ammonia and Hydrogen Sulfide Detection

SafEye Quasar 950 delivers rapid detection of Hydrogen Sulfide (H₂S) gas while SafEye Quasar 960 provides quick detection of Ammonia (NH₃). Both instruments can detect gas in ranges up to 200 feet (60 meters) and due to their inherent stability and sensitivity, the minimum detectable level is 50 PPM.m.



Depict the relationship between fixed point gas detectors and SafEye 900 Open-Path will measure 20% LEL x 7m = 1.4 LEL.m - well above 1 LEL.m alarm level



1 LEL meter (1 LEL.m) = a cloud of 100% LEL methane gas that is 1 meter wide

1 LEL meter (1 LEL.m) = a cloud of 5% LEL methane gas that is 20 meter wide



SafEye for Combustible and Toxic Gas Detection Applications

GENERAL SPECIFICATIONS

Detection Range	Model	901	902	903	904
	Feet	23-66	50-132	115-330	265-660
	Meters	7-20	15-40	35-100	80-200
Detected Gas		C1-C8			
Response Time		3 sec.			
Immunity to False Alarm		Not influenced by solar radiation, hydrocarbon flames and other external IR radiation sources.			
Sensitivity Range		0-5 LEL.m methane and propane 0-8 LEL.m ethylene			
Spectral Response		2.0 - 3.0µm			
Displacement/Misalignment Tolerance		±0.5°			
Drift		±7.5% of the reading or ±4% of the full scale (whichever is greater)			
Minimum Detectable Level		0.15 LEL.m			
Temperature Range		-67°F (-55°C) to 149°F (65°C)			
Humidity		Up to 95% non-condensing (withstands up to 100% RH for short periods)			
Heated Optics		To eliminate condensation and icing on the window			
Warranty		Safety system – 3 years			

ELECTRICAL SPECIFICATIONS

Power Supply	24VDC nominal (18-32 VDC)
Power Consumption	Detector: 250mA (300mA Peak)
(peak includes heated optics)	Source: 250mA (300mA Peak)
Warm Up Time	30 sec for transmitter and receiver
Electrical Connection (specify)	2 x 3/4" – 14NPT conduits or 2 x M25 x 1.5mm ISO
Electrical Input Protection	per MIL-STD-1275B
Electromagnetic Compatibility	EMI/RFI protected per EN50270

OUTPUTS – INTERFACES

0-20mA Current Output	Sink (source option) configuration - maximum load of 500 ohm at 18-32 VDC
	Gas reading 4-20mA Obscuration/beam block 2mA
	Normal, zero reading 4mA Zero calibration mode 1mA
	Maintenance call 3mA Fault 0mA
	Misalignment 2.5mA
RS-485 Interface – Modbus Compatible	The RS-485 input/output provides complete data information to a PC and receives control commands from the PC or handheld unit
HART	HART communications on 0-20mA analog current (FSK) – used for maintenance and asset management
Visual Status Indicator	3 color LED: Green – Power on, Yellow – Fault, Red – Alarm

MECHANICAL SPECIFICATIONS

Hazardous Area Approval	ATEX&IECEX Ex II 2(2)G D Ex db eb ib [ib Gb] IIB + H2 T4 Gb Ex tb IIIC T135°C Db Ta = -55°C to +65°C
	FM/FMC Class I Div 1 Groups B, C and D Class II,III Div 1 Groups E, F and G
	TR CU/EAC 1Ex d e ib [ib Gb] IIB + H2 T4 Gb X Ex tb IIIC T135°C Db X
	Inmetro Ex db eb ib [ib Gb] IIB_H2 T4 Gb Ex tb IIIC T135°C Db
Performance	Approved per FM6325 and tested by FM per EN60079-29-4
Reliability	SIL2 per IEC61508 (TUV)
Enclosure	The source and detector housings are stainless steel 316L with electro polish finish. The circuit boards are conformal coated and protected from mechanical vibrations. The tilt mount is also stainless steel 316L.
Dimensions	Detector/Source 10.5 x 5.1 x 5.1 inch (267 x 130 x 130mm) Tilt Mount 4.7 x 4.7 x 5.5 inch (120 x 120 x 158mm)
Weight	Detector/Source 11lb (5kg) Tilt Mount 4.2lb (1.9kg)
Water and Dust Tight	IP66 and IP68 NEMA 250 6P
Environmental	Meets MIL-STD-810C for Humidity, Salt and Fog, Vibration, Mechanical Shock, High and Low Temperature

