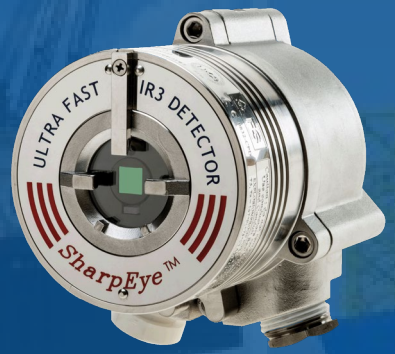
SPECTREX

Open Path Gas Detection

SPECTREX

WE SAVE LIVES



SharpEye™
Optical Flame
Detectors

SafeEye™
Open Path
Gas Detectors

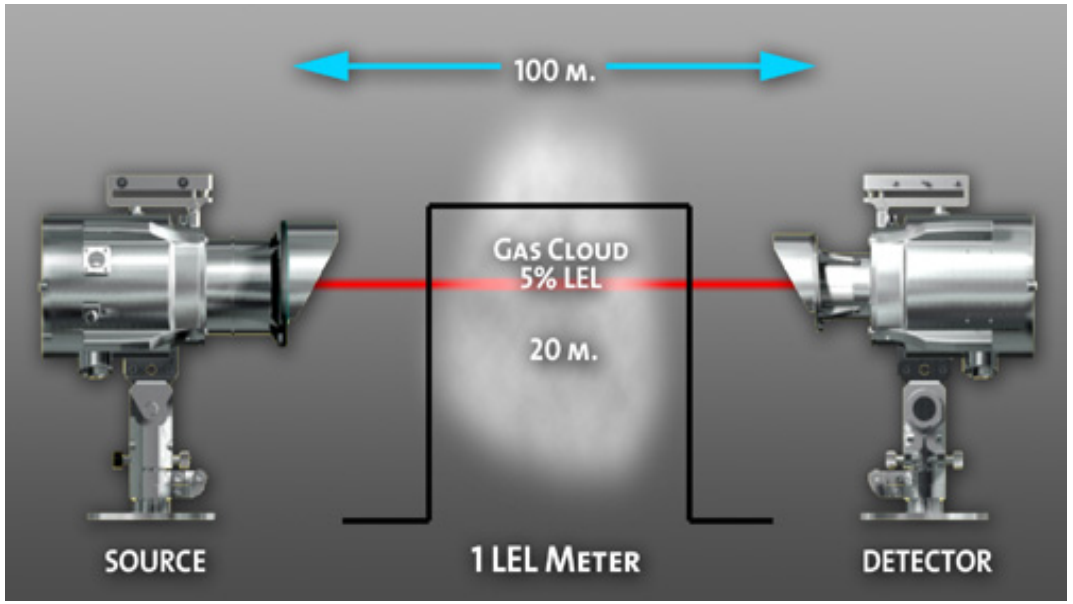
SAFE™ Flame
Detection &
Suppression
Systems

