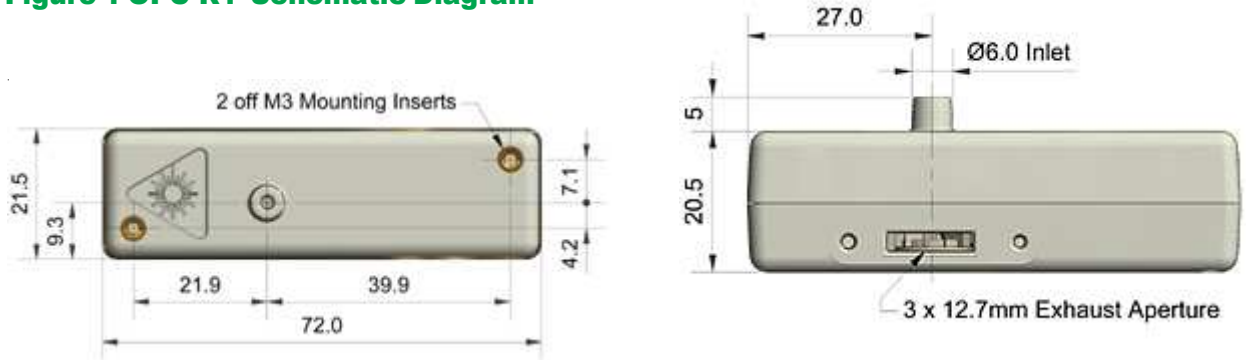




# OPC-R1 Particle Monitor

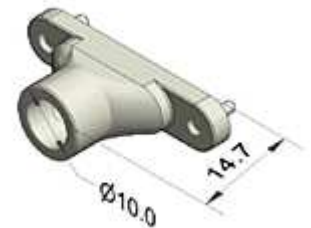
# Technical Specification

Figure 1 OPC-R1 Schematic Diagram



- Reports PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub> plus histograms
- SPI connection for communication and firmware upgrades
- PC software supplied
- Removable fan exit adaptor
- Small size and low power consumption
- Configurable to specific applications

Optional Exhaust Extension



## MEASUREMENT

Particle range	Spherical equivalent size (based on RI of 1.5)	0.4 to 12.5
Size categorisation	Number of software bins	16
Sampling interval	Histogram period (seconds)	1 to 30
Total flow rate	L/min (typical)	1
Max particle count rate	particles/second	10,000
Max coincidence probability	%concentration at 10 <sup>6</sup> particles/L	0.84
	%concentration at 500 particles/L	0.24

## POWER

Measurement mode	mA (typical)	95
Laser on, fan off	mA (typical)	< 5
Voltage range	VDC	4.8 to 5.2
Switch-on transient	mW for 1 ms	< 5000

## KEY SPECIFICATIONS

Digital interface	(No data storage)	SPI Mode 1
Laser classification	as enclosed housing	Class 1
Temperature range	°C	-10 to 50
Humidity range	% rh (continuous)	0 to 95 (non-condensing)
Weight	g	< 30



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.

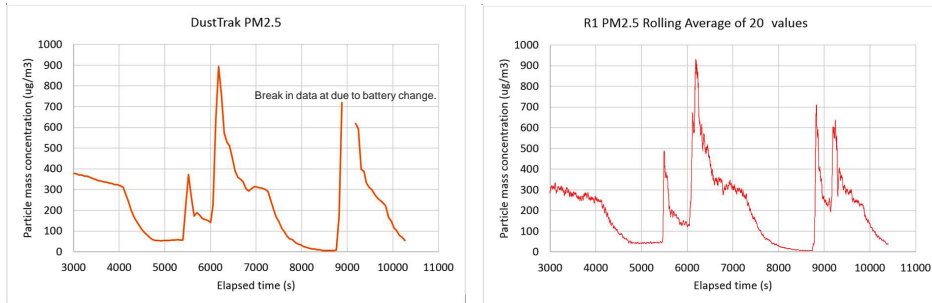
**NOTE:** As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.



