



# Aurora NOSS

## TDLAS moisture analyzer

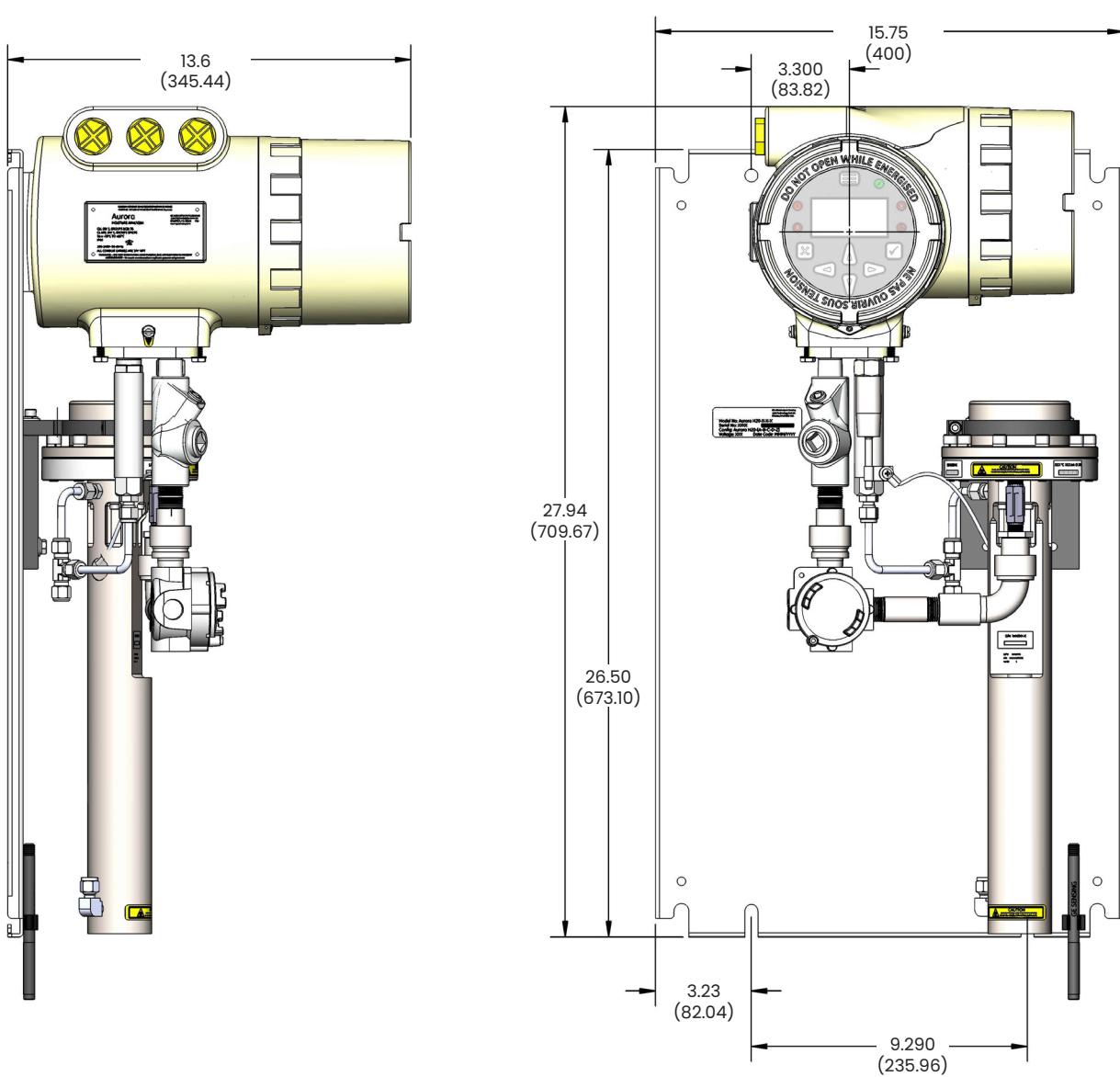
Aurora NOSS is a modified version of the Aurora analyzer. It is configured to enable installation within customized sampling systems.

The Aurora NOSS consists of the laser absorption flow cell, sample pressure and temperature sensors, read-out electronics with local display and keypad interface. The unit is assembled on an epoxy coated or 316 SS plate. All system components are Class 1 Division 1 or ATEX/IECEx Zone 1 certified.

A sampling system is required to filter contaminants, reduce the pressure of the applied process gas and control the flow rate. In addition, sample-conditioning components such as heaters, valves, flow meters etc., may be applied depending on the specific application. Panametrics' applications engineers can review your application details and design a system to meet your requirements.

The Aurora NOSS has the identical functionality, features, and performance as the turnkey Aurora. Please refer to the Aurora product data sheet for additional information.

