

Technical Specifications

Main Console

Analysis Method	Two non-dispersive infrared gas analyzers, configured as an absolute absorptiometer with microprocessor control of linearization for both CO ₂ and H ₂ O. All readings are automatically corrected for temperature, pressure and foreign gas broadening.
CO₂ Range	0 – 10000 µmol mol ⁻¹ Precision: 1 µmol mol ⁻¹
H₂O Range	0 – 75 mb
Pressure Compensation Range	80 – 115 kPa
Absolute Accuracy	< 1% of span concentration over the calibrated range but limited by the accuracy of the calibration mixture
Differential Accuracy	+/- 1 µmol mol ⁻¹ for CO ₂ differential up to 50 µmol mol ⁻¹
Linearity	< 1% throughout the range
Stability	Auto-Zero at regular intervals corrects for sample cell contamination, source and detector aging and changes in electronics.
Calibration	User programmable calibration (if required)
Warm-up Time	Approximately 15 minutes
Air Supply Unit	Integral pump for supply of reference air to the leaf cuvette Range: 200 - 500 cc/min CO ₂ and H ₂ O Control: User adjustable from 0 - 100% of ambient. A smoothing volume is recommended for fresh air intake. An internal electronic flow sensor monitors flow rate.
Sampling Pump	Integral pump for sample (Analysis) air Range: 50-200 cc/min An internal electronic flow sensor monitors flow rate.
Sampling Rate	10 Hz. Sample data is averaged and output every 1.0 seconds.
Digital Output	USB
Gas Flow Rate	200-500 cc/min (280-340 cc/min is optimal). An internal electronic flow sensor monitors flow rate.
Terminal Block	10 pin terminal block for system inputs and outputs
Analog Output	0 – 2.5V (CO ₂ range selectable)
Digital Output	One mini USB for connection to external PC
Environmental Sensor Inputs	2 inputs available for use with external chambers and environmental sensors
Alarm	Visual and audible alarm/warnings
Data Storage (USB)	USB Flash Drive port for data storage in multiple formats
Mini USB	For connection to external PC
Touch Display	2.7" electronic paper touch display with 264 x 176 pixel resolution
Power	Internal, rechargeable 7.4V, 8.7 Ah Li-Ion battery provides up to 10 hours of continuous use
Power Consumption	Warm up: 15W (12V @ 1.0A) Normal operation: 7.2W (12V @ 0.6A)
Enclosure	Rugged, ergonomic, lightweight aluminum with polyurethane base
Gas Connections	Two quick connect fittings (inlet and exhaust) for use with 1/8" (.125") ID tubing
Operating Temperature	0 – 50°C, non-condensing External filtration is recommended in dirty/dusty environments.
Dimensions	20 cm L x 20 cm H 10 cm W (Enclosure only)
Weight	2.1 kg

PLC5 Leaf Cuvette

Cuvette Materials	The materials of construction are carefully selected to ensure maximum accuracy and repeatability of gas exchange measurements.
Stirring Fan	High speed fan provides efficient mixing of the air inside the leaf chamber for ensuring rapid measurement and minimal boundary layer resistance.
Cuvette Window	18 mm x 25 mm (4.5 cm ²)
Air Temperature Sensor	Precision Thermistor Range: 0-50 °C Accuracy: ± 0.3 °C at 25 °C
PAR Sensor (External)	Cosine corrected Response: 400 - 700 nm Range: 0 - 3000 µmol m ⁻² s ⁻¹ Accuracy: 10 µmol m ⁻² s ⁻¹
Dimensions	30 cm L x 3 cm (Handle Diameter)
Weight	0.7 kg

Light Unit (Optional)

Type	Low power LED light unit (White LEDs) easily mounts to the PLC5 Broad Leaf Cuvette.
Control Range	0 - 2500 µmol m ⁻² s ⁻¹
Dimensions	6 cm (L) x 6 cm (H) x 5 cm (W)
Weight	0.1 kg

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