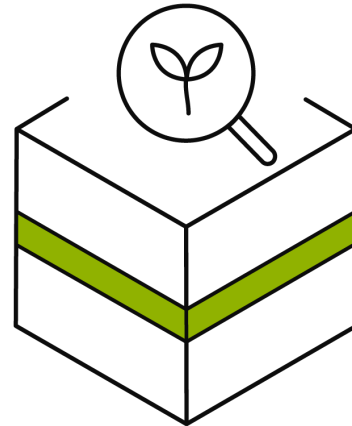


Horticulture Research Package



Aranet Horticulture Packages offers a comprehensive, ready-to-use wireless sensor solution tailored for horticultural applications. This package includes the Aranet base station and a selection of wireless sensors designed to monitor key environmental parameters in greenhouses or outdoor cultivation settings. It comes pre-configured, ready to use, and includes 6 months of free Aranet Cloud PRO service.

Product numbers

Product number	Radio band	To be used in
TDSPHP06	EU868	European Union
TDSPHPU6	US920	United States of America, Canada, South America, Australia, New Zealand
Not available	AS923	BRN, KHM, HKG, IDN, LAO, TWN, THA, VNM, MYS, SGP
Not available	JP923	Japan
Not available	KR923	South Korea

Package contains

Product number	Quantity	Product name
TDSB0B*3	1	PRO Plus LTE base station
TDAP0E*3	1	PoE injector for base station power supply
TDSPT8*2	4	T/RH IP67 sensor
TDSPT5*9	1	T/RH sensor with radiation shield
TDSIR0*1	1	IR plant temperature sensor
TDSPHW*2.004	1	Soil sensor (WET150)
TDSPIK*2.010	1	Drainage sensor kit
TDSPC0*5	1	CO ₂ and temperature sensor
TDSKAR*2	1	PAR sensor with holder
TDSPSM*2.050	2	Soil moisture sensor

- Package is pre-configured and ready for use, with sensors paired to the base station and labeled for easy identification. Package also includes 6 months of free *Aranet Cloud PRO service*, redeemable via email to Aranet sales support (sales_support@aranet.com).

- Product number designations include the symbol “*” to signify multiple product numbers, which, depending on the region of use, have either 0 or U in place of the asterisk. Refer to the relevant product datasheets for more information.

Pre-configuration settings

Sensor pre-configuration

Sensor measurement interval	1 min
Sensor labeling pattern	<type> <number>, e.g. <i>T/RH 1, T/RH 2, VWC 1</i>

- Sensors are labeled both physically, with tags on the devices themselves, and digitally, with matching names configured in the base station.

Base station pre-configuration

Wi-Fi network settings	Access point mode (for configuration using the WebGUI)
Ethernet network settings	Enabled, with DHCP
Mobile LTE network settings	Disabled, no SIM card inserted
Defined users	Default root user only

- To access the base station configuration WebGUI, use the Wi-Fi access point mode with the login credentials (root user password) provided on the base station label. For enhanced security, it is strongly recommended to change the default login credentials during the initial setup.
- To enable LTE network connectivity, insert the SIM card and access the WebGUI to activate the LTE network and to enter the required credentials as provided by your mobile network operator.
- If you wish to adjust these pre-configured settings, please refer to the base station user guide. It provides instructions on changing base station settings such as re-pairing sensors to optimize battery life through longer measurement intervals or updating network settings.

Use case

This package is for horticulture research organizations and companies that want to study how ambient conditions and their combinations impact plant growth. Effective plant growth monitoring can be achieved by employing one or a few reference plants equipped with sensors. Reference plants provide valuable feedback on growth processes and root zone conditions, such as vapor pressure deficit (VPD), irrigation, salinity, and other critical parameters, facilitating informed decision-making for all plants in the greenhouse.



Monitoring climate conditions for optimal plant growth

- **Optimal lighting for growth.** Monitoring photosynthetically active radiation (PAR) and daily light integral (DLI) allows growers to adjust light intensity and duration, ensuring plants receive the right amount of light for healthy growth while reducing energy costs and preventing stress.
- **Temperature and relative humidity.** By linking ambient temperature and humidity readings with other parameters, growers can identify environmental conditions that promote optimal growth. This enables the fine-tuning of heating, cooling, and ventilation systems to create the best possible environment for plant development.
- **Optimal CO₂ levels.** Different plants have specific requirements for CO₂ concentrations in the air, as this gas plays a crucial role in photosynthesis. Maintaining optimal CO₂ levels can significantly enhance growth rates, allowing plants to maximize their energy production and overall health.



Root zone conditions and drainage

- **Optimize irrigation practices.** Ensure that plants receive the right amount of water at the right time.
- **Nutrient balance.** By monitoring bulk and pore electrical conductivity, growers can ensure that plants receive the right amount of nutrients, avoiding under-fertilization or salt build-up that can stress plants.

- **Drainage monitoring.** Measuring drainage volume allows growers to determine how much water and nutrient solution is lost versus how much is absorbed by plants. This data enables precise irrigation adjustments, reducing water waste and improving nutrient delivery efficiency.



Benefits of using the Aranet ecosystem

- All your data in one platform—available anytime, anywhere.
- Easy to add any other Aranet PRO series sensor or use Aranet transmitters to gain data from third-party sensors for the Aranet platform.
- Integrated with third-party control systems using MQTT, Modbus TCP/IP, and BACnet IP protocols, or use the Cloud API to integrate with any web- or cloud-based IT system.