



Spark H₂O in CO₂ Trace Level Analyzer for Moisture in Carbon Dioxide

GASES & CHEMICALS

CEMS

ENERGY

ATMOSPHERIC

SEMI & HB LED

SYNGAS

LAB & LIFE SCIENCE

For the first time, powerful advanced spectroscopy is available at a popular price for a host of applications, from quality assurance to cylinder filling, as well as welding, medical, industrial and high-purity gas production; bulk delivery and distribution transfer points; and more. Say goodbye to cumbersome, complex, costly and labor-intensive 20th century technology. Gone is the need for calibration, spare parts, limited measurement ranges, and worries about drift and downtime. Plus, it's a joy to start up and to operate.

The compact and affordable Spark H₂O in CO₂ offers:

- Powerful, proven Cavity Ring-Down Spectroscopy (CRDS) technology
- Freedom from calibration
- Extremely low Cost of Ownership
- Ethernet, 4-20 mA and RS-232 connectivity
- Fast response with low gas consumption
- Wide-range H₂O analysis in pure CO₂: 550 ppb to 600 ppm!

The original maker of CRDS analyzers, Tiger Optics has been serving users worldwide for over a dozen years. We are in HyCO plants, with our Class I, Div 2 rated CO-rect analyzer; in nuclear plants, where we are Safety Integrity Level One (SIL 1) approved; and we are widely used in semiconductor fabs for bulk and specialty monitoring, in addition to toolmounted process control and QA/QC of purifiers and gas delivery systems. We are the designated standard under SEMI F-112-0613 for determining moisture dry-down characteristics of such systems. Tiger Optics was used by NIST to name the new hydrogen chloride protocol for continuous emissions monitoring, and we now measure HCl in stack gas at coal-fired utilities.

Put a little Spark in your life!

Tigeroptics

21ST

CENTURY SPECTROSCOPY

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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 LDL
Accuracy (greater of)	± 4% or 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
Sample gases	Most inert, toxic, 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 (fits up to two sensors)	8.73 x 19.0 x 23.6 (222 x 483 x 599)

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, H ₂ O:	Range	LDL (3σ)	Precision (1σ) @ zero
In CO ₂	0 – 600 ppm	550 ppb	180 ppb
In Nitrogen	0 – 500 ppm	7.5 ppb	2.5 ppb
In Oxygen	0 – 250 ppm	7.5 ppb	2.5 ppb
In Argon	0 – 200 ppm	6 ppb	2.0 ppb
In Helium	0 – 125 ppm	4 ppb	1.3 ppb
In Hydrogen	0 – 400 ppm	6 ppb	2.0 ppb
In Clean Dry Air (CDA)	0 – 450 ppm	7.5 ppb	2.5 ppb

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

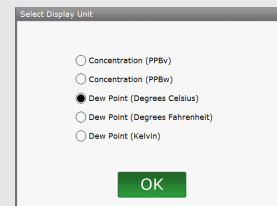
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Optional Packages

Customize your Spark H₂O in CO₂ analyzer with these powerful add-ons:

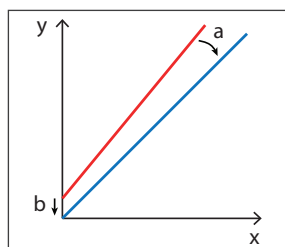
Dew Point Measurement

- Moisture measurement can be displayed as Dew Point (in units of °C, °F or K) or Concentration (as volume or weight basis)
- Ideal for use as transfer standard for Dew Point-based moisture generators – no unit conversion necessary
- Wide Dew Point measurement range from –100°C to –13°C



Linear Fit Mode

- Linear $y = a x + b$ fit function permits user-defined calibration curves with programmable slope (a) and offset (b)
- Automatically adjusts readings to factor in dilution probes and sampling system offsets, while retaining the absolute data
- Enables calibration against external standards, when mandated by rules or regulations



Annual Remote Certification

- Low-cost and easy remote certification process, with no need to return the analyzer to the factory
- Annual re-certification 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



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