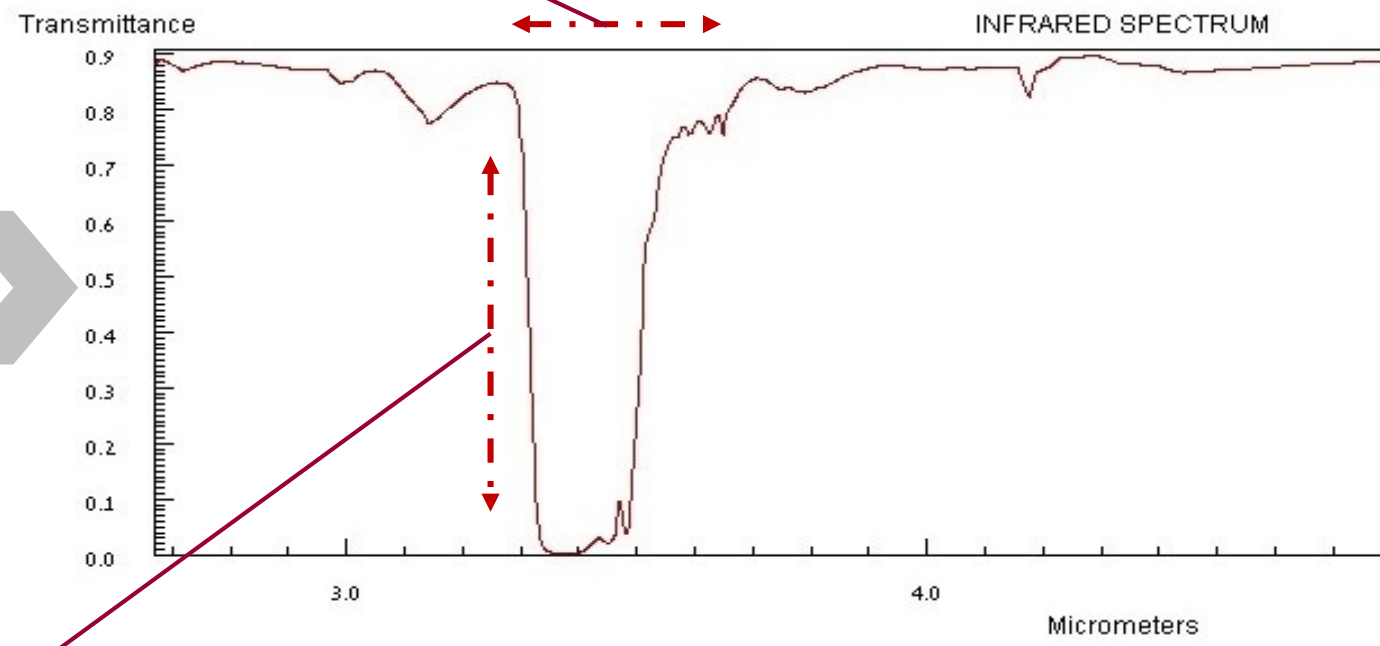
Keep An Eye On Your Safety

Open Path Gas Detection Technology

What is Open Path Gas Detection? How Does it Work?

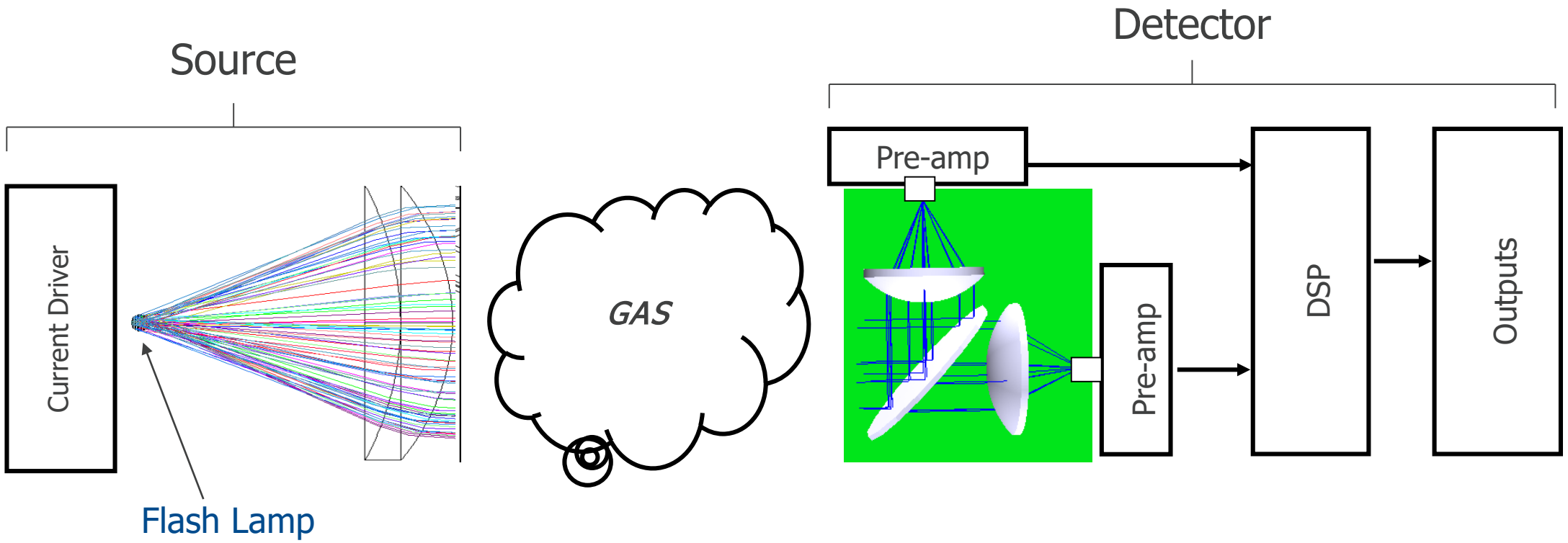
Each chemical substance has a unique absorption spectrum
in the UV, VIS, IR spectral bands





