



Rugged and Bluetooth-enabled, the MX2310 delivers an all-in-one solution for soil-plant-atmosphere monitoring that provides insights at the root level to inform irrigation and fertilization decisions. Get research-grade photosynthetically active radiation (PAR), temperature and relative humidity—plus soil salinity and volumetric water content measurements, all in a single device. Whether you're growing plants in a commercial greenhouse, managing indoor vertical farms, fine-tuning conditions in hydroponic systems, or conducting agricultural or ecological research, the MX2310 completes your growing picture, giving you the data you need to optimize conditions for growth, health, and productivity.

Built for simplicity and flexibility, this multi-parameter logger integrates LI-COR® LI-190R PAR and LI-300/350 sensors, trusted by researchers worldwide for its precision in measuring photosynthetically active radiation (PAR).

IMPORTANT NOTE: For mounting, an M-PLT and 2003S Leveling Fixture are required. Mounting to poles or pipes require an M-BRK and 2003S.

This versatile logger is designed to operate reliably across diverse environments, from high-tech vertical farming racks to outdoor experimental plots to support informed decisions around lighting, ventilation, and irrigation without the complexity or high costs of traditional monitoring systems:

What the MX2310 Temp/RH/PAR Logger Supports:

Irrigation Timing : Helps determine when to irrigate vs. fixed schedules

Dryback Tracking : Informs greenhouse, cannabis and substrate-based growing operations

Overwatering prevention : High VWC can indicate poor drainage, low oxygen risk, or disease-prone conditions. High VWC can indicate poor drainage, low oxygen risk, or disease-prone conditions. High VWC can indicate poor drainage, low oxygen risk, or disease-prone conditions. Detecting high VWC can indicate drainage issues, low oxygen availability, and disease-prone conditions

With Bluetooth wireless, setup and data retrieval are seamlessly simple—no cables or additional download devices needed using the free HOBObconnect app on your phone or tablet. Effortlessly configure the logger and download data via Bluetooth (up to a 100 ft range), which allows you to deploy in and download data from hard-to-reach spots.

Expand your remote monitoring by adding an MX Data Plan, which allows you to upload data to LI-COR Cloud remote software for further analysis, sharing, and more.

Features:



Wireless Bluetooth Data Offload

Fast, easy logger setup and download via phone or tablet (up to ~100 ft range)



High-Accuracy PAR Measurements

Integrated LI-COR PAR sensor delivers research-grade light intensity readings for both sunlight and indoor grow light conditions



Integrated Temp & RH Monitoring

Logged temperature and humidity alongside PAR enables calculation of VPD for a complete view of greenhouse climate conditions



Rugged, Weatherproof Design

Durable IP67/NEMA 6 housing stands up to humid, wet, and dusty environments found in greenhouses, growth chambers, or outdoor field sites



Long Battery Life & Memory

User-replaceable battery lasts up to ~2+ years and ample data storage supports extended deployments



Alarms and Alerts

See out-of-range conditions with logger's LED readout, and configure threshold alerts using HOBObconnect for proactive monitoring



Easy Deployment

Users can deploy the logger in minutes, configure logging intervals via the HOBObconnect app, and wirelessly retrieve data (without a laptop) in the field!

Technical Specifications:

Temperature Sensors

Range	: -40 to 70°C (-40 to 158°F)
Accuracy	: ±0.2 °C (typical) within -40 to 70 °C
Resolution	: 0.008°C (.014 °F)
Drift	: <0.01°C (0.018°F) per year
Response Time* Without Solar Radiation Shield	: 17 minutes in air moving 1 m/sec
Response Time* With Solar Radiation Shield	: 24 minutes in air moving 1 m/sec

Relative Humidity (RH) Sensor

Range	: 0 to 100% RH, -40° to 70 °C exposure to conditions below -20°C (-4°F) or above 95% RH may temporarily increase the maximum RH sensor error by an additional 1%
Accuracy	: ±2.5% from 10% to 90% (typical) to a maximum of ±3.5% including hysteresis at 25°C (77°F); below 10% RH and above 90% RH ±5% typical
Resolution	: 0.01% RH
Drift	: <1% per year typical
Response Time* Without Solar Radiation Shield	: 30 seconds in air moving 1 m/sec
Response Time* With Solar Radiation Shield	: 40 seconds in air moving 1 m/sec
Calculated Metrics	: Vapor Pressure Deficit (VPD) in kPa, and Dew Point (computed from logged data)

