



LaserTrace 3 CH₄ Trace Level Methane Analyzer

AUTOMOTIVE

ENERGY

ENVIRONMENTAL

GASES & CHEMICALS

LABORATORIES

LEDS

SEMICONDUCTORS

Designed for trace level methane analysis,
the LaserTrace 3 CH₄ offers:

- Industry-leading parts-per-trillion detection capability
- Unprecedented speed of response
- Widest available dynamic range
- Absolute measurement (freedom from calibration gases)
- Flexibility: up to four (4) measurement points per electronics module
- Extremely low cost of ownership
- Electronics module compatible with existing LaserTrace sensor modules

Delivering your best measurements

Detect gas quality upsets before they can damage your processes. Using Tiger Optics' LaserTrace 3, you can verify 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. The LaserTrace 3 CH₄ sensor detects trace methane to

ensure gases meet specifications or to alarm when critical processes are at risk, such as in silicon crystal manufacturing, where methane can alter wafer electrical properties. 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 CH₄

Trace Level Methane Analyzer



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, 24 hr. peak-to-peak variation)	See table below
Sensitivity (3 σ)	See table below
Precision (1 σ , greater of)	$\pm 0.75\%$ or $\frac{1}{3}$ of Sensitivity
Accuracy (greater of)	$\pm 3\%$ or $\frac{1}{2}$ of LDL
Speed of response	< 1 minute to 95%
Environmental conditions	10°C – 40°C, 30 – 80% RH (non-cond)
Storage temperature	-10°C – 50°C

Gas Handling System and Conditions

Wetted materials	316L stainless steel (optional Hastelloy [®]) 10 Ra surface finish
Gas connections	$\frac{1}{4}$ " male VCR inlet and outlet
Leak tested to	1×10^{-9} mbar l / sec
Inlet pressure	30 – 125 psig (3.1 – 9.6 bara)
Flow rate	0.9 – 3.9 slpm (gas dependent)
Sample gases	Most inert, toxic, passive and corrosive matrices
Gas temperature	Up to 60°C

Performance: CH₄

	Range	LDL	Sensitivity
In Nitrogen	0-8 ppm	1.0 ppb	0.8 ppb
In Helium	0-5 ppm	0.7 ppb	0.5 ppb
In Argon	0-7 ppm	0.9 ppb	0.7 ppb
In Hydrogen	0-8 ppm	1.0 ppb	0.8 ppb
In Oxygen	0-5 ppm	0.7 ppb	0.5 ppb

Contact us for additional analytes and matrices.
U. S. Patent # 5,528,040 • U.S. Patent # 7,255,836 • Other patents pending

Dimensions	H x W x D [inches (mm)]
Electronics unit	14 x 19 x 14 (356 x 483 x 356)
Sensor rack	8.75 x 19 x 27 (222 x 483 x 686)
Standard sensor	7 x 4.75 x 27 (178 x 121 x 686)
Weight	
Electronics unit	32 lbs (14.5 kg)
Standard sensor	38 lbs (17.2 kg)

Electrical

Alarm indicators	User programmable setpoints (1 per sensor), Form-C relay
Power requirements	90-240 VAC 50/60 Hz
Power consumption	200 Watts max.
Signal output	0-5 VDC, isolated 0-20 or 4-20 mA output per sensor
User interface	10.4" color VGA display/Touchscreen PS/2 mouse and keyboard connection 10/100/1000BaseT Ethernet 2 USB ports, RS-232

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