



LaserTrace 3 H₂O

LaserTrace 3 O₂

Ultra-High Purity Gas Analyzers

GASES & CHEMICALS

CEMS

ENERGY

ATMOSPHERIC

SEMI & HB LED

SYNGAS

LAB & LIFE SCIENCE

Designed for trace level contamination analysis, the LaserTrace 3 H₂O and O₂ analyzers offer:

- Industry-leading parts-per-trillion detection capability
- Unprecedented speed of response
- Wide dynamic range
- Absolute measurement (freedom from calibration gases)
- Flexibility: up to four measurement points per electronics module
- Extremely low cost of ownership
- Electronics module compatible with existing LaserTrace sensor modules

Delivering your best measurement

Detect gas quality upsets before they can damage your processes. Using Tiger Optics' LaserTrace 3 H₂O and O₂ analyzers, you can verify moisture and oxygen impurity levels with part-per-trillion accuracy, drift-free stability, and virtually immediate response. You'll find our system exceptionally easy and fast to install, and

effortless to maintain, with built-in zero verification. It measures in bulk gases, specialty gases, and gas mixtures. And its robust design—free of moving parts—results in an analyzer that has a high Mean Time Between Failure (MTBF) rate and a very low Cost of Ownership (CoO).

Tigeroptics

21ST CENTURY SPECTROSCOPY

LaserTrace 3 H₂O

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Ultra-High Purity Gas Analyzers



Winner Golden Gas Award

Tiger Optics' LaserTrace 3 is *Gases & Instrumentation's* 2012 Golden Gas Award Winner, in recognition of its technological innovativeness, superior specifications, cost benefits and other quality considerations as determined by independent industry experts.

| 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) | ± 3% or LDL |
| Speed of response | < 3 minutes to 95% |
| 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 (corrosive gas version optional) 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 | 10 – 125 psig (1.7 – 9.6 bara) |
| Flow rate | 0.5 to 1.8 slpm (gas dependent) |
| Sample gases | Most inert, toxic, passive and corrosive matrices |
| Gas temperature | Up to 60°C |

| Dimensions | H x W x D [in (mm)] |
|----------------------------------------|----------------------------------|
| Electronics unit | 14 x 19 x 14 (356 x 483 x 356) |
| H ₂ O sensor | 7 x 4.75 x 27 (178 x 121 x 686) |
| O ₂ sensor (rackmount only) | 8.75 x 19 x 27 (222 x 483 x 686) |
| Sensor rack | 8.75 x 19 x 27 (222 x 483 x 686) |

(fits 4 H₂O sensors or 1 H₂O and 1 O₂ sensor)

| Weight | |
|-------------------------|--------------------|
| Electronics unit | 32 lbs (14.5 kg) |
| H ₂ O sensor | 38 lbs (17.2 kg) |
| O ₂ sensor | 60.5 lbs (27.5 kg) |

| Electrical | |
|--------------------|-------------------------------------------------------------------------------------------------------|
| Alarm indicators | User programmable setpoints (1 per sensor) Form C relays |
| Power requirements | 90 – 240 VAC, 50/60 Hz |
| Power consumption | 200 Watts max. |
| Signal output | Isolated 4–20 mA per sensor |
| User interfaces | 10.4" LCD touchscreen PS/2 for mouse and keyboard 10/100 Base-T Ethernet 2 USB ports, RS-232 |

| Performance: | Trace H ₂ O | | | Trace O ₂ [†] | | |
|------------------------|------------------------|-----------|------------------|-----------------------------------|-----------|------------------|
| | Range | LDL* (3σ) | Precision @ zero | Range | LDL* (3σ) | Precision @ zero |
| In Nitrogen | 0 – 5 ppm | 200 ppt | 70 ppt | 0 – 2.5 ppm | 100 ppt | 40 ppt |
| In Helium | 0 – 1 ppm | 100 ppt | 17 ppt | 0 – 0.5 ppm | 50 ppt | 9 ppt |
| In Argon | 0 – 2 ppm | 100 ppt | 30 ppt | 0 – 1 ppm | 50 ppt | 17 ppt |
| In Hydrogen | 0 – 4 ppm | 150 ppt | 50 ppt | 0 – 2 ppm | 75 ppt | 25 ppt |
| In Oxygen | 0 – 2.5 ppm | 100 ppt | 40 ppt | | N/A | |
| In Clean Dry Air (CDA) | 0 – 4.5 ppm | 180 ppt | 60 ppt | | N/A | |
| In CO ₂ | 0 – 10 ppm | 800 ppt | 300 ppt | 0 – 5 ppm | 800 ppt | 300 ppt |

*LDL is dependent upon the quality of the sample gas and the integrity of the sampling system

[†]H₂ supply required (except for detection in hydrogen)

Contact us for additional analytes and matrices.

U.S. Patent # 7,277,177 • U.S. Patent # 7,255,836

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