DURAG GROUP

CPC 5421-TR-CEN
19″ Condensation Particle Counter

Full compliance with CEN standard EN 16976:2024

- 24/7 real-time monitoring of UFP in ambient air
- D_{50} = 10 nm
- n-Butanol based CPC with long term operation tank unit
- Inlet system with Nafion® based dryer

ACTRIS Compliant

GRIMM AEROSOL TECHNIK
DURAG GROUP

FEATURES

- Calibrated according to EN 16976:2024
- Compact 19″ design
- Integrated pumps
- Long term butanol and condensate tanks
- Saturator shutter

BENEFITS

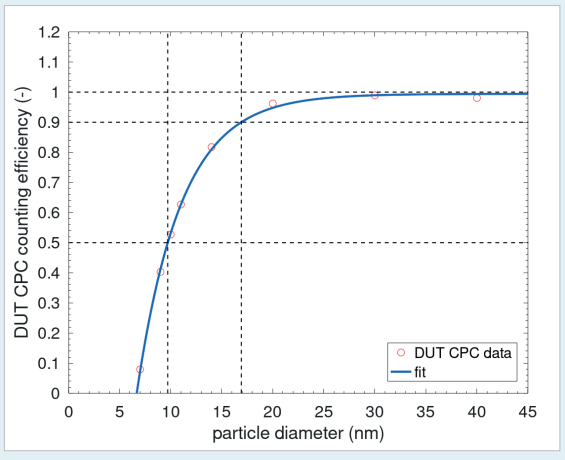
- Harmonized UFP counting
- Easy integration in measurement stations
- No external vacuum required
- Unattended 24/7 operation up to 6 weeks*
- Easy transport: just close the saturator, no drying step required

TECHNICAL DATA

Measuring principle	Condensation particle counting
Measuring parameter	Particle number concentration/cm³
Working fluid	n-Butanol (n-butyl alcohol)
Particle concentration range	• Single count mode: Up to 100,000 particles/cm³ (0.6 l/min sample flow) Up to 150,000 particles/cm³ (0.3 l/min sample flow) • Photometric mode: Up to 10^7 particles/cm³ **
Particle concentration accuracy	Single count mode: ≥ 95% Photometric mode: ≥ 90%
Data output interval	1 … 90 s (user selectable)
Counting efficiency	D_{50} = 10 ± 1 nm D_{90} ≤ 20 nm
Linearity slope	1 ± 0.05
Response time t_{10} … t_{90}	< 2 s (0.6 l/min sample flow) < 3 s (0.3 l/min sample flow)
Sample inlet pipe	• Nafion® based dryer • Drying of aerosol flow to ≤ 40% RH • Maximum particle losses ≤ 25% at 10 nm
Total inlet flow rate	1.8 l/min (through sample pipe)
CPC sample flow rate	0.3 or 0.6 l/min
Flow control	Critical orifices with stabilized temperature

Standards and certificates	• EN 16976:2024 • ISO 27891:2015 • ACTRIS compliant instrument***
Data recording	On PC with GRIMM 5475 nanoSoftware, on USB flash drive or direct USB/RS-232 read-out
Connectivity	USB, USB flash drive, RS-232, analog input for meteorological sensors, analog pulse output
Power requirements	110 … 240 VAC; 50/60 Hz; maximum 130 W
Ambient aerosol 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%
Installation	• 19″ instrument rack**** • Indoor or outdoor***** protected environment • Temperature: 10 … 25 °C (50 … 95 °F) • Humidity: 0 … 95% RH, non-condensing
System components	• CPC 5421-TR-CEN • 5438-1.5: Butanol and condensate tank unit • 182-1.5: 1.5 m sample pipe
Dimensions (h x w x d)	• CPC: 22 x 48 x 41 cm (8.7 x 19 x 16 in.) 5 height units 19 in. • Tank unit: 9 x 48 x 32 cm (3.5 x 19 x 12.6 in.) 2 height units 19 in. • Height with sample pipe: 182 cm (72 in.)
Weight	• CPC: 16.2 kg (35.7 lbs) • Tank unit: 4.1 kg (9 lbs) • Total with sample pipe: 23.3 kg (51.4 lbs)

* 0.3 l/min sample flow rate version
** For short-term measurements
*** 0.6 l/min sample flow rate version
**** Requires 19″ rack rails
***** Outdoor installation requires weather protection shelter



CPC counting efficiency calibration according to CEN EN 16976:2024

GRIMM AEROSOL TECHNIK GMBH
OT Friedersdorf | Vordere Aue 4 | 06774 Muldestausee, Germany | Phone +49 3493 51407-0 | info@grimm.durag.com