

Preliminary Product Datasheet "LGD F200 (H)"



Laser Diode Gas Detector

Product launch: Q2 2010

IR Microsystems "microLGD" is an OEM Module, or sub-mount for the continuous monitoring of NH₃, CH₄, CO₂ or O₂ (others on request). Based on state-of-the-art *Tunable Diode Laser Spectrometry* (TDLs), the system has virtually no cross-sensitivity with other gases and features an innovative, patented measurement principle without the need for a reference-channel.



The modular subsystem LGD F200 (H) comprises micro-processor-driven read-out electronics with digital (and analog) data output for industry-standard connectivity, as well as a flow-through measurement cell. The cell also can be used for hot gas measurements up to 190 °C. The self-contained unit is built ready-to-use for rapid OEM integration.

Specifications

System Specifications

LGD F200 (H) layout	flow-through	
Meas. temp. flow-through	ambient, optional up to 190 °C	
Measurement cell layout	modular, different path lengths	depending on gas & application
Measurement range	ppm- or %-ranges	depending on gas & application
Drift	below detection limit	

Main Target Gases		Max. precision at T constant*	Peak-to-peak noise in the range T: -40 °C to +65 °C
NH ₃	Ammonia	0.3 ppm	±1 ppm
CH ₄	Methane	0.5 ppm	±1.5 ppm
CO ₂	Carbon Dioxide	5 ppm	±15 ppm
O ₂	Oxygen	130 ppm	±400 ppm

Other gases on request. Values at reference conditions. Values were calculated using an absorbance of $8 \cdot 10^{-6}$ based on a microLGD performance as of February 2009. Detection limits, precision and accuracy may degrade where a difficult measurement matrix is present, or where the target gas in flow-through measurements is present in the ambient atmosphere. * Also: Where concentration changes occur significantly faster than system temperature changes.

Reference conditions

Ref. path length	40 cm	
Ref. temperature	20 °C	
Ref. measurement time	2 sec	
Ref. ambient pressure	1013 hPa	
Ref. humidity	50 ± 1.5 % r.H.	

Operating Conditions

Usage	Interior use	
Cell temperature range	Flow-through: ambient to 190 °C	
Measurement humidity range	20 ... 97 % r.H., or 30 % absolute humidity max.	non-condensing
Ambient temp. range	- 30 ... 65 °C	non-icing
Ambient r.H. range	0 ... 99 % r.H.	non-condensing
Ambient pressure range	650 ... 1050 hPa	pressure sensor, firmware compensated

Storage Conditions

Storage temperature	- 40 ... 85 °C	
Humidity	0 ... 99 % r.H.	non-condensing

Dimensions

Mechanical dimensions	380 x 105 x 75 mm ³ (standard)	depending on meas. range & application
Flow-trough cell length	200 mm (standard)	different length on request, depending on measurement range & application
Flow-trough cell volume	15 mL (standard)	200 mm cell length
Path length	400 mm (standard)	different length on request, depending on meas. range & application
Tubing connection flow	6 mm OD	

Electrical Specifications

Power supply	10 ... 30 V DC	via RJ45
Detector power consumpt.	1 ... 5 W	
Optional heater power consumption	up to 100 W	if heated up to 190 °C
Data output	I ² C (4-20 mA, 0-5 V, RS485 or RS232)	over RJ45 (on customer request)

Standards

EN/IEC 61326	EMC requirements – Electrical equipment for measurement, control and laboratory use
EN/IEC 60825-1	Safety of laser products
EN60068-2-6	Vibration (target)
EN60068-2-27/31	Shock (target)

If you have additional questions or if you would like to discuss an application, please contact us at:

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