

Eddy Covariance SYSTEMS



A clear path to flux results

LI-COR®

Integrated Modular Systems

Turnkey eddy covariance (EC) systems from LI-COR® consist of either an LI-7500A Open Path or LI-7200 Enclosed CO₂/H₂O Analyzer and a sonic anemometer. Each system includes a 16 GB USB drive to log months of compressed, self-contained EC data files. Data sets are transferrable over computer networks or wireless communication networks, making it possible to deploy EC systems in remote areas.



Open and enclosed path options for CO₂/H₂O flux analysis



LI-7500A Open Path CO₂/H₂O Analyzer

An open path system provides the lowest power consumption and is ideal for CO₂/H₂O measurements in a variety of environments.

- Based on the proven LI-7500, which is used in flux networks worldwide
- Low power consumption for solar powered operation
- Co-located by the sonic anemometer to provide in situ measurements of air parcels



LI-7200 Enclosed CO₂/H₂O Analyzer

An enclosed system is preferred for CO₂/H₂O measurements in environments with frequent fog, rain, or snow.

- Short intake tube optimized for flux measurements
- Outputs CO₂/H₂O mixing ratio to simplify flux calculations
- Selected as a standard analyzer by flux networks around the world
- Integrated flow module for a controlled flow rate with low power consumption

The modular design makes it easy to add an LI-7700 Open Path CH_4 Analyzer to measure methane flux and a biomet system to record data from a full complement of biological and meteorological sensors for gap filling and interpretation of flux patterns.

Providing a new data management paradigm, logged data are processed easily in EddyPro®, an intuitive EC data processing application. EddyPro provides many well-established processing routines, quality control computations, simple reprocessing, and the ability to account for time-varying parameters.

90% of CO_2 eddy covariance flux systems around the world use LI-COR analyzers, making it easier to compare your results with those from other regions. Many LI-7500 analyzers have been continually deployed for over 10 years – bringing an excellent return on the initial investment.

CH_4 flux analysis



LI-7700

Open Path CH_4 Analyzer

Designed for solar powered EC stations, the LI-7700 is a drop-in addition to LI-COR EC systems. High-speed methane density measurements are logged synchronously with other gas density and wind speed data so you can compute methane fluxes with EddyPro.

- Low power consumption for solar powered operation
- High precision – RMS noise is 5 ppb at 10 Hz in typical ambient CH_4 concentrations
- Ethernet data communication simplifies setup and configuration

► *Learn more about LI-COR's gas analyzers at*

www.licor.com/ec-analyzers

Analyzer Interface Unit

Included with each LI-7500A and LI-7200, the LI-7550 Analyzer Interface Unit is a multipurpose component of the EC system.

- Graphical software interface eliminates the need to write code or program a datalogger
- Includes a 16 GB USB drive to log months of data
- Weather-resistant cable connections simplify setup and save time
- Supports wireless (cellular modem, satellite, line-of-site radio) or networked data transfer

*GHG files (with a .ghg extension) include all the information that is required to compute fluxes, including wind speed measurements, gas concentration/density measurements, site information, and optional biomet data.



Logs data in self contained, compressed GHG* eddy covariance files that import directly into EddyPro.



Sonic Anemometers

- Compatible with omnidirectional and c-clamp style sonic anemometers to accommodate different site conditions and research objectives
- Quick-connect data cables provide simple, robust connections for the CSAT3, WindMaster™, WindMaster™ Pro, HS-50, and R3-50

LI-COR offers the following Gill anemometers: WindMaster, WindMaster Pro, R3-50, and HS-50

EC systems are compatible with nearly any model of sonic anemometer, including Campbell Scientific® CSAT3, Gill WindMaster, WindMaster Pro, R3, and HS.

