



Advantages

The LI-7500A is a high speed, high precision, non-dispersive infrared gas analyzer that accurately measures densities of carbon dioxide and water vapor *in-situ*. With the eddy covariance technique, these data are used in conjunction with sonic anemometer wind speed to determine the fluxes of CO₂ and H₂O into and out of ecosystems.

The LI-7500A accepts analog data from a sonic anemometer and logs complete data sets to a removable USB storage device.

Features:

- Low power consumption : 12 W during normal operation
- High speed: up to 20 Hz bandwidth
- High Precision: 0.11 ppm CO₂, 0.0047 ppt H₂O*
- Excellent stability
- Absence of tubing eliminates delays and sorption effects
- No signal Attenuation for CO₂/H₂O
- Suitable for harsh environments



The LI-7550 (included) is a weatherproof enclosure houses the control unit's high speed Digital Signal Processing (DSP) electronics. Ethernet and Serial data are output at selectable speeds of up to 20 Hz, and linearized user-configurable Digital-to-Analog Converters (DACs) output analog signals at up to 20 Hz bandwidth. The LI-7550 also offers SDM communication for use with Campbell Scientific data loggers.

Specification

CO ₂		μmol mol ⁻¹	Mmol m ⁻³	Mg m ⁻³
Calibration Range		0-3000	0-117	0-5148
RMS noise at ambient (370 ppm) PSD* = 35 ppb + Hz typical 70 ppb + Hz max.	Bandwidth:			
	5 Hz	0.08	0.0031	0.13
	10 Hz	0.11	0.0043	0.19
	20 Hz	0.16	0.0061	0.27
Zero drift with temperature (per °C)	Maximum	±0.3	±0.012	±0.5
	Typical	±0.1	±0.004	±0.2
Gain drift with temperature at 370 ppm (% of reading per °C)	Maximum		±0.1%	
	Typical		±0.02%	
Direct sensitivity to H ₂ O (mol CO ₂ /mol H ₂ O)	Maximum		±4.00E-05	
	Typical		±2.00E-05	

H ₂ O		μmol mol ⁻¹	Mmol m ⁻³	g m ⁻³
Calibration Range		0-60	0-2340	0-42
RMS noise in moist air (10 mmol mol ⁻¹) PSD* = 1.5 ppb + Hz typical 2.5 ppb + Hz max.	Bandwidth:			
	5 Hz	0.0034	0.13	0.0024
	10 Hz	0.0047	0.18	0.0033
	20 Hz	0.0067	0.26	0.0047
Zero drift with temperature (per °C)	Maximum	±0.05	±2	±0.4
	Typical	±0.03	±1	±0.2
Gain drift with temperature at 20 mmol mol ⁻¹ (% of reading per °C)	Maximum		±0.3%	
	Typical		±0.15%	
Direct sensitivity to H ₂ O (mol CO ₂ /mol H ₂ O)	Maximum		±0.05	
	Typical		±0.02	