AERODYNE RESEARCH, Inc.

# CAPS $PM_{ex}$ Monitor

*Accurate and Precise*
*Continuous Monitoring of*
*Particle Optical Extinction.*


## APPLICATIONS

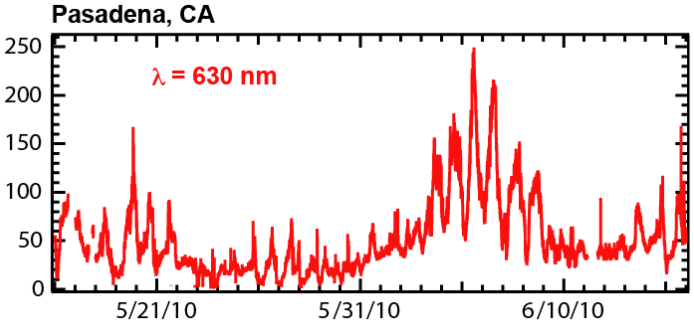
- Visible (red, green or blue) measurement of particle optical extinction using patented Cavity Attenuated Phase Shift technology.
- Measurement of ambient optical extinctions at the 1 $Mm^{-1}$ level.
- Climate Change Research
  Optical Properties Closure.
- Roadside Monitoring.
- Combustion Plume Analysis.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

## ADVANTAGES

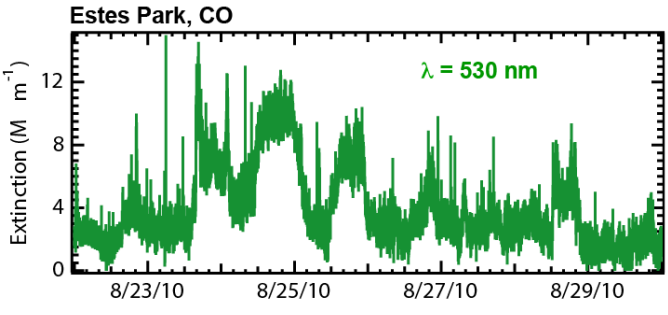
- Choice of 1 of 5 Wavelengths:

  | | |
  |---|---|
  | 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 $Mm^{-1}$).
- 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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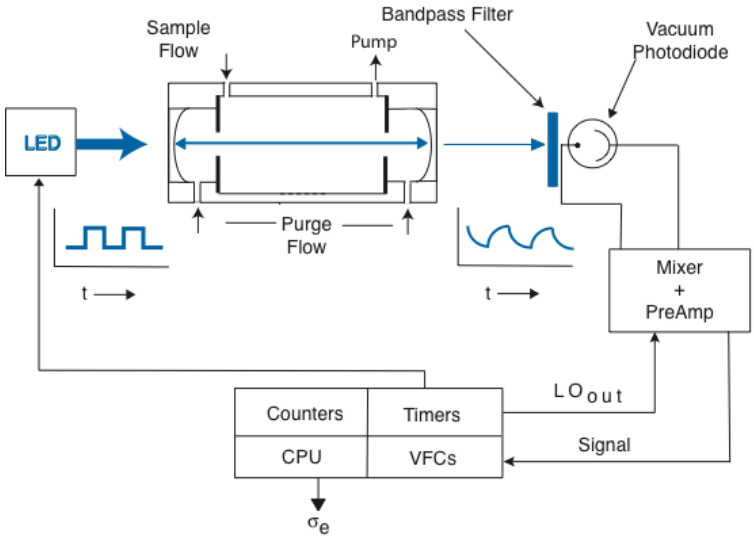
## SPECIFICATIONS:

| | |
|---|---|
| Sensitivity (S/N =3): | 2.5 $Mm^{-1}$ (1 s), 0.25 $Mm^{-1}$ (60 s) |
| Response Time (10-90%): | < 2 s |
| Sample Flow: | 0.85 l $min^{-1}$ (volumetric flow) |
| Operating Pressure: | Ambient |
| Materials Exposed to Sample: | Conductive Urethane, Stainless Steel, Conductive Silicone, and Aluminum |
| Data Output: | RS-232, USB, Ethernet (Data Acquisition Program Included)<br>On-board Data Storage (6 GB)<br>Front Panel Display |
| Size/Weight: | Rack mount, 19" x 24" x 9.06", 25 lbs.<br>[61 cm x 43 cm x 23 cm, 12 kg] |
| Electric Power: | 50 W; 100-250 VAC (50-60 Hz) |




## REFERENCES

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