

**Product: XgardIQ Sensor Module**

**Subject: Technical Specification**

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<b>Product:</b>	<b>XgardIQ</b>
<b>Sensor Module Part Number:</b>	<b>XIQ-CV</b>
<b>Gas Type:</b>	<b>LPG (Liquid Petroleum Gas)</b>
<b>Sensor Technology:</b>	<b>Infrared (IR)</b>

**Environmental Specification:**

ATEX and IECEx Approved Ambient Temperature Range	-20°C to +55°C
Operational Temperature and Humidity Range:	-20°C to +55°C 0 to 95% RH non-condensing
Recommended storage Temperature and Humidity Range	-25°C to +85°C 0 to 95% RH non-condensing.
Warranty Period:	24 months if operated within stated environmental limits.
Pressure Range:	700 to 1300mBar

**Performance Characteristics:**

Expected Operating Life:	>10 years if operated within stated environmental limits.
Storage Life:	Unlimited if stored at 20°C in the original packaging in a clean environment.
T90 Response Time:	<45 seconds @ 0.5 litre per minute flow rate
Minimum Display Resolution:	1%LEL
Linearity	Maximum deviation: +/-0.1% volume
Long Term Sensitivity Drift:	Negligible

**Configuration:**

XgardIQ Display Name:	LPG
Range:	0-100%LEL
Maximum User-Selectable Range:	0-100%LEL
Minimum Recommended User-Selectable Range:	0-20%LEL
Alarm 1 Threshold	20%LEL
Alarm 2 Threshold	40%LEL
Stabilisation Time	60 seconds*

\*Please note thermal stabilisation time of sensor in Product Notes

## Product Notes and Calibration Instructions:

Crowcon recommends IR LPG sensors are initially calibrated on commissioning and bump-tested every 12 months minimum. Re-calibration is only necessary where the sensor reading deviates significantly from the applied test gas concentration.

Please refer to the XgardIQ installation, operating and maintenance instructions for information on performing sensor zero, calibration and bump-tests.

**Important:** to allow for thermal stabilisation of the sensor, it is essential that the sensor module is left powered for at least 1 hour after insertion before attempting to zero or calibrate. The sensor may be zeroed in clean air after 1 hour of being powered.

Crowcon recommends calibration and bump-tests are performed using 0.8% vol. (50%LEL) LPG (mix of 70% Propane, 30% Butane) in air at a flow-rate of 0.5 - 1 litre per minute. The sensor must be zeroed in clean air before calibration is performed.

XgardIQ allows cross-calibration using easily obtainable and usable vapours where the target gas is impractical for calibration. When using the Calibration menu, the user will be offered a choice of calibrating with the target gas (i.e. LPG), or two others (propane and pentane). The cross-calibration gas must be applied in the concentration shown on-screen: in this case 0.85% (50%LEL) propane or 0.55% (50%LEL) pentane; XgardIQ will automatically calibrate so that the sensor responds correctly to LPG.

The correction factors are detailed below for reference, however these are already stored in the sensor module configuration and thus the user just needs to choose the gas type.

**Note:** if a dust filter accessory is fitted to the sensor, calibration must be performed with the filter in-place. Filters must be inspected regularly and replaced as soon as they show signs of contamination. A dust filter will affect the T90 response time of the sensor: response time may be significantly longer than shown on this datasheet.

**Note:** The sinter should be inspected regularly; a blocked sinter may prevent gas from reaching the sensor.

**Note:** modules will be calibrated with a 70%/30% Propane/Butane LPG gas mixture where 100%LEL LPG = 1.61% volume in air.

### Measured Cross Calibration Data:

0.85% Vol. (50%LEL) Propane ( $C_3H_8$ ) = 55%LEL LPG.      Cross calibration factor = **1.10**  
0.55% Vol. (50%LEL) Pentane ( $C_5H_{12}$ ) = 40%LEL LPG.      Cross calibration factor = **0.80**

Note: The cross calibration factors have been measured at 20°C (nominally) and at 50%LEL concentration of the gases specified above.

### Safety Information:

Maintenance and calibration operations must be performed by qualified service personnel.

**Important note:** the IR sensor module must only be used with XgardIQ transmitters bearing the certification label shown below.



The IR sensor module must not be fitted to transmitters manufactured before August 2016 unless the transmitter has been upgraded to the latest hardware and certification status by Crowcon.

**Disclaimer:**

The data contained on this document is provided for guidance purposes only and is correct at the time of issue. Performance data is typical as measured at Crowcon; no guarantees can be made on the performance of individual products. Environmental specifications are specific to the sensor listed, and may differ from those shown on the gas detector datasheet.