CAPS PM\textsubscript{ex} Monitor

Accurate and Precise
Continuous Monitoring of Particle Optical Extinction.

**APPLICATIONS**

- Visible (red, green or blue) measurement of particle optical extinction using patented Cavity Attenuated Phase Shift technology.
- Measurement of ambient optical extinctions at the 1 Mm\textsuperscript{-1} level.
- Climate Change Research Optical Properties Closure.
- Roadside Monitoring.
- Combustion Plume Analysis.
- Aircraft Engine Exhaust Monitoring.

**ADVANTAGES**

- Choice of 1 of 5 Wavelengths:
  - Far Blue (405 nm)
  - Blue (450 nm)
  - Green (525 nm)
  - Red (630 nm)
  - Far Red (660 nm)
  - Near IR (780 nm)
- No calibration required.
- Autonomous Operation: No Zero Air. Automated Background Subtraction.
- Linear Response (0 - 4000 Mm\textsuperscript{-1}).
- Maintenance-Free.

Measured particle extinction at 630 nm in Pasadena, CA during the CalNex campaign shown as 1 hour average values. Note the diurnal variation in extinction levels.

Measured particle extinction at 532 nm outside of Estes Park, CO shown as 1 minute averages. Note the low levels of ambient particle extinction. The spikes are particulate emissions from passing vehicles.
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**SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tbody>
<tr>
<td><strong>Sensitivity (S/N =3):</strong></td>
<td>$2.5 \text{ Mm}^{-1}$ (1 s), $0.25 \text{ Mm}^{-1}$ (60 s)</td>
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<td><strong>Response Time (10-90%):</strong></td>
<td>&lt; 2 s</td>
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<td><strong>Sample Flow:</strong></td>
<td>0.85 l min\textsuperscript{-1} (volumetric flow)</td>
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<td><strong>Operating Pressure:</strong></td>
<td>Ambient</td>
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<td><strong>Materials Exposed to Sample:</strong></td>
<td>Conductive Urethane, Stainless Steel, Conductive Silicone, and Aluminum</td>
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<td><strong>Data Output:</strong></td>
<td>RS-232, USB, Ethernet (Data Acquisition Program Included)</td>
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<td>On-board Data Storage (10 yrs)</td>
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<td>Front Panel Display</td>
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<td><strong>Size/Weight:</strong></td>
<td>Rack mount, 19” x 24” x 9.06”, 25 lbs. [61 cm x 43 cm x 23 cm, 12 kg]</td>
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<td><strong>Electric Power:</strong></td>
<td>50 W; 100-250 VAC (50-60 Hz)</td>
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**REFERENCES**


