DURAG GROUP

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

ACTRIS Compliant

GRIMM AEROSOL TECHNIK
DURAG GROUP

As a member of DURAG GROUP since 2015, GRIMM AEROSOL TECHNIK combines over 40 years of expertise in optical aerosol particle measurement with the strength of a global leader, offering comprehensive solutions and local support through an extensive international network.

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

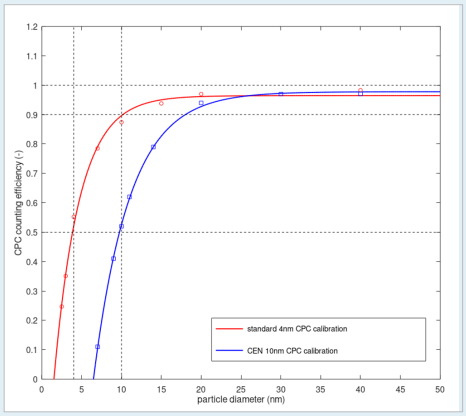
Measuring principle	Condensation particle counter
Measuring parameter	Particle number concentration/cm³
Working fluid	n-butanol (n-butyl alcohol)
CPC sample flow rate	Two versions available: 0.6 or 1.0 l/min
Particle concentration range	Single count mode: • Up to 60,000 p/cm³ (1.0 l/min sample flow) • Up to 100,000 p/cm³ (0.6 l/min sample flow) Photometric mode: up to 10^7 p/cm³*
Particle concentration accuracy	Single count mode: ≥ 95% Photometric mode : ≥ 90%
Counting efficiency	Many configurations and calibrations available D_{50} = 4nm (GRIMM standard) D_{50} = 10 nm (EN 16976:2024) D_{50} = 23 nm (PMP, Euro 5 and 6) D_{65} = 10 nm (PMP, Euro 7)
Linearity slope	1 ±0.05
Response time t_{10} ... t_{90}	< 1.5 s (1.0 l/min sample flow) < 2.0 s (0.6 l/min sample flow)
Flow control	Critical orifices with stabilized temperature
External vacuum	≤ 350 hPa at NPT **
Data output interval	1 ... 90 s (user selectable)
Compliance and certifications	• **Listed in ACTRIS**-compliant measuring devices • **ISO 27891:2015** (calibration of condensation particle counters, CPCs) • **EN 16976:2024** (standard method for determining the particle number concentration in ambient air) • **UN R No. 49 and 83** (PMP, motor vehicle emissions, EURO 5, 6 and 7) • **UN GTR No.24** (brake emissions)
Data recording	On PC with GRIMM 5475 nano software, on USB flashdrive or direct USB / RS-232 read-out

Connectivity	USB, USB flashdrive, RS-232, analog input for meteorological sensors, analog pulse output
Power supply	110 ... 240 VAC; 50/60 Hz; maximum 130 W
Power consumption	30 W standby 40 W standard operation 80 W warm-up
Aerosol sample conditions	• Temperature: –20 ... 40 °C (–4 ... 104 °F) • Humidity: 0 ... 95% RH, non-condensing • Absolute pressure range: 500 ... 1,100 mbar
Transport and storage	0 ... 50 °C (32 ... 122 °F), RH < 95%
Operating conditions	• Indoor protected environment • Temperature: 10 ... 40 °C (50 ... 104 °F) • Humidtity: 0 ... 95% RH, non-condensing • Absolute pressure range: 790 ... 1,100 mbar
Dimensions (h x w x d)	23 x 25 x 29 cm (9 x 9.8 x 11.4 inch)
Weight	8.9 kg (19.6 lbs)

* For short-term measurement; not available for 1.0 L/min version
** CPC 5412 model with integrated sample pump; no external vacuum needed

OPTIONAL ACCESSORIES

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



Example of size dependent counting efficiencies for a standard 4nm and a CEN 10nm CPC calibration

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