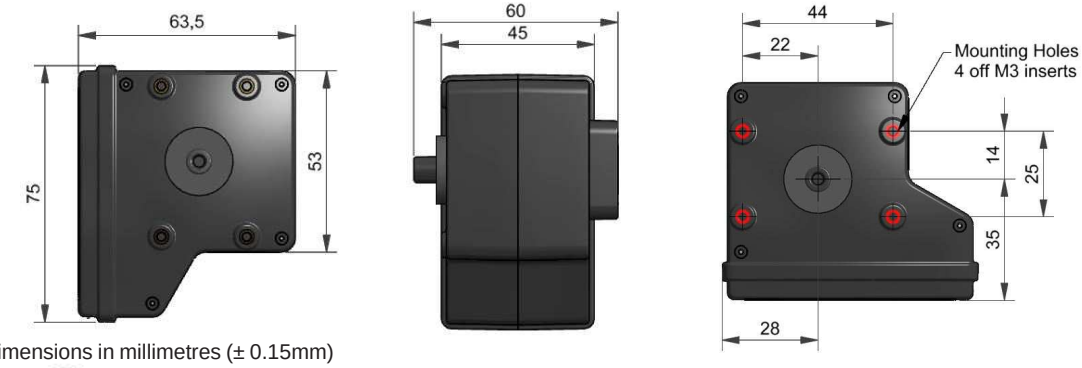
OPC-N3 Particle Monitor

For use in high polution urban environments

Technical Specification

Figure 1 OPC-N3 Schematic Diagram



All dimensions in millimetres (± 0.15mm)

* PM $_1$, PM $_{2.5}$ and PM $_{10}$ (PM$_{4.25}$ as an option)
* Measures up to 40 µm for pollen detection
* Reduced power standby mode
* Capability to measure up to 2,000 µg/m^3
* Onboard temperature and humidity sensor
* SPI interface not included, order code 000-0SPI-00

MEASUREMENT

Particle range*	µm spherical equivalent size (based on RI of 1.5)	0.35 to 40
Size categorisation	Number of software bins	24
Sampling interval	Histogram period (seconds)	1 to 30
Total flow rate (typical)	L/min	5.5
Sample flow rate (typical)	mL/min	280
Max particle count rate	Particles/second	10,000
Max coincidence probability	%concentration at 10^6 particles/L	0.84
	%concentration at 500 particles/L	0.24

** Based on 100% detection efficiency at 0.35µm, 50% at 0.3µm*

POWER

Measurement mode	mA (typical)	180
Standyby mode	mA (typical)	< 45
Voltage range	VDC	4.8 to 5.2
Switch-on transient	mW for 1ms	< 5000

DATA

Digital interface/connections	SPI (real-time data and communications)	
	Micro USB (firmware updates and standalone mode)	
Data storage	micro-SD (.CSV format) (GB)	16

KEY SPECIFICATIONS

Digital interface	SPI (Mode 1), USB	
Laser classification	as enclosed housing	Class 1
Temperature range	℃	-10 to 50
Humidity range	% rh (continuous)	0 to 95 (non-condensing)
Warranty	months	24
Weight	g	< 105

At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

NOTE: As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the unit is suitable for their own requirements.

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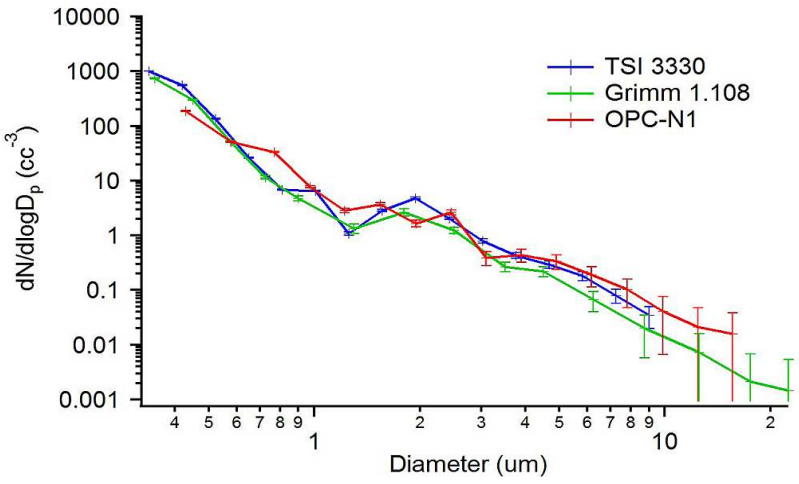
OPC-N3 Performance Data

