



Specifications Soil Mini 2023

Sigrow BV

Ede, The Netherlands



Sense. Discover. Improve.

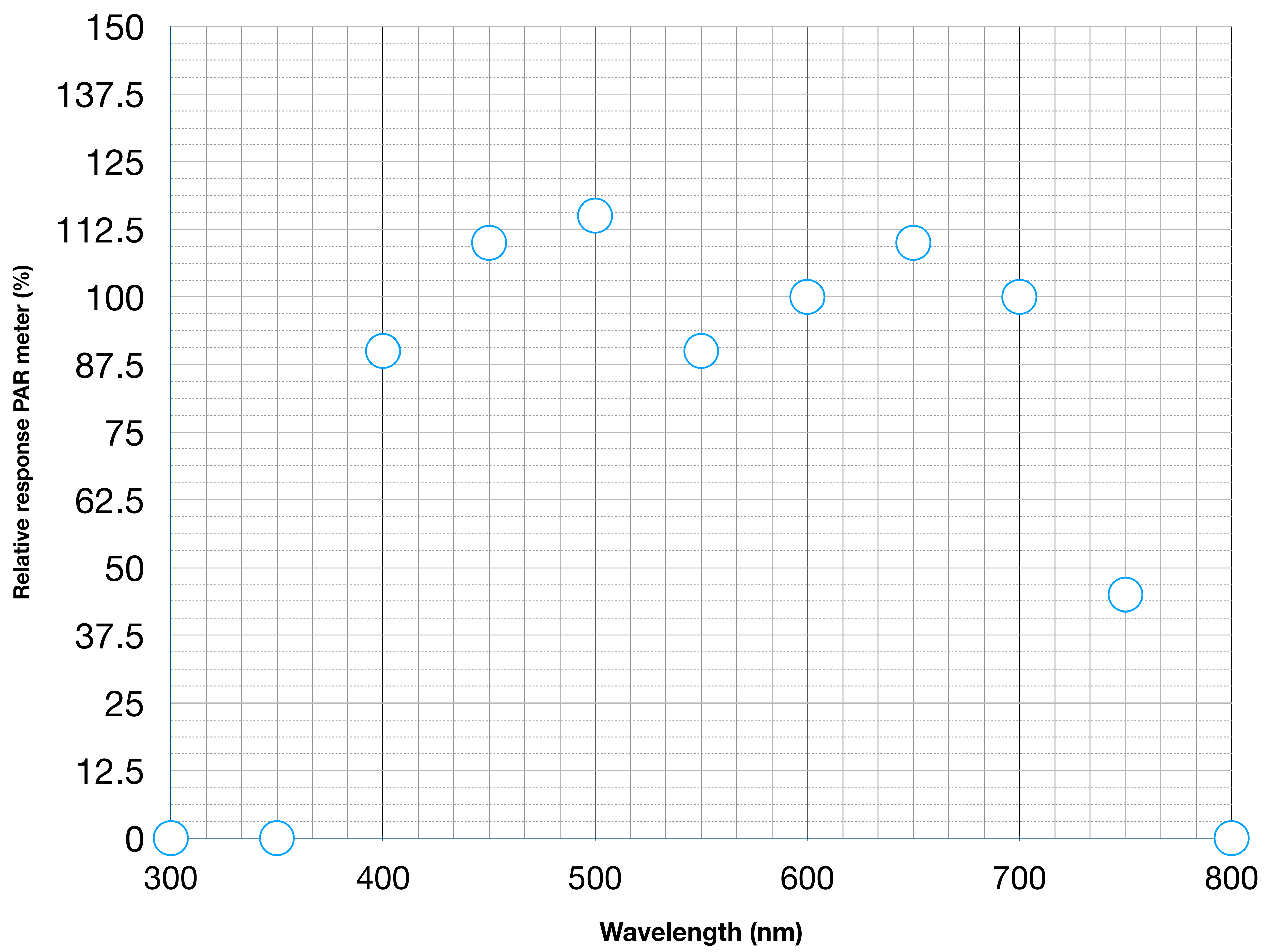
Name	Sigrow Soil Mini
Main body dimensions (Height x Width x Length)	80 x 20 x 50 mm
Substrate Probe dimensions	70x35 mm See next pages
Measurements	PAR Air Temperature (not ventilated) Volumetric Water Content, Substrate EC,
Output format via api.sigrow.com	JSON file
Sampling time	900" *can be changed in the Netherlands factory before shipping; battery life will be affected
Required components	Sigrow® CNv5 Gateway or CN04 Industrial Central
Max devices <i>within Gateway range</i>	Time sample in seconds / 3 <i>eg (900"/3 = 300)</i>
Lead time	<3 week from purchase date for up to 100 devices
Maximum radio range	200-300 meters <i>depending on obstacles</i>
Battery	300 mAh, Lithium Ion
Battery cycle life	+6 months with 900" sampling time. After 1h in wireless charger
Battery longevity	>2 years. Serviceable by user
Enclosure rating	IP65



