



CPEC306

Expandable Closed-Path Eddy-Covariance System with EC155 and Pump Module



For Various Trace Gas Applications

Provides additional ports without automatic zero and span

Overview

The CPEC306 with EasyFlux[®] is a turn-key, closed-path eddy-covariance (EC) flux system for long-term monitoring of atmospheric-biosphere exchanges of carbon dioxide, water vapor, heat, and momentum. A complete system consists of a closed-path gas analyzer (EC155 closed-path gas analyzer), sonic anemometer (CSAT3A sonic anemometer), data logger

(CR6 datalogger), sample pump, and accommodations for a CDM-A116 allowing for additional sensors.

The gas analyzer's intake design and small sample cell volume (5.9 mL) provide excellent frequency response (4.3 Hz cutoff frequency) with low total system power (12 W). Additionally, the vortex intake (United States Patent No. 9,217,692) greatly reduces maintenance and maintains frequency response compared to traditional inline filters.

Benefits and Features

- ▶ New conformal coating helps protect sonic transducers in corrosive environments
- ▶ Expandable, mid-level system with CR6 datalogger processing power
- ▶ Suitable for sites with many sensors and either a short or tall tower
- ▶ Simple design for easier troubleshooting

Detailed Description

The gas analyzer's small sample cell volume (5.9 mL) minimizes the sample residence time (50 ms at the system's nominal flow rate, 7 LPM). This gives excellent frequency response (5.8 Hz half-power bandwidth) with low total system power (12 W).

temperature are measured with a CSAT3A sonic anemometer head.

Eddy-Covariance Measurements

CO₂ and H₂O are measured with an EC155 Closed-Path Gas Analyzer. Three-dimensional wind speed and sonic air

CPEC306 System Enclosure

The CPEC306 has two enclosures: a fiberglass enclosure that houses the CR6 datalogger, pump module, and optional CDM-A116, and the EC100 enclosure for data processing.

CPEC306 Pump Module

The pump module, a standard component of the CPEC306 system, consists of a small dual-head diaphragm pump with a brushless dc motor mounted inside a fiberglass enclosure. An

integral cable connects the pump module to the CPEC306 system enclosure, which provides power, temperature measurement and control, pressure measurement, and pumping speed measurement and control.

Specifications

Operating Temperature Range	-30° to +50°C
Input Voltage Range	10.5 to 16.0 Vdc
Power	› 35 W (maximum, at cold startup) › 12 W (typical)

System Enclosure

Dimensions	54 x 44.5 x 29.7 cm (21.3 x 17.5 x 11.7 in.)
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Weight	› 14.6 kg (32.2 lb) with optional CDM-A116 module › 13.72 kg (30.25 lb)
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Pump Module

Inlet Connection	3/8-in. Swagelok
Pressure Sensor Range	15 to 115 kPa
Pumping Speed	3 to 9 LPM (automatically controlled at the set point, typically 7 LPM)

For comprehensive details, visit: www.campbellsci.com/cpec306 



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