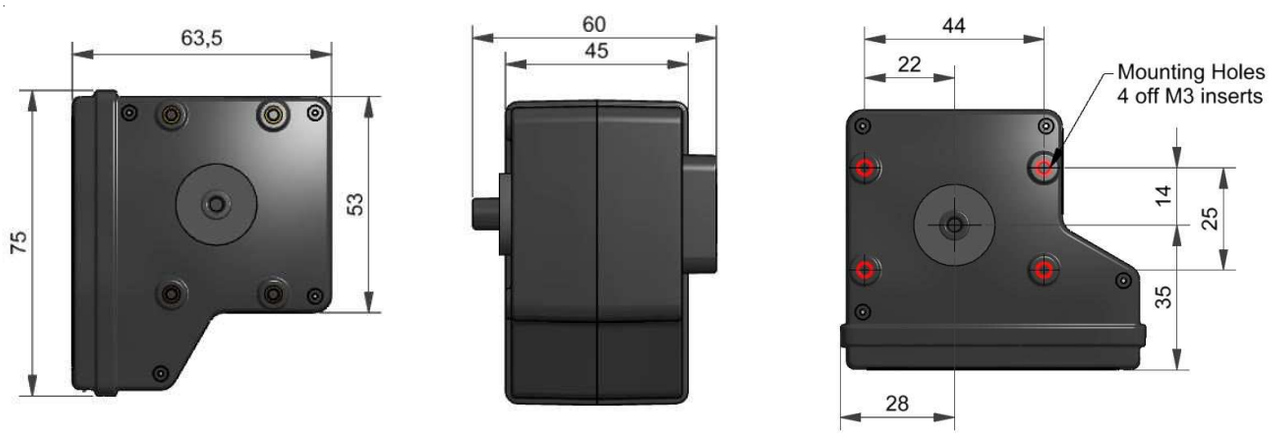
alphasense
AMETEK

Technical specifications Version 1.0

OPC-N3 particle monitor – for use in high pollution urban environments



Dimensions are in millimetres (± 0.15 mm).

- 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

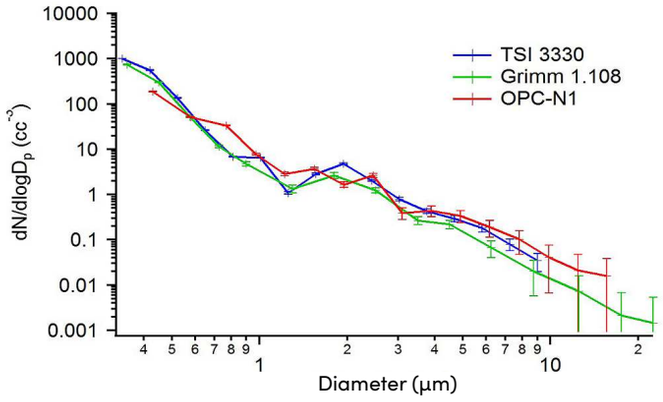
Data	Digital interface/connections	SPI (real-time data and communications)	
		Micro USB (firmware updates and standalone mode)	
	Data storage	micro-SD (.CSV format) (GB)	16

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

T: +44 (0)1376 556700 **E:** sensors@alphasense.com **W:** www.alphasense.com

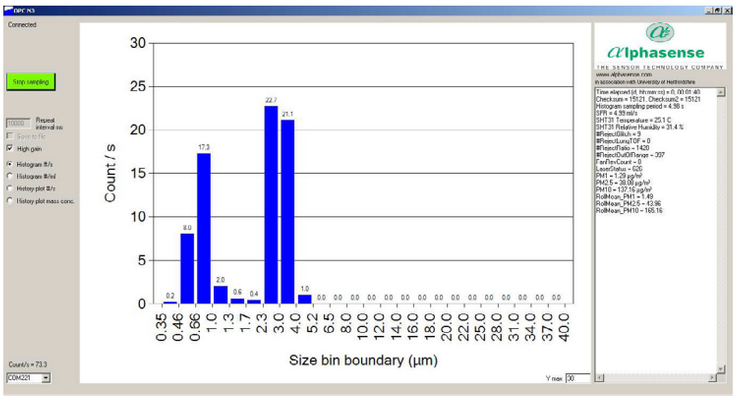
For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. or visit our website at "www.alphasense.com".

Figure 1 Particle size derivative comparison



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

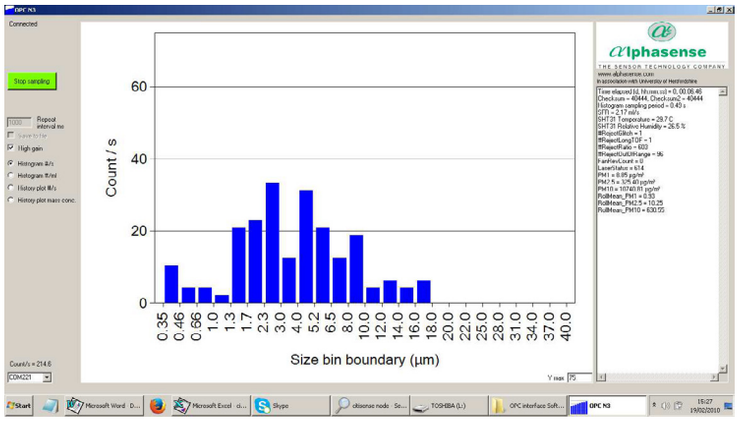
Figure 2 OPC-N3 response to 0.75 and 3 um PSL calibration standards, as displayed on the supplied software



Size speciation can support pollution source apportionment.

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

Figure 3 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.