AMERICAN ECOTECH

WORLD CLASS environmental MONITORING

Aurora 2000

PM correlation nephelometer

User friendly and easy to maintain, the Aurora 2000 makes $PM_{2.5}$ correlation studies simple and easy to perform.

The Aurora 2000 is part of the 'new generation' nephelometers using a single wavelength to measure particulate scattering. The Aurora is available in two configurations:

- Configured with a PM2.5 Size selective inlet (SSI) to sample $PM_{2.5}$, Ideal in areas with stable aerosol chemistry
- Configured to communicate directly with a beta attenuation particulate monitor providing 1 minute PM corrected data, ideal in areas with multiple aerosol sources

Increased accuracy

- Automatic optical reference calibration
- Enhanced high powered LED light-source
- $PM_{2.5}$ sampling inlet head

Ease of use

- Compact and portable
- 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, 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 upgrade software supplied on CD

Lower cost of ownership

- Internal 12V heater eliminates the need for expensive external inlet heater
- Long lasting LED light source reduces replacement costs

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Specifications

Parameter:	mg/m^3 or 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 (includes 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:	26.5 lbs (12kg)

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, $\sigma_{sp(635,\ 525\ or\ 450)}$, 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

- $PM_{2.5}$ inlet head
- Additional sample tube
- Roof flange kit
- Rain cap with insect screen
- Gas Calibration kit
- Wall mount bracket
- BAM 1020 communication protocol

Applications

- Source apportionment studies of particulate matter
- $PM_{2.5}$ mass measurement correlation studies
- Particulate monitoring with multiple sources

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