# OPC-R1 Performance Data

Technical Specification

**Figure 2 Comparison of PM2.5 monitoring by Alphasense R1 PM Sensor and TSI DustTrak**



These two graphs track the OPC-R1 and a TSI Dust Trak for three hours. The good correlation shows that the OPC-R1 follows particulate events accurately.

**Figure 3 Particle size distribution for broad 5 um alumina (Spherisorb™) using the OPC-R1 and Alphasense software.**

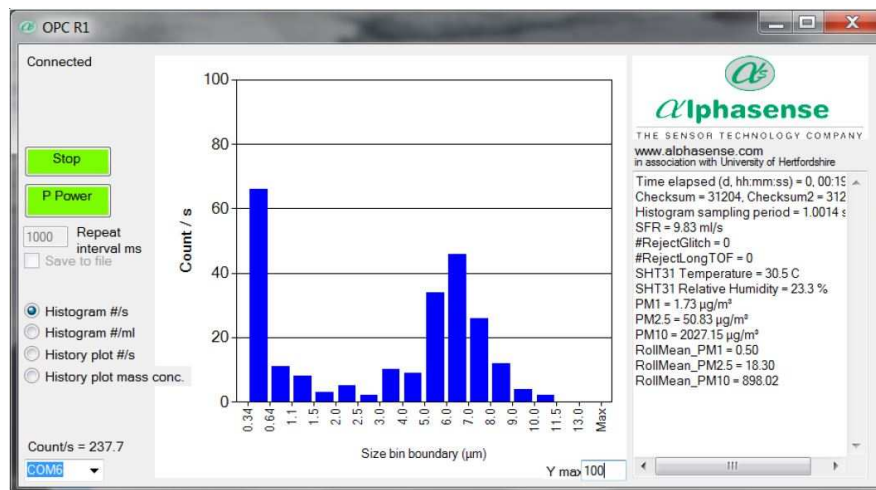


Figure 3 shows the OPC-R1 particle size distribution for the test aerosol.

**Figure 4 Particle size distribution for broad 5 um alumina (Spherisorb™) using a TSI-3330 OPS**

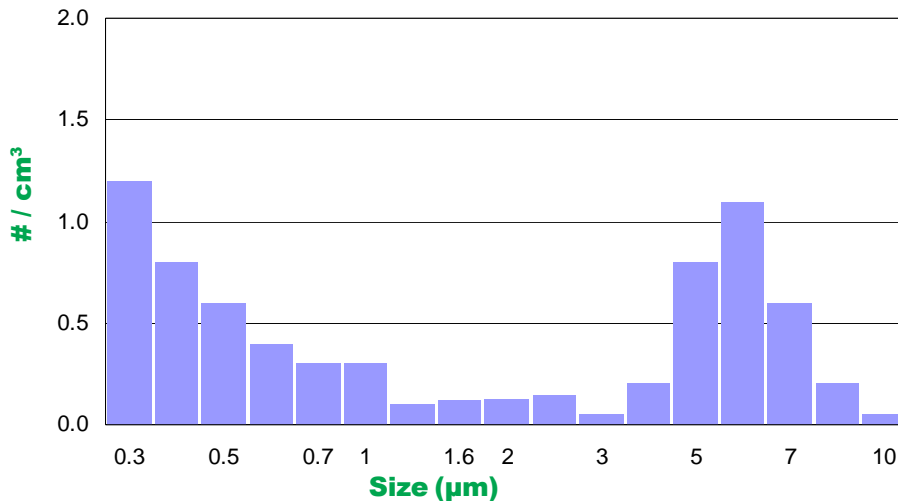


Figure 4 shows the TSI 3330 particle size distribution for the same aerosol.

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](http://www.alphasense.com)".

*In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Alphasense Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within. (©ALPHASENSE LTD) Doc. Ref. OPC-R1/FEB17*