Aranet Technical Presentation

What is Aranet?

24/7 monitoring — using wireless temperature, humidity, CO2, pressure, and other sensors

Long receiving range of at least 3km/1.9mi (line-of-sight)

Simple installation- savings on costly and time-consuming installation

Remote & centralized data collection — eliminates human error with manual data gathering

Reduced maintenance cost — long battery life **up to 10 years**
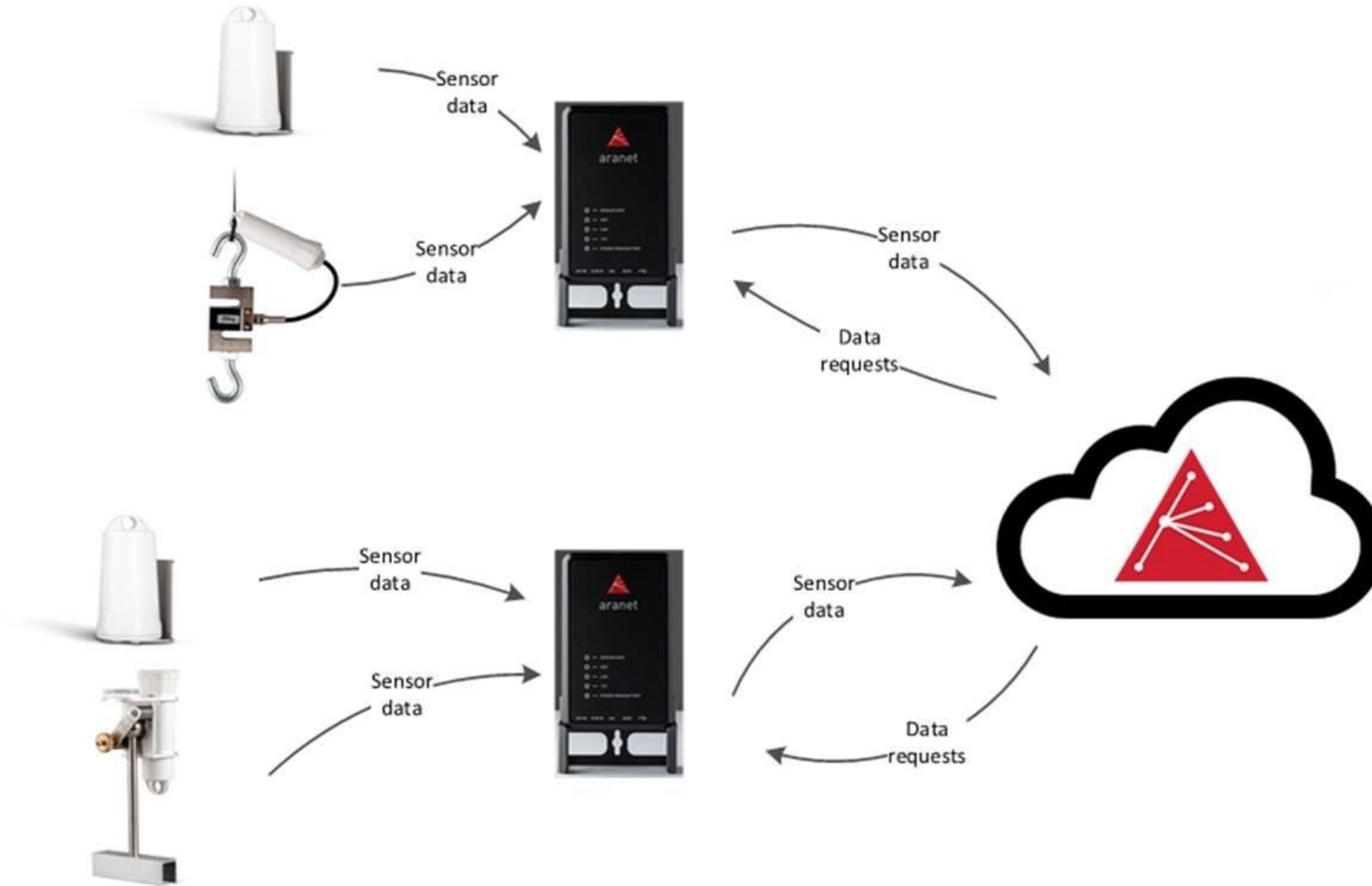
Aranet PRO

Released and evolving ...

