



Spark CH₄ · CO · CO₂ · C₂H₂ Spark+ CO

Trace Level Analyzers for non-H₂O Contaminants

GASES & CHEMICALS

CEMS

ENERGY

SEMI & HB LED

ATMOSPHERIC

LAB & LIFE SCIENCE

Compact, affordable and powerful, the Spark family for non-H₂O contaminants brings you:

- Part-per-billion (ppb) level sensitivity for CO, CO₂, CH₄ and C₂H₂
- Wide measurement range
- Drift-free performance & immunity to vibration
- No spectral interferences
- Standalone or rack-mountable
- Lowest Cost of Ownership & simple operation
- Serani™ interface software for remote analyzer control & data analysis
- Spark+ version with lower LDL available for CO

Simple, Drift-Free Contaminant Detection Beyond Moisture

With the Spark analyzer family, powerful advanced spectroscopy is available at a popular price for a host of applications, from process control and quality assurance in Air Separation Plants to refineries and hydrogen plants. Other applications include monitoring of cylinder filling, bulk delivery and distribution transfer points, as well as welding, medical, industrial and high-purity gas production, and more. Part-per-billion level sensitivity and high-ppm ranges make the Spark an ideal trace gas detection solution for these industrial gas applications.

Say goodbye to cumbersome, complex, costly and labor-intensive mid-20th century technology. Gone is the need for calibration, spare parts, limited measurement ranges, and worries about drift and downtime usually associated with NDIRs and GCs. And without the need for H₂ fuel gas and with plug-and-play installation within minutes, the Spark is a faster and safer alternative to FIDs. In addition, the Spark has the lowest Cost of Ownership in the industry.

The Spark CH₄, CO, CO₂ and C₂H₂ perfectly complement our popular Spark H₂O trace moisture analyzer to utilize powerful, drift-free and hassle-free Cavity Ring-Down Spectroscopy technology for all your critical contaminants. Choose the Spark+ CO when lower detection limit for carbon monoxide is required.

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Performance		Dimensions	H x W x D [in (mm)]
Operating range	See tables below	Standard sensor	8.73 x 8.57 x 23.6 (222 x 218 x 599)
Detection limit (LDL, 3σ/24h)	See tables below	Sensor rack	8.73 x 19.0 x 23.6 (222 x 483 x 599)
Precision (1σ, greater of)	± 0.75% or 1/3 of LDL	(fits up to two sensors)	
Accuracy (greater of)	± 4% or the LDL	Weight	
Speed of response	< 1 minute to 90%	Standard sensor	32 lbs (14.5 kg)
Environmental conditions	10°C to 40°C 30% to 80% RH (non-condensing)	Electrical	
Storage temperature	-10°C to 50°C	Alarm indicators	2 user programmable 1 system fault Form C relays
Gas Handling System and Conditions		Power requirements	90 – 240 VAC, 50/60 Hz
Wetted materials	316L stainless steel 10 Ra surface finish	Power consumption	40 Watts max.
Gas connections	1/4" male VCR inlet and outlet	Signal output	Isolated 4–20 mA per sensor
Inlet pressure	10 – 125 psig (1.7 – 9.6 bara)	User interfaces	5.7" LCD touchscreen 10/100 Base-T Ethernet 802.11g Wireless (optional) RS-232 Modbus TCP (optional)
Flow rate	~0.7 slpm (in N ₂), gas-dependent		
Sample gases	Most inert and passive matrices		
Gas temperature	Up to 60°C		

Spark CH₄

Performance, CH ₄ :	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 80 ppm	7.5 ppb	2.5 ppb
In Oxygen	0 – 50 ppm	6 ppb	2.0 ppb
In Clean Dry Air (CDA)	0 – 80 ppm	7.5 ppb	2.5 ppb
In Argon	0 – 70 ppm	6.5 ppb	2.2 ppb
In Helium	0 – 50 ppm	6 ppb	2.0 ppb
In Hydrogen	0 – 80 ppm	7.5 ppb	2.5 ppb

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Spark CO

Performance, CO:	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 2000 ppm	200 ppb	70 ppb
In Oxygen	0 – 1800 ppm	180 ppb	60 ppb
In Clean Dry Air (CDA)	0 – 2000 ppm	200 ppb	70 ppb
In Argon	0 – 1600 ppm	160 ppb	55 ppb
In Helium	0 – 1800 ppm	180 ppb	60 ppb
In Hydrogen	0 – 2500 ppm	250 ppb	85 ppb

Spark+ CO

Performance, CO:	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 2000 ppm	120 ppb	40 ppb
In Oxygen	0 – 1800 ppm	110 ppb	40 ppb
In Clean Dry Air (CDA)	0 – 2000 ppm	120 ppb	40 ppb
In Argon	0 – 1600 ppm	100 ppb	35 ppb
In Helium	0 – 1800 ppm	110 ppb	40 ppb
In Hydrogen	0 – 2500 ppm	150 ppb	50 ppb

Spark CO₂

Performance, CO ₂ :	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 1500 ppm	250 ppb	80 ppb
In Oxygen	0 – 1200 ppm	220 ppb	75 ppb
In Clean Dry Air (CDA)	0 – 1500 ppm	250 ppb	80 ppb
In Argon	0 – 1200 ppm	220 ppb	75 ppb
In Helium	0 – 1200 ppm	220 ppb	75 ppb
In Hydrogen	0 – 2000 ppm	400 ppb	140 ppb

Spark C₂H₂

Performance, C ₂ H ₂ :	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 80 ppm	8 ppb	3 ppb
In Oxygen	0 – 70 ppm	7 ppb	2.5 ppb
In Clean Dry Air (CDA)	0 – 80 ppm	8 ppb	3 ppb

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

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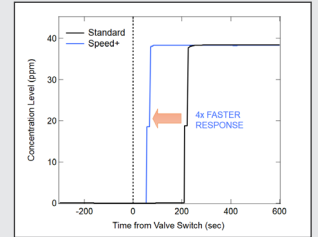


Analyzer Upgrades

Add more value your Spark analyzer with these powerful options:

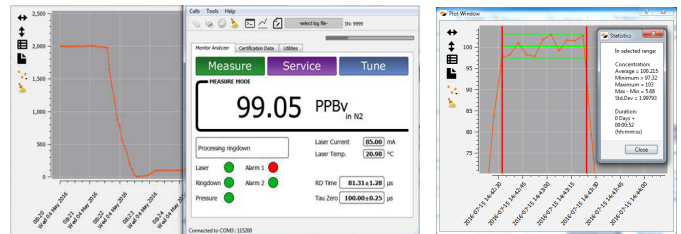
Speed+ Performance Upgrade

- Intelligent dynamic data processing boosts analyzer's speed of response while maintaining low noise performance
- Real-time process control ensures quality, as well as increased capacity to improve efficiency and profitability
- Analyze with Ease™—no manual adjustments required, Speed+ is fully automatic



Serani™ Analyzer Interface Software

- Connect to your analyzer remotely from your computer via Ethernet or RS-232 (Windows XP or higher required)
- Data recording, plotting and analysis in real-time with the click of a button
- One-step data collection and other service function shortcuts



Annual Performance Verification

- Low-cost and easy remote verification process, with no need to return the analyzer to the factory
- Annual verification by Tiger Optics ensures that your analyzer continues to meet its original specifications
- Up-to-date Verification Certificate to comply with your QA/QC standards



Installation & Commissioning Package

- On-site analyzer installation and start-up by Tiger Optics trained personnel
- Ensuring correct installation helps prevent future issues with the analyzer or your sampling system
- Gain peace of mind and save money in the long run



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