The absorption intensity is related to the concentration of the chemical substance in the optical path measured by the system

What is Open Path Gas Detection? How Does it Work?



The Quasar system detects hydrocarbon gases through dual spectral range monitoring, analyzing the absorption of radiation caused by gases in the atmosphere and comparing it to background atmospheric absorption.

SafEye Gas Detection Technology

- Optical Open-Path “Line-of-Sight” Gas Detection
- Spectral “Fingerprint” Gas Absorption
- Differential Optical Absorption Spectroscopy (DOAS)
- Unique Flash Light (pulses) Emission Source
- Unique sensors & filters for multiple gas detection and discrimination
- Direct, in-situ gas concentration determination at very low concentrations in air (LEL.m)
- Immune to false alarms from background radiation, environmental and extreme weather conditions

Spectrex Open Path Gas Detectors

SafeEye™ Open Path Gas Detectors

2000

200 Series for Combustible Gases

2002

300 Series Duct Mounted Applications

2004

400 Series for Toxic Gases

Quasar **900** NG – New Quad Technology

2006-2007

Quasar **700** for Combustible Gases

2012-2013

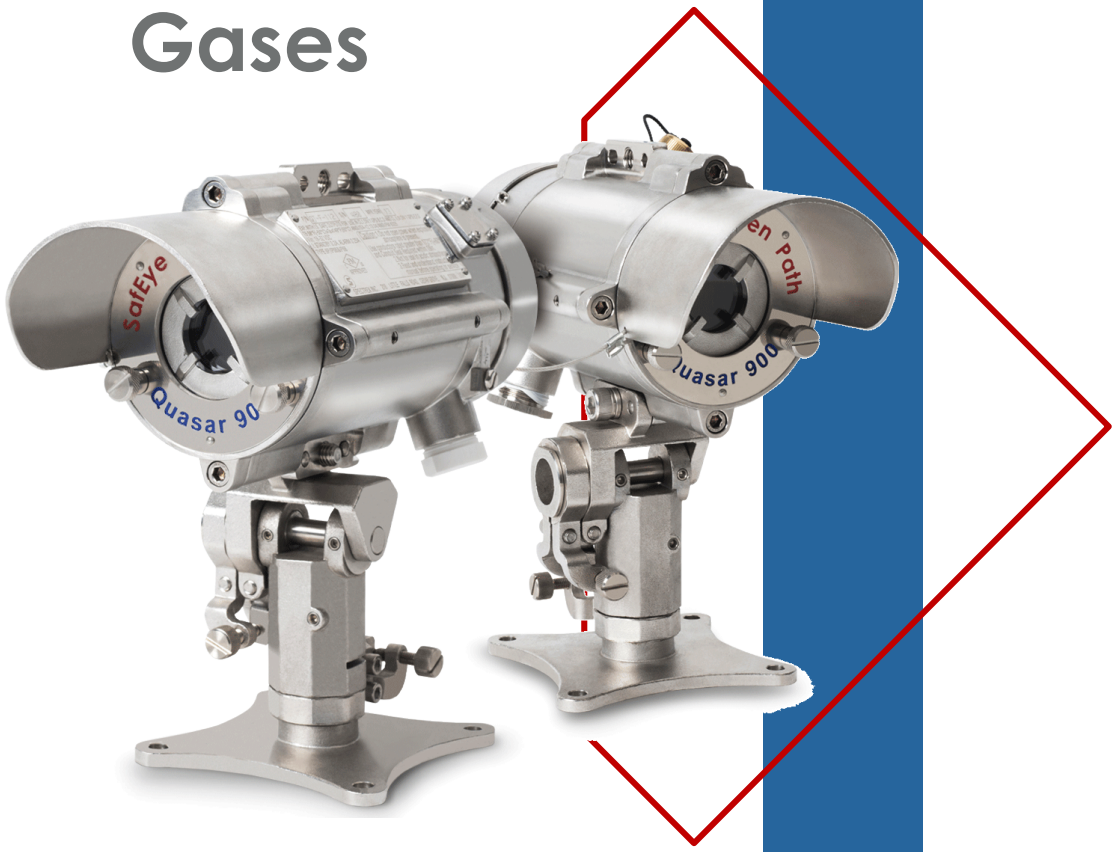
Quasar **900** for Flammable Gases

2018

Quasar **950** for Toxic Hydrogen Sulfide

2018-2019 Quasar **900** NG **New Core Technology**

SafeEye™ Quasar 900 Series – Flammable Gases



OPEN PATH IR TECHNOLOGY FOR WIDE RANGE OF HYDROCARBON GASES

Long Range Flammable Gas Detection >200m

High Sensitivity and high resolution

- 0.15 LEL.m detection level
- Fast response <3sec

High immunity to false alarms

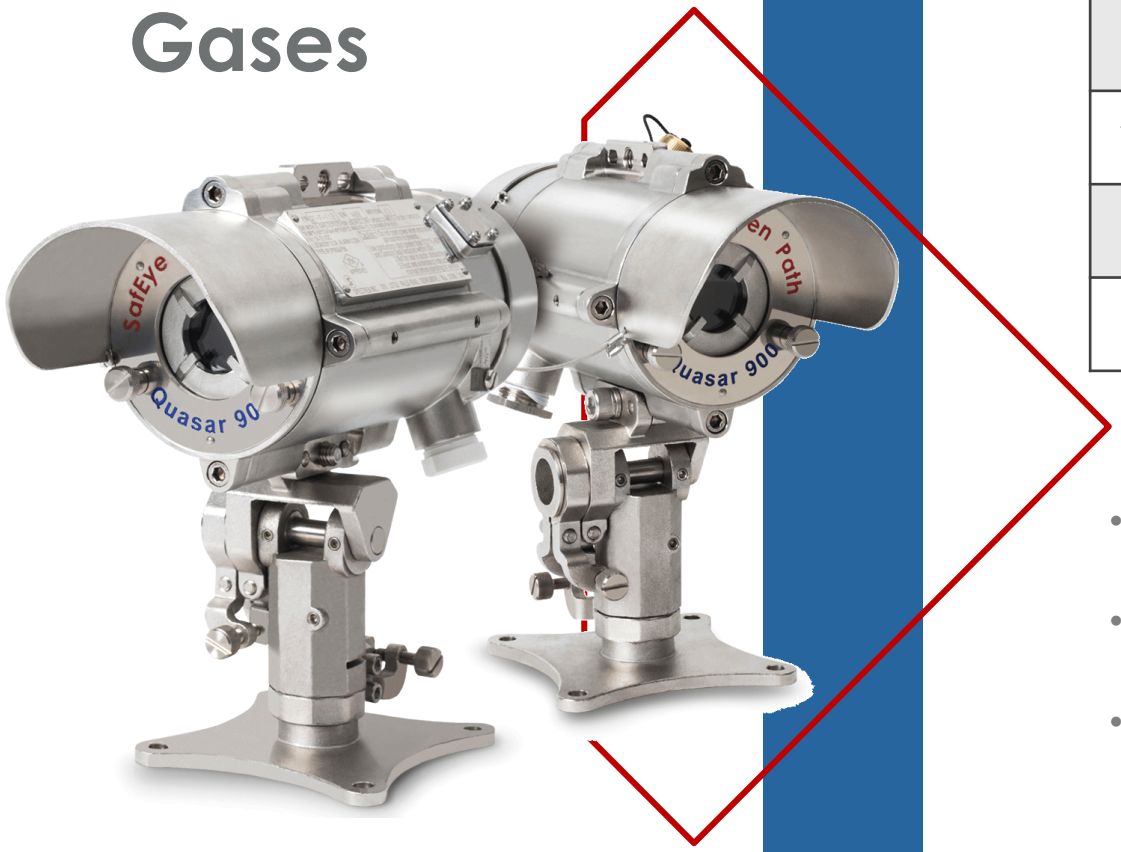