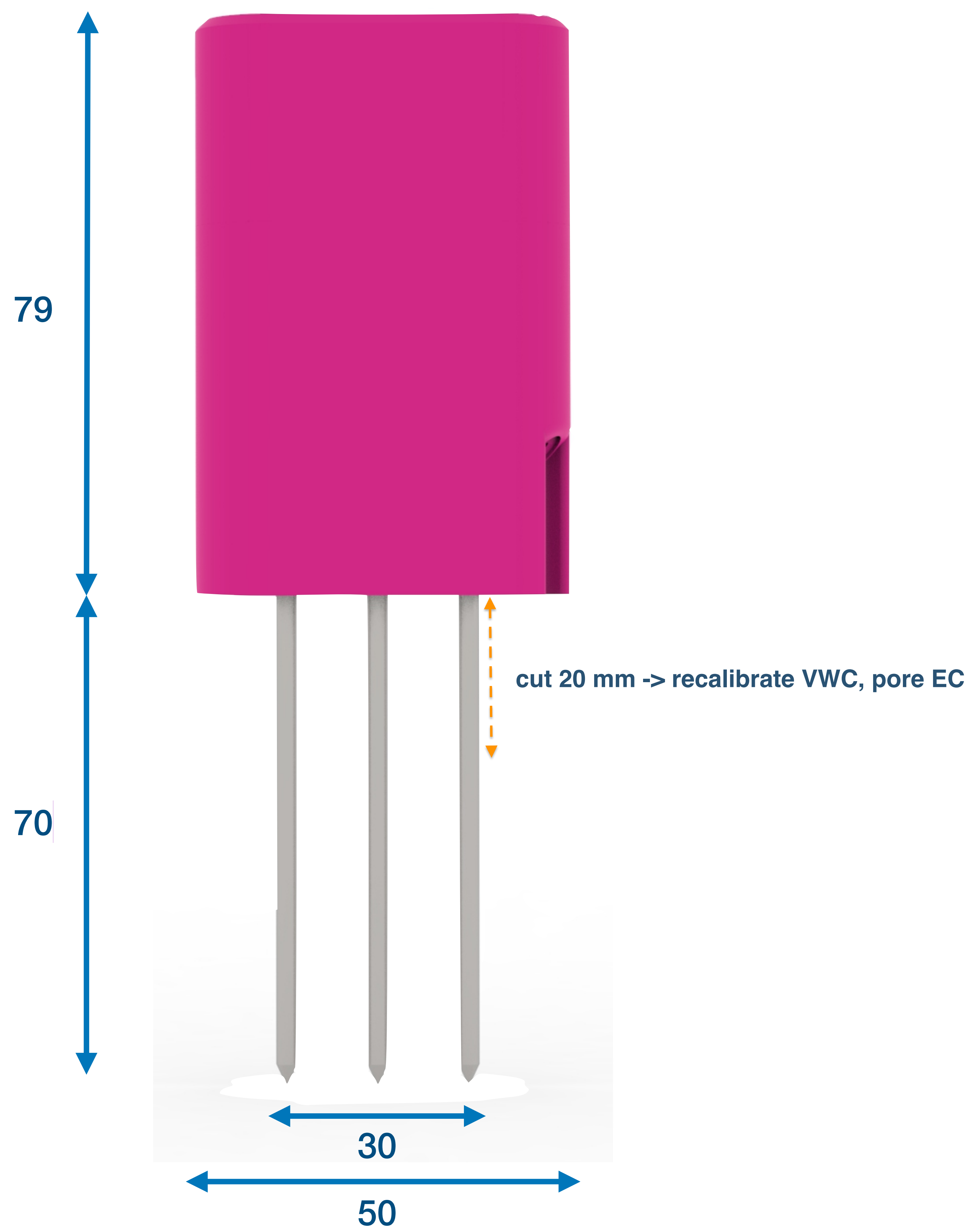
Variable	Accuracy	Resolution	Unit	Manufacturer
PAR	See next pages	1	umol/m2/s	Sigrow
Air temperature	0.3°C†	0.01	°C	Sigrow
†Maximum temperature error due to sun irradiation without ventilation	Air temperature sensor is not ventilated, therefore it's affected by radiation. 1°C @ 100 umol/m2/s 3°C @ 500 umol/m2/s			
Substrate Volumetric Water Content (Substrate humidity)	See next pages	0.1%	%	Sigrow
Pore EC	5%	0.1	mS/cm	Sigrow
Substrate Temperature	5%	0.1	°C	Sigrow
Calibration period recommended	PAR (if PAR<500 umol/m2/s) -> Every 2 years PAR (if PAR>500 umol/m2/s) -> Every 1 year PAR (if PAR>10000 umol/m2/s) -> Every 6 months Air temperature: Every 5 years Substrate >4 years (See media calibrations advice in page 8)			

