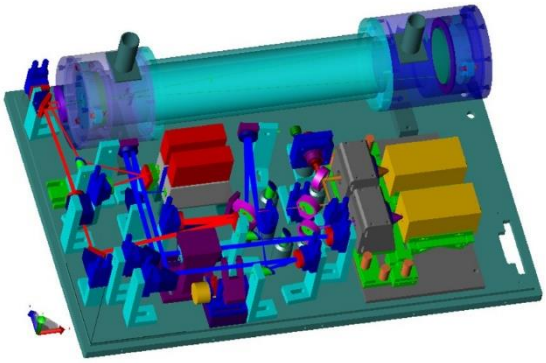
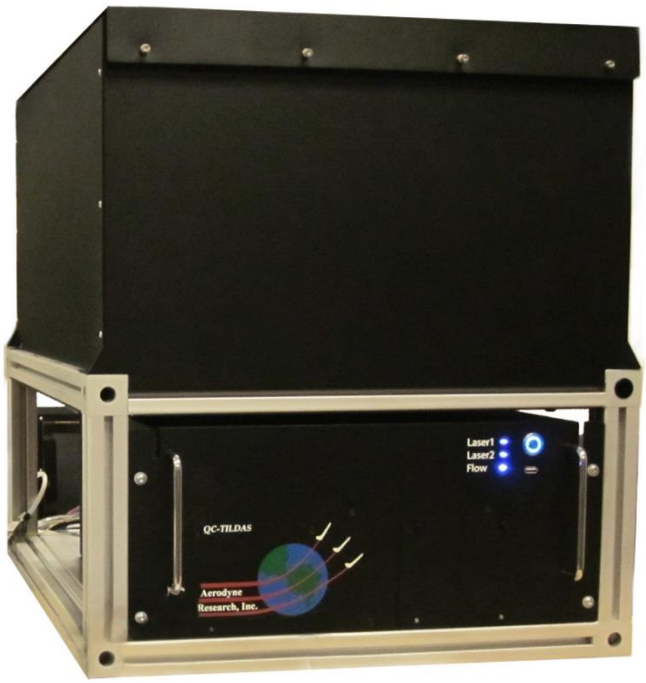
AERODYNE RESEARCH, Inc.

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.

Performance Specifications

	HNO3	HONO
Precision at 1 sec	150 ppt or 0.15 ppb	210 ppt or 0.21 ppb
Precision at 100 sec	60 ppt or 0.06 ppb	75 ppt or 0.075 ppb

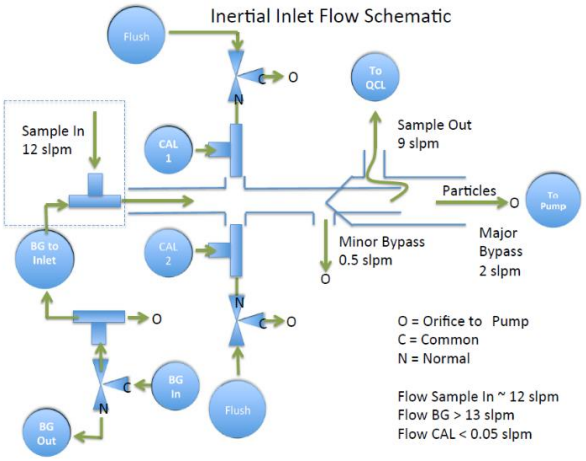
The precision is the standard deviation of a data stream measured at the typical ambient mixing ratio. Accuracy before calibration is typically 2%.

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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