

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-K-15140-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 04.11.2020

Date of issue: 23.11.2020

Holder of certificate:

**Deutsche WindGuard Wind Tunnel Services GmbH
Oldenburger Str. 65, 26316 Varel**

Calibration in the fields:

Fluid quantities

- **Velocity of gases**

The management system requirements in DIN EN ISO/IEC 17025 are written in language relevant to operations of calibration laboratories and operate generally in accordance with the principles of DIN EN ISO 9001.

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Velocity of gases Absolute value of flow vector Anemometer	0.5 m/s to 38 m/s	ISO 16622:2002 ISO 17713-1:2007 VA Calibration of flow sensors (D5831 Version 15)	0.4 %, but not less than 0.040 m/s	Wind tunnel: Type Göttingen Nozzle: 1.0 m x 1.0 m, up to 30 m/s additional nozzle: 1.2 m x 1.2 m Anemometer inclination: 0°
	4 m/s to 16 m/s	IEC 61400-12-1:2017		
	0.5 m/s to 38 m/s	ISO 16622:2002 ISO 17713-1:2007 VA Calibration of wind sensors at non-horizontal flow (D5832 Version 4)	1,3 %, but not less than 0.040 m/s	Wind tunnel: Type Göttingen Nozzle: 1.0 m x 1.0 m, up to 30 m/s additional nozzle: 1.2 m x 1.2 m Anemometer inclination at non horizontal flow: -31° to 31°
	4 m/s to 16 m/s	IEC 61400-12-1:2017		
Direction of flow vector Anemometer, wind direction sensors	0 to 360°	IEC 61400-12-1:2017 ISO 16622:2002 ISO 17713-1:2007 VA Calibration of wind direction sensors (VA D5836 Version 5)	0.8°	Wind tunnel: Type Göttingen Nozzle: 1.0 m x 1.0 m

Abbreviations used:

CMC	Calibration and measurement capabilities (Kalibrier- und Messmöglichkeiten)
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
VA	In-house procedure of Deutsche WindGuard Wind Tunnel Services GmbH

¹⁾ The expanded uncertainties according to EA-4/02 M:2013 are part of CMC and are the best measurement uncertainties within accreditation. They have a coverage probability of approximately 95 % and have a coverage factor of $k = 2$ unless stated otherwise. Uncertainties without unit are relative uncertainties referring to the measurement value unless stated otherwise.