Intercomparison of Condensation Particle Counter

Project No.:	*CPC-2018-7-7*
Principal Investigator:	Harald Flentje
Home Institution:	*Deutscher Wetterdienst*
Participant:	**DE-DWD-Hohenpeißenberg**
Candidate:	
Counter (SN):	TSI CPC Model 3776; SN: 70927167
Location of the quality assurance:	TROPOS Leipzig, lab 130
Comparison period:	October 23, 2018
Last Intercomparison (with Project No.):	
TROPOS Reference Instrument:	Electrometer: TSI model 3068B #70838596, Last calibration in September 2018
Additional Equipment:	Bubble flow meter 'Gilibrator', Gilian (Sensidyne) #1711008-S, Last calibration in November 2017

Summary of Intercomparison

Status:
The candidate passed the quality standards of ACTRIS and GAW. The candidate reached 100% efficiency at 40 nm. The Dp50 is at 2 nm. The CPC efficiency curve corresponds to the standard of ACTRIS and GAW.

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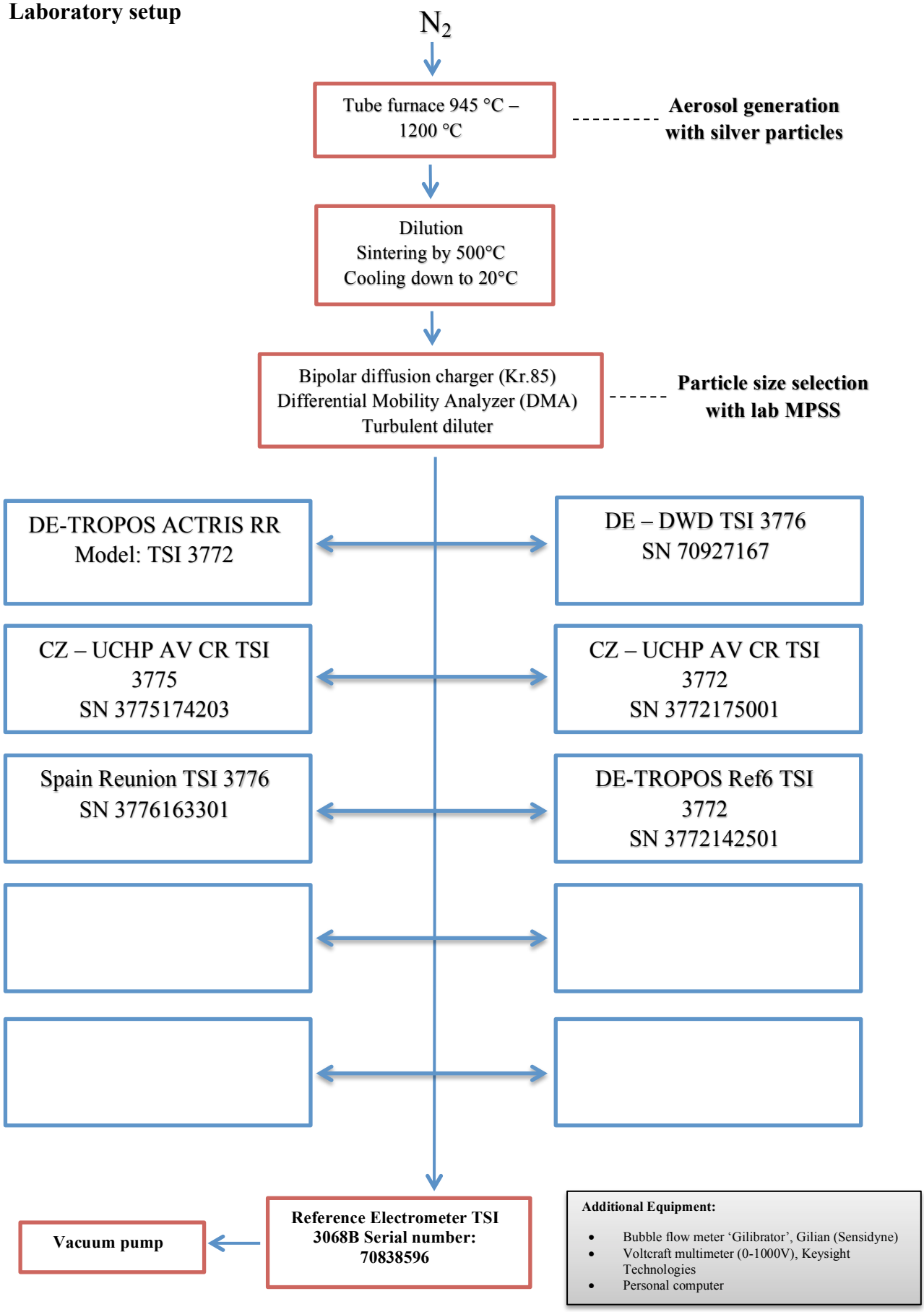
Laboratory setup



