AERODYNE RESEARCH, Inc.

Dual Laser HNO_3/HONO TILDAS

Sensitive, rapid, highly specific and continuous measurements of HNO_3 and HONO in ambient air.

APPLICATIONS

- Extremely sensitive detection of nitric acid (HNO_3) and nitrous acid (HONO) to studies of ambient air quality, environmental nitrogen deposition/production, and others.
- Fast flow allows for <1 s time response
- Can be used with Aerodyne Inertial inlet and Active Passivation to reduce sample-wall interactions
- Eddy Covariance measurements.
- Fast response plume studies.
- Air quality monitoring.
- Mobile measurements from ship, truck, and aircraft platforms.

ADVANTAGES

- Absolute trace gas concentrations without calibration gases.
- Fast time response.
- Free from interferences by other atmospheric gases or water vapor.
- Turnkey and unattended operation.
- Ready to be deployed in field measurements and on moving platforms.
- Two lasers allow simultaneous measurement of more species.
- Optical pathlength of either 76 meters or 210 meters.

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SPECIFICATIONS

(76 meter cell)

	HNO3	HONO
Precision at 1 sec	0.2 ppb	0.4 ppb
Precision at 100 sec	0.07 ppb	0.15 ppb

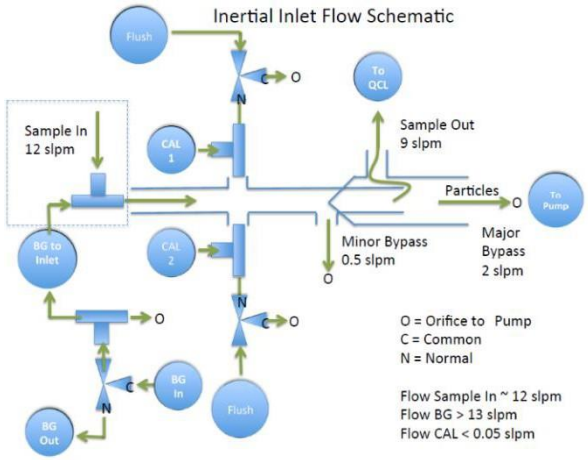
The precision is the standard deviation of a data stream measured at the typical ambient mixing ratio. Accuracy before calibration is typically 2%.

Enhanced Measurement Options

Inertial inlet for particle separation with fast time response (see right)

Multiple valve control for calibration/zeroing at inertial inlet

Active passivation to improve time response to <1 s



Instrument components

Core instrument
Thermoelectric chiller
Keyboard, mouse, and monitor
Vacuum pump (customer specified)

Instrument Operating Conditions

Operating temperature: 10 to 35 °C
Sample flow rate: 0 to 20 slpm

Data Outputs

RS-232, USB drive, ethernet

MECHANICAL SPECIFICATIONS FOR DUAL LASER TRACE GAS MONITOR:

Dimensions: 560 mm x 770 mm x 640 mm (WxDxH)
Weight: 75 kg
Electrical Power: 250-500 W, 120/240 V, 55/60 Hz (without pump)

MULTIPASS CELL:

Choice of 76 meter standard cell (V=0.5 liters) or 210 meter “Super Cell” (V=2liters)

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