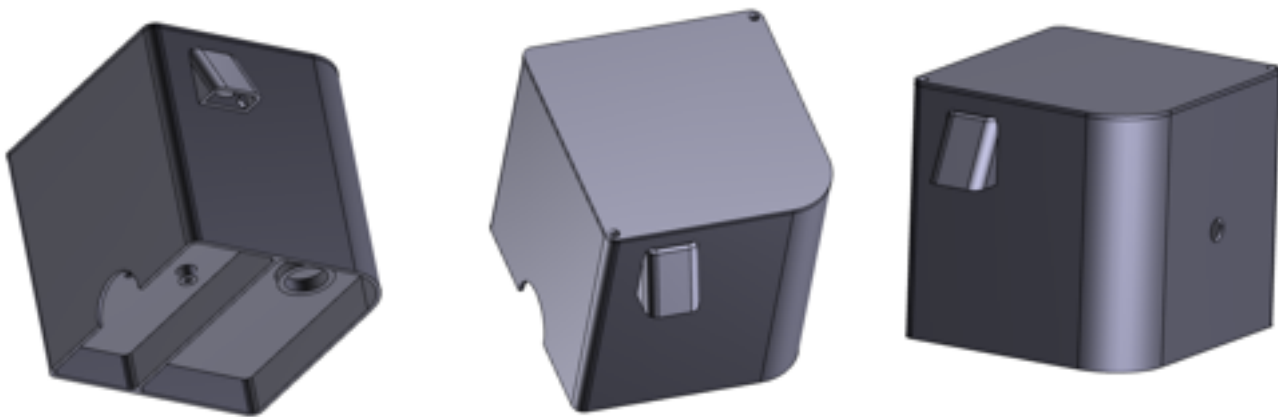


VICOTEE SMALL-PARTICLE & NITRIC OXIDE SENSOR



Vicotee Environmental Monitoring

Vicotee's new Small-Particle & Nitric OXIDE sensor solution will enable the implementation of innovative air quality monitoring devices that prevent air pollution damage.

The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can affect the lungs and heart. Larger particles are of less concern, although they can irritate the eyes, nose, and throat.

- **PM2.5.** Particles less than 2.5 micrometers in diameter are called "fine" particles. Sources of fine particles include all types of combustion, also motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. PM2.5 contains more toxic heavy metals and hazardous organic pollutants and can go directly to the lungs. It is more easily attached to bacteria and viruses in the environment, so the particles have greater impact on ecology and human health.
- **PM10.** Particles between 2.5 and 10 micrometers in diameter are referred to as "coarse." Sources of coarse particles include crushing or grinding operations, and dust stirred up by vehicles traveling on roads.

Supported RF Interfaces: DUST, SigFox, LoRa or NBloT

PRODUCT DIMENSIONS

Hight : 109 mm
 Width: 115 mm
 Depth: 110 mm

POWER

Input Voltage	Vdc (typical)	4.0 to 6.0
Input Current	mA (Measurement Mode, RF on)	250.0
Input Current	uA (Standby, all sensors Off, RF off)	<100
Voltage range	Vdc	4.8 to 5.2

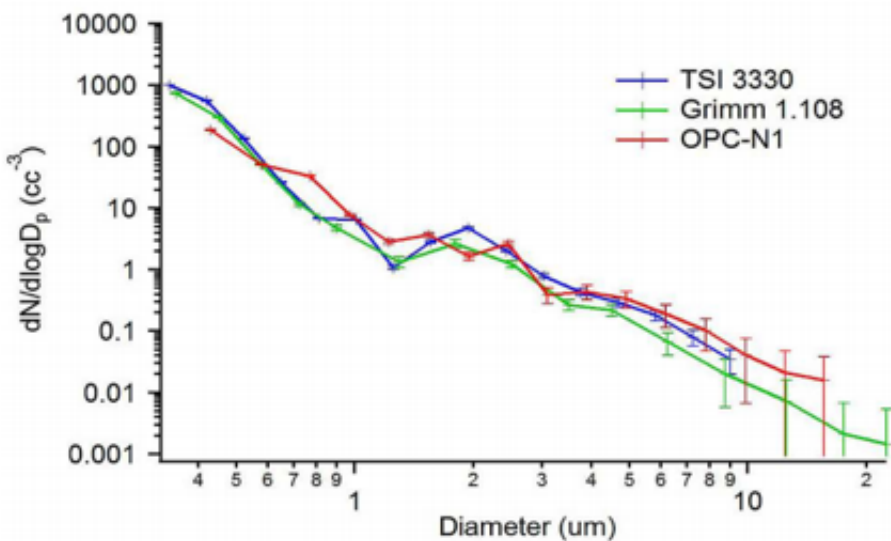
PARTICLE

MEASUREMENT

Particle range	Spherical equivalent size (based on RI of 1.5)	0.38 to 17
Size categorisation	Number of software bins	16
Sampling interval	Histogram period (seconds)	1 to 30
Total flow rate (typical)	L/min	1.2
Sample flow rate (typical)	mL/min	220
Max particle count rate	Particles/second	10,000
Max coincidence probability	%concentration at 106 particles/L	0.84
%concentration at 500 particles/L		0.24

KEY SPECIFICATIONS

Laser classification	as enclosed housing	Class 1
Temperature range	°C	-10 to 50
Humidity range	% rh (continuous)	0 to 99



NITRIC OXIDE

MEASUREMENT

Sensor Type Used	3NF/F
Filter	To remove SO ₂
Response Time (T90)*	<10 Seconds at 20°C
Resolution	1 ppm
Zero Shift (-20°C to +40°C)	<30 ppm equivalent
Repeatability	2% of signal
Linearity	Linear

ENVIRONMENTAL

Operating Temperature Range	-20°C to +40°C
Recommended Storage Temp	0°C to 20°C
Temperature Compensation	None
Operating Pressure Range	Atmospheric ± 10%
Pressure Coefficient	0.01% signal/mBar
Operating Humidity Range	15 - 90% RH non-condensing

CROSS SENSITIVITY TABLE

GAS	3NF/F Cross Sensitivity (% with respect to NO)
Nitric Oxide, NO	100
Carbon Monoxide, CO	0
Hydrogen Sulfide, H ₂ S	0
Sulfur Dioxide, SO ₂	0
Nitrogen Dioxide, NO ₂	<10
Hydrogen, H ₂	0
Hydrogen Chloride, HCl	<5
Ethylene, C ₂ H ₄	0

MAKE TRADITIONAL WIRED SENSORS WIRELESS

Connect all your Sensor devices with Vicotee HW Interface and make them wireless.

Vicotee can easily, effectively and wirelessly connect entire cities using existing technology. The network connection can be spread out among dozens or hundreds of wireless Vicotee nodes that "talk" to each other to share the network connection across a large area.

Vicotee