Open-Path Eddy-Covariance System
With IRGASON or EC150/CSAT3A

Do not connect or disconnect the gas analyzer head or the sonic anemometer head from the EC100 electronics while the EC100 is powered. Doing so can result in unpredictable performance of the system or damage to the instrument head.

Grounding electrical components in the measurement system is critical. Proper earth (chassis) grounding will ensure maximum electrostatic discharge (ESD) protection and higher measurement accuracy.

Use care when connecting and disconnecting tube fittings to avoid introducing dust or other contaminants.

The OPEC power source should be designed thoughtfully to ensure uninterrupted power. If needed, contact Campbell Scientific for assistance.

**IMPORTANT NOTE:** This Quick Deploy Guide is meant to be a general reference to give the installer an overview of the steps required to make this system operational. The product manuals are the definitive source for detailed installation instructions and information.

**Software**

EasyFlux® DL is a free CRBasic program that enables a data logger to report fully corrected fluxes of CO2, latent heat (H2O), sensible heat, and momentum from a Campbell Scientific open-path and closed-path eddy-covariance (EC) system.

EasyFlux® PC is a free computer program that processes high-frequency time-series data, collected using a Campbell Scientific eddy-covariance flux system, into fluxes following community accepted practices.

EasyFlux® Web is a web-based software tool for monitoring CR6- and CR1000-based Campbell Scientific eddy-covariance systems.

https://www.campbellsci.com/easyflux-dl
https://www.campbellsci.com/easyflux-pc
https://www.campbellsci.com/easyflux-web

**Required Tools**
The following tools are required to install the OPEC system in the field. Additional tools may be required for a user-supplied tripod or tower.

1. 9/16-in, open-end wrench
2. 1/2-in, open-end wrench
3. 7/16-in, open-end wrench
4. Adjustable wrench
5. Small, flat-tip screwdriver
6. Large, flat-tip screwdriver
7. Sledgehammer (to drive grounding rod into the ground)
8. 3/16-in hex-key wrench

**Physical Deployment**

1. Set up the tripod and mount enclosure.
2. Ground the tripod and enclosures.
3. Attach the OA20X crossarm to the tripod mast.

**Radiation shield with temperature sensor**

**EC100 electronics**

**Data logger enclosure**

**IRGASON or EC150 w/CSAT3A**

**EasyFlux® DL**

**EasyFlux® PC**

**EasyFlux® Web**

**CPEC300 System Diagram**
4. Connect the gas analyzer, sonic anemometer, and temperature probe cables to the EC100 electronics.

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7. Connect the gas analyzer, sonic anemometer, and temperature probe cables to the EC100 electronics.

8. Insert a MicroSD card into the datalogger and connect power.

9. Mount the IRGASON or EC150/CSAT3A to the crossarm and point it into the prevailing wind.

10. Mount the radiation shield and IRGASON or EC150/CSAT3A temperature probe.

11. Connect the gas analyzer, sonic anemometer, and temperature probe cables to the EC100 electronics.

12. Insert a MicroSD card into the datalogger and connect power.

13. Turn on the +12 VDC power supply and use either LoggerNet, PC200W, or PC400 on your computer to configure settings, either within the Connect screen (Part A) or in the data-logger program itself in CRBasic Editor (Part B). The CR1000KD can also be used to configure these settings as shown in Part C.

14. Configuring with LoggerNet, PC200W, PC400, or CR1000KD

Turn on the +12 VDC power supply and use either LoggerNet, PC200W, or PC400 on your computer to configure settings, either within the Connect screen (Part A) or in the data-logger program itself in CRBasic Editor (Part B). The CR1000KD can also be used to configure these settings as shown in Part C.

A: LoggerNet, PC200W or PC400 Connect screen

1. Connect to the data logger.

2. Go to the Const Table within the Confluent™ DL program.

B: CRBasic Editor

1. Open the program using the CRBasic Editor.

2. Within the program you can search for the word “Unique” to customize all the values within the constant table as well as get definitions of what each constant means.

C: CR1000KD

1. The CR1000KD may be used to set constants and site specific variables as well.

2. Press Esc to activate the display.

3. Press Enter to display the System Control menu.

4. Use the arrow keys to select Site Var Settings to access the site specific variables. Use the keypad to enter the new values.

3. Set all the sensors that are used in the system to TRUE and declare their address, quantity, and calibration information. Select the cell to be changed, right-click on the cell, then select View/Modify Value to change the setting.

4. Once all of the sensors and constant settings are correct, scroll to the bottom and set ApplyAndRestart to true.

5. Review the Public table and confirm that site specific variables are set appropriately. Note: Setting these variables does not require an ApplyAndRestart.

6. Connect the gas analyzer, sonic anemometer, and temperature probe cables to the EC100 electronics.