

HALO OK

Trace-Level Oxygen Analyzer

GASES & CHEMICALS

CEMS

ENERGY

SEMI & HB LED

ATMOSPHERIC

LAB & LIFE SCIENCE

Designed for trace-level oxygen analysis, the HALO OK offers:

- Industry-leading parts-per-trillion detection capability
- Unprecedented speed of response
- Wide dynamic range
- Absolute measurement (freedom from need for calibration gases)
- Low maintenance and cost of ownership
- Compact, portable package, ideal for both fixed and mobile cart installation
- Direct measurement in many matrices

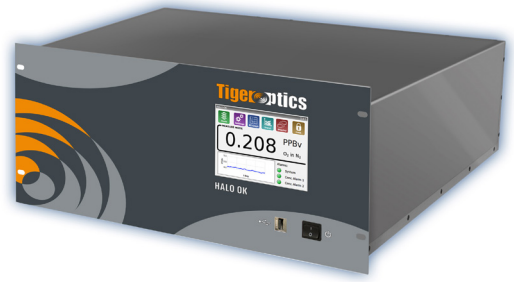
Leading Choice for Ultra-high Purity Gas Users

Detect gas quality upsets before they damage your process. Using Tiger Optics' HALO OK oxygen analyzer, you can verify oxygen impurity levels with part-per-trillion accuracy, drift-free stability and instantaneous response. You'll find our system exceptionally easy and fast to install, and effortless to maintain, with built-in zero verification. 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).

With its patented catalytic conversion technique, utilizing a minute amount of hydrogen to cleanly and safely convert oxygen to moisture, the OK offers a fully laser-based solution for Continuous Quality Control of your process. Based on powerful Cavity Ring-down Spectroscopy, the HALO OK aligns with the SEMI F-112 standard for moisture dry-down characterization of gas systems. Pair the HALO OK with our HALO KA or HALO KA Max for ppt-level moisture measurement and enjoy the many advantages of profit-boosting CRDS technology for both critical contaminants.

HALO OK

Trace-Level Oxygen Analyzer



Performance	
Operating range	See table below
Detection limit (LDL, 3 σ /24h)	See table below
Precision (1 σ , greater of)	\pm 0.75% or 1/3 of LDL
Accuracy (greater of)	\pm 4% 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 10 Ra surface finish
Leak tested to	1 x 10 ⁻⁹ mbar l / sec
Gas connections	1/4" male VCR
Sample inlet pressure	10 – 125 psig (1.7 – 9.6 bara)
Sample flow rate	0.5 to 1.8 slpm (gas dependent)
Sample gases	Most inert matrices
Gas temperature	Up to 60°C
H ₂ supply requirements*†	~15 sccm, 20 – 125 psig

Dimensions	H x W x D [in (mm)]
Standard sensor	8.73 x 19.0 x 23.6 (222 x 483 x 599)
Weight	
Standard sensor	45 lbs (20.4 kg)
Electrical and Interfaces	
Platform	Max series analyzer
Alarm indicators	2 user programmable 1 system fault Form C relays
Power requirements	100 – 240 VAC, 50/60 Hz
Power consumption	450 Watts max.
Signal output	Isolated 4–20 mA
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, O ₂ :	Range	LDL [‡] (3 σ)	Precision (1 σ) @ zero
In Helium	0 – 0.5 ppm	50 ppt	17 ppt
In Argon	0 – 1 ppm	90 ppt	30 ppt
In Hydrogen	0 – 2 ppm	150 ppt	50 ppt
In Nitrogen	0 – 2.5 ppm	200 ppt	70 ppt
In Carbon Dioxide [§]	0 – 5 ppm	5000 ppt	300 ppt

Contact us for additional analytes and matrices or information about our optional purged enclosure.

*H₂ supply (maximum 10 ppm H₂O and O₂ impurity) is required for sample conditioning via catalytic conversion.

†For enhanced safety, a mixture of 3% H₂/97% N₂ can be used as an alternative to pure H₂. This option requires a special configuration that must be specified at the time of order.

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

§Special configuration required, must be specified at time of order.

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

Tiger Optics, LLC
275 Gibraltar Road, Horsham, PA 19044
Phone: +1 (215) 656 4000 · Fax: +1 (215) 343 7168
sales@tigeroptics.com · www.tigeroptics.com



Tiger Optics
A Process Insights Company

5/2020