



World Calibration Centre  
for Aerosol Physics

Leibniz-Institut für Troposphärenforschung Permoserstraße 15 04318 Leipzig



Leibniz Institute for  
Tropospheric Research

**CPC Model:** TSI CPC 3772

**CPC Serial Number:** 3772141701

**Customer:** -

**Description:** Calibration of a Condensation Particle Counter (CPC, Model 3772)

**Date of Calibration:** March 04, 2020

**Summary of Intercomparison:**

The candidate passed the quality standards of ACTRIS and GAW. The candidate reached 100% efficiency at 40 nm. The Dp50 is at 8.39 nm. The CPC efficiency curve corresponds to the standard of ACTRIS and GAW.

Certificate / Reference: WCCAP

Date of issue: March 09, 2020

Signature:

Reviewed by: **TROPOS**

Name: **Kay Weinhold**

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**Date of arrival of instrument in calibration lab:**

*February 11, 2020*

**Instrument:**

*Condensation Particle Counter*

**Model and serial number of instrument:**

*CPC 3772 S/N 3772141701*

**Result of physical inspection:**

*no damages*

**Result of functional test:**

*functional test successful, no problems*

**Internal parameters of instrument**

*nominal flow rate 1.0 l/min*

**Model and identification number of  
aerosol electrometer:**

*TSI Electrometer Model 3068, S/N 70838596*

**Electrometer calibration certificate:**

*September 5, 2018, calibrated at PTB  
Braunschweig*

**Corrections of electrometer, for instance,  
differing flow rate:**

*Within tolerance range (+/-2%); reference: 4.0  
l/min, measured: 4.000 l/min*

**Software for recording:**

*LabView 2010; National Instruments; Program  
„LabCount.vi“*

**Date of calibration:**

*March 04, 2020*

**Lab temperature and pressure:**

*23.0°C, 995.0 mbar*

**Measured aerosol flow rate of CPC:**

*0.997 l/min*

**Uncertainty in measured flow rate:**

*3%*

**Flowmeter used:**

*Gilian Gilibrator V; S/N 1711008-S,  
January, 2018*

**Particles and gases used for calibration:**

*silver particles and nitrogen*

**Method of particle generation:**

*tube furnace generator*

**Zero measurement of instrument:**

*0 particles/cm<sup>3</sup> in 5 minutes*

**Results (using pulse output):**

Particle size (nm)	40	30	20	15	10
Number concentration (cm-3)	1357	1293	1492	1248	1124
Counting efficiency $\eta$	1.00	1.00	0.99	0.94	0.70
Particle size (nm)	09	08	07	06	05
Number concentration (cm-3)	1052	631	311	43	0
Counting efficiency $\eta$	0.59	0.43	0.23	0.03	0.00



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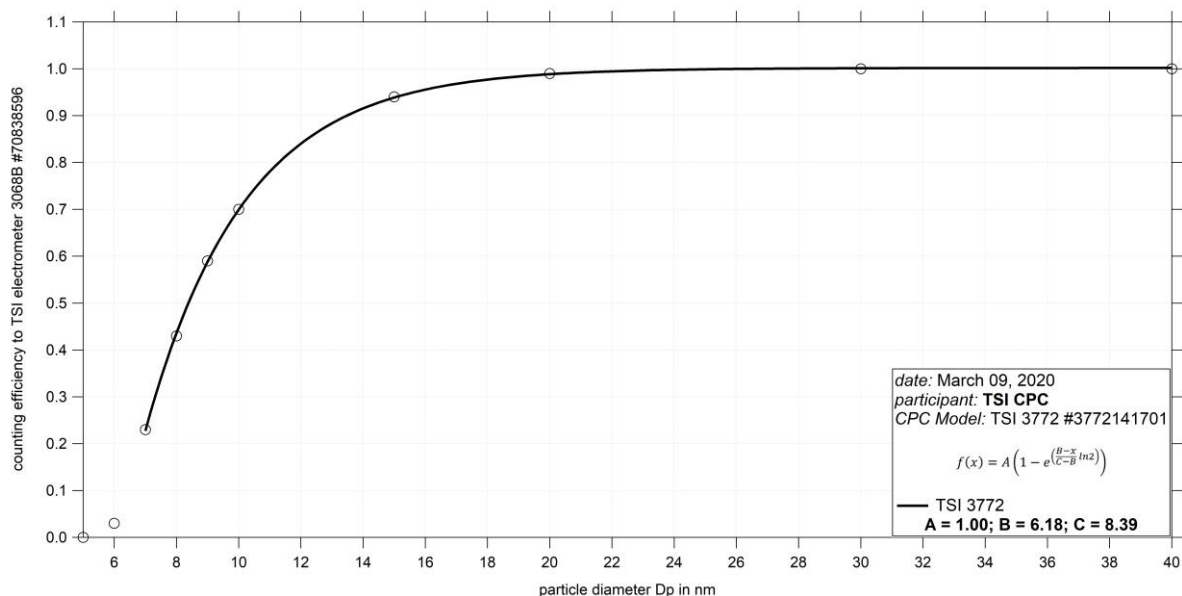


Fig. 1: Counting efficiency for CPC 3772 S/N 3772141701 against aerosol electrometer 3068 S/N 70838596; silver particles between 5 and 40 nm were used for calibration; the calculated Dp50 is 8.39 nm.

**Status information:**

Status	T SAT	T CON	T OPT	T CAB	P AMB	P VAC
from display	39.0	22	40.1	29.5	98.9	-
Status	P OR	P NO	Laser	LV	flow	P INLET
from display	77.4	2.7	50	full	0.997	-

**Date of issue:** March 09, 2020

Reference: TSI electrometer, model 3068, SN 70838596

Reviewed: TROPOS / Kay Weinhold

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