ProCeas®
NH₃ Trace analyzer

Low level NH₃ Detection in Pure Gas

The ProCeas® NH₃ is a complete pre-calibrated laser infrared spectrometer for low level detection of NH₃ in combustion process and pure gas.

The ProCeas® NH₃ uses the patented OFCEAS (WO 03031949) IR Laser technology for enhanced specificity, selectivity, accuracy and stability (no instrumental response drift.)

The ProCeas® NH₃ uses a patented low-pressure sampling system (WO 2010058107) enabling low-cost installation thanks to non-heated lines* and reduced maintenance.

The ProCeas® NH₃ is a complete, reliable, robust, low-cost and easy-to-use solution for the NH₃ analysis in the monitoring of combustion process and pure gas.

ProCeas®
Advantages & Benefits

- **DIRECT MEASUREMENT**
  No sample pre-treatment
  OFCEAS technology associated with low pressure sampling enables direct measurement. The low pressure in the sampling system removes any risk for chemicals adsorption/desorption and condensation in the line.

- **NO INTERFERENCE**
  OFCEAS technology associated with low pressure sampling provides exceptional selectivity, enabling simultaneous multi-component measurement without interferences, regardless of the matrix.

- **NO RE-ZERO; NO DRIFT**
  The zero information is contained in the signal, enabling automated and intrinsic re-zero of the analyzer.

- **EASE-OF-USE**
  The ProCeas® is pre-calibrated for your application. Initially packaged in a standard 19” rack, it includes a touch screen interface and on-board PC for local / remote control and real time display / recording of results.

- **EASE-OF-INTEGRATION**
  The ProCeas® allows digital (Ethernet, RS485, RS232, ModBus), analog and TDR I/O’s.

- **ROBUSTNESS**
  The ProCeas® contains no optical moving parts and was designed and built strictly for industrial and on-board mobile applications.

- **LOW MAINTENANCE**
  High MTBF.
  In addition to containing no moving optical components, the IR sources (telecom type laser) are characterized by MTBF’s of 5 years.

- **CLEAN LINES / FILTERS**
  The low pressure sampling system enables low flow rates (3-9 L/h) without degrading response time. Accumulation of contaminants lines and filters is greatly reduced.

- **SAFE**
  ATEX compliant configuration available.

* Requires ambient temperature > 10°C and H₂O < 65 % vol
**SAMPLING**

- Flow Rate: 3-9 L/h
- Max. Temp.: 60°C
- Max. Humidity: H₂O(g) < 65% vol. - Standard, H₂O(g) > 65% vol. - Study Required
- Pressure: 1 atm. ± 100 mbar @ sampling point
- Sampling Line:
  - Ambient Temp. > 10°C et H₂O < 65% vol.: Simple polytube (no heating)
  - Ambient Temp. < 10°C et H₂O > 65% vol.: > 80°C heated line

**DIMENSIONS**

- Size: standard 19", 4U rack
- Weight: 20kg
- Options: Wall mounted, ATEX compliant integration

**ELECTRONICS**

- Display/Control: 5.7" diagonal color touch screen
- PC OS: Windows® XP®
- Software: WinProceas ©

**INSTALLATION REQUIREMENTS**

- Operating Temp.: 15-35°C - Standard, 10-40°C - Optional
- Power supply: 200 W - 110-220VAC - 50-60Hz
- Compressed Air: 1-6 bar (oil free). Not provided.

**ANALYTICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Gas</th>
<th>Range</th>
<th>LOD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>min</td>
<td>max</td>
</tr>
<tr>
<td>NH₃</td>
<td>50ppm</td>
<td>100%</td>
</tr>
<tr>
<td>Optional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CH₄</td>
<td>50ppm</td>
<td>100%</td>
</tr>
<tr>
<td>N₂O</td>
<td>50ppm</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Response Time:** <2 seconds

**Zero Drift:** none

*S adjustable range on request

*b* limit of detection 3 Sigma

**SPECTRA (Examples) - 200 equidistant data points over 0.2 nm**

**LAYOUT FROM SONIC NOZZLE TO ProCees ANALYZER**

- Sonic nozzle 3-9 L/h
- Polytube 2 PFA 1/4" cores
- Heated line option
- Sample 30 to 90 L/h at 100 mbar
- Standardized gas + Backflush
- Remote analog / digital I/O’s option
- Standardized gases 1 regulated bar
- 110/220V 50/60 Hz 3A
- Oil / dust free dry air (6 bar ± 0.5) - 200 L/h

**ProCees**

- 2.4b tom
- Air conditioned room
- Jbus - Modbus RS232 / 485 / ETH outputs
- USB ports (keyboard, mouse, data...)

**Exhaust**

**Pump**

3-9 L/h @P° Atm

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