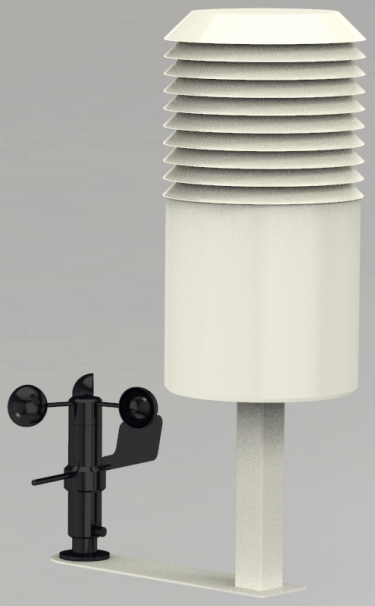
Aerys X
Datasheet



Smart City Design

While urbanization has boosted economic growth and improved the standard of living for many, it is putting increased pressure on air quality and the environment. Traffic congestion, sanitation issues, mass deforestation, and ozone layer depletion are only a few examples. All of this leads to questionable air quality and public health challenges in urban communities.

Aerys X combines both particulate matter (Aerys P) and gaseous pollutant sensors (Aerys G) to measure the widest range of potential air pollutants.

In addition, with weather-related data such as PHT, wind speed and direction, Aerys X provides the most comprehensive picture of air quality in our neighborhoods.

Extensive data collected about air quality is available via Solos platform and helps educate people about the impact on our health and the environment.

Dimensions
640 x 500 x 220 mm

Weight
10 kg

IK rating
IK08

Materials
fiberglass, ABS, hot-dip zinc coated steel (EN10346), galvanized low carbon steel (ISO 2081)

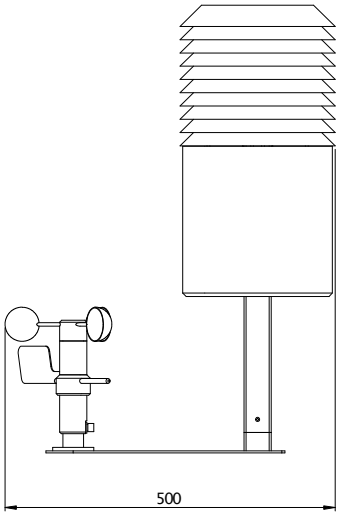
Operating temperature
-20°C to 50°C

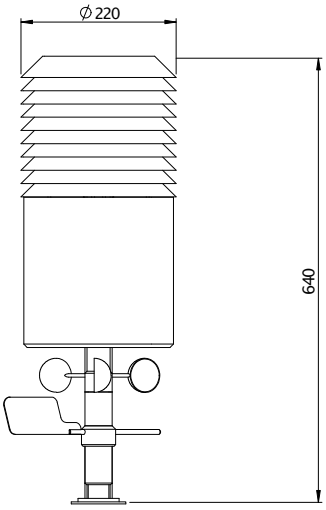
Operating Humidity
(RH) 0-100%

Environment
C4/C5* (*on request)

IP rating
IP45

Noise level
<30 dBA





Particulate matter sensor

Measurement technology
Laser-scattering technology

Laser classification
Class 1 (as enclosed housing)

Particle range
0.30 to 12.4 µm spherical equivalent size
(based on RI of 1.5)

Sampling interval
2 to 30 Histogram period (seconds)

Total flow rate
0.24 L/min (typical)

Max particle count rate
10,000 particles/second

Max coincidence probability
0.7 %concentration at 10^6 particles/L

Unit of measurement
µg/m^3

Li-ion battery pack

Total energy
320 Wh

Rated voltage
11.1 V

Max. voltage
12.6 V

Peak power
400 W

Continuous power
300 W

Over current protection
40 A

Over discharge protection
<3 V per cell

Short circuit protection
<100µs

Cell balancing
Yes

State of charge indicator
Yes

Gas sensors

Sensors type
Electrochemical sensors with low gas concentration detection

Monitored gases
Nitric oxide (NO)
Nitrogen dioxide (NO_2)
Ground-level ozone (O_3)

Zero drift (ppb equivalent change/year in lab air)
0 to 50 for NO, 0 to 20 for NO_2 and O_3

Max sensitivity drift (% change/year in lab air)
0 to -20 for NO, -20 to -40 for NO_2 and O_3

Calibration frequency
12 months from the installation date

Operating life
24 months or more from the installation date

Unit of measurement
ppb and ppm

Stabilization time when first plugged in
12 hours for NO, 2 hours for NO_2 and O_3

Wind sensor

Wind speed range
0-30 m/s, 0-60 m/s

Wind direction range
16 directions (0-360 degrees)

Wind speed precision
3%

Wind direction precision
3%

Environmental sensors

Atmospheric pressure sensor
700 ~ 1100 hPa

Humidity sensor
0 ~ 99 %RH ±2.0 %RH (20~80%RH)

Temperature sensor
-40°C to 85°C ±2 °C

Internal server communication system

GSM band
850/900/1800/1900 MHz

Transmitting power
Class 4 (2W) at 850/900MHz, Class 1 (1W) at 1800/1900MHz

GPS type
22 tracking (66 acquisition), GPS L1 C/A code

Accuracy
GPS L1 C/A code