

Intercomparison of Condensation Particle Counter

Project No.: CPC-2018-4-7

Basic information:

Location of the quality assurance: TROPOS, lab: 130

Delivery date: -

Setup in the laboratory: June 6, 2018

Comparison period: June 6, 2018

Principal Investigator	Home Institution	Participant	Instrument
	Staatliche Betriebsgesellschaft für Umwelt und Landwirtschaft (BfUL) Altwahnsdorf 12, 01445 Radebeul Telefon: +49 351 8312-501 www.smul.sachsen.de/bful	---	DE-BFUL MPSS Dresden- Winckelmann; TSI CPC Model 3772 # 70807232

TROPOS Reference Instrument: Electrometer: TSI model 3068B
70838596

Additional Equipment:

- Bubble flow meter 'Gilibrator', Gilian (Sensidyne)

Summary of Intercomparison:

Pre-status:

The TSI CPC Model 3772 was in good condition.

Final status:

The TSI CPC Model 3772 passed the quality standards of ACTRIS and GAW.

On June 6, 2018, the DE-BFUL MPSS Annaberg 3772 #70807232 participated in the TROPOS ACTRIS-2 CPC-Workshop.

1. Status of the wick: The wick was clean.
2. Status of the CPC: The CPC was working properly.
3. Final CPC-Workshop: The TSI CPC Model 3772 reached 100% efficiency at 40 nm. The Dp50 is at 8.1 nm. The CPC efficiency curve corresponds to the standard.

Status of the candidate:

<i>CPC status</i>	Pre-Status	Final Status
<i>power/status</i>	LED green	LED green
<i>saturator temp</i>	39 °C	39 °C
<i>condenser temp</i>	22 °C	22 °C
<i>optics temp</i>	40 °C	40 °C
<i>cabinet temp</i>	40.1 °C	40.1 °C
<i>ambient pressure</i>	100.5 kPa	100.5 kPa
<i>orifice pressure</i>	76.7 kPa	82.3 kPa
<i>nozzle pressure</i>	3.0 kPa	3.0 kPa
<i>laser current</i>	48 mA	48 mA
<i>liquid level</i>	full	full
<i>Aerosol flow (l/min)</i>	1.002 l/min	0.999 l/min

Final status: 06.06.2018

Dp in nm	counting efficiency
40	1.01
30	0.99
20	0.96
15	0.90
13	0.84
11	0.76
10	0.69
9	0.61
8	0.49
7	0.33
6	0.14
5	0.00

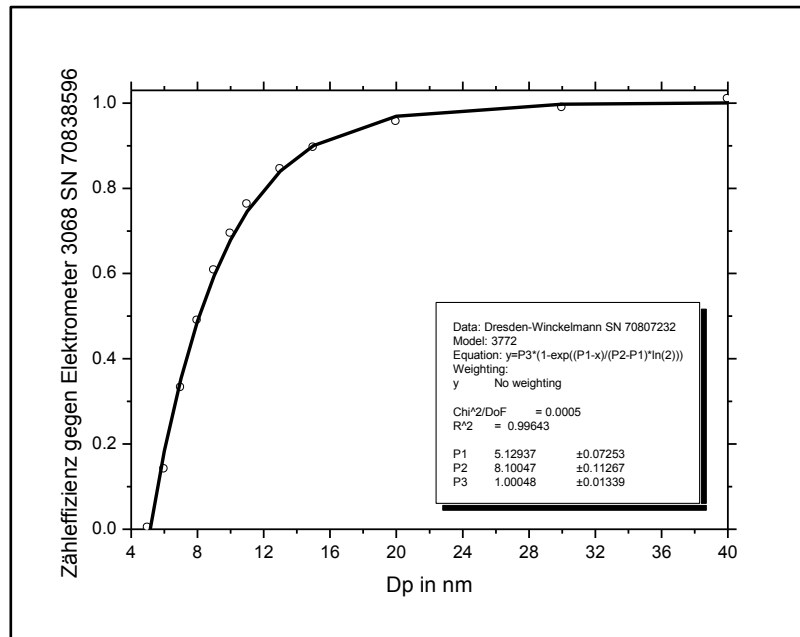


Figure 01: CPC efficiency curve based on Electrometer TSI 3068B. Serial number: 70838596

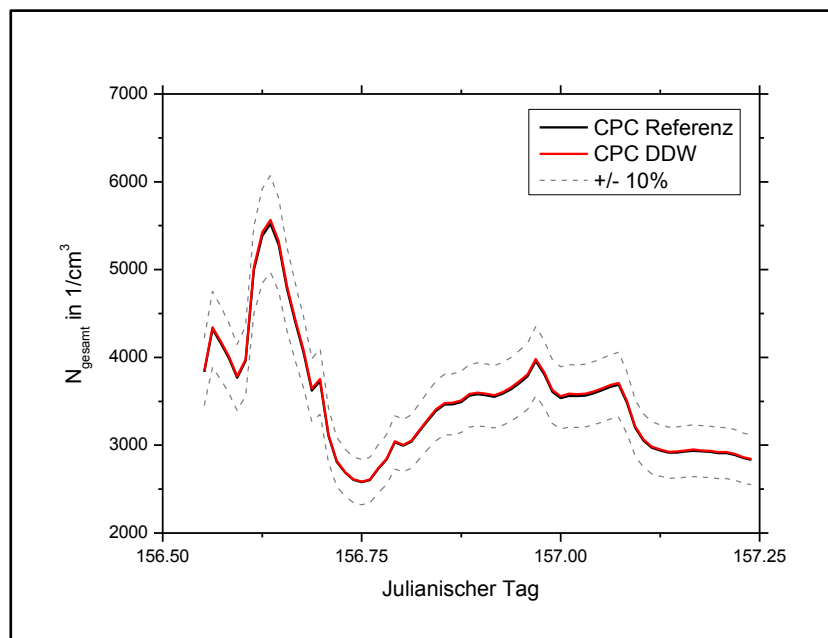


Figure 02: Inter-comparison of ambient air conditions between Reference CPC and CPC DDW.



**Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin**
Nationales Metrologieinstitut



Kalibrierschein Calibration Certificate

Gegenstand:
Object: Aerosol Elektrometer
ID-Nummer: TSI_3068B_70838596

Hersteller:
Manufacturer: TSI Incorporated

Typ:
Type: 3068B

Kennnummer:
Serial No.: 70838596

Auftraggeber:
Applicant: AG 3.23 - Herr Nowak, Tel.: 3228

Anzahl der Seiten:
Number of pages: 4

Geschäftszeichen:
Reference No.: PTB AG 2.11-1461323527-0327

Kalibrierzeichen:
Calibration mark: 20790 PTB 16

Datum der Kalibrierung:
Date of calibration: 22.04.2016

Im Auftrag:
On behalf of PTB: Braunschweig, 04. Mai. 2016

Im Auftrag:
On behalf of PTB:

391 008 n

Dr. B. Schumacher

Siegel
Seal



C. Rohrig

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