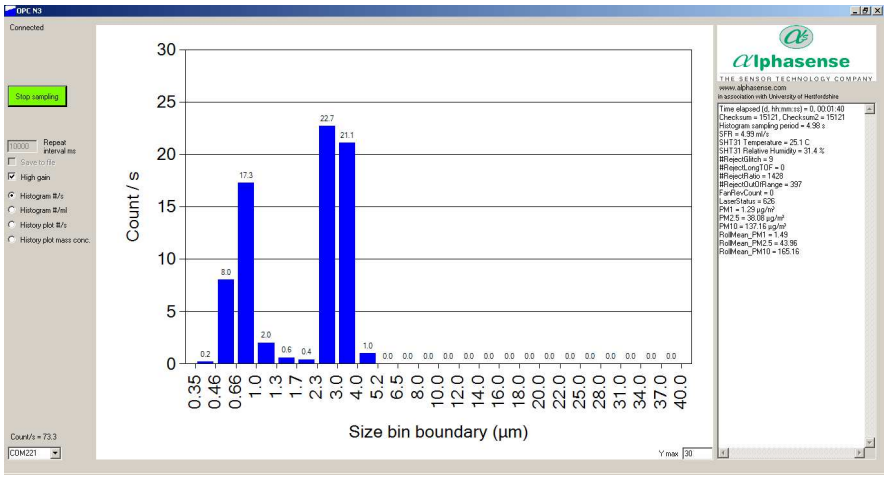
Technical Specification

Figure 2 Particle size derivative comparison



The OPC-N3 uses the same algorithms for 0.3 - 17 µm as the OPC-N1

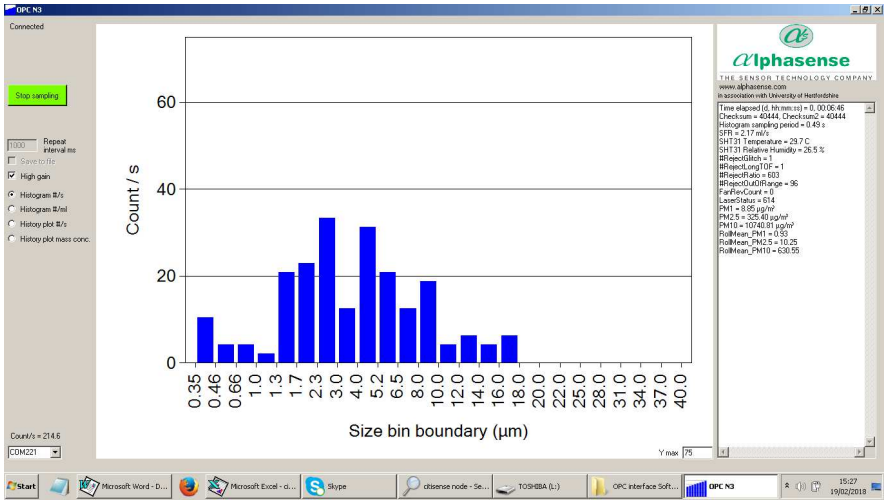
Figure 3 OPC-N3 response to 0.75 and 3 um PSL calibration standards, as displayed on the supplied software



Size speciation can support pollution source apportionment.

The expanded range to 40µm helps to identify pollen types.

Figure 4 OPC-N3 response to a broad size range test dust



Combustion soot, inorganic or metal?

Size speciation adds more information to identify the polluting source.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. For Application Notes visit "www.alphasense.com".