

Plantarry - Intelligent screening system



Technical Data

Plantarray is a high-throughput, physiological-based, precise phenotyping system that performs simultaneous SPAC (Soil-Plant-Atmosphere-Continuum) measurements for the whole-plant response to different environments, in an easy to use, not destructive and non invasive setup.

The 3rd party products integrated in the Plantarry solution were chosen very carefully and tested for many years under almost every condition, to make sure they meet Plant-DiTech's uncompromising approach to accurate and reliable measurement.

Plant-DiTech LTD

Israel, Rehovot

Web: plant-ditech.com

Mail: customer-relations@plant-ditech.com

Tel: 972-54-5434590 / Fax: 972-8-9472504





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Each PIU (Electric Card) has 3 digital ports, 1 analog port and 1 port for the weighing lysimeter ; all sensors are measured simultaneously and continuously

	Measurement	Device	Measurement Range	# per plant	# in System	Connector	Link to technical information
Soil Sensors	Soil Moisture Sensors (Volumetric Water Content – VWC %)	Decagon GS3	0 - 100%	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
		Decagon 5TM	0 - 100%	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
		Decagon 5TE	0 - 100%	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
		Decagon GS1	0 - 57%	Up to 1	No limitation	ANALOG	www.decagon.com
		Decagon 10HS	0 - 57%	Up to 1	No limitation	ANALOG	www.decagon.com
	Soil Salinity (Electrical conductivity -dS/m)	Decagon GS3	0 - 25	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
		Decagon 5TE	0 - 23	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
	Soil Temperature	Decagon GS3	-40°C - 60°C	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
		Decagon 5TM	-40°C - 60°C	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
		Decagon 5TE	-40°C - 60°C	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
Plant	Weight	Vishay 1042	1 - 200kg	Up to 1	No limitation	ANALOG	www.vishaypg.com
	Pot Size	Flexible (fit for most commercial pots)	1.5 - 60Litre	1	No limitation	SPAC container and O rings	



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Atmosphere	Atmospheric Temperature	WatchDog 2000 Mini-Stations	-32° - 100°C	Non	One	USB	www.specmeters.com
	Ambient Light (PAR) $\mu\text{mol}/\text{m}^2/\text{s}$	WatchDog 2000 Mini-Stations	0 - 2,500	Non	One	USB	www.specmeters.com
	Atmospheric Humidity	WatchDog 2000 Mini-Stations	10% - 100%	Non	One	USB	www.specmeters.com
	Atmospheric Temperature	Decagon VP-4	-40°C - 80°C	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
	Vapour Pressure	Decagon VP-4	0.01 kPa	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
	Atmospheric Humidity	Decagon VP-4	0 - 100% RH	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
	Barometric Pressure	Decagon VP-4	49 - 109 kPa	Up to 3	No limitation	DIGITAL SDI-12	www.decagon.com
Irrigation and treatment	Solenoid Valves	Baccara G75-A	Not relevant	Up to 2	No limitation	ANALOG	www.baccara-geva.com
	Metering Pump (used for adding solutions for treatments e.g. fertilisers, salts, bio stimulants etc.)	Dosatron	5 - 500 L/h	Up to 2	No limitation	hydraulic valves	www.dosatron.com