- Aranet PRO supports up to 100 sensors

- Sampling rate available for 1, 2, 5, 10 minutes

- Email and SMS notifications

- New sensor support

- Support by Aranet Cloud

Aranet architecture

Aranet Temperature Sensor Family

- Line-of-Sight range up to 3 km
- Data Transmission every 1, 2, 5, 10 minutes
- Battery life up to 10 years

ARANET RH/T SENSOR

- Measures temperature (-40°C to 60°C/ -40°F to 140 °F)
- Measures Relative humidity (0% to 100%)
- Operating environment: indoor
- Protection class: IP42

ARANET IP68 RH/T SENSOR

- Measures temperature (-40°C to 60°C)
- Measures relative humidity (0% to 100%)
- Operating environment: indoor and outdoor use
- Protection class: IP68

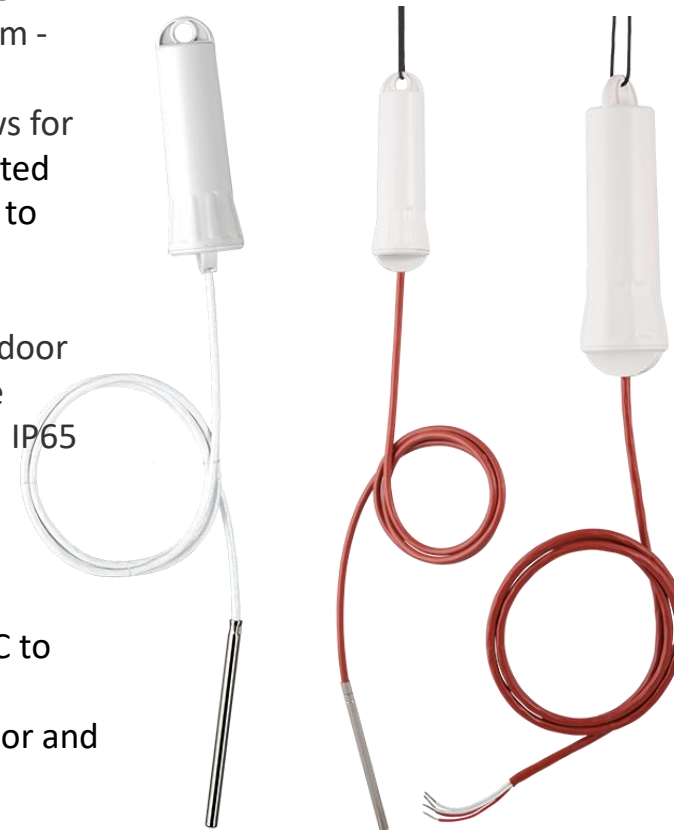## Aranet T/RH for Greenhouse (convection radiation shield)

- Temperature and relative humidity
- Suitable for greenhouses
- Solving the problem of wrong T data due to direct sunlight heating up the sensor
- Innovative design with passive ventilation of hot air

ARANET T-PROBE SENSOR

- Measures temperature (-55°C to 105 °C)
- Operating environment: indoor and outdoor use
- Protection class: IP68
- Probe length: 0.3m/1m/5m/10m

Aranet PT100/PT1000 TX/Sensors

- Sensors measure temperature from -190°C to 260°C
- Transmiter allows for temperature tested range -200°C up to 800°C
- Operating environment: indoor and outdoor use
- Protection class: IP65

