

FYTA Beam Gen-2 – Smart Soil & Climate Sensor



FYTA Beam smart sensors are designed for continuous monitoring of soil water content (VWC) and soil electrical conductivity (EC), and environmental parameters in potted plants (indoor & outdoor). The sensor operates either directly with the FYTA App via Bluetooth Low Energy (BLE) or as part of the FYTA modular sensing system in conjunction with FYTA Hubs (WiFi Hub, Terra, or LTE Hub).

FYTA Beam employs a combined capacitive and conductive (direct) soil measurement approach, enabling moisture-related and salinity-related effects to be evaluated independently across a wide range of grow media. Measurement probes are available in variable lengths to support different pot sizes, soil depths, and installation contexts. Preconfigured calibration

models are provided for common growing media. Custom calibration models for specific substrates, soil densities, or application scenarios can be provided upon request.

Parameter	Technical Specification
Body dimensions	61 x 40 x 36,4 mm
Measurement range	VWC: 0–100 % (effective range depends on substrate dielectric properties) EC: 0–10 mS/cm (depending on substrate) Temp.: –5 °C to +50 °C PPFD: 0–2000 µmol/m ² /s
Accuracy	VWC: ±5 % of reading (depending on substrate), improved with custom calibration EC: ±10 % of reading in soils, improved with custom calibration Temp.: ± 2°C PPFD: ± 5 %
Resolution (default)	VWC: 1 % VWC EC: 0.1 mS/cm Temp.: 0.1°C PPFD: 1 µmol/m ² /s
Sensing frequency	15 min (default), configurable upon request
Data transmission frequency	15 min (default) via FYTA Hub, configurable upon request
Data storage	Measurement data and conversion parameters are stored locally for up to 10 days and synchronized with the FYTA Cloud for long-term storage & analysis.
Soil probe dimensions	Diameter: 5.5 mm Length: 3–350 mm Probe spacing: 6.8 mm
Weight (incl. battery)	25 g
Operating temperature	–3 °C to +50 °C
Bits per sample	VWC: 12-bit (multi-channel capacitive measurement) EC: 24-bit (conductive measurement)
Number of data channels	1
Connectivity	BLE 5.4 (integrated); indirect Wi-Fi / LTE connectivity via FYTA Hubs
Ingress protection	IP64 (splash-proof)
Power supply	Replaceable coin cell battery (CR2450 / LIR2450), run time: 9-12 months
Typical runtime	9-12 months