♦ **Pore EC.** Bulk EC (S/m) is measured and Pore EC can be calculated according to Max Hilhorst (E. Engineer designer of WET 2 probe Delta T Cambridge) or Sigrow model. As substrate dries Bulk EC get's lower and Pore EC get's higher. Pore EC gives a better idea of what plants are experiencing. In depth documents about EC can be provided upon request.

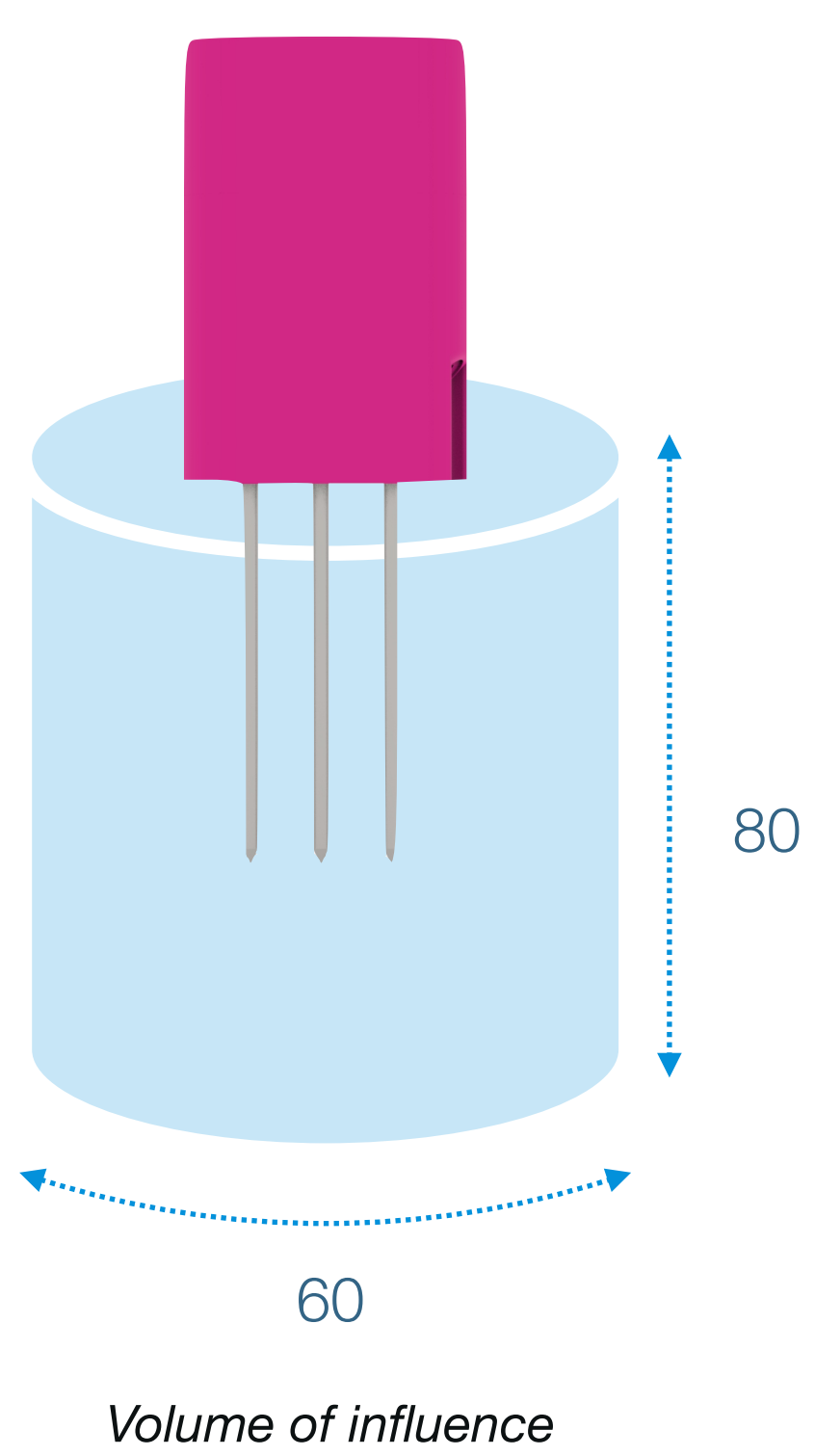


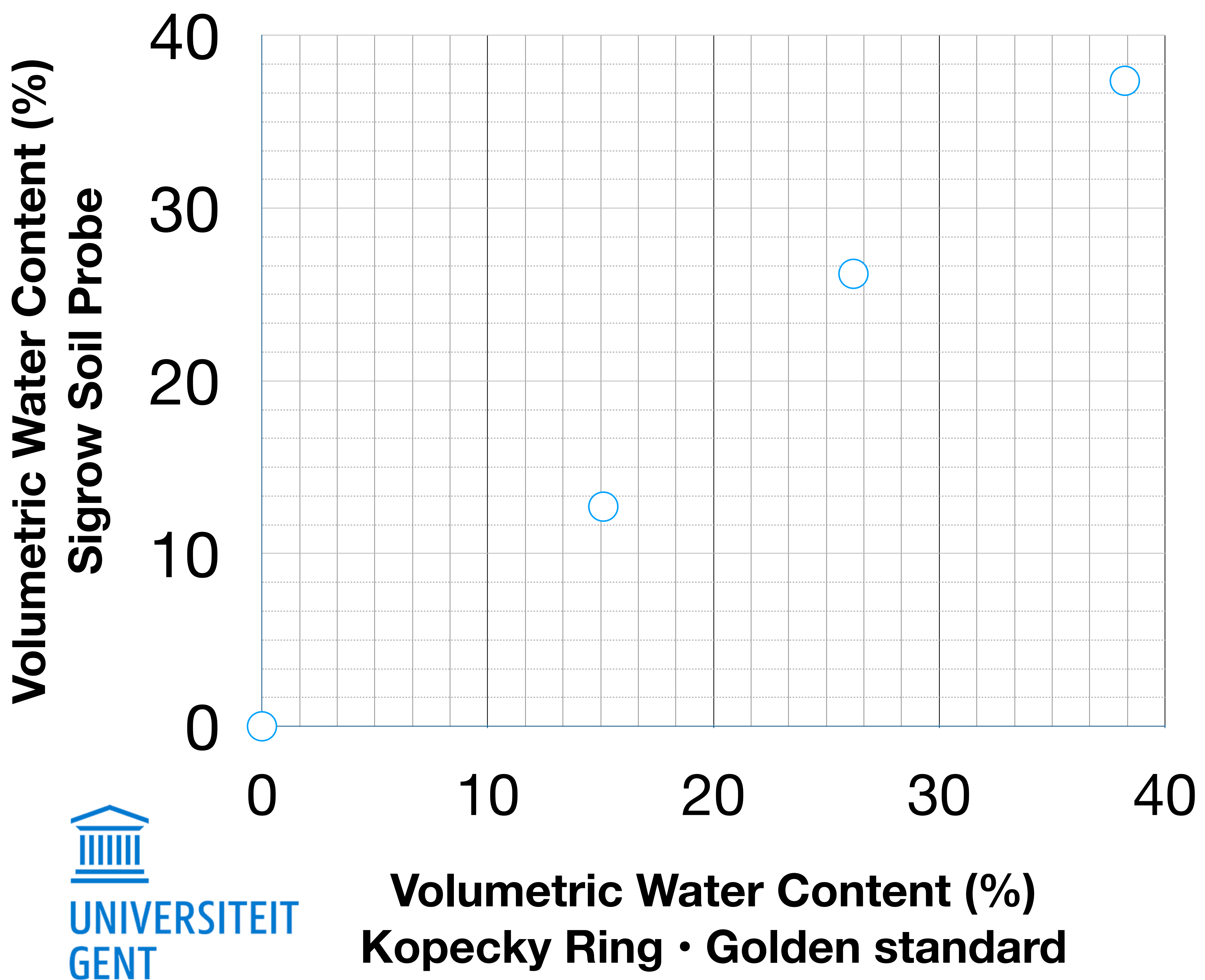


Sigrow PAR response is adjusted to