



CAPS NO₂ Monitor

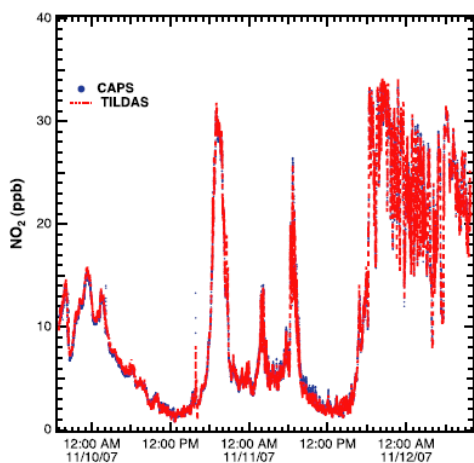
*Accurate and Precise
Continuous Monitoring of
Nitrogen Dioxide*

- *Ambient Monitoring*
- *Fast Response*
- *Extended Range*



APPLICATIONS

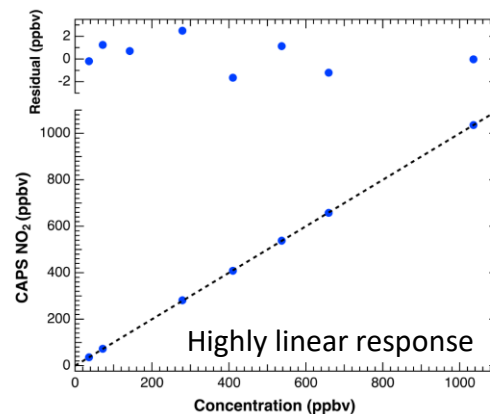
- Ambient monitoring (Ground, vehicle, or aircraft)
- Medical inhalant purity monitoring (3 or 10 ppm range)
- Stack gas monitoring
- Combustion plume analysis (Fast response)



Comparison of data taken with CAPS-based NO₂ and quantum cascade laser-based (TILDAS) monitors during field study.

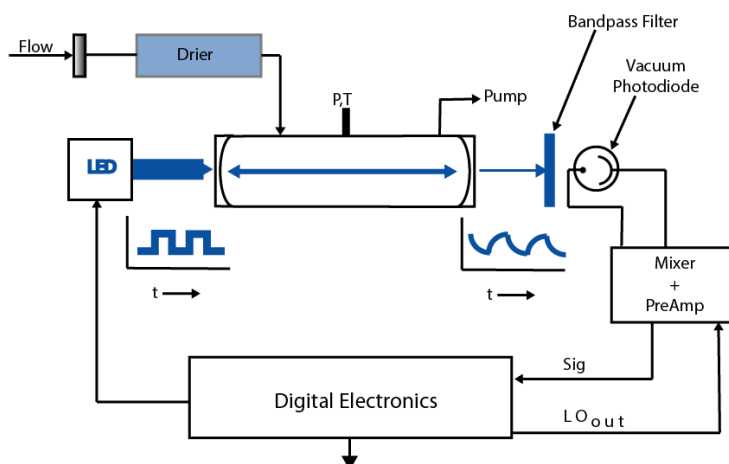
ADVANTAGES

- Visible absorption measurement using patented Cavity Attenuated Phase Shift (CAPS) technology.
- Direct measurement of analyte - no chemical conversion required
- Essentially interference-free: Insensitive to presence of varying levels of nitric oxide, aerosols, humidity and other trace atmospheric species
- Minimal maintenance (periodic change of particle filter)
- Automated and Autonomous Operation with On-board Scrubber Unit
- LOD (3 σ , 10 s) = <0.1 ppb.





Electric Power:	75 W; 100-250 VAC (50-60 Hz)
Range (ppb NO₂):	Standard Range: 0-3000 ppb Extended Range: 0-10000 ppb
Sensitivity (S/N =3):	Ambient Monitoring: < 0.1 ppb (10 s) Fast Response: < 1 ppb (1 s) Extended Range: < 2 ppb (1 s)
Response Time (10-90%):	Ambient Monitoring: 8 s Fast Response: <2 s
Sample Flow:	Ambient Monitoring: 0.85 lpm Fast Response: 1.25 lpm
Materials Exposed to Analyte:	Stainless Steel, PFA and Nafion
Data Output:	RS-232, USB, Ethernet (Data Acquisition Program Included) On-board Data Storage (10 yrs) Front Panel Display
Size/Weight:	Rack mount, 19" x 24" x 9.06", 25 lbs. [61 cm x 43 cm x 23 cm, 12 kg]



"A Practical Alternative to Chemiluminescence Detection of Nitrogen Dioxide: Cavity Attenuated Phase Shift Spectroscopy, P.L. Kebabian, E.C. Wood, S.C. Herndon, and A. Freedman, Environ. Sci. Technol., 42:6040-6045 (2008).

"System and method for trace species detection using cavity attenuated phase shift spectroscopy with an incoherent light source", P.L. Kebabian and A. Freedman, U.S. Patent No. 7301639 (issued November 27, 2007).

"Detection of Nitrogen Dioxide by Cavity Attenuated Phase Shift Spectroscopy", Paul L. Kebabian, Scott C. Herndon and Andrew Freedman, Anal. Chem., 77:724-728 (2005).