

LI-710 Evapotranspiration Sensor

# Accurately measure evapotranspiration with this simplified sensor

- Easy to operate and maintain
- Direct measurements
- Based on established science



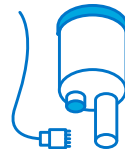
## Easy operation

The LI-710 Evapotranspiration Sensor gives you answers—no data processing is necessary. From mounting to output, it is designed for ease-of-use.



### Mounting

Attach it to a simple pole—no tower or tripod needed—and it is compatible with NuRail® and other commonly used mounting hardware.



### Output

SDI-12 output from a single cable makes it easy to collect data and integrate the sensor into existing infrastructures.



### Power

Its 1.5 W power requirement means you only need a battery and small solar panel to run it.



### Maintenance

It requires no calibration and is low maintenance.

## Actual evapotranspiration measurements

The direct measurement of evapotranspiration hasn't been widely used because of the cost and complexity of traditional measurement methods. Indirect methods rely on estimates based on crop coefficients and reference or potential evapotranspiration, which leads to uncertainty.

The LI-710 measures actual evapotranspiration—water vapor moving out of the field and into the atmosphere—without the need for crop coefficients. It works over any relatively flat and uniform ground cover at field or ecosystem scale.

## Applications

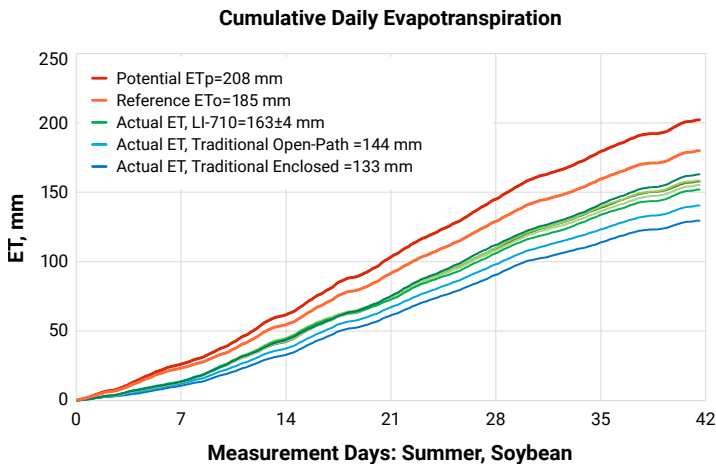
Use the LI-710 Evapotranspiration Sensor to accurately quantify evapotranspiration for:

- Irrigation management
- Drought monitoring
- Weather stations
- Water budgeting
- Verification of remote sensing
- Regulatory oversight
- Watershed management



# Research-grade accuracy

The LI-710 applies the eddy covariance method to measure vertical wind and water vapor concentration at 10 Hz, then provides fully processed results every 30 minutes.



A comparison of the LI-710 to traditional eddy covariance and Penman-Monteith Estimates shows that the LI-710 reports evapotranspiration with the accuracy of traditional eddy covariance.

# A high-quality, cost-effective solution

With the LI-710, you get high-quality evapotranspiration measurements for a fraction of the cost of more complex direct measurement methods. You can deploy multiple sensors to expand your data collection footprint. You don't need to hire a data analyst, and it has low ongoing power and maintenance costs.



# Specifications

## Instrument Specifications

**Operating Temperature:** 5 – 50 °C up to 85% RH

**Communication:** SDI-12

**Power:**

**Input Voltage Range:** 8-33 V

**Power:** ≤ 1.5 W

**Weight:** 1.4 kg

**Size:** 58 x 17.5 x 7.6 cm

**Mount:** 1 inch mounting post, compatible with NuRail® and other commonly used mounting hardware

## Measurement Specifications

**H<sub>2</sub>O Mole Fraction Range:** 0 - 60 mmol/mol

**Inlet Flow:** 0.3 lpm (typical)

## Output Variables

| Variable | Description                                   |
|----------|---|
| ET       | Actual Evapotranspiration (mm)                |
| LE       | Latent Energy Flux (W/m <sup>2</sup> )        |
| H        | Sensible Heat Flux (W/m <sup>2</sup> )        |
| VPD      | Vapor Pressure Deficit (kPa)                  |
| Pa       | Atmospheric Pressure (kPa)                    |
| Ta       | Air Temperature (°C)                          |
| RH       | Relative Humidity Ambient (%)                 |
| AH       | Absolute Humidity Ambient (g/m <sup>3</sup> ) |
| SVP      | Saturated Vapor Pressure Ambient (kPa)        |
| Td       | Dewpoint (°C)                                 |

## System Requirement

**Minimum Separation Between Sonics:** 2 meters

**Minimum Mounting Height:** 2 meters

## Weatherproof Rating

Tested to IEC IP54 standard user

*Specifications subject to change without notice.*

# About LI-COR

LI-COR Environmental is a leading technology innovator for plant physiology, ecosystem, soil, light, water, wind, and greenhouse gas monitoring research.



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[licor.com/env](https://www.licor.com/env)



## LI-COR Environmental

4647 Superior Street  
Lincoln, Nebraska 68504

Phone: +1-402-467-3576  
Toll free: 800-447-3576

[envsales@licor.com](mailto:envsales@licor.com)  
[envsupport@licor.com](mailto:envsupport@licor.com)  
[www.licor.com/env](https://www.licor.com/env)

## LI-COR Ltd., United Kingdom

St. John's Innovation Centre  
Cowley Road  
Cambridge  
CB4 0WS  
United Kingdom

Phone: +44 (0) 1223 422102

[envsales-UK@licor.com](mailto:envsales-UK@licor.com)  
[envsupport-eu@licor.com](mailto:envsupport-eu@licor.com)

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## LI-COR GmbH, Germany

Siemensstraße 25A  
61352 Bad Homburg  
Germany

Phone: +49 (0) 6172 17 17 771

[envsales-gmbh@licor.com](mailto:envsales-gmbh@licor.com)  
[envsupport-eu@licor.com](mailto:envsupport-eu@licor.com)

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[www.licor.com/env/distributors](https://www.licor.com/env/distributors)