McCree photosynthetic response curve



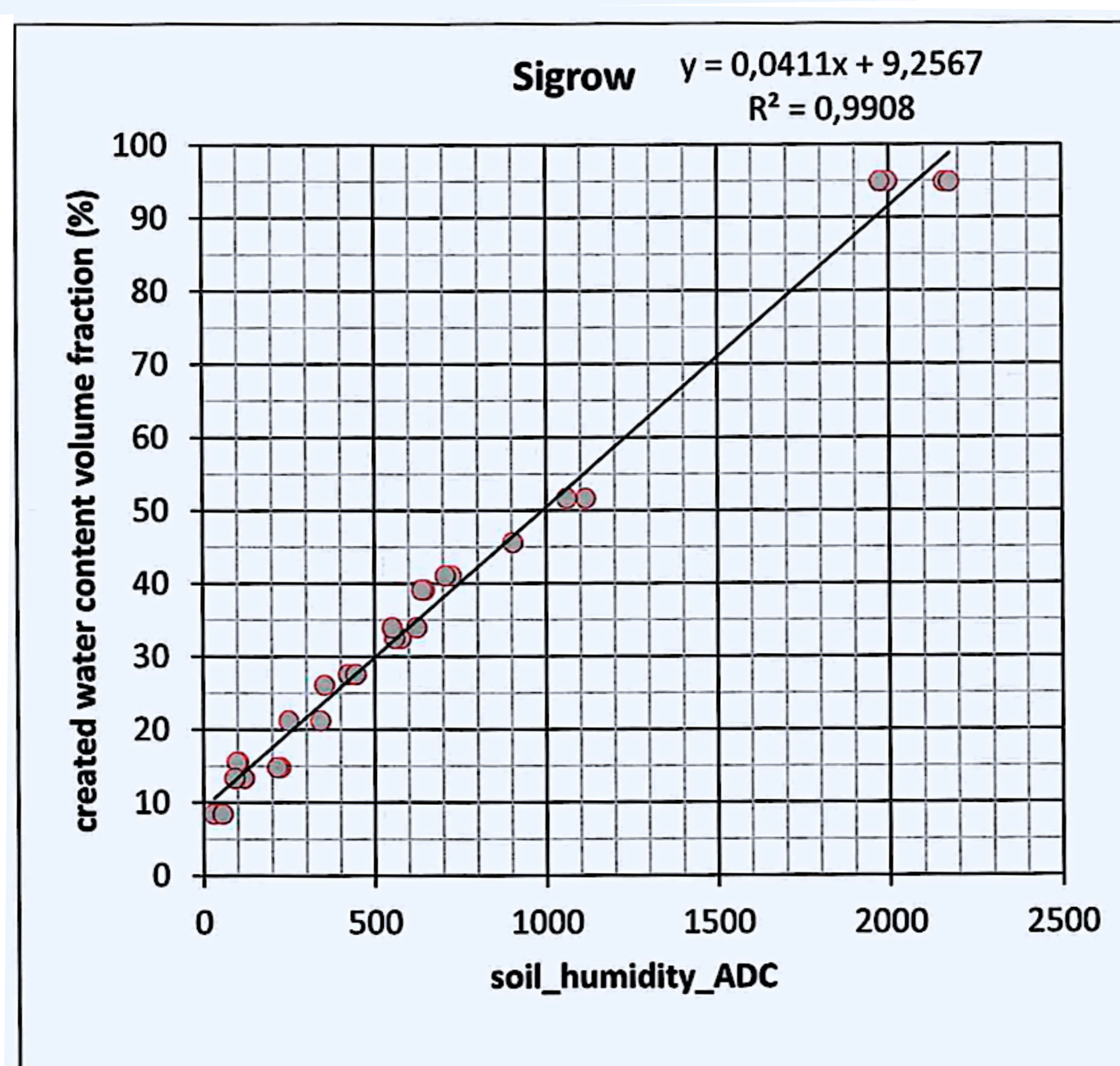
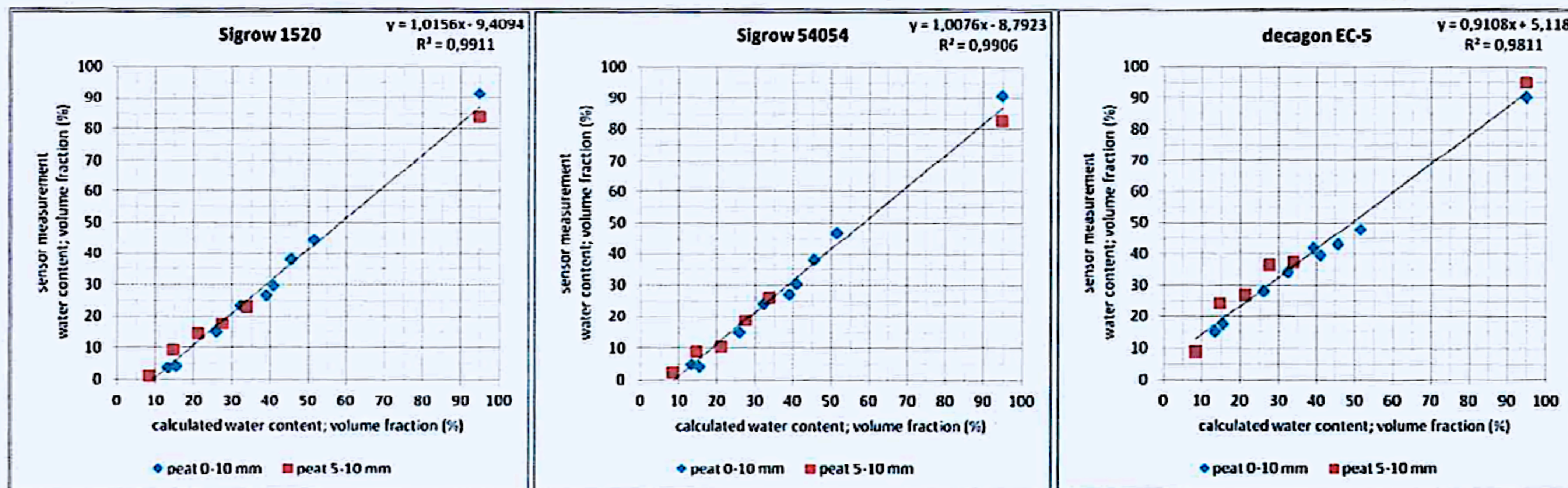
Sigrow Soil Mini: Dimensions in millimetres (mm)
Metal pins can be made shorter on demand (Min. order 100 units)