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Status of the candidate:

CPC status	Pre-Status		Final Status	
power/status	LED green	-	LED green	-
saturator temp		°C	39.0	°C
condenser temp		°C	10.0	°C
optics temp		°C	40.0	°C
cabinet temp		°C	31.9	°C
ambient pressure		kPa	99.2	kPa
orifice pressure		kPa	63.0	kPa
nozzle pressure		kPa	3.6	kPa
laser current		mA	27	mA
liquid level		-	Full	-
Aerosol flow (l/min)		l/min	1.443 (50)	l/min

Special Information regarding to the Candidate:

Was it necessary to:	yes/no	information
do a second run	no	
clean the optics	no	checked
clean the nozzle	no	checked
clean the saturator	no	checked
change the wick	no	checked
change the laser	no	
change internal settings	no	

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CPC efficiency curve of the candidate: Status

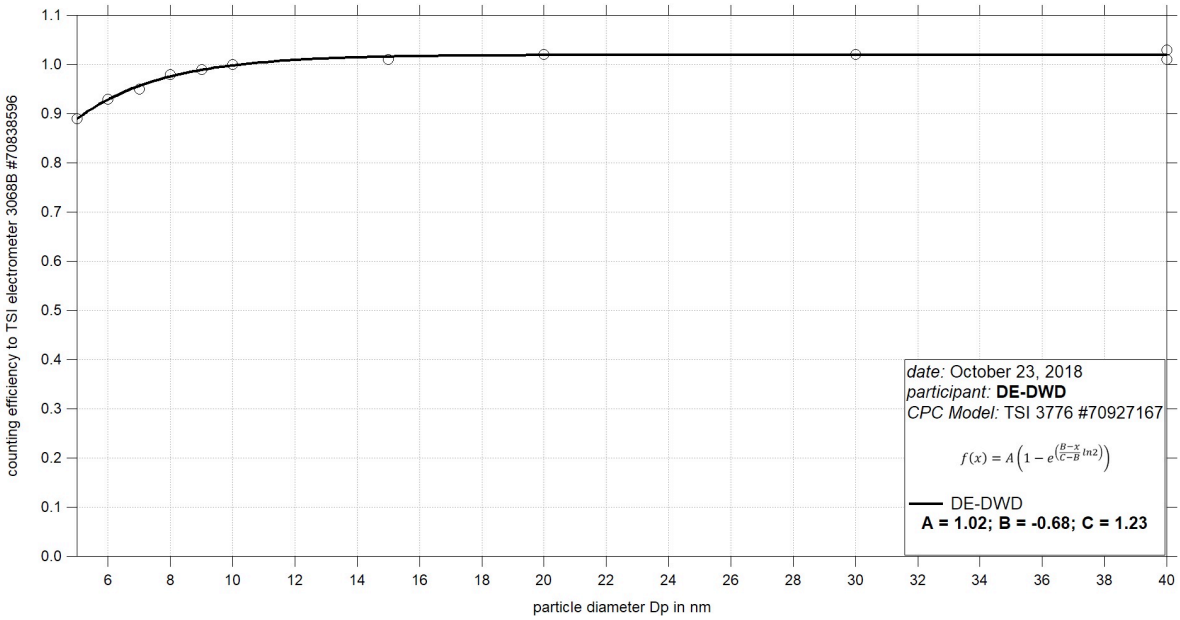

Figure 01: CPC efficiency curve. Based on Electrometer TSI 3068B. Serial number: 70838596

Measured data of the candidate: Status

Dp in nm	counting efficiency
40 nm (start)	***1.01***
30 nm	***1.02***
20 nm	***1.02***
15 nm	***1.01***
12 nm	**-**
10 nm	***1.00***
9nm	***0.99***
8 nm	***0.98***
7nm	***0.95***
6 nm	***0.93***
5 nm	***0.89***
40 nm (end)	***1.03***

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