

# HALO-H<sub>2</sub>O

## Trace Moisture Analyzer for High Purity Gases

The HALO moisture analyzer provides users with the unmatched accuracy, reliability, speed of response and ease of operation that users of Tiger Optics analyzers have come to expect. The HALO moisture analyzer features Tiger Optics' patented Cavity Ring-Down Spectroscopy-based moisture sensor in a very compact and economic analyzer design. This versatile analyzer allows users to measure moisture in most inert, corrosive and toxic 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 moisture measurement is extremely critical. These applications include fixed bulk gas continuous quality control, portable mobile analytical carts, process tool monitoring, air separation, gas cylinder quality control and many other demanding applications.



### PERFORMANCE

<b>Lowest Detection Limit*:</b>	2 ppb
<b>Sensitivity*:</b>	1 ppb
<b>Accuracy (greater of)*:</b>	4% of reading or $\pm 1$ ppb
<b>Speed of Response (typical)*:</b>	95% Response < 3 minutes
<b>Operating Range:</b>	0-20 ppm
<b>Environmental Conditions:</b>	10°C-40°C
<b>Storage Temperature:</b>	-10°C-50°C
	*Nitrogen background gas

### MATERIALS OF CONSTRUCTION

<b>Materials of Construction:</b>	316L stainless steel (optional Hastelloy®)
<b>Wetted Components:</b>	10 Ra surface finish
<b>Gas Connection:</b>	1/4" M VCR Inlet & Outlet
<b>Leak Tested to:</b>	$< 2 \times 10^{-8}$ mbar • l/sec

### ELECTRICAL

<b>Alarm Indicators:</b>	User programmable set points
<b>Power Requirements:</b>	90-240 VAC, 50/60 Hz
<b>Power Consumption:</b>	200 Watts max.
<b>Output Signals:</b>	
• Recorder	Isolated 4-20 / 0-5VDC
• Alarm	Form-C relay
<b>Communications:</b>	RS-232, Wireless (Optional)
<b>User Interface:</b>	5.6" LCD touch screen, 10BaseT Ethernet, RS-232

### DIMENSIONS

<b>Mounting (H x W x D):</b>	8.75" x 8.5" x 23.6" (22.2cm x 21.6 x 57.2)
<b>Weight:</b>	28 pounds (12.7 kg)

### GAS SAMPLE CONDITIONS

<b>Sample Inlet Pressure:</b>	10-125 psig
<b>Flow Rate:</b>	up to 1,800 sccm
<b>Sample Gases:</b>	Most inert, passive, toxic and corrosive gases
<b>Sample Line Temperature:</b>	Up to 60°C

### TECHNOLOGY

<b>Approvals:</b>	CE: LVD & EMC
<b>Method:</b>	Cavity Ring-Down Spectroscopy
<b>Patents:</b>	U.S. Patent # 5,528,040 Other Patents Pending

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