Failsafe –no unrevealed failures

Simple to align and commission

Built in event recorder of the last 100 events

MOST RELIABLE GAS DETECTOR IN ALL WEATHER CONDITIONS

SafeEye™ Quasar 900 Series – Flammable Gases

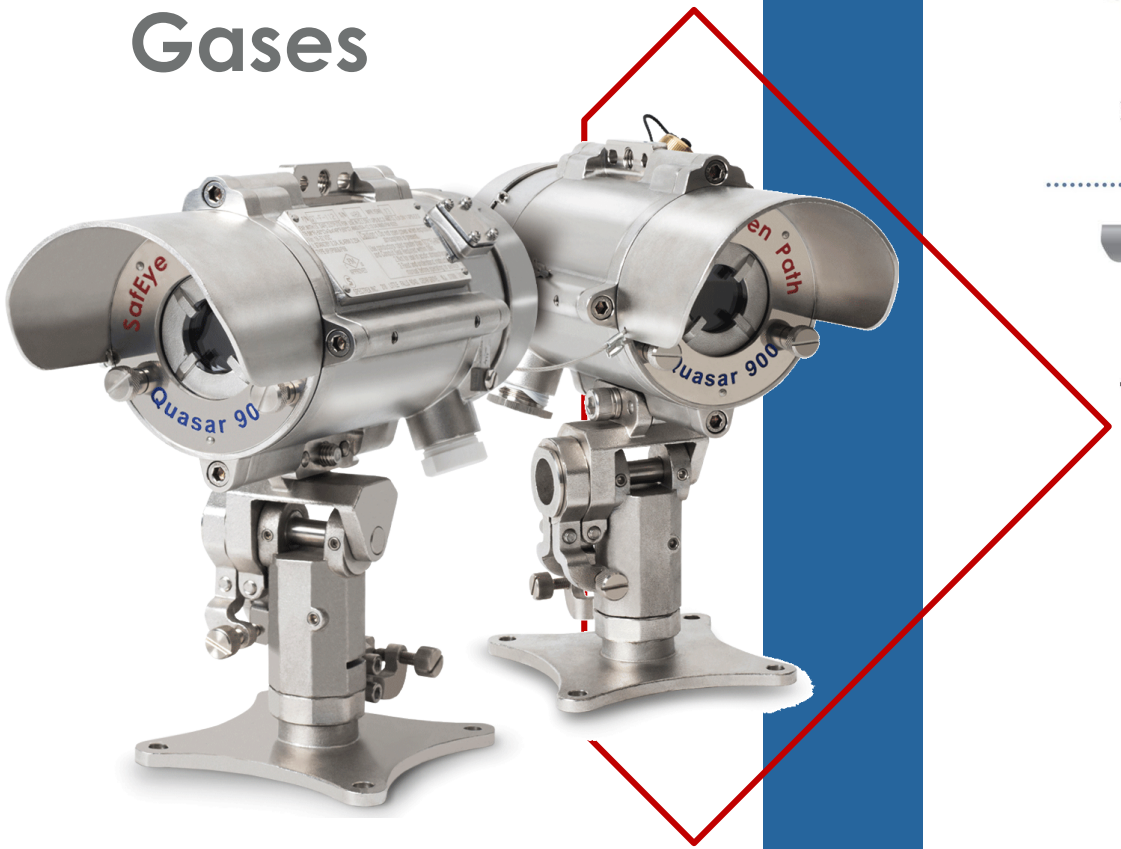


MODEL RANGE

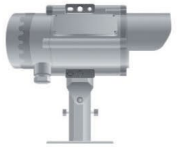
Max. Installation Distance	Min. Installation Distance	Source (Transmitter)	Detector (Receiver)	Model
66ft (20m)	23ft (7m)	QT-X-11X	QR-X-11X	901
132ft (40m)	50ft (15m)	QT-X-21X	QR-X-11X	902
330ft (100m)	115ft (35m)	QT-X-31X	QR-X-11X	903
660ft (200m)	265ft (80m)	QT-X-41X	QR-X-11X	904

- The source for models 901, 902 and 903 is the same electronically and optically.
- The only difference is in the apparatus diameter that enables different source intensity.
- The source for model 904 has different optics with different Flash lamp source.

