



# Calibration of Particle Counter with polystyrene (PSL) Particles

## Calibration campaigns

- Campaign A: CW 11...14; preferred date
- Campaign B: CW 23...26; preferred date
- Campaign C: CW 45...48; preferred date

## Contact

Company:

Name:

Address:

PC, City, Country:

Telephone:

Email:

## Instrument

Manufacturer:

Model:

S/N:

Flow rate: L/min

## Typical application

- In-house reference
  - max. concentration used: counts per minute
  - typical sizes used:  $\mu\text{m}$ ,  $\mu\text{m}$ ,  $\mu\text{m}$ ,  $\mu\text{m}$
- Classification/Qualification
  - typical ISO14644-class:
- Other
  - Please describe:
- Size resolution
  - For Size:  $\mu\text{m}$ ,  $\mu\text{m}$ ,  $\mu\text{m}$
- Size setting error
  - For Size:  $\mu\text{m}$ ,  $\mu\text{m}$ ,  $\mu\text{m}$

## Adjustment

- Adjustment of size channels and/or flow rate

Adjustment of the instrument is possible, if access granted.

## Capabilities at METAS

Calibration according to ISO 21501-4 or ISO 21501-1

The following particle counters can be calibrated:

- OPC (Optical particle counter)
- OPSS (Optical particle size spectrometer)
- APS (Aerodynamic particle sizer)
- CPC (Condensation particle counter)

Nominal particle sizes ( $\mu\text{m}$ ):

0.1, 0.15, 0.2, 0.25, 0.3, 0.4, 0.45, 0.5, 0.7, 0.8, 0.9, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 10.0

Nominal particle number concentrations:  $(0.5 \dots 1000) \text{ cm}^{-3}$ , depending on particle size.

Typical expanded relative uncertainties in the determination of the OPC counting efficiency: at high concentrations the uncertainties drop down to  $(2 \dots 7) \%$

During calibration/adjustment all instruments are, in principle, operated by the personnel of the institute. The customer is therefore not obliged to be present during the calibration procedure. However, interested persons are very welcome to attend calibration or perform the adjustment themselves.

ISO 17025: please check

[https://www.metas.ch/metas/en/home/metas/managemetnsystem/internationale-  
anerkennung.html](https://www.metas.ch/metas/en/home/metas/managemetnsystem/internationale-<br/>anerkennung.html)

Internationally recognised Calibration and Measurement Capabilities (CMCs). The CMCs are valid only for nominal particle sizes between  $0.3 \mu\text{m}$  and  $1.5 \mu\text{m}$  and concentrations between  $0.5 \text{ cm}^{-3}$  and  $800.0 \text{ cm}^{-3}$ , as well as for nominal particle sizes between  $1.5 \mu\text{m}$  and  $10.0 \mu\text{m}$  and concentrations between  $0.5 \text{ cm}^{-3}$  and  $5.0 \text{ cm}^{-3}$ .

The size resolution and the size setting error are determined according to the following paper:

[Direct approach to determine the size setting error and size resolution of an optical particle counter](#)

### Important information

„METAS General Terms and Conditions” are applied to all services of METAS. They are available at [www.metas.ch](http://www.metas.ch).

NDA's, amendments, subsidiary agreements and supplements shall always have to be made in writing.

Please send along:

- Manual
- Communication cable
- Power supply
- Software

Please make sure:

- Old data has been saved
- Batteries are charged
- Your user settings are noted or saved

Shipping instructions:

<https://www.metas.ch/metas/en/home/dl/geraete-ans-metas-senden.html>

## **Contact**

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