Intercomparison of Condensation Particle Counter

Project No.: CPC-2019-3-20

Basic information:

Location of the quality assurance: TROPOS, lab: 130

Delivery date: -

Setup in the laboratory: July 19, 2019

Comparison period: July 19, 2019

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 Annaberg; TSI CPC Model 3772 # 3772112102; 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 July 19, 2019, the DE-BFUL MPSS Annaberg 3772 #3772112102; 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 7.9 nm. The CPC efficiency curve corresponds to the standard.

Status of the candidate:

CPC status	Pre-Status	Final Status
power/status	LED green	LED green
saturator temp	39 °C	39 °C
condenser temp	22 °C	22 °C
optics temp	40 °C	40.1 °C
cabinet temp	36.9 °C	36.8 °C
ambient pressure	99.1 kPa	99.5 kPa
orifice pressure	83.7 kPa	83.9 kPa
nozzle pressure	2.5 kPa	2.5 kPa
laser current	58 mA	58 mA
liquid level	full	full
Aerosol flow (l/min)	0.987 l/min	0.990 l/min

Final status: 19.07.2019

Dp in nm	counting efficiency
40	1.00
30	0.99
20	0.98
15	0.94
12	0.86
10	0.75
9	0.67
8	0.53
7	0.32
6	0.05
5	0.00

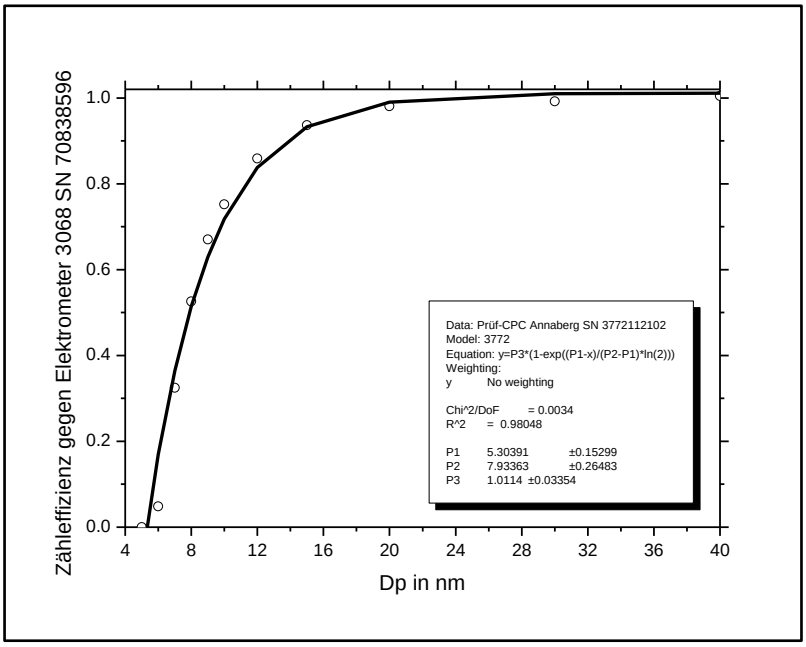

Figure 01: CPC efficiency curve based on Electrometer TSI 3068B. Serial number: 70838596

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

Siegel
Seal

Im Auftrag:
On behalf of PTB:

391 00B n

Dr. B. Schumacher

C. Rohrig

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