

**PRODUCT DATASHEET**

# HALO KA Max™

THE ULTIMATE TRACE GAS ANALYZER



## HALO KA Max offers:

- Available for detecting traces on moisture (H<sub>2</sub>O), ammonia (NH<sub>3</sub>), or methane (CH<sub>4</sub>)
- Parts per trillion (ppt) 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
- Unprecedented speed of response at sub-ppb levels
- Compact footprint (two HALO KA Max fit in a 19" rack)

# Specifications

## Performance

|  |   |
|--|---|
| <b>Operating range:</b>                              | See gas performance table on next page  |
| <b>Detection limit (LDL)*:</b>                       | See gas performance table on next page  |
| <b>Precision (1<math>\sigma</math>, greater of):</b> | $\pm 0.75\%$ or see tables on next page   |
| <b>Accuracy (greater of):</b>                        | $\pm 4\%$ or LDL  |
| <b>Speed of response:</b>                            | < 2 min to 95% (for H <sub>2</sub> O/NH <sub>3</sub> ), < 1 min to 95% (for CH <sub>4</sub> ) |
| <b>Environmental conditions:</b>                     | 10°C to 40°C, 30% to 80% RH (non-condensing)  |
| <b>Storage temperature:</b>                          | -10°C to 50°C   |

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## Gas Handling System and Conditions

|                         |   |
|-------------------------|---|
| <b>Gas connections:</b> | 1/4" male VCR inlet and outlet            |
| <b>Leak tested to:</b>  | 1 x 10 <sup>-9</sup> mbar l / sec         |
| <b>Inlet pressure:</b>  | 10 – 125 psig (1.7 – 9.6 bara)            |
| <b>Flow rate:</b>       | ~2 slpm in N <sub>2</sub> (gas dependent) |
| <b>Sample gases:</b>    | See tables below                          |
| <b>Gas temperature:</b> | Up to 60°C                                |

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## Dimensions & Weight

|  |  |
|--|--|
| <b>Standard sensor:</b>                      | H x W x D 8.73 x 8.57 x 23.6 in (222 x 218 x 599 mm) |
| <b>Sensor rack</b> (fits up to two sensors): | H x W x D 8.73 x 19.0 x 23.6 in (222 x 483 x 599 mm) |
| <b>Standard sensor weight:</b>               | 28 lbs (12.7 kg)                                     |
| <b>NH<sub>3</sub> sensor weight:</b>         | 34 lbs (15.4 kg)                                     |

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## Electrical and Interfaces

|                            |  |
|----------------------------|--|
| <b>Platform:</b>           | Max Series analyzer  |
| <b>Alarm indicators:</b>   | 2 user programmable, 1 system fault, Form C relays                                       |
| <b>Power requirements:</b> | 90 – 240 VAC, 50/60 Hz   |
| <b>Power consumption:</b>  | 40 Watts max.  |
| <b>Signal output:</b>      | Isolated 4–20 mA   |
| <b>User interfaces:</b>    | 5.7" LCD touchscreen, 10/100 Base-T Ethernet, USB, RS-232, RS-485, Modbus TCP (optional) |
| <b>Data storage:</b>       | Internal or external flash drive   |
| <b>Certification:</b>      | CE Mark  |

## HALO KA Max H<sub>2</sub>O Performance, H<sub>2</sub>O

|                         | Range       | LDL <sup>*,†</sup> | Precision (1σ) @ zero |
|-------------------------|-------------|--------------------|-----------------------|
| In Nitrogen:            | 0 – 5 ppm   | 100 ppt            | 40 ppt                |
| In Helium:              | 0 – 1 ppm   | 100 ppt            | 10 ppt                |
| In Argon:               | 0 – 2 ppm   | 100 ppt            | 20 ppt                |
| In Hydrogen:            | 0 – 4 ppm   | 100 ppt            | 30 ppt                |
| In Oxygen:              | 0 – 2.5 ppm | 100 ppt            | 20 ppt                |
| In Clean Dry Air (CDA): | 0 – 4 ppm   | 100 ppt            | 30 ppt                |

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## HALO KA Max NH<sub>3</sub> Performance, NH<sub>3</sub>

|              | Range     | LDL <sup>†</sup> (3σ/24h) | Precision (1σ) @ zero |
|--------------|-----------|---------------------------|-----------------------|
| In Nitrogen: | 0 – 7 ppm | 150 ppt                   | 50 ppt                |

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## HALO KA Max CH<sub>4</sub> Performance, CH<sub>4</sub>

|              | Range     | LDL <sup>†</sup> (3σ/24h) | Precision (1σ) @ zero |
|--------------|-----------|---------------------------|-----------------------|
| In Nitrogen: | 0 – 8 ppm | 500 ppt                   | 200 ppt               |
| In Helium:   | 0 – 5 ppm | 400 ppt                   | 140 ppt               |
| In Argon:    | 0 – 7 ppm | 450 ppt                   | 150 ppt               |
| In Hydrogen: | 0 – 8 ppm | 500 ppt                   | 200 ppt               |
| In Oxygen:   | 0 – 7 ppm | 500 ppt                   | 200 ppt               |

\*The Detection limit (LDL) is defined as 3σ over 24 hours or the H<sub>2</sub>O drydown limit, whichever is higher.

†Lowest achievable impurity 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

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