Prismatic™ 2
Multi-Species Gas Analyzer

GASES & CHEMICALS | CEMS | ENERGY | ATMOSPHERIC | SEMI & HB LED | SYNGAS | LABORATORY

The Prismatic 2 features:

- Simultaneous multi-species detection
- Wide Dynamic Range
- No calibration required
- Low Cost of Ownership
- Compact – all in one box
- Superior Sensitivity

With the advent of the Prismatic 2 laser-based, multi-species trace gas analyzer, Tiger Optics takes a quantum leap forward. With a combined electronics and sensor module that can simultaneously measures multiple analytes in a wide variety of background gases, the Prismatic 2 offers precise analysis over a vast dynamic range. You can select multiple species of interest from a sizable and growing detection list, including moisture, methane, carbon monoxide, carbon dioxide, ammonia and hydrogen sulfide.

The Prismatic 2 provides a critical tool for use in a variety of applications in both research and industrial settings where continuous, on-line gas monitoring is essential. The ability to measure from parts-per-million to parts-per-trillion of multiple analytes enables extensive research in gaseous applications at laboratories, such as multiple national metrology institutes. Low-level contaminant detection helps ensure the quality of high-purity hydrogen necessary in the electrochemical process inherent to hydrogen fuel cell production.

Based on the Beer-Lambert Law, our proven CRDS technology offers absolute accuracy, with no external calibration required. Our customers worldwide prize our instruments for their precision, stability, exceptionally low cost-of-ownership, vast dynamic range, rapid speed of response and ease of use and installation, among other attributes. By providing an affordable, yet highly sensitive means to measure multiple trace species in gases, the Prismatic 2 offers a compelling choice for gas analysis.

Tiger Optics | 21ST CENTURY SPECTROSCOPY

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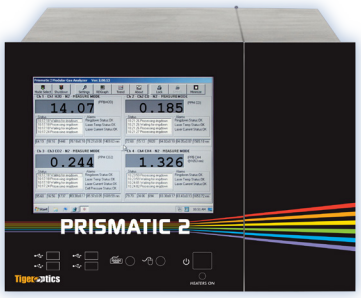

Performance	
Operating range	See table on next page
Detection limit (LDL,	See table on next page
24 h peak-to-peak variation)	
Sensitivity (3σ)	See table on next page
Precision (1σ, greater of)	± 0.75% or 1/3 of Sensitivity
Accuracy (greater of)	± 4% or 1/2 of LDL
Speed of response	< 5 minutes to 95%
	(in 4-channel operation)
Environmental conditions	10°C – 40°C
	30% – 80% RH (non-condensing)
Storage temperature	-10°C – 50°C
Gas Handling System and Conditions	
Wetted materials	316L stainless steel
	(optional Hastelloy©)
	10 Ra surface finish
Gas connections	1/4" male VCR inlet and outlet
Leak tested to	1 x 10^{-9} mbar l / sec
Inlet pressure	20 – 125 psig (2.4 – 9.6 bara)
Flow rate	< 1 slpm (gas dependent)
Sample gases	Inert gases, hydrogen and oxygen
Gas temperature	Up to 60°C

Dimensions	H x W x D [in (mm)]
Electronics unit and sensor	12.25 x 17.50 x 29.65
	(311 x 445 x 753)
Weight	
Standard sensor	70.5 lbs (32.0 kg)
Electrical	
Alarm indicators	User programmable setpoints
	(1 per channel), Form C relays
Power requirements	90 – 240 VAC, 50/60 Hz
Power consumption	400 Watts max.
Signal output	0–5 VDC analog
	Isolated 0–20 mA or 4–20 mA
User interfaces	10.4" LCD touchscreen
	PS/2 mouse and keyboard
	10/100 Base-T Ethernet
	4 USB ports, RS-232

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Performance in N_2, H_2 or CDA:	Range	LDL (Peak-to-peak)	Sensitivity (3σ)
Methane (CH_4)	0 – 10 ppm	1.0 ppb	0.75 ppb
Moisture (H_2O)	0 – 50 ppm	10 ppb	5 ppb
Carbon Monoxide (CO)	0 – 1000 ppm	150 ppb	100 ppb
Carbon Dioxide (CO_2)	0 – 2000 ppm	200 ppb	150 ppb

Performance in He:	Range	LDL (Peak-to-peak)	Sensitivity (3σ)
Methane (CH_4)	0 – 6 ppm	0.7 ppb	0.5 ppb
Moisture (H_2O)	0 – 10 ppm	2.0 ppb	1.0 ppb
Carbon Monoxide (CO)	0 – 800 ppm	130 ppb	90 ppb
Carbon Dioxide (CO_2)	0 – 1600 ppm	170 ppb	130 ppb

Performance in ambient air*:	Range	Precision (1σ) at typical ambient levels	Accuracy at typical ambient levels
Methane (CH_4)	0 – 100 ppm†	<15 ppb over 24 hours	<80 ppb
Carbon Dioxide (CO_2)	0 – 1500 ppm	<3 ppm over 24 hours	<15 ppm

* Vacuum pump required
† Upper range available as high as 1000 ppm on request.
Contact us for additional analytes and matrices.
U.S. Patents # 6,097,555, # 6,172,823, # 7,277,177

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