## Dimensions



Dimensions in inches (mm)

# Specifications

## Power

100-240 VAC, 50-60 Hz, 10 W  
18-32 VDC (24 VDC nominal), 10 W

## Range

### Parts per million by volume

0 to 5000 ppmv  
For CO<sub>2</sub> applications: 0 to 1000 ppmv

### Dew/frost point

-97.1° to 27.3°F (-71.7° to -2.6°C) frost point @ STP of 25°C,  
14.696 psia

### Process dew/frost point

Process or equivalent dew point/frost point by calculation  
with process pressure signal (4-20 mA) or constant pressure  
value.

Notes: Readings below 0°C (32°F) are in "frost point" temperature and  
above 0°C (32°F) are in "dew point" temperature.

### Absolute humidity

0.095 to 237 lbs/MMSCF (1.52 to 3,803 mg/m<sup>3</sup>)

## Accuracy

### Parts per million by volume

±1% of reading or ±2 ppmv, whichever is greater; for >1000  
ppmv ±5% of reading.

### For CO<sub>2</sub> applications:

±3% of reading or ±5 ppmv

For H<sub>2</sub> recycle applications: ±1% of reading or ±2 ppmv (for  
up to ±5% H<sub>2</sub> and ±1% C<sub>2</sub>H<sub>6</sub> variation from nominal calibration  
composition).

Individual instrument calibrated accuracy conditions  
provided in Certificate of Conformance. Accuracy of other  
parameters derived from ppmv.

## Repeatability

### Parts per million by volume

±0.2 ppmv or ±0.1%, whichever is greater.

For CO<sub>2</sub> applications: ±1.0 ppmv or ±0.5%, whichever is  
greater.

## Other moisture parameters

Derived from ppmv

## Response time

**Optical response**  
< 2 seconds

### System response

The system response is dependent on the length of sample  
tubing, sample system components, flow rate and pressure,  
and the change in moisture concentration.

## Operating pressure

**Operating sample cell pressure**  
10 to 25 psia (69 to 172 Pa)

**Maximum sample cell pressure**  
200 psi (1380 kPa)

Notes: Higher pressure available with application of additional sampling  
system components.

## Operating temperature

**Operating temperature range**  
-20° to 65°C (-4° to 149°F)

## Flowrate

**Sample cell flowrate**  
10 to 60 SLH (0.4 to 2 SCFH); 30 SLH (1 SCFH) nominal  
Notes: A fast loop bypass of 5-10x of the sample cell flow rate is  
recommended.

## Display

**Backlit LCD**  
Three programmable simultaneous parameters.  
Alphanumeric status and diagnostic display.

### LED indicators

Power, laser temperature stability, keypad lockout and faults.

### User interface

Keypad is programmable "through-the-glass" via magnetic  
stylus.

## I/Os

### Analog outputs

Three 0/4–20 mA DC (source) with 500-ohm load. User programmable for any parameter and scalable. Complies with NAMUR protocol for analog signals.

### Analog inputs

Loop powered 4–20 mA input for remote pressure transmitter. Aurora supplies 24 VDC.

## Digital interface

### Serial ports

Two programmable digital communications RS232/RS485 ports. Multidrop capability with assignable address. MODBUS RTU protocol.

One ethernet port: Modbus TCP/IP protocol

### Enclosure

Ingress rating IP-66

## Dimensions

### Physical

See drawing

Notes: The unit is assembled on an epoxy-coated steel plate. A 316 stainless steel plate is available on special order.

### Net weight

33.6 kg/74 lbs.

## Certifications

### United States/Canada

cFMus Explosion-proof for Class I, Division 1, Groups B, C, D.

### EU and other countries

ATEX and IECEx: Ex de IIB+H2 T6 -20°C to +65°C Flameproof with increased safety compartment

### European certification

CE: Complies with EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC and Pressure Directive 97/25/EC for DN/25

## Laser

Laser Class 1 product. Conforms to IEC 60825-1, Edition 2.0 Safety of Laser Products.

Notes:

1. Per ATEX and IECEx requirements the laser head assembly of the Aurora H<sub>2</sub>O Moisture Analyzer shall be inside a tool secured enclosure with IP20 or better rating to ensure the factory installed laser head assembly bolts are unaccessible from the outside.

## Ordering information

The Aurora-NOSS is sold on a customized basis per your particular application. Please contact Panametrics for a price quotation.

Panametrics, a Baker Hughes business, provides solutions in the toughest applications and environments for moisture, oxygen, liquid and gas flow measurement.

Experts in flare management, Panametrics technology also reduces flare emissions and optimizes performance.

With a reach that extends across the globe, Panametrics' critical measurement solutions and flare emissions management are enabling customers to drive efficiency and achieve carbon reduction targets across critical industries including: Oil & Gas; Energy; Healthcare; Water and Wastewater; Chemical Processing; Food & Beverage and many others.

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