Preliminary Product Datasheet "LGD F200 (H)"

Laser Diode Gas Detector

Product launch: Q3 2010

Axetris' Laser Gas Detectors (LGDs) are OEM modules, or sub-mount for the continuous monitoring of NH_3, CH_4, CO_2 or O_2 (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-trough 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	Stand-alone module for integration by OEMs	
Measurement cell layout	Integrated flow-through cell, Modular set-up	different path lengths possible, depending on gas & application
Cell temperature	Ambient, optional up to 190°C	
Measurement range	ppm- or %-ranges	depending on gas & application
Typical dynamic range	2'000	Range extension possible upon request

Main Target Gases*		Detection Limit 2σ** 1s integration time	Detection Limit 2σ** 10 s integration time
NH_3	Ammonia***	0.8 ppm	0.3 ppm
CH_4	Methane	0.7 ppm	0.3 ppm
CO_2	Carbon Dioxide	10 ppm	3 ppm
O_2	Oxygen	200 ppm	70 ppm

*Other gases on request. **Detection limits at constant system temperature, 20°C, 1013hPa and 50 ± 1.5% r.H. Detection limits may change where system temperature changes occur significantly faster than concentration changes, and/or where a difficult gas matrix is present. *** Detection limits at high temperature degrade due to spectroscopic reasons; e.g. NH_3 at 190°C, 10 s integration time: 0.8 ppm detection limit.

Dimensions		
Mechanical dimensions (std. vs., approx. values)	350 x 78x 75 mm^3 380 x 105 x 75 mm^3, "H"-version	different length on request, depending on measurement range & application
Flow-trough cell length	200 mm (standard)	different length on request, depending on measurement range & application
Path length	400 mm (standard)	different length on request, depending on meas. range & application
Flow-trough cell volume	15 mL (standard)	
Tubing connection flow	6 mm OD	

Operating Conditions		
Usage	Interior use	
Cell temperature range	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	

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

Electrical Specifications		
Power supply	10 …30 V DC	via RJ45
Detector power consumpt.	< 2 W	
Optional cell heater power consumption	up to 100 W	for heating up to 190°C
Data output	I^2C and/or RS232 (4-20 mA, 0-5 V)	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
EN60068-2-27/31	Shock

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