Sigrow Soil Pro Probe Validation vs Kopecty Ring

Author: Ir. Bashar A.Barri at Gent University Soil Management Department by
Conclusion: Absolute differences lower than 2.4% with salinities up to 3 mS/cm.



Sigrow Soil Pro Probe Validation vs Decagon EC-5 at different substrate structures

Author: Hans Verhagen, Head of research at RHP

Substrate: Peat 0-5 and 5-10 mm

31-May-2019

Remarks: There's no effect of the structure of the peat on the readings. Special attention should be paid to an optimal placing and contact of the sensor in the substrates.

Full scanned report available upon request

Sigrow Soil technology is high frequency (100 MHz) and this minimises the texture and salinity effects





Substrate type	Recommendation
Peat	Works
Coco	Works
Coco husk	Calibration recommended
More than 50% bark	Not recommended
Perlite grade 2, grade 3	Calibration recommended
Rockwool (EC<4 mS/cm)	Works
Rockwool (EC>4 mS/cm)	Calibration recommended
Rockwool (EC>10 mS/cm)	Not recommended
Clay	Calibration recommended

Recommendation table for pure substrates

Since 2017 we have been updating our table

Works: Default calibration will perform with accuracy better than 4% and repeatability better than 1%
 In cases where the Soil Pro probe is not recommended we generally advice to look into our weighting solution: Sigrow Mass Start Scale