► *Learn more about sonic anemometers on the web:*
www.licor.com/sonics



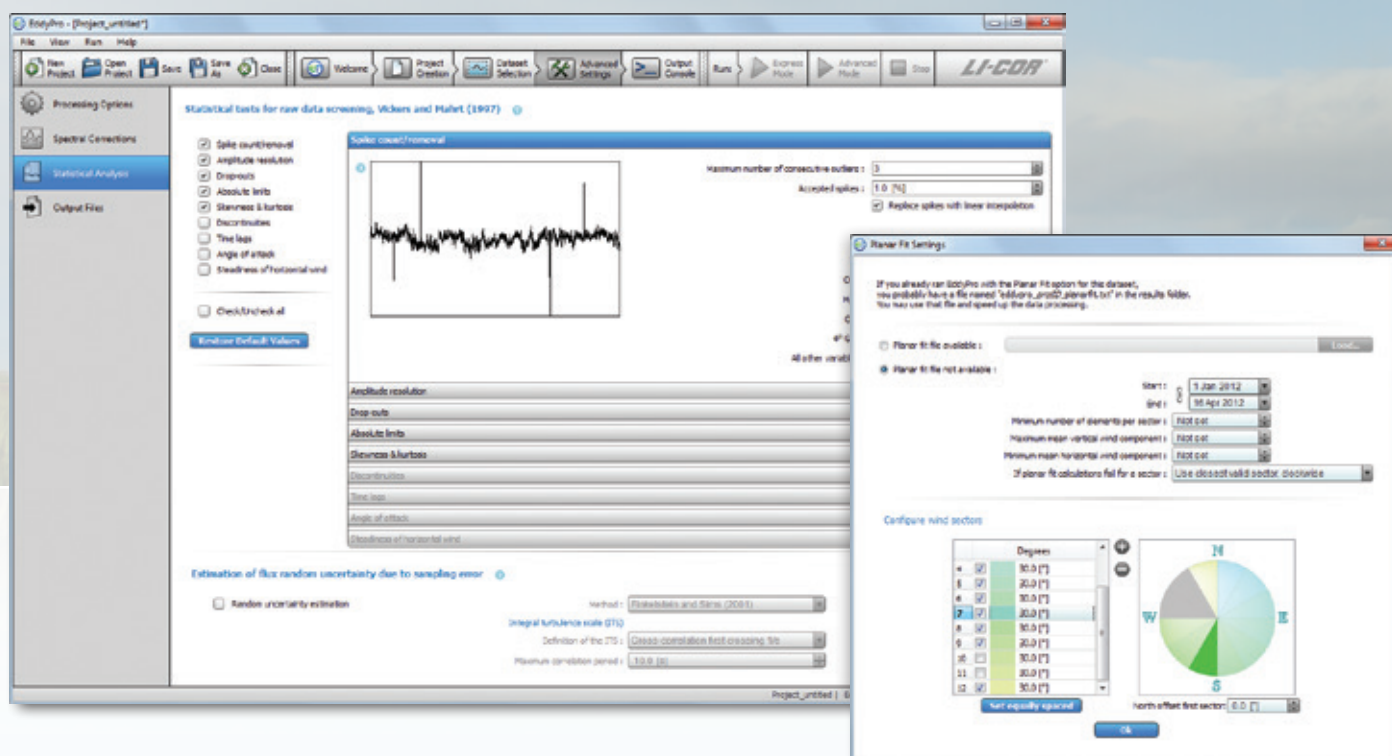


Eddy Covariance Flux Processing Software

EddyPro is a powerful software application for processing EC data. It computes fluxes of momentum, carbon dioxide, water vapor, methane, and other trace gases with the EC method.



EddyPro is optimized to provide the greatest flexibility and simplicity when processing GHG eddy covariance data files.



In Express Mode, EddyPro processes data with commonly used default settings, requiring minimal user configuration. In Advanced Mode, it provides state-of-the-art choices for researchers who need control over data processing procedures.

- Provides a complete set of processing options, including frequency response correction, footprint estimation, random error estimation, quality flagging, and many more
- Comprehensive spectral assessment using both analytical and in situ methods
- Computes full and binned spectra, co-spectra, binned ogives and ensemble spectra and co-spectra with model
- Integrates data from biomet sensors at your site (ambient air temperature and relative humidity, global radiation, etc.) into your flux computation

► *EddyPro is available for free download from*

www.licor.com/eddypro



Here for You Every Step of the Way

Deploying an EC system or maintaining a network of systems is a difficult undertaking. To help ensure your success, our products are backed up by a team of highly skilled technical support staff.

Furthermore, each system is warranted to ensure successful startup and operation of your EC system.

LI-COR support brings decades of combined experience to assist you with nearly every aspect of EC measurements – including preparation, installation, operation, maintenance, and data processing.

Resources and Training

More EC resources and training opportunities are available:



Design your own system – Choose your research environment and decide which sensors are best to satisfy your research objectives.
www.licor.com/ec-design



Case Studies Map – See how other researchers are using LI-COR EC systems around the world and review recent research publications.
www.licor.com/ec-map



Hands-on training courses – Three-day training courses are held throughout the year. Course topics include theory, setup, data collection, processing, analysis, best practices, maintenance, and much more.
www.licor.com/ec-training



Webinars – Educational webinars cover a variety of topics related to ecosystem-level gas exchange, including details on the EC method, EddyPro data analysis software, EC system configurations, and more.
www.licor.com/ec-webinars



Book – *A Brief Practical Guide to Eddy Covariance Flux Measurements* is a resource to help researchers who wish to know more about the EC method and how to properly make these measurements.
www.licor.com/ec-book

► *Contact us for Package and Ordering Information*

*Our contact information can be found at
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The LI-COR board of directors would like to take this opportunity to return thanks to God for His merciful providence in allowing LI-COR to develop and commercialize products, through the collective effort of dedicated employees, that enable the examination of the wonders of His works.

“Trust in the LORD with all your heart and do not lean on your own understanding. In all your ways acknowledge Him, and He will make your paths straight.”

– Proverbs 3:5,6