

OPC-N3 Particle Monitor

For use in high pollution urban environments



Figure 1 OPC-N3 Schematic Diagram



All dimensions in millimetres ($\pm 0.15\text{mm}$)



- * PM₁, PM_{2.5} and PM₁₀
- * Reduced power standby mode
- * Capability to measure up to 2,000 $\mu\text{g}/\text{m}^3$
- * Onboard temperature and humidity sensor
- * SPI interface not included, order code 000-0SPI-00

Technical Specification

MEASUREMENT

Particle range	Spherical equivalent size (based on RI of 1.5, S of 1.65)	0.38 to 40
Size categorisation	Number of software bins	24
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 10 ⁶ particles/L	0.84
	%concentration at 500 particles/L	0.24

POWER

Measurement mode	mA (typical)	175
Standby mode	mA (typical)	< 50
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	°C	-10 to 50
Humidity range	% rh (continuous)	0 to 95 (non-condensing)
Weight	g	< 105



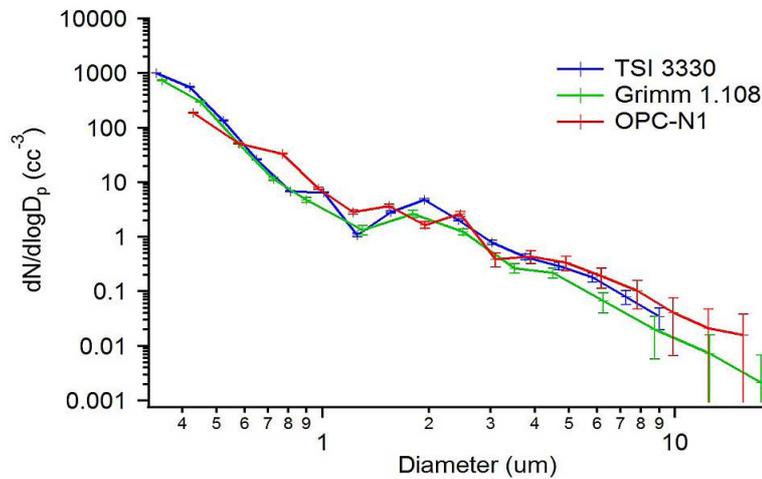
At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

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 sensors are suitable for their own requirements.

OPC-N3 Performance Data

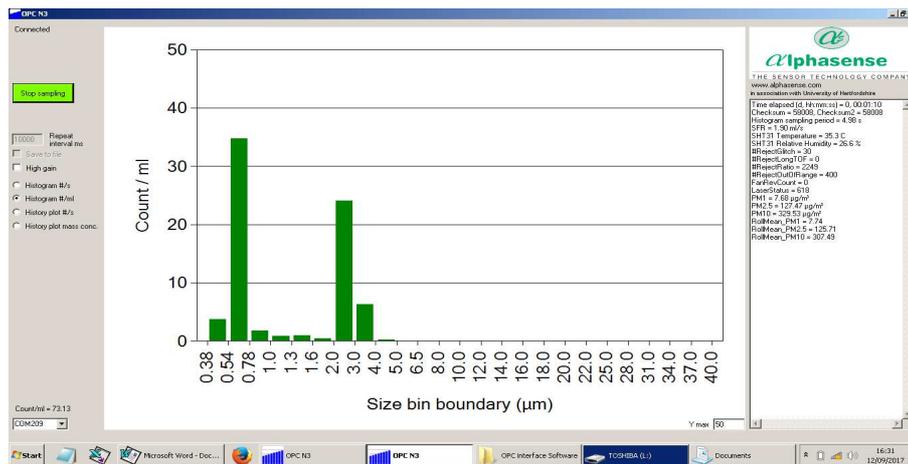
Technical Specification

Figure 2 Particle size derivative comparison



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

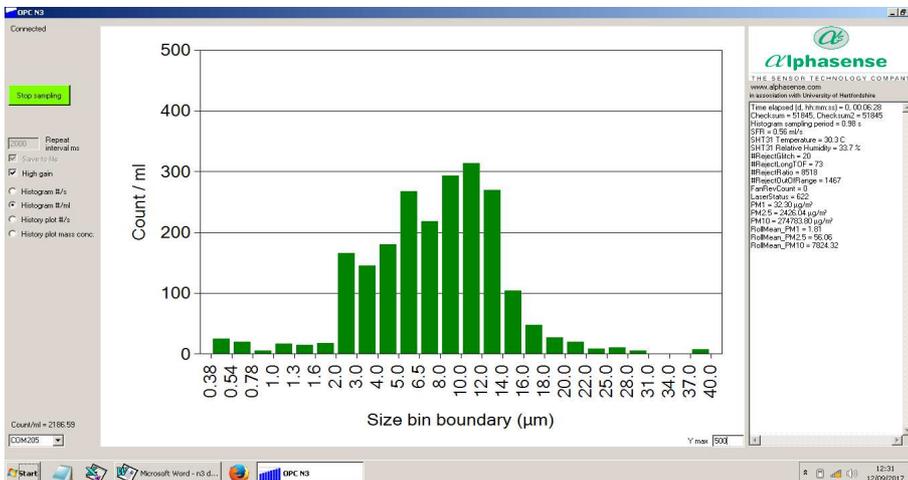
Figure 3 OPC-N3 response to 0.75 and 3 um PSL calibration standards, as displayed on the supplied software



Size speciation can support pollution source attribution.

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.