HALO KA Max

Ultra-High Purity Gas Analyzer

GASES & CHEMICALS | CEMS | ENERGY | ATMOSPHERIC | SEMI & HB LED | SYNGAS | LAB & LIFE SCIENCE

Compact, affordable and more powerful than ever, the HALO KA Max offers you:

- Parts per trillion (ppt) moisture detection capability in an array of gases
- Absolute measurement (freedom from calibration)
- Field proven lowest Cost of Ownership and ease of use
- Wide dynamic range—over four orders of magnitude
- Clean technology
- Compact footprint (two HALO KA Max fit in a 19" rack)

Enabling Enhanced Moisture Detection Performance in Semiconductor Manufacturing

As the International Roadmap for Devices and Systems (IRDS) drives the semiconductor industry beyond Moore's Law and sets the requirements for the next decade, Tiger Optics accepts the challenge with the HALO KA Max.

Building on Tiger Optics' customer-acknowledged and renowned time-based technology—Continuous Wave Cavity Ring-Down Spectroscopy—users can verify moisture impurity levels down to 100 ppt in semi bulk gases, with drift-free stability and virtually instant response to intrusions.

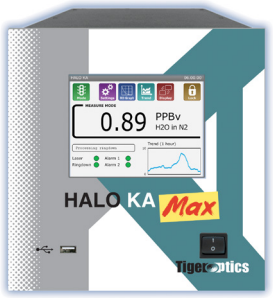
The HALO KA Max, based on Tiger Optics' latest platform, offers exceptional speed and further improved usability in an all-inclusive and compact form factor. The analyzer is fast to install, easy to use and effortless to maintain, with built-in zero verification. The HALO KA Max specializes in trace-level H_2O detection in bulk gases and specialty gases used in semiconductor manufacturing.

Pair the HALO KA Max with the HALO OK for ppt-level oxygen measurement to enjoy the benefits of advancements in laser-based technology for both of these critical contaminants.

Tiger Optics | 21ST CENTURY SPECTROSCOPY

HALO KA Max

Ultra-High Purity Gas Analyzer



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)	± 4% or LDL
Speed of response	< 2 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	0.05 to 1.8 slpm
Sample gases	Most inert, toxic, passive
	and corrosive matrices
Gas temperature	Up to 60°C

Dimensions	H x W x D [in (mm)]
Standard sensor	8.73 x 8.57 x 23.6 (222 x 218 x 599)
Sensor rack	8.73 x 19.0 x 23.6 (222 x 483 x 599)
(fits up to two sensors)	

Weight	
Standard sensor	28 lbs (12.7 kg)

Electrical	
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
User interfaces	5.7" LCD touchscreen
	10/100 Base-T Ethernet
	USB, RS-232, RS-485
Data storage	Internal or external flash drive

Performance, H_2O:	Range	LDL (3σ)*
In Nitrogen	0 – 5 ppm	100 ppt
In Helium	0 – 1 ppm	100 ppt
In Argon	0 – 2 ppm	100 ppt
In Hydrogen	0 – 4 ppm	100 ppt
In Oxygen	0 – 2.5 ppm	100 ppt

*Lowest achievable H_2O level is dependent upon the quality of the sample gas and the integrity of the sampling system.

Contact us for additional analytes and matrices.

U.S. Patent # 7,277,177

Tiger Optics, LLC
250 Titus Avenue, Warrington, PA 18976
Phone: +1 (215) 343 6600 • Fax: +1 (215) 343 4194
sales@tigeroptics.com • www.tigeroptics.com

Tiger Optics | 21ST CENTURY SPECTROSCOPY

7/2018