Aranet for Horticulture (Greenhouses)
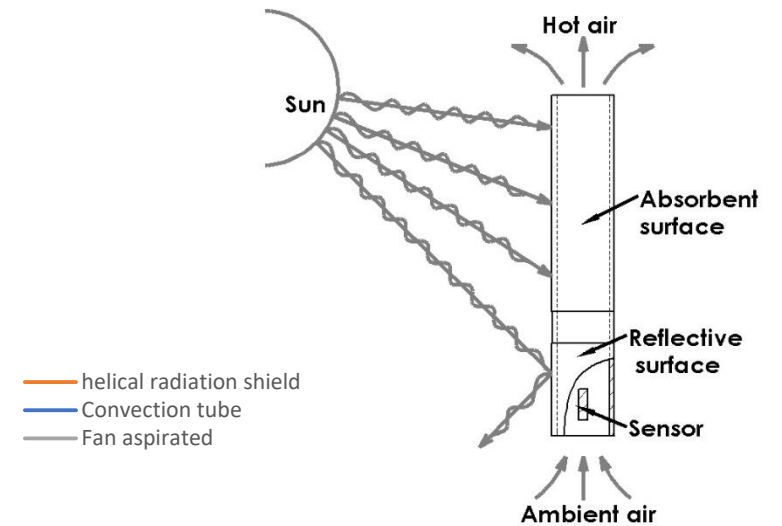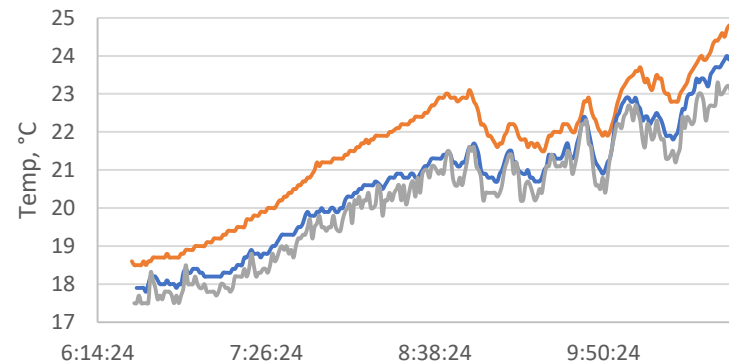
ARANET CO2 SENSOR

- Measures Carbon dioxide (CO_2) (0 ppm – 9999 ppm)
- Line-of-Sight range up to 3 km
- Operating environment: indoor use
- Data Transmission every 1, 2, 5, 10 minutes
- Battery life up to 2 years
- Protection class: IP40
- Manual Calibration

Aranet T/RH for greenhouse

- Measures Temperature (-40°C to 60°C)
- Measures Relative humidity (0% to 100%)
- Line-of-Sight range: up to 3 km
- Operating environment: greenhouse
- Data Transmission every 1, 2, 5, 10 minutes
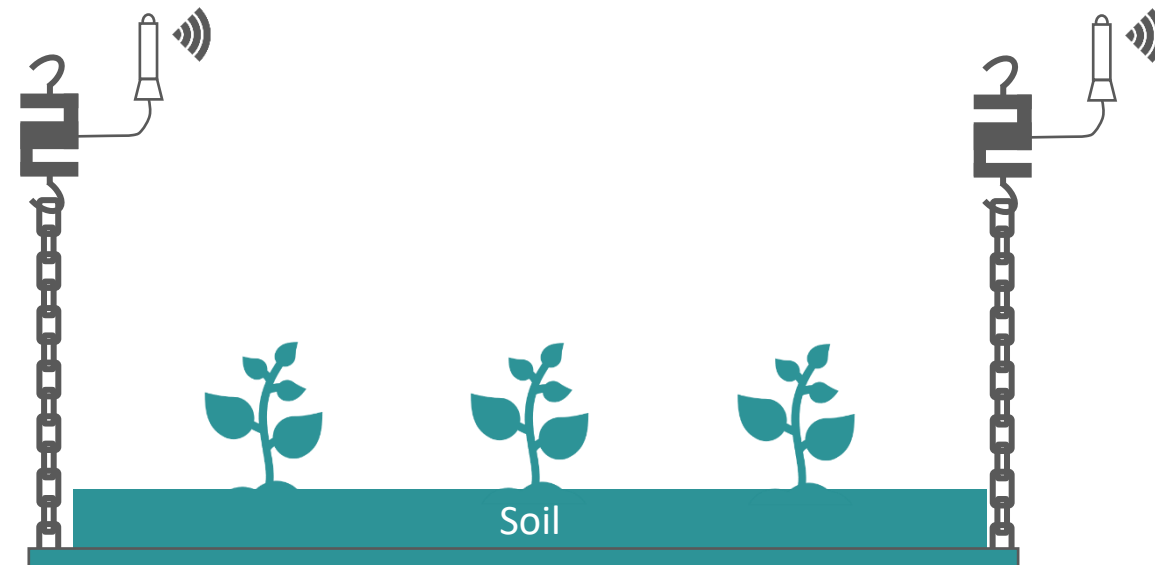- Battery life up to 10 years
- Protection class: IP68

