# LongITools Environmental Satellite

High-quality and low-power data is crucial for assessing the real-life effects of environmental conditions on both indoor and outdoor environments. The LongITools **Environmental Satellite** provides a collection of cardiovascular-related variables. The unit is capable of acting as a standalone Bluetooth® Low Energy (BLE) data broadcaster or can be integrated into any system that supports the BLE protocol, such as the CyNexo **Environmental Hub**.

System block diagram
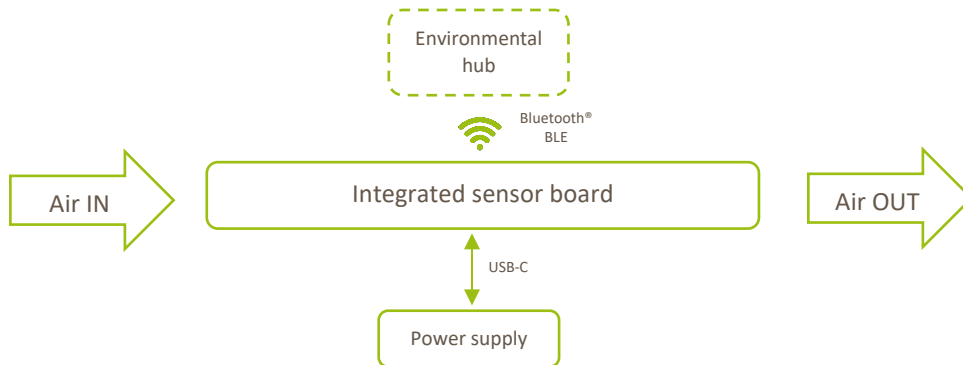
The LongITools satellite, which is a component of the LongITools Health Risk Assessment System, focuses on a list of pertinent variables that are correlated with cardiovascular wellbeing, as depicted in Table 1.

Variable	Unit	Range
Temperature	°C	-40/+80
Relative Humidity	%	0-100
NOx Index	-	1-500
VOC Index	-	1-500
PM 1.0, 2.5, 4.0, 10	$\mu g/m^3$	0-1000
O_3	ppb	0-10000
CO_2 (optional)	ppm	400-10000
Averaged SPL (optional)	dB(A)	30-120

Table 1: Sensor list

Main features

Multiple exposure monitoring: the device is capable to monitor an optimized set of air pollution parameters, light and noise for the LongITools project, part of the EHEN Horizon Europe frame project.

Mbed ARM OS: standard broadcasting functions and Bluetooth stack are available to release custom firmware.

Discontinuous mode: a configurable sleep mode allows battery powered operations.

USB device interface to connect to PC for saving of logs or for software upgrades.

Small, portable and robust, packaged in a conveniently appealing aluminium housing.

SPECIFICATIONS	
OS	*Mbed OS*
Communication	*Bluetooth® 5.3 BLE*
Status	*Configurable RGB LED*
Power	*5V 5W max (EN60601-1 compliant medical grade power supply included)*
Dimensions (Max)	*118 x 109 x 58mm*
Weight	*330 g (depending on configurations)*

RELATED PRODUCTS
Environmental Hub

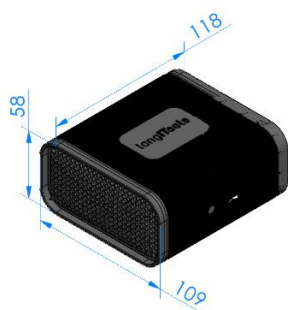| OPTIONS / ADD-ONS |
|---|
| • *Noise sensor*
• *CO₂ sensor* |

Figure 1: Mechanical dimensions (mm)

CyNexo promotes the United Nations Sustainable Development Goals (SDGs) as a company.
This product has been designed to achieve:

• Recyclability: aluminium case and 3D printed parts, with minimal waste

• Low power consumption: 1W average