



**NEW**

## W.E.T Sensor

- Precision Horticulture
- Soil Science Research

*W.E.T sensors are used in soils and growing substrates.*

*One sensor produces three outputs:*

**Water content**

**Electrical Conductivity**

**Temperature**



The new W.E.T Sensor, type WET-1, from Delta-T Devices measures three vital soil properties: Water content, Electrical conductivity and Temperature. [The W.E.T Sensor's name comes from the first letter of each measured quantity, reflecting the fact that it's a three-in-one sensor].

The W.E.T Sensor has applications in precision horticulture and soil science research and is usable in both soils and growing substrates. It is unique in its ability to measure pore water conductivity ( $EC_p$ ), which is the EC of the water that is available to the plant.

Readout and data storage in the field are handled by the HH2 Moisture Meter (illustrated).

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*Delta-T gratefully acknowledges the partner organisations that have enabled the development of these sensors & systems:*

**Institute of Agricultural and Environmental Engineering (IMAG-BV)**

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Tel: +31.317.476654 Fax: +31.317.425670 Website: [www.imag.wag-ur.nl](http://www.imag.wag-ur.nl)

*Designers of the W.E.T. Sensor and the integrated circuit which enables accurate measurement of the permittivity and conductivity of the bulk soil or media.*



**Saint-Gobain Cutilène B.V.**

Hoekenidsehof 1, 2665 JZ, Postbus 4, 2665 ZG Bleiswijk, The Netherlands.

Tel: +31.10.5294294 Fax: +31.10.5294299 Website: [www.cutilene.nl](http://www.cutilene.nl)

*Sponsors of research into horticultural media applications and suppliers of horticultural media*

*calibrations. Exclusive suppliers of horticultural media calibrations to customers in the Netherlands.*



**Applied Plant Research**

Division Glasshouse Horticulture, (Praktijkonderzoek Plant & Omgeving B.V.)

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*Developers of the W.E.T calibrations for horticultural media. © 2001*



APPLIED PLANT RESEARCH

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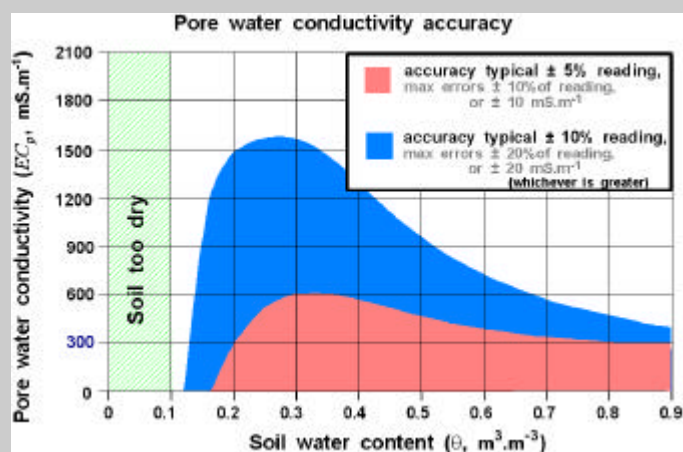
PLEASE SEE OVERLEAF

## W.E.T Sensor Specifications

Probe Output: TTL serial data for:		Range	Accuracy	Resolution	Units
▪	Permittivity, $\epsilon$	1 - 80	$\pm 2.5$	0.1	(no units)
▪	Bulk conductivity, $EC_b$	0 - 200	$\pm 10$	1.0	$mS.m^{-1}$
▪	Temperature, $^{\circ}C$	-5 - 50	$\pm 0.7$	0.1	$^{\circ}C$
Calculated parameters					
▪	Volumetric Soil Moisture, $\theta$	0 - 1	$\pm 0.03$ [1]	0.001	$m^3.m^{-3}$
▪	Pore water conductivity, $EC_p$	depends on water content and conductivity, see graph [2]		1.0	$mS.m^{-1}$
<b>Environmental</b>	Sensor sealed to IP67, connector sealed to IP65. Operating temperature 0 to 50°C.		<b>Power</b>	Typically 38mA for 2.5 seconds. WET-1/d requires 6 - 10 Volts.	
<b>Frequency</b>	20 MHz.		<b>Response time</b>	5s	
<b>Calibration</b>	Individual sensor calibrations supplied.		<b>Dimensions &amp; weight</b>	Probe housing: 55 x 45 x 10mm. Rods: 68mm long x 3mm dia. Wt. 75g	

Notes:

[1] Soil Moisture accuracy specification [2] refer to errors after applying a soil-specific calibration, within 10°C of calibration temperature.



### Ordering Information

**W.E.T Sensor Kit type WET-K1** Comprises WET-1/d-02 W.E.T Sensor, HH2 Moisture Meter (including alkaline battery and comms cable), spare battery, user manuals and WCC2 carrying case. (WET-K1 includes sensor calibrations suitable for a variety of standard soil types).

**W.E.T Sensor Kit type WET-H-K2** Comprises WET-1/d-02 W.E.T Sensor, HH2 Moisture Meter (incl alkaline battery and comms cable) fitted with WET-CL-1\* (W.E.T substrate calibrations upgrade), spare battery, user manuals and WCC2 carrying case.

**W.E.T Sensor type WET-1/d-02** Combined water content, electrical conductivity and temperature probe. Includes sensor calibration on 3.5" disk. 2m cable, with 25-way D-connector, including voltage regulator. (For use with HH2 only).

**Moisture Meter type HH2** With integral 25-pin D-connector for sensor or PC connection. Includes connector cap, battery, user manual with PC software and RS232 cable assembly.

**W.E.T Substrate Calibrations Upgrade type WET-CL-1\*** Upgrade of HH2 Moisture Meter with W.E.T substrate calibrations suitable for a variety of horticultural media. NB calibrations are factory installed at Delta-T premises.

#### \* Further information on W.E.T Substrate Calibrations Upgrade type WET-CL-1.

The WET-CL-1 calibrations are suitable for a variety of horticultural media, including mineral wools (vertical and horizontal measurement), coir, peat-based potting mixes and greenhouse "mineral" soils. In the Netherlands, WET-CL-1 is available exclusively through Saint-Gobain Cutilène B.V.



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