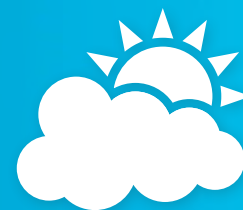# Dielectric Leaf Wetness Sensor

Innovative and easy-to-use, the new Dielectric Leaf Wetness Sensor enables accurate and affordable leaf wetness monitoring. Many fungal and bacterial diseases affect plants only when moisture is present on the leaf surface. The Leaf Wetness Sensor determines the presence and duration of wetness on a leaf's surface, enabling researchers and producers to forecast disease and protect plant canopies.
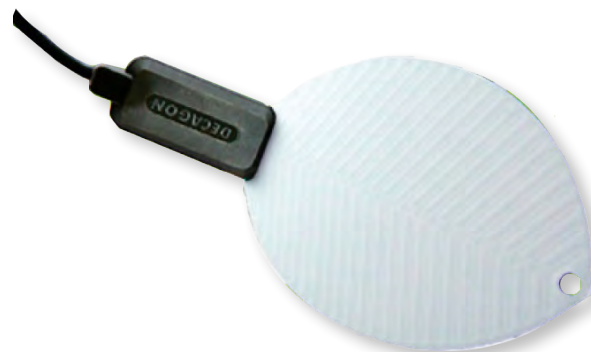
FEATURES

▸ No user manipulation or painting required

▸ High resolution detects trace amounts of water or ice on the sensor surface

▸ No calibration necessary; factory calibration set at standard wetness threshold

▸ Low power requirement and long battery life (2+ years with Sutron's Dataloggers) enable effective long-term leaf wetness monitoring

▸ Forecast plant disease

▸ Modeling for blight

▸ Canopy treatment scheduling

▸ Imitates characteristics of a real leaf

▸ Requires no painting or user calibration

▸ Can detect ice on the "leaf" surface

▸ Low power

▸ High Resolution

APPLICATIONS

▸ Disease forecasting and modeling

▸ Ecological and Agricultural Research

How It Works

The Leaf Wetness Sensor approximates the thermal mass and radiative properties of leaves to closely mimic the wetness state of a real leaf. If the canopy is wet, the sensor is wet; if the canopy is dry, the sensor is dry. The Sensor measures the dielectric constant of its top. The dielectric constants of water (80) and ice (5) are higher than air (1), so the sensor can determine the presence or absence of wetness. Measurements are logged at user-defined intervals to determine the duration of wetness on the canopy.

Moisture does not need to bridge electrical traces for the sensor to detect moisture; the presence of water or ice anywhere on the sensor surface will be detected.

SPECIFICATIONS	
Subject to change without notice	
Parameters	**Specifications**
Measurement time	10 ms
Power	2.5VDC @ 2mA to 5VDC @ 7mA
Output	250 to 1500 mV
Operating Environment	-10°C to 60°C
Expected Lifetime	2+ years continuous use
Probe Dimensions	
Length	11.2cm
Width	5.8cm
Thickness	0.075cm
Cable Length	5m standard Extension cables available"
Connector type	3.5mm plug
Datalogger Compatibility (not exclusive)	Sutron Xpert, XLite, 8310 Decagon Em5b, Em50, Em50R Campbell CR10, 10X, 21X, 23X, 1000, 3000, 5000