



HALO 3 NH₃

Trace Ammonia Analyzer

GASES & CHEMICALS

CEMS

ENERGY

ATMOSPHERIC

SEMI & HB LED

SYNGAS

LAB & LIFE SCIENCE

Designed for trace ammonia analysis in laboratory and process applications:

- Accuracy traceable to the world's major national reference labs
- Industry-proven technology
- Freedom from the need for span calibrations
- No periodic sensor replacement/maintenance
- Sub-part-per-billion (ppb) detection limit
- Wide dynamic range and no drift

Versatile, sensitive and hassle-free trace ammonia analysis

Ammonia (NH₃) is a key impurity in many applications, ranging from industrial process control to the analysis of fuel cell hydrogen. Tiger Optics delivers a powerful analytical tool for the measurement of NH₃, based on Continuous-Wave Cavity Ring-Down Spectroscopy (CW-CRDS). The HALO 3's low detection limit, drift-free operation, and compatibility with many different sample gases makes it an ideal tool for monitoring trace amounts of ammonia, for example, to ensure

compliance with SAE J2719, ISO 14687 or similar purity standards for hydrogen used for fuel cell electric vehicles (FCEVs).

Highly specific to the target molecule, CW-CRDS also prevents cross-interferences from distorting your measurement. Plus, there is no need to perform costly and time-consuming zero and span calibrations, saving both time and money with continuous, online service.

Tigeroptics

21ST CENTURY SPECTROSCOPY

HALO 3 NH₃

Trace Ammonia 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	< 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
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	~1 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	34 lbs (15.4 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 per sensor
User interfaces	5.7" LCD touchscreen 10/100 Base-T Ethernet 802.11g Wireless (optional) RS-232 Modbus TCP (optional)
Certification	CE Mark

Performance, NH ₃ :	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 7 ppm	400 ppt	150 ppt
In Hydrogen	0 – 6 ppm	300 ppt	100 ppt

*Analysis in some specialty gases and certain applications may require a vacuum pump for operation. Please contact us to discuss your specific requirements.

Contact us for additional analytes and matrices.
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