

PRODUCT DATASHEET

Spark H₂O in CO₂ Trace Level Moisture Analyzer



The compact and affordable Spark H₂O in CO₂ offers:

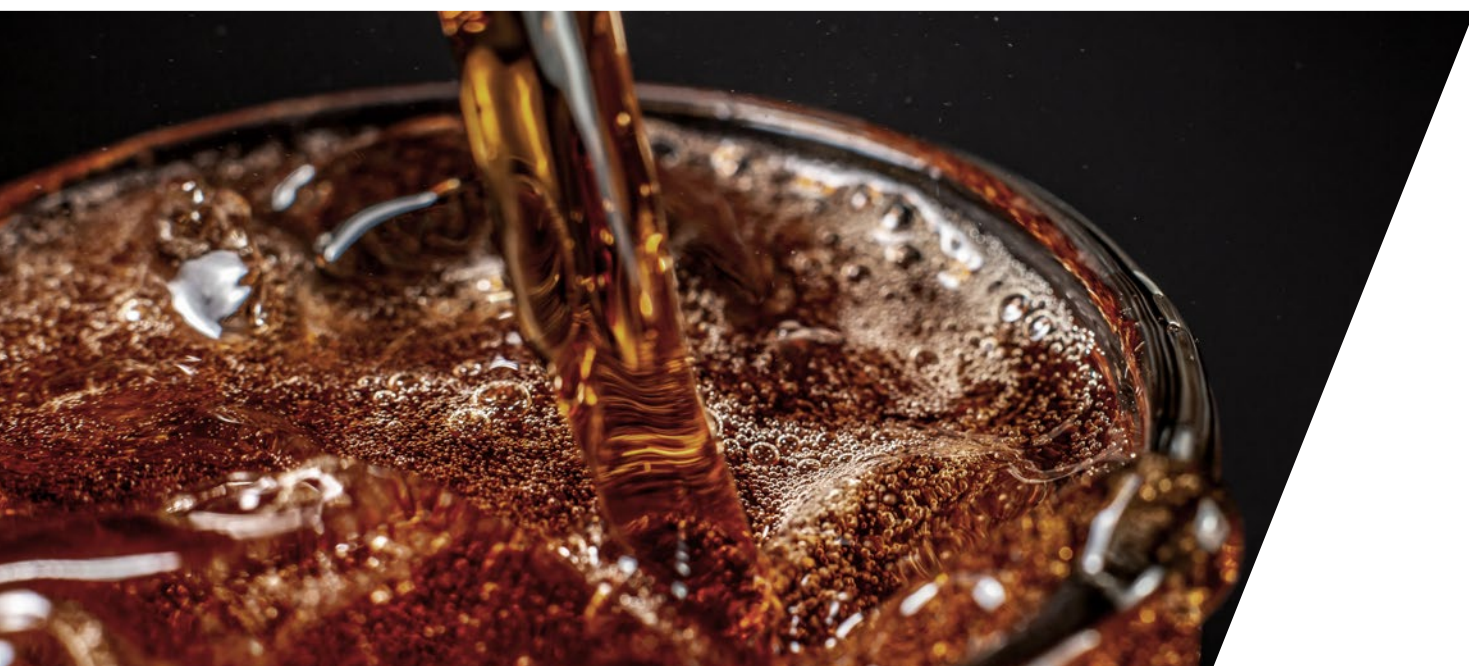
- Powerful, proven Cavity Ring-Down Spectroscopy (CRDS) technology
- Freedom from calibration
- Extremely low cost of ownership
- Ethernet, 4–20 mA and RS-232 connectivity
- Fast response with low gas consumption
- Wide-range H₂O analysis in pure CO₂: 550 ppb to 600 ppm!
- NOW INCLUDED: **Speed+ performance upgrade** – intelligent dynamic data processing boosts analyzer's speed of response while maintaining low noise performance



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 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-rekt 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 tool-mounted process control and QA/QC of purifiers and gas delivery systems. We are the designated standard under SEMI F112-0613 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!