Example of test measurement data in greenhouse

helical radiation shield
Convection tube
Fan aspirated

Sun
Hot air
Absorbent surface
Reflective surface
Sensor
Ambient air

Aranet Weight Sensor

- Measures weight (0-50 kg, 0-100 kg)
- Line-of-Sight range: up to 3 km
- Operating environment: indoor and outdoor use
- Data Transmission every 1,2, 5, 10 minutes
- Battery life up to 10 years
- Protection class: IP67
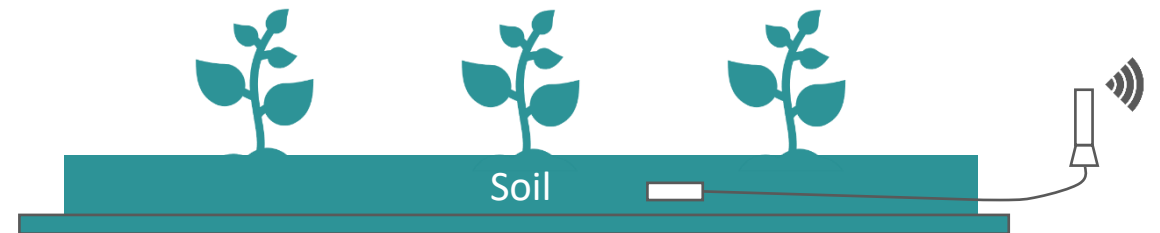- Cable length: 0.2m

Soil

Aranet substrate Sensor

- Measures soil and substrate moisture, electric conductivity, temperature
- Line-of-Sight range: up to 3 km
- Operating environment: indoor and outdoor use
- Data Transmission every 1,2, 5, 10 minutes
- Battery life up to 10 years
- Protection class: IP68
- Cable length: 5m

