

Aurora 1000

Integrating nephelometer

User friendly, easy to use and maintain, the Aurora-1000 lowers the cost of ownership for visibility measurements and particulate monitoring.

The Aurora 1000 is the 'new generation' monitor which uses a single wavelength for scattering coefficient visibility measurements at one of three user specified wavelengths

- 450nm (blue) for fine and ultra fine particulates (wood fires, automobiles)
- 525nm (green) for visibility
- 635nm (red) for large particulates (e.g. pollen, sea salt)

Differentiated in the marketplace by Ecotech's innovative LED Light source design, the Aurora 1000 provides higher reliability and stability in measuring local atmospheric visibility.



Increased accuracy

- Automatic optical reference calibration
- Enhanced light-source increases measurement accuracy

Ease of use

- Compact and portable
- Easy, automated instrument calibration using the selected span gas, with pressure and temperature compensation
- Internal sample heater which can be enabled by the user to eliminate the effects of humidity (RH: <40% to <90%)
- Automatic Zero/Span check or adjust available in intervals of 1,3,6,12 or 24 hrs or weekly
- Holds up to 45 days of 5 minute data averages or 10 days of 1 min data averages
- Data downloader and Firmware upgrading software supplied on CD

Lower cost of ownership

- Facilitates a wide measuring range (σ_{sp} <0.25 Mm^{-1} to >2 000 Mm^{-1})
- Internal 12V heater eliminates the need for external inlet heater
- Long lasting LED light source

Specifications

Parameter:	Light scattering coefficient (σ_{sp}) at (450, 525 or 635nm)
Ranges:	0 - 10,000 Mm^{-1}
Lower Detectable limit:	<0.3 Mm^{-1} (60 second averaged data)
Secondary Measurements:	Sample air temperature, chassis temperature, relative humidity and sample pressure
Flow rate:	≈5 l/min
Operating Temperature:	0 to 45°C
Operating RH:	10 to 95%
Calibration:	Span gas selection and calibration values for CO ₂ , SF ₆ , FM-200, R-12, R-22, R-134 or a user defined gas
Optics:	Reference brightness measurement
Light source:	Stable LED light source
Wavelength:	525nm (green), 450nm (blue) or 635nm (red)
Operating Voltage:	12 VDC (incl 110-240 VAC 50/60 Hz power converter) (60 watts with heater active)
Dimensions:	6.7in x 27.5in x 8.5in(L x W x H) (170 x 700 x 215mm)
Weight:	24.7 lbs (11.2kg)

Communications/Data logging

Outputs:	4 analogue outputs (2 voltage & 2 current) and RS 232 multidrop serial port
Filtering:	Kalman (digital adaptive filter), Moving average (30 seconds) or no filter
Stored Parameters:	Date & Time, σ_{sp} (635, 525 or 450), Air temp, Enclosure temp, RH, Pressure, Status
Capacity:	Maximum of 45 days of 5 minute averages, or 10 days of 1 minute averaged data

Options

- Additional sample tube
- Roof flange kit
- Rain cap with insect screen
- Gas Calibration kit
- Wall mount bracket

Applications

- Visibility Measurements (Airports, City pollution, AAQMS)
- Dust/Sand storm monitoring and early detection networks
- Bushfire pollution monitoring and early detection networks
- PM_{2.5} mass measurement correlation studies