Performance

Operating range:	See table on next page
Detection limit (LDL, $3\sigma/24h$):	See table on next page
Precision (1σ, greater of):	$\pm 0.75\%$ or $1/3$ of LDL
Accuracy (greater of):	$\pm 4\%$ 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 & Weight

Standard sensor:	H × W × D 8.73 × 8.57 × 23.6 in (222 × 218 × 599 mm)
Sensor rack (fits up to two sensors):	H × W × D 8.73 × 19.0 × 23.6 in (222 × 483 × 599 mm)
Standard sensor weight:	32 lbs (14.5 kg)

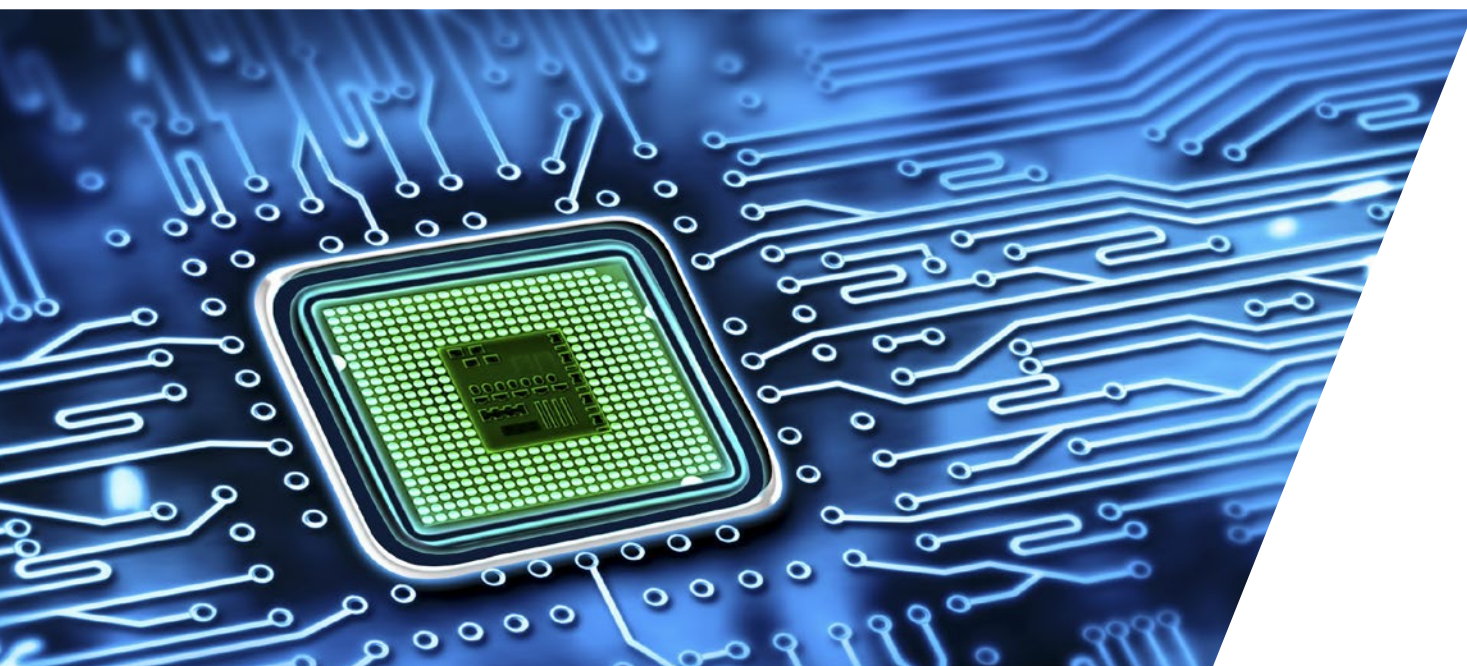
Electrical and Interfaces

Platform	Max Series analyzer
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. USB, RS-232, RS-485. Modbus TCP (optional)
Data storage:	Internal or external flash drive
Certification:	CE Mark

Performance, H₂O

	Range	LDL (3σ)	Precision (1σ) @ zero
In Carbon Dioxide:	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
In Carbon Monoxide:	0 – 480 ppm	7 ppb	2.5 ppb

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

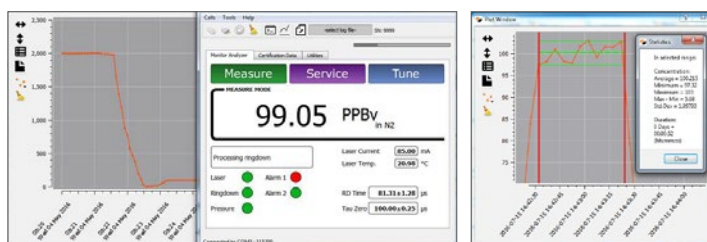


Optional Packages

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

Serani™ Max 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



PREMIUM INSIGHTS – GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights' products and solutions deliver innovative and differentiated analysis and measurement solutions and technologies that add high value to our customers and protect the environment.

Our commitment is to deliver smart and affordable innovation that optimizes process, improves safety, and transforms our world.



OUR PREMIUM GLOBAL BRANDS

AQ ALPHA OMEGA
INSTRUMENTS

 **ATOM**
INSTRUMENT



MBW calibration

COSAXENTAUR

 **HYGROCONTROL**

LAR THE
TOC
COMPANY

Tigeroptics