Soil

New Releases: Aranet Soil VWC sensor
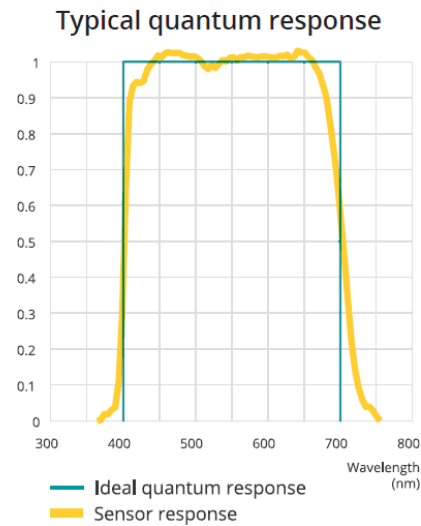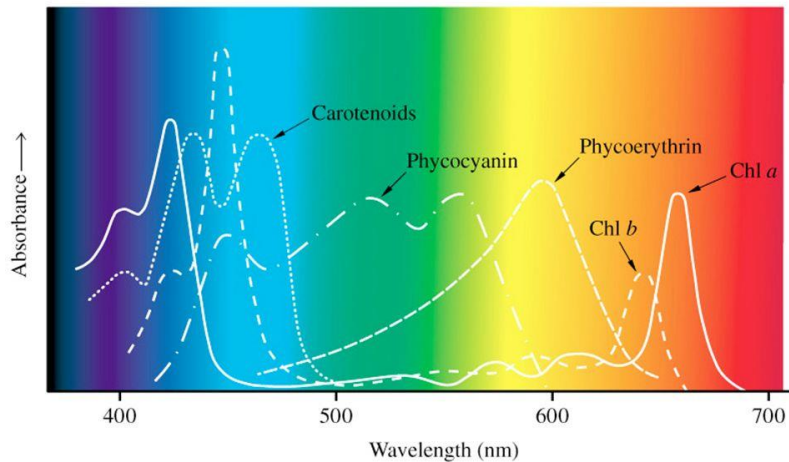
- Measures: soil volumetric water content
- Battery life: up to 10 years
- Protection class: IP67
- Cable length: 1.5 / 5 / 10 / 20 m
- Accuracy: ±15%
- Cheaper version

Aranet PAR Sensor

- Measures Photosynthetically Active Radiation (PAR)
- Line-of-Sight range up to 3 km
- Operating environment: indoor and outdoor use
- Data Transmission every 1,2, 5, 10 minutes
- Battery life up to 10 years
- Protection class: IP68

absorption spectra of photosynthetic pigments

Aranet stem diameter Sensor

- Measures stem micro variations
- Line-of-Sight range up to 3 km
- Operating environment: indoor and outdoor use
- Data Transmission every 1,2, 5, 10 minutes
- Battery life up to 10 years
- Protection class: IP64

Aranet Compact T

Released Recently

- Measures only temperature (-40°C to 60°C/ -40°F to 140 °F)
- Small (30mmØx77mm)
- Food Grade
- IP68
- Perfect for Supermarkets

Aranet Ultrasonic Level Sensor

- Measures distance to an object using ultrasonic sound waves

- Measurement Range: 0.3m - 5m or 0.5 - 10m

- Measurement accuracy: 1%

- IP67

- Uses: pig feeding silos, gas tank level measurment
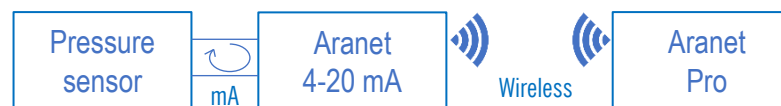
Aranet Current and Voltage Sensors

Released

- Current loop 4-20 mA wireless interface

- Integrates with any 3rd part sensor that use mA as an output

- Enabled translation from mA into user defined measurement unit (e.g. bar, m, mm, etc)

- Voltage Sensor -32 to +32 VDC

- Integrate with any 3rd part sensor that use V as an output

- Enabled translation from V into user defined measurement unit (e.g. bar, m, mm, etc)

Example with pressure sensor

Pressure sensor — mA — Aranet 4-20 mA — Wireless — Aranet Pro

Aranet4

- Aranet4 sensor with an e-ink display
  - Monitors CO2 level, temperature, relative humidity and atmosphere pressure
  - Can be used
    - As a standalone product with Bluetooth connectivity and application for iOS and Android
    - With Aranet PRO
  - Readings on screen refresh every 5 minutes
  - Battery life up to 2 years
  - Indicator for CO2 level pointing towards green, amber, red marking
- Target markets – individuals, schools, offices.

