



HALO 3 HCl

Trace Level Hydrogen Chloride Analyzer

GASES & CHEMICALS

CEMS

ENERGY

SEMI & HB LED

ATMOSPHERIC

LAB & LIFE SCIENCE

The HALO 3 HCl offers:

- Low single-digit parts per billion (ppb) detection capability
- Absolute measurement (freedom from calibration gases)
- Wide dynamic range
- Low cost of ownership and operational simplicity
- Clean technology—no external calibration gases required

The HALO 3 HCl trace level hydrogen chloride gas analyzer provides users with the unmatched accuracy, reliability, speed of response and ease of operation that users of Tiger Optics' analyzers have come to know and expect. Featuring Tiger Optics' proven Cavity Ring-Down Spectroscopy-based trace gas sensor in a very compact and economic analyzer design, this versatile instrument allows users to measure HCl in most inert and passive gases with just one device.

Users also enjoy freedom from requirements, such as periodic sensor maintenance, span calibrations, purifier replacement and pump rebuilds. As a result, the HALO is ideally suited to many applications where HCl impurities are extremely critical, such as semiconductor utilization.

HALO 3 HCl

Trace Level Hydrogen Chloride Analyzer



Performance		Dimensions	H x W x D [in (mm)]
Operating range	See table below	Standard sensor	8.73 x 8.57 x 23.6 (222 x 218 x 599)
Detection limit (LDL, 3σ/24h)	See table below	Sensor rack	8.73 x 19.0 x 23.6 (222 x 483 x 599)
Precision (1σ, greater of)	± 0.75% or 1/3 of LDL	(fits up to two sensors)	
Accuracy (greater of)	± 4% or LDL	Weight	
Speed of response	< 1 minute to 90%	Standard sensor	28 lbs (12.7 kg)
Environmental conditions	10°C to 40°C 30% to 80% RH (non-condensing)	Electrical and Interfaces	
Storage temperature	-10°C to 50°C	Platform	Max series analyzer
Gas Handling System and Conditions		Alarm indicators	2 user programmable 1 system fault
Wetted materials	316L stainless steel (corrosive gas version optional) 10 Ra surface finish		Form C relays
Gas connections	1/4" male VCR inlet and outlet	Power requirements	90 – 240 VAC, 50/60 Hz
Leak tested to	1 x 10 ⁻⁹ mbar l / sec	Power consumption	40 Watts max.
Inlet pressure	10 – 125 psig (1.7 – 9.6 bara)	Signal output	Isolated 4–20 mA per sensor
Flow rate	Up to 1.8 slpm	User interfaces	5.7" LCD touchscreen 10/100 Base-T Ethernet USB, RS-232, RS-485 Modbus TCP (optional)
Sample gases	Most inert, toxic, passive and corrosive matrices	Data storage	Internal or external flash drive
Gas temperature	Up to 60°C	Certification	CE Mark

Performance, HCl:	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 20 ppm	1.0 ppb	0.4 ppb
In Clean Dry Air (CDA)	0 – 20 ppm	1.0 ppb	0.4 ppb
In Hydrogen	0 – 10 ppm	1.0 ppb	0.4 ppb

Contact us for additional analytes and matrices.
U.S. Patent # 7,277,177

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 Brand

4/2022