**Autopollen intercomparison campaign – Alphasense OPC-N3 meta data**

This data was logged by three different Alphasense OPC-N3 instruments, functionalised at the University of Birmingham (including addition of BME280 sensor), while participating in the EUMETNET Autopollen ADOPT – COST Action Intercomparison Campaign in Munich, Germany, 2021. The time period for this data is between 2021-03-09 and 2021-07-07, and at 1 s time resolution in CET/CEST time zone.

See Alphasense website and OPC-N3 datasheet for more information on these instruments:

* <https://www.alphasense.com/products/optical-particle-counter/>
* <https://www.alphasense.com/wp-content/uploads/2019/03/OPC-N3.pdf>

Pre-processing performed:

* Data collated from monthly data files for each OPC with ‘Sensor’ column created to differentiate sensors.
* Date/Time column converted to CET/CEST (Europe/Berlin) time zone.
* Bin columns converted from particle counts to particle number concentrations (m-3) using the Sample Period and Sample Flow Rate columns.
* Dataset filtered to rows where LaserStat value was greater than 570 W cm-2 and less than 670 W cm-2, and cut off at Date/Time value of 2021-07-07 08:30.
* Excess columns from OPC removed.

Table : Listed column names, descriptions, and units for this dataset.

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| Column name | Description | Units |
| Date/Time | Date and time in CET/CEST time zone | %Y-%m-%d %H-%M-%S |
| Bin0 | Particles in size range 0.35-0.46 µm | Particles m-3 |
| Bin1 | Particles in size range 0.46-0.66 µm | Particles m-3 |
| Bin2 | Particles in size range 0.66-1.0 µm | Particles m-3 |
| Bin3 | Particles in size range 1.0-1.3 µm | Particles m-3 |
| Bin4 | Particles in size range 1.3-1.7 µm | Particles m-3 |
| Bin5 | Particles in size range 1.7-2.3 µm | Particles m-3 |
| Bin6 | Particles in size range 2.3-3.0 µm | Particles m-3 |
| Bin7 | Particles in size range 3.0-4.0 µm | Particles m-3 |
| Bin8 | Particles in size range 4.0-5.2 µm | Particles m-3 |
| Bin9 | Particles in size range 5.2-6.5 µm | Particles m-3 |
| Bin10 | Particles in size range 6.5-8.0 µm | Particles m-3 |
| Bin11 | Particles in size range 8.0-10 µm | Particles m-3 |
| Bin12 | Particles in size range 10-12 µm | Particles m-3 |
| Bin13 | Particles in size range 12-14 µm | Particles m-3 |
| Bin14 | Particles in size range 14-16 µm | Particles m-3 |
| Bin15 | Particles in size range 16-18 µm | Particles m-3 |
| Bin16 | Particles in size range 18-20 µm | Particles m-3 |
| Bin17 | Particles in size range 20-22 µm | Particles m-3 |
| Bin18 | Particles in size range 22-25 µm | Particles m-3 |
| Bin19 | Particles in size range 25-28 µm | Particles m-3 |
| Bin20 | Particles in size range 28-31 µm | Particles m-3 |
| Bin21 | Particles in size range 31-34 µm | Particles m-3 |
| Bin22 | Particles in size range 34-37 µm | Particles m-3 |
| Bin23 | Particles in size range 37-40 µm | Particles m-3 |
| Sample Period s | Sample period | Seconds |
| Sample Flow Rate ml/s | Sample flow rate | mL s-1 |
| PM1 ug/m3 | PM1 | µg m-3 |
| PM2.5 ug/m3 | PM2.5 | µg m-3 |
| PM10 ug/m3 | PM10 | µg m-3 |
| LaserStat | Laser power density | W cm-2 |
| Pressure | Atmospheric pressure measured by BME280 sensor | Pascal |
| BME\_Temp | Temperature measured by BME280 sensor | °C |
| BME\_Humid | Relative humidity measured by BME280 sensor | % |
| Sensor | Number between 1-3 for each OPC instrument | - |