Aranet4

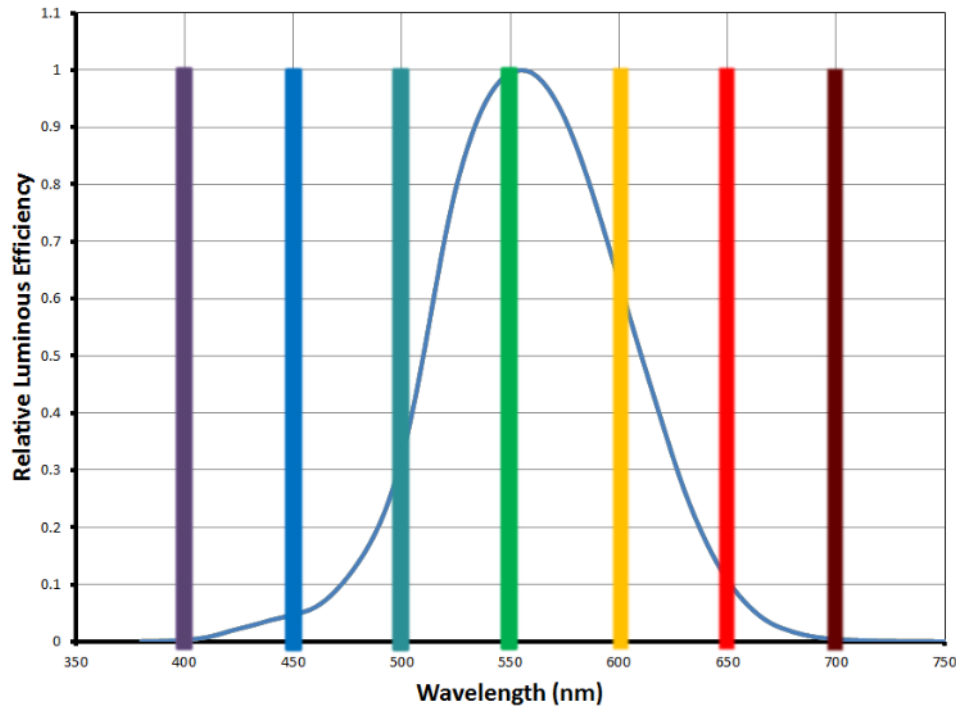|	Aranet4 HOME	Aranet4 PRO
CO_2, temperature, relative humidity, atmospheric pressure monitoring	✓	✓
NDIR CO_2 sensor	✓	✓
Energy-efficient e-ink display	✓	✓
Smartphone app	✓	✓
Up to 2-year battery life (2xAA)	✓	✓
Access to the Aranet business ecosystem (Aranet PRO, Aranet Cloud, SensorHUB)	✕	✓
Price EUR [incl. VAT] Shipping cost is 10 EUR [incl. VAT] Available in EU only.	149 +SHIPPING	249 +SHIPPING

- Integrates with Homey

Aranet LUX sensor

Light intensity as percieved by the **human** eye

- Ambient light detection in all kind of building environment
- Measures Illuminance (lx) - light intensity as percieved by the human eye
- Range 0 – 200 000 lx
- Accuracy +/- 10%
- IP68

