

LI-610 Portable Dew Point Generator



A Precision Water Vapor Source

Designed for Precision

The LI-610 Portable Dew Point Generator is a rugged, portable instrument that provides a stream of gas with a precisely controlled dew point. This high precision makes the LI-610 the ideal instrument for calibrating the H₂O channels of gas analyzers and other sensors, or for rigorously controlling water vapor mole fraction in environmentally regulated chambers.

- NIST certified
- Generates stable dew points from 0 to 50 °C
- Accuracy of ± 0.2 °C
- Completely portable and self-contained (battery or AC operated)
- No need for gas tanks and mixing systems

Operation

To generate a stable dew point, an air stream is bubbled through water reservoirs in two condensers to saturate the air stream with water vapor. The temperature of each condenser is precisely controlled to the target dew point. An internal radiator with a cooling fan dissipates heat from the coolers, providing a completely self-contained cooling system.

The water vapor stream exits the condensers via a port on the front panel, or can be split to a second port. An internal pump provides a flow rate up to 2.0 liters per minute.

Applications

Calibrating Instruments

The high accuracy and stability of the LI-610 make it well-suited for calibrating gas analyzers, relative humidity sensors and to check the calibration of dew point hygrometers.

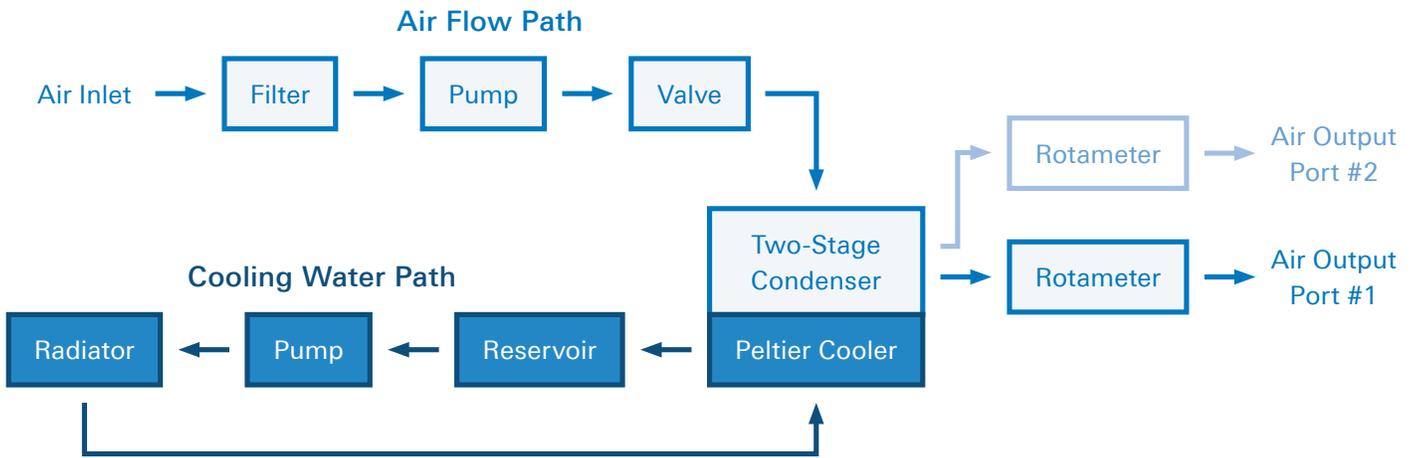
Controlling Humidity During Photosynthesis Measurements

The LI-610 can provide a continuous air stream of known dew point to photosynthesis and stomatal conductance measurement chambers, or for other applications where a known amount of water vapor is required.

Maintaining Humidity in Chambers

A carefully controlled dew point can be used to maintain the desired water vapor mole fraction in regulated chambers, and to calibrate sensors in enclosures.





Specifications

Dew Point Range: 0 to 50 °C (limited to 35 °C below the cooling water temperature)

Accuracy: ± 0.2 °C (0-50 °C)

Stability: <0.02 °C per day at 25 °C typical;
<0.04 °C per day at 25 °C maximum

Noise Level: 0.01 °C peak-to-peak

Repeatability: 0.01 °C

Response Time: Typically 15 seconds per °C when changing from ambient to a higher dew point; 30 seconds per °C for dew points lower than ambient

Temperature Sensor: Platinum resistance temperature detector (RTD)

Flow

Rate: Adjustable; typically 2.0 liters per minute

Meter Type: Dwyer series RMA. 2.5 liters per minute full scale

Meter Accuracy: ± 4% of full scale reading

Outlets: Two rapid connect hose fittings for 4 mm ID by 6 mm OD plastic tubing. Accepts 1/4" OD tubing with 1/8 to 3/16" ID

Maximum Input Flow: 2.0 liters per minute. Contact LI-COR about using higher input flow rates.

Analog Output: 0 to 5 V, 100 mV / °C

Command Input: 0 to 5 V, 100 mV / °C

Display: 4 1/2 digit LCD for displaying set dew point temperature (°C), actual dew point temperature (°C), or battery voltage

Display Resolution: 0.01 °C

Operating Temperature: 0 to 50 °C, 0 to 100% RH

Power Requirements: 10.5 to 16 VDC, 5.5 amps max current draw; or 108-126/216-252 VAC with 610-01 AC Module

Dimensions: 23.5 H x 21 W x 28.5 D cm (9 H x 8.1 W x 11" D)

Weight: 7.86 kg (17.4 lbs.)

Ordering Information

LI-610 Portable Dew Point Generator:

Includes 610-01 AC Module and 610-04 BNC to mV Recorder Leads

Accessories

6200B Rechargeable Battery: 4 hours battery life at 25 °C and 10 °C dew point. Requires LI-6021 to recharge

LI-6021 Battery Charger: Used to charge the 6200B rechargeable battery



Global Headquarters

Lincoln, Nebraska, USA
Intl.: +1-402-467-3576
envsales@licor.com

Outside the United States — Regional Offices and Distributors

www.licor.com/env/contact

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