

# Plantarray - 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, non-destructive and non-invasive setup.

The 3<sup>rd</sup> party products integrated in the Plantarray 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.

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Each PIU (Electric Card) has 4 digital (SDI-12) 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	Communication protocol	Technical information
Soil Sensors	Soil Moisture Sensors (Volumetric Water Content – VWC %)	Decagon GS3	0 - 100%	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">GS3 Manual</a>
		Decagon 5TM	0 - 100%	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">5TM Manual</a>
		Decagon 5TE	0 - 100%	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">5TE Manual</a>
		Decagon GS1	0 - 57%	Up to 1	No limitation	ANALOG	<a href="#">GS1 Manual</a>
		Decagon 10HS	0 - 57%	Up to 1	No limitation	ANALOG	<a href="#">10HS Manual</a>
	Soil Salinity (Electrical conductivity -dS/m)	Decagon GS3	0 - 25	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">GS3 Manual</a>
		Decagon 5TE	0 - 23	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">5TE Manual</a>
	Soil Temperature	Decagon GS3	-40°C - 60°C (-40°F - 140°F)	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">GS3 Manual</a>
		Decagon 5TM	-40°C - 60°C (-40°F - 140°F)	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">5TM Manual</a>
Decagon 5TE		-40°C - 60°C (-40°F - 140°F)	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">5TE Manual</a>	
Plant	Load cell	Anyload 108TA	0 - 12kg (26lbs)	Up to 1	No limitation	ANALOG	<a href="#">Anyload 108TA</a>
		Anyload 108TA	0 - 100kg (441lbs)	Up to 1	No limitation	ANALOG	<a href="#">Anyload 108TA</a>
	Pot Size	Small SPAC container	Dia: 12 - 16cm (4.7 - 6.3in)	1	No limitation	-	Fit most commercial pots
		Large SPAC container	Dia: 27 - 31cm (10.6 - 12.2in)	1	No limitation	-	Fit most commercial pots



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Each PIU (Electric Card) has 3 digital (SDI-12) 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	Communication protocol	Technical information
Atmosphere	Atmospheric Temperature	WatchDog 2000 Mini-Stations	-32°C - 100°C (-25.6 – 212°F )	Non	One	USB	<a href="#">WatchDog 2000 Manual</a>
	Ambient Light (PAR) $\mu\text{mol}/\text{m}^2/\text{s}$	WatchDog 2000 Mini-Stations	0 - 2,500	Non	One	USB	<a href="#">WatchDog 2000 Manual</a>
	Atmospheric Humidity	WatchDog 2000 Mini-Stations	10% - 100%	Non	One	USB	<a href="#">WatchDog 2000 Manual</a>
	Atmospheric Temperature	Decagon VP-4	-40°C - 80°C (-40 - 176°F)	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">VP-4 Manual</a>
	Vapour Pressure	Decagon VP-4	0.01 kPa	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">VP-4 Manual</a>
	Atmospheric Humidity	Decagon VP-4	0 - 100% RH	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">VP-4 Manual</a>
	Barometric Pressure	Decagon VP-4	49 - 109 kPa	Up to 3	No limitation	DIGITAL SDI-12	<a href="#">VP-4 Manual</a>
Irrigation	Solenoid Valves	Baccara G75-A	-	Up to 2	No limitation	ANALOG	<a href="http://www.baccara-geva.com">www.baccara-geva.com</a>