Typical examples

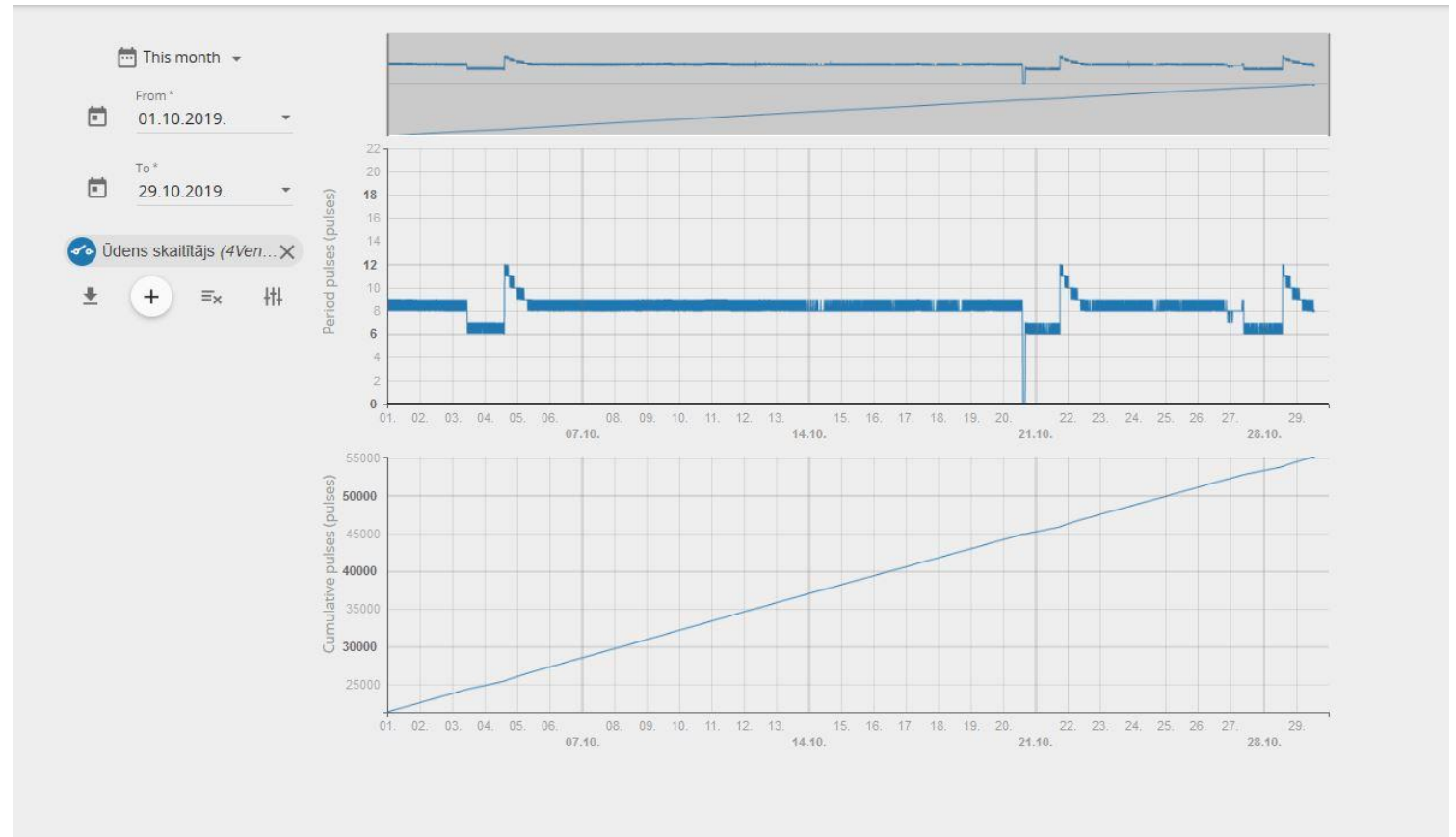|	
twilight	10 lux
nighttime household lighting	30 lux
hallway/stairwell in an office building	200 lux
typical office	500 lux
outdoors, overcast	1000 lux
outdoors, full daylight, but not in direct sun	10,000 to 20,000 lux
outdoors, direct sunlight	100,000 lux

Coming soon…

Aranet Pulse Sensor

- Measures dry contact pulse
- Max. pulse frequency: 25 Hz
- Min. pulse width: 10 ms
- Min. interval between pulses: 30 ms
- IP67
- Meant for flow meters

IP67 CO$_2$

Planned release from Q1 2020

- NDIR CO2 sensor
- Up to 5-year battery life
- IP67

Chemical Gas sensor

- NH_3, NO_2, O_2, CO, CO_2
- IP67
- Must be recalibrated every 2 years
- Initially able to sell only non calibrated sensors (large error).

Confidential