SafeEye™ Quasar 900 Series – Flammable Gases



PART NUMBER DEFINITION



RECEIVER

QR	- X -	X	X	X
	C: ATEX **F:** FM **B:** Inmetro	**1:** STANDARD	**1:** STANDARD	**1:** M25 **2:** ¾" NPT

TRANSMITTER

QT	- X -	X	X	X
	C: ATEX **F:** FM **B:** Inmetro	**1:** 7-20m: *Short Range* **2:** 15-40m: *Medium Range 1* **3:** 35-100m: *Medium Range 2* **4:** 80-200m: *Long Range*	**1:** (OPTION)	**1:** M25 **2:** ¾" NPT

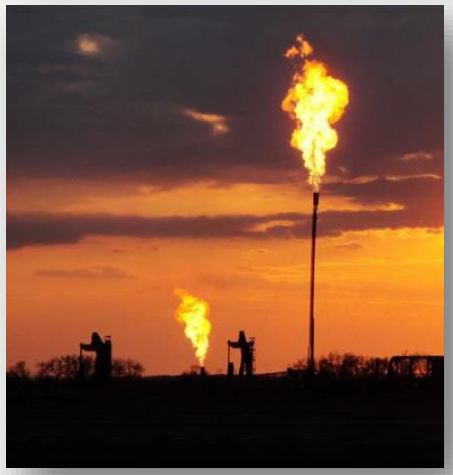
Open Path Gas Detection

Gas Calibration

The Quasar 900 is sensitive to a wide range of hydrocarbon gases.

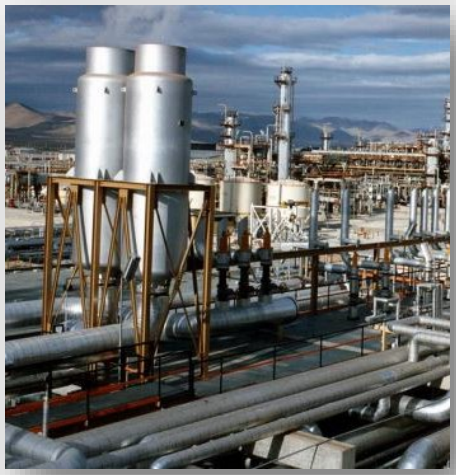
The detector has three gas calibrations:

Methane 100%



Propane 100%

Ethylene 100%



The response of the detector to a variety of hydrocarbon gases is relatively uniform.

There is a small difference in sensitivity to different hydrocarbons and mixtures.

Hazardous Area Approvals

The detector or source units have a combination of approvals. Each is a single enclosure (Exd) with an integral, segregated rear terminal section (Exe) and intrinsically safe (Exia) data-port for external in-situ connection to Hand-Held Diagnostic unit.

ATEX/IECEX

Approved per

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

Approved by FM USA & FM Canada for use in:

Class I Div 1 Groups B, C and D,

Class II,III Div 1 Groups E, F and G

T6 -56°F (-50°C) ≤Ta≤149°F (+65°C).

Other Approvals

Performance

FM approved per FM3625

FM tested per EN60079-29-4

Reliability (TUV)

SIL2 approved per IEC61508

Marine Approval (DNV)

Open Path Gas Detector Accessories

Mounting Accessories

- Tilt Mount
- Pole Mount (5”)
- Sunshield

Alignment Kits

- Commissioning Kit
  - Telescope
  - Check Filters (Warning & Alarm)
  - Installation Tools
  - RS485 Connection Harness

Maintenance Software

- HART Handheld
- Mini Laptop
- USB RS485 Harness