Photosynthetically Active Radiation (PAR)

Range	: 0 to 3,000 $\mu\text{mol}/\text{m}^2/\text{s}$ (full sunlight)
Accuracy	: $\pm 5\%$ typical (LI-COR LI-190R factory calibration)
Offset	: $\pm 1 \mu\text{mol}$
Resolution	: $0.1 \mu\text{mol}/\text{m}^2/\text{s}$
Spectral Range	: 400–700 nm (PAR waveband)
Linearity	: Maximum deviation of 1% up to 3,000 $\mu\text{mol}/\text{m}^2/\text{s}$
Stability	: $\leq 2\%$ change over one year

Soil Moisture: Volumetric Water Content (VWC)

Measurement Range	
(select one at configuration)****	: 0.00 to 1.0 m^3/m^3 VWC in mineral soils 0.00 to 1.0 m^3/m^3 VWC in soilless media Apparent Dielectric Permittivity: 1 (air) to 80 (water)
Accuracy	: $\pm 0.03 \text{ m}^3/\text{m}^3$ typical $\pm 0.06 \text{ m}^3/\text{m}^3$ maximum Apparent Dielectric Permittivity: $\pm 1 \epsilon_a$
Resolution	: $0.001 \text{ m}^3/\text{m}^3$ Apparent Dielectric Permittivity: $0.002 \epsilon_a$
Dielectric Measurement	
Frequency	: 70 MHz
Volume of Influence	: 1400 ml
Percent of Field Capacity	
(for VWC measurements only)	: Range: 0 to 200% Resolution: 0.1%

Soil Temperature*****

Measurement Range	: -40 to 70°C (-40 to 158°F)
Accuracy	: $\pm 0.5^\circ\text{C}$ from -40° to -20°C $\pm 0.3^\circ\text{C}$ from -20°C to 70°C
Resolution	: 0.1°C (0.18°F)

Soil Bulk Electrical Conductivity (EC)

Measurement Range	: 0 to 20000 $\mu\text{S cm}^{-1}$
Accuracy	: $\pm 5\%$ from 0 to 10000 $\mu\text{S cm}^{-1}$ $\pm 8\%$ from 10000 to 20000 $\mu\text{S cm}^{-1}$
Resolution	: $1 \mu\text{S cm}^{-1}$

Logger

Operating Range	: -40 to 70°C (-40 to 158°F)
Radio Power	: 1mW (0 dBm)
Transmission Range	: Approximately 30.5 m (100 ft) line-of-sight
Wireless Data Standard	: Bluetooth Low Energy (Bluetooth Smart)
Logging Rate	: 1 second to 18 hours
Logging Modes	: Fixed interval (normal, statistics) or burst
Memory Modes	: Wrap when full or stop when full
Start Modes	: Immediate, push button, date & time, or next interval
Stop Modes	: When memory is full, push button, date & time, or after a set logging period
Time Accuracy	: ±1 minute per month 0° to 50°C (32° to 122°F)
Battery Type	: 2/3 AA 3.6 Volt lithium, user replaceable
Battery Life	: 2 years, typical with logging interval of 1 minute and Bluetooth Always On enabled; 4 years, typical with logging interval of 1 minute and Bluetooth Always On disabled. Faster logging intervals and statistics sampling intervals, burst logging, remaining connected with the app, excessive downloads, and paging may impact battery life.
Memory	: 195,000 measurements, maximum
Full Memory Download Time	: Approximately 4-5 minutes; may take longer the further the device is from the logger
Dimensions	: Logger housing: 10.8 x 5.08 x 2.24 cm (4.25 x 2.0 x 0.88 in.) Soil moisture sensor (only): 4.6 x 4.6 x 10.9 cm (1.81 x 1.81 x 4.31 in.) Soil moisture sensor needle length: 5.4 cm (2.14 in.) Soil moisture sensor needle diameter: 0.40 cm (0.16 in.) Sensor cable length: 2 m (6.56 ft)
Weight (Unpackaged)	: 333 g, 11.8 oz
Weight (Packaged)	: 490 g, (17.3 oz)
Materials	: Acetal, silicone gasket, stainless steel screws Soil Moisture Sensor: ASA plastic body with polyurethane epoxy filling and stainless-steel pins Cable: PVC, UV resistant and rodent repellent (soil moisture sensor cable)
Environmental Rating	: Logger: NEMA 6 and IP67 Soil Moisture sensor and cable: xxxx