



## Intercomparison of Condensation Particle Counter

Project No.: CPC-2018-4-6

### 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-Winckelm.; TSI CPC Model 3772 # 3772130901; Prüf-CPC

**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 Dresden-Winckelmann 3772 #3772130901; Prüf-CPC 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 7.8 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>	42.0 °C	41.6 °C
<i>ambient pressure</i>	99.4 kPa	99.4 kPa
<i>orifice pressure</i>	75.5 kPa	81.8 kPa
<i>nozzle pressure</i>	2.9 kPa	2.9 kPa
<i>laser current</i>	42 mA	42 mA
<i>liquid level</i>	Full	full
<i>Aerosol flow (l/min)</i>	1.009 l/min	1.008 l/min

Final status: 06.06.2018

Dp in nm	counting efficiency
40	1.01
30	1.00
20	0.97
15	0.92
13	0.87
11	0.79
10	0.73
9	0.64
8	0.53
7	0.37
6	0.17
5	0.01

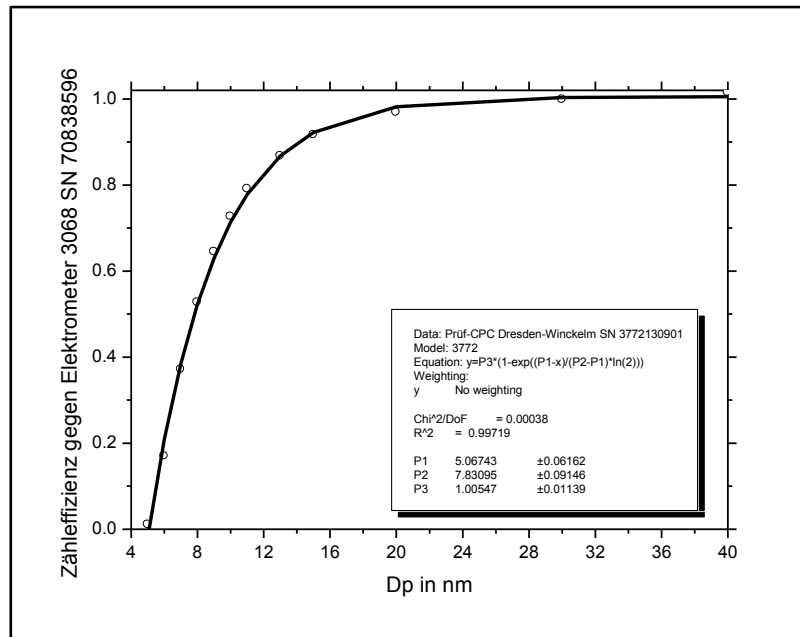


Figure 01: CPC efficiency curve based on Electrometer TSI 3068B. Serial number: 70838596

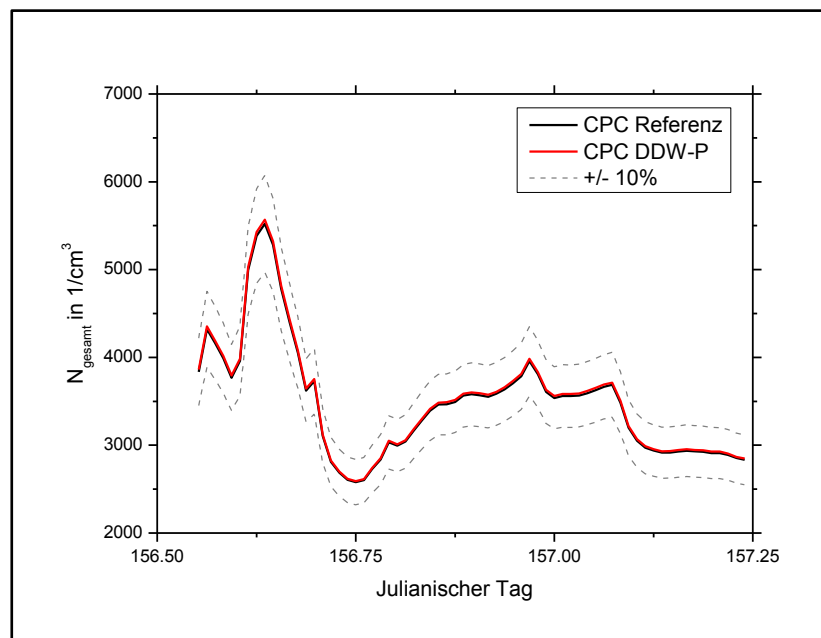


Figure 02: Inter-comparison of ambient air conditions between Reference CPC and CPC DDW-P.



**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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