





# **Calibration Certificate**

44281

#### **Applicant**

Address

Customer name

CCSTEC GesmbH Triesterstrasse 36 A-2512 Oeynhausen

Austria

Order reference applicant
Order reference TPF Control

CP0999 44280

#### Instrument information

Instrument type Manufacturer Model Serial number Tag Number Flow Calibrator Mesalabs Definer 220H 115673 C63

#### **Calibration method**

The temperature calibration is done by compairing the DUT reading to a PT-100 reading in Air. The pressure DUT is directly, connected to a pressure standard to compare pressure readings. The flow measurements are made in a parallel setup.

A flow source is connected to the inlet of the instrument to generate a flow.

#### **Environmental conditions**

The laboratory environment was maintained at  $21^{\circ}\text{C} \pm 2^{\circ}\text{C}$  and  $40\%\text{rh} \pm 20\%\text{rh}$ . The atmospheric pressure at the time of calibration was 1010 mBar.

### Date (or period) of calibration

2 January 2018

#### Results

The results of the calibration are presented on the following page(s).

# Uncertainty

The reported expanded uncertainty is based on the standard uncertainty of the measurement multiplied by a coverage factor k, such that the coverage probability corresponds to approximately 95%.

The standard uncertainty of measurement has been determined in accordance with EA-4/02.

#### Traceability

The measurements have been executed using standards for which the traceability to (inter)national standards has been demonstrated towards the RvA.

# Date

2 January 2018

## Calibration Technician

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**Bart Vissers** 

Technical Manager

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This certificate is issued under the provision that the Raad voor Accreditatie does not assume any liability.





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# Instrument specification [ Device Under Test ]

Qmax : Reference conditions :

30000 sccm

21.1 °C & 1013.25 mBar

Serial number Tag Number 115673 C63

# **Calibration conditions**

Calibration gas :

Air

#### **Calibration results**

Instrument reading	Reference	Deviation (ERROR)			Uncertainty
Flow [sccm]	Flow [sccm]	Of rate [%]	DUT- REF [sccm]	Limit [%]	Calibration [%]
303.39	303.07	0.11	0.32	1.00	0.18
5001.6	5023.1	-0.43	-21.50	1.00	0.18
29894	29968	-0.25	-74.00	1.00	0.18
Temperature [°C]	Temperature [°C]	Of rate [%]	DUT - REF [°C]	Limit [°C]	Calibration [°C]
21.4	21.5	-0.47	-0.1	0.8	0.4
Pressure [mmHg]	Pressure [mmHg]	Of rate [%]	DUT- REF [mmHg]	Limit [mmHg]	Calibration [mmHg]
756	757	-0.13	-1.0	3.5	3

#### Note

1 The deviation is determined by :

Deviation =

Instrument reading - Reference

Reference

\* 100 %

2 Calibrations are performed at mentioned pressure and temperature conditions. Reference temperatues are defined according the ITS-90.