

# GRIMM CPC 5410

## Condensation particle counter

Precise and compact – easy to use

The versatile laboratory instrument for nanoparticle counting

- **n-butanol based CPC:** The most reliable and widely used particle counter
- **0.6 or 1.0 L/min sample flow:** Two versions to meet a wide range of experimental needs
- **Versatile use:** Supports multiple calibration options, including compliance with EN 16976:2024 and other relevant standards



Digital Version

**ACTRIS**  
Compliant



## FEATURES AND BENEFITS

- **Accurate nanoparticle counting**  
Optimized condensation for precise results with droplet size control and continuous drainage
- **Effortless Operation**  
Simple start/stop functionality for stand-alone use and easy data storage via USB flash drive
- **Space-Saving Design**  
A compact footprint for seamless integration into any laboratory setup

- **Traceable Calibration**  
Easily perform traceable calibrations with analog pulse output for direct access to raw data
- **Unique saturator shutter**  
Ensures fast transport without butanol drying and eliminates any risk of optics contamination
- **Pressure-Independent Performance**  
Sample flow controlled by critical orifice. Ready for external vacuum supply. Model CPC 5412 also available with integrated sample pump

## TECHNICAL DATA

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| <b>Measuring principle</b>                             | Condensation particle counter  |
| <b>Measuring parameter</b>                             | Particle number concentration/cm <sup>3</sup>  |
| <b>Working fluid</b>                                   | n-butanol (n-butyl alcohol)  |
| <b>CPC sample flow rate</b>                            | Two versions available:<br>0.6 or 1.0 l/min  |
| <b>Particle concentration range</b>                    | Single count mode:<br>• Up to 60,000 p/cm <sup>3</sup> (1.0 l/min sample flow)<br>• Up to 100,000 p/cm <sup>3</sup> (0.6 l/min sample flow)<br>Photometric mode: up to 10 <sup>7</sup> p/cm <sup>3</sup> *   |
| <b>Particle concentration accuracy</b>                 | Single count mode: ≥ 95%<br>Photometric mode: ≥ 90%  |
| <b>Counting efficiency</b>                             | Many configurations and calibrations available<br>D <sub>50</sub> = 10 nm (EN 16976:2024)<br>D <sub>50</sub> = 23 nm (PMP, Euro 5 and 6)<br>D <sub>65</sub> = 10 nm (PMP, Euro 7)  |
| <b>Linearity slope</b>                                 | 1 ± 0.05   |
| <b>Response time t<sub>10</sub> ... t<sub>90</sub></b> | < 1.5 s (1.0 l/min sample flow)<br>< 2.0 s (0.6 l/min sample flow)   |
| <b>Flow control</b>                                    | Critical orifices with stabilized temperature  |
| <b>Data output interval</b>                            | 1 ... 90 s (user selectable)   |
| <b>Compliance and certifications</b>                   | <ul style="list-style-type: none"> <li>• Listed in ACTRIS-compliant measuring devices</li> <li>• ISO 27891:2015 (calibration of condensation particle counters, CPCs)</li> <li>• EN 16976:2024 (standard method for determining the particle number concentration in ambient air)</li> <li>• Particle measurement program (EURO 5, 6 and 7)</li> <li>• UN GTR No.24 (brake emissions)</li> </ul> |
| <b>Data recording</b>                                  | On PC with GRIMM 5475 nano software, on USB flashdrive or direct USB / RS-232 read-out   |
| <b>Connectivity</b>                                    | USB, USB flashdrive, RS-232, analog input for meteorological sensors, analog pulse output  |

|                                  |  |
|----------------------------------|--|
| <b>Power supply</b>              | 110 ... 240 VAC; 50/60 Hz; maximum 130 W   |
| <b>Power consumption</b>         | 30 W standby<br>40 W standard operation<br>80 W warm-up  |
| <b>Aerosol sample conditions</b> | <ul style="list-style-type: none"> <li>• Temperature: -20 ... 40 °C (-4 ... 104 °F)</li> <li>• Humidity: 0 ... 95% RH, non-condensing</li> <li>• Absolute pressure range: 500 ... 1,100 mbar</li> </ul>  |
| <b>Transport and storage</b>     | 0 ... 50 °C (32 ... 122 °F), RH < 95%  |
| <b>Operating conditions</b>      | <ul style="list-style-type: none"> <li>• Indoor protected environment</li> <li>• Temperature: 10 ... 40 °C (50 ... 104 °F)</li> <li>• Humidity: 0 ... 95% RH, non-condensing</li> <li>• Absolute pressure range: 790 ... 1,100 mbar</li> </ul> |
| <b>Dimensions (h x w x d)</b>    | 23 x 25 x 29 cm (9 x 9.8 x 11.4 inch)  |
| <b>Weight</b>                    | 8.9 kg (19.6 lbs)  |

\* For short-term measurement; not available for 1.0 L/min version

## OPTIONAL ACCESSORIES

- 7813, 7814 Small, large diffusion dryers
- 4042397 RS232-RJ45 network adapter

