Spark CO_2
Trace Level Carbon Dioxide Analyzer

GASES & CHEMICALS | CEMS | ENERGY | ATMOSPHERIC | SEMI & HB LED | SYNGAS | LAB & LIFE SCIENCE

Compact, affordable and powerful, the new Spark CO_2 brings you:

- Trace CO_2 detection limit down to 250 ppb
- Wide dynamic measurement range
- Drift-free performance
- Immunity to vibration
- No spectral interferences
- Compact standalone footprint or rack-mountable
- Low Cost of Ownership
- Simple operation
- Serani™ interface software for remote analyzer control & data analysis

Advancing Accurate, Consistent & Drift-Free CO_2 Measurements

The removal of contaminants prior to cooling and distillation is essential to the cryogenic air separation process. If not detected quickly, impurities such as carbon dioxide (CO_2) can freeze in the downstream cryogenic equipment causing damage and product spoilage. Tiger Optics' Spark CO_2 analyzer affords fast, accurate response and clean-up, with robust, drift-free performance.

The Spark CO_2 builds on Tiger Optics' longstanding leadership for trace monitoring of critical impurities in pressurized gases. Based on powerful Cavity Ring-Down Spectroscopy (CRDS), with a proprietary laser-locked cell, the Spark is free of drift, guaranteeing consistent and reliable trace CO_2 detection in nitrogen and other inert gases. Highly specific to the target molecule, CRDS also prevents cross-interferences from distorting your measurement.

Plus, there is no need to perform costly and time-consuming zero and span calibrations, saving both time and money with continuous, on-line service. With freedom from calibration and maintenance, the Spark CO_2 gives you exceptional ease of use and extremely low Cost of Ownership.

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Performance	
Operating range	See table below
Detection limit (LDL, 3σ/24h)	See table below
Precision (1σ, greater of)	± 0.75% or 1/3 of Sensitivity
Accuracy (greater of)	± 4% or the LDL
Speed of response	< 3 minutes to 90%
Environmental conditions	10°C to 40°C
	30% to 80% RH (non-condensing)
Storage temperature	-10°C to 50°C

Gas Handling System and Conditions	
Wetted materials	316L stainless steel
	10 Ra surface finish
Gas connections	1/4" male VCR inlet and outlet
Inlet pressure*	10 – 125 psig (1.7 – 9.6 bara)
Flow rate	≤1.4 slpm (in N_2, gas dependent)
Sample gases	Most inert and passive matrices
Gas temperature	Up to 60°C

Dimensions	H x W x D [in (mm)]
Standard sensor	8.73 x 8.57 x 23.6 (222 x 218 x 599)
Sensor rack	8.73 x 19.0 x 23.6 (222 x 483 x 599)
(fits up to two sensors)	

Weight	
Standard sensor	32 lbs (14.5 kg)

Electrical	
Alarm indicators	2 user programmable
	1 system fault
	Form C relays
Power requirements	90 – 240 VAC, 50/60 Hz
Power consumption	40 Watts max.
Signal output	Isolated 4–20 mA per sensor
User interfaces	5.7" LCD touchscreen
	10/100 Base-T Ethernet
	802.11g Wireless (optional)
	RS-232
	Modbus TCP (optional)

Performance, CO_2:	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 1500 ppm	250 ppb	80 ppb
In Clean Dry Air (CDA)	0 – 1500 ppm	250 ppb	80 ppb

*Inlet pressure as low as 0 psig available with Atmospheric Pressure Sampling option

Contact us for additional analytes and matrices.
U.S. Patent # 7,277,177

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