

NEULOG DEW POINT LOGGER SENSOR GUIDE



NeuLog dew point logger sensor NUL-245 Part# NL-2450

The NeuLog dew point sensor can be used for any science experiment which requires an accurate dew point reading such as in the fields of Biology, Exercise Science, Environmental Science, Earth Science, Weather Science, Botany, Entomology, etc.

The sensor comes pre-calibrated so you can start experimentation right out of the box using this guide.

Among hundreds of possible experiments that can be carried out with the NUL-245 sensor are: perspiration, photosynthesis rates, insect behavior, ecological studies, animal behavior, weather patterns, and many more.

Dew point is a measurement which determines the temperature at which water vapor (at a constant barometric pressure) condenses back into a liquid at the same rate at which it evaporates. A high dew point means there is a high amount of moisture in the air. Relative humidity and dew point are closely related; a high relative humidity indicates that the dew point is closer to the current air temperature. At 100% relative humidity, the dew point temperature will equal the environmental temperature.

The NeuLog dew point sensor can take accurate readings in the following units of measurement:

Celsius: The SI (International System of Units) unit of temperature.

Fahrenheit: The temperature measurement unit of the English System commonly used in the United States.

Included with the sensor:

- NeuLog General Guide

Sensor's specifications		
	Celsius	Fahrenheit
Range and operation modes	-114.0 to 109.0°C	-182.0 to 228.0°F
ADC resolution	12 bit	
Resolution	0.1°C	0.2°F
Max sample rate (S/sec)	100	

Experiment Duration: 1 second to 31 days.

Sensor's features:

- Fully digital data
- Rugged plastic ergonomic case
- Push button switch for Start/Stop experiments in off line mode
- LED indicator of experiment status (blinks while collecting data)
- Pre-calibrated sensing equipment

Note: NeuLog products are intended for educational use.

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Videos and experiment examples:

- Videos, literature and other probes can be found at www.NeuLog.com.
- In order to access the dew point sensor's page, choose "Products" on the main menu and then "Dew point logger sensor".
- In order to access the dew point sensor's experiments, choose "Example Labs":
 - Measuring Dew Point (E-5)

Technical background:

The philosophy behind NeuLog's plug and play technology is based on each sensor's ability to store its own data due to an internal flash memory chip and micro-controller in each plastic NeuLog body. This technology allows the sensor to collect and then store the digital data in the correct scientific units ($^{\circ}\text{C}$, $^{\circ}\text{F}$, Lux, %, ppm, for example).

The sensor is pre-calibrated at the factory. The built-in software in the logger can be upgraded for free at any time using the provided firmware update.

The dew point sensor relies on two different sensors to accurately determine the dew point of an environment: a temperature and a humidity sensor.

The internal humidity sensor utilizes a dielectric polymer to absorb water molecules. As more water molecules enter, the capacitance changes proportionally to the relative humidity value. Using this technique, an accurate relative humidity value is calculated.

The internal temperature sensor uses a thermistor which changes its resistance according to temperature change. Resistance is measured and converted into temperature.

Dew point is calculated using both the environmental temperature and relative humidity values.

Maintenance and storage:

- Never submerge the NeuLog plastic body in any liquid.
- Do not allow liquid into the dew point sensor's body.
- After use, gently wipe away any foreign material from the dew point sensor.
- Store in a box at room temperature out of direct sunlight.

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Warranty:

We promise to deliver our sensor free of defects in materials and workmanship. The warranty is for a period of 3 years from the date of purchase and does not cover damage of the product caused by improper use, abuse, or incorrect storage. Sensors with a shelf life such as ion selective probes have a warranty of 1 year. Should you need to act upon the warranty, please contact your distributor. Your sensor will be repaired or replaced.

Thank you for using NeuLog!

NeuLog 

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