DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Accreditation Certificate** that the calibration laboratory

Weiss Technik GmbH
Greizer Straße 41-49, 35447 Reiskirchen

meets the requirements according to DIN EN ISO/IEC 17025:2018 for the conformity assessment activities listed in the annex to this certificate. This includes additional existing legal and normative requirements for the calibration laboratory, including those in relevant sectoral schemes, provided they are explicitly confirmed in the annex to this certificate.

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

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This accreditation certificate only applies in connection with the notices of 09.02.2024 with accreditation number D-K-20681-02.
It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 5 pages.

Registration number of the accreditation certificate: **D-K-20681-02-00**

In Vertretung Klaus Umbach

Berlin, 09.02.2024 — Dipl.-Wirtsch.-Ing (BA) Tim Harnisch, Head of Technical Unit

Translation issued: 09.02.2024 — Dipl.-Wirtsch.-Ing. (BA) Tim Harnisch, Head of Technical Unit

The certificate together with the annex reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

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Europa-Allee 52
60327 Frankfurt am Main

Office Braunschweig
Bundesallee 100
38116 Braunschweig

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-K-20681-02-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **09.02.2024**

Date of issue: 09.02.2024

Holder of accreditation certificate:

Weiss Technik GmbH
Greizer Straße 41-49, 35447 Reiskirchen

with the location

Weiss Technik GmbH
Beethovenstraße 34, 72336 Balingen

The calibration laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The calibration laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

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

Thermodynamic quantities

Temperature quantities

- **Resistance thermometers**
- **Direct reading thermometers**
- **Temperature tranmitters, data loggers**
- **Climatic chambers (temperature)** [a)]

Humidity quantites

- **Devices for absolute humidity**
- **Devices for relative humidity**
- **Climatic chambers (humidity)** [a)]

[a)] **also on-site calibration**

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de.

Within the measurands/calibration items marked with *), the calibration laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use calibration standards or equivalent calibration procedures listed here with different issue dates.

The calibration laboratory maintains a current list of all calibration standards / equivalent calibration procedures within the flexible scope of accreditation.

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Temperature	−80 °C to −40 °C	DKD-R 5-1:2018 in liquid baths	0.04 K	Comparison with reference thermometers
Resistance thermometers; direct reading thermometers, measuring transducers and data loggers with resistance sensor *)	> −40 °C to 0 °C		0.04 K	
	> 0 °C to 100 °C		0.04 K	
	> 100 °C to 200 °C		0.06 K	
	100 °C to 350 °C	DKD-R 5-1:2018 in dry block calibrators	0.15 K	
	−80 °C to −40 °C	DKD-R 5-1:2018 in climatic chambers (measurement in air)	0.12 K	
	> −40 °C to 0 °C		0.10 K	
	> 0 °C to 100 °C		0.08 K	
	> 100 °C to 150 °C		0.12 K	
	> 150 °C to 200 °C		0.18 K	
Direct reading thermometers, measuring transducers and data loggers with base metal thermo-couple sensor *)	−80 °C to 100 °C	DKD-R 5-3:2018 in liquid baths or in climatic chambers (measurement in air)	0.25 K	Comparison with reference thermometers
	> 100 °C to 200 °C		0.35 K	
	> 100 °C to 200 °C	DKD-R 5-3:2018 in dry block calibrators	0.35 K	
	> 200 °C to 350 °C		0.45 K	
Measuring locations in climatic chambers with air circulation *)	−80 °C to −40 °C	DKD-R 5-7:2018 method C measurement in air	0.15 K	Comparison with reference thermometers
	> −40 °C to 0 °C		0.12 K	
	> 0 °C to 100 °C		0.08 K	
	> 100 °C to 150 °C		0.13 K	
	> 150 °C to 200 °C		0.20 K	
	> 200 °C to 300 °C		0.33 K	
Climatic chambers with air circulation *)	−80 °C to −40 °C	DKD-R 5-7:2018 method A and B measurement in air	0.5 K	
	> −40 °C to 0 °C		0.4 K	
	> 0 °C to 100 °C		0.2 K	
	> 100 °C to 150 °C		0.4 K	
	> 150 °C to 200 °C		0.6 K	
	> 200 °C to 300 °C		1.7 K	
Measuring locations in climatic chambers without air circulation *)	−80 °C to −40 °C	DKD-R 5-7:2018 method C measurement in air	0.5 K	
	> −40 °C to 0 °C		0.4 K	
	> 0 °C to 100 °C		0.3 K	
	> 100 °C to 150 °C		0.4 K	
	> 150 °C to 200 °C		0.5 K	
	> 200 °C to 300 °C		0.8 K	
Climatic chambers without air circulation *)	−80 °C to −40 °C	DKD-R 5-7:2018 method A and B measurement in air	3.0 K	
	> −40 °C to 0 °C		2.0 K	
	> 0 °C to 100 °C		2.2 K	
	> 100 °C to 150 °C		3.0 K	
	> 150 °C to 200 °C		3.5 K	
	> 200 °C to 300 °C		5.0 K	

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Dew point temperature Dew point hygrometers	−30 °C to 95 °C	PB-D-000014, Rev. 8 in climatic chambers	0.1 K	Comparison with reference dew point hygrometers
Relative humidity Measuring devices for direct recording of the relative humidity, no psychrometers*)	5 % to 30 %	DKD-R 5-8:2019 in climatic chambers air temperature: 5 °C to 140 °C (max 95 °C dew point temperature)	0.4 %	The humidity reference value is calculated from the dew point and the air temperature, each measured with reference instruments. Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % to 60 %		0.6 %	
	> 60 % to 98 %		0.8 %	
Electrical psychrometers	5 % to 30 %	PB-D-000015, Rev. 9 in climatic chambers air temperature: 5 °C to 140 °C (max 95 °C dew point temperature)	0.4 %	
	> 30 % to 60 %		0.6 %	
	> 60 % to 98 %		0.8 %	
Measuring locations in climatic chambers with air circulation *)	5 % to 30 %	DKD-R 5-7:2018 method C air temperature: 5 °C to 140 °C (max 95 °C dew point temperature)	0.4 %	The humidity reference value is calculated from the dew point and the air temperature, each measured with reference instruments. Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % to 60 %		0.6 %	
	> 60 % to 98 %		0.8 %	
Climatic chambers with air circulation *)	5 % to 30 %	DKD-R 5-7:2018 method A and B air temperature: 5 °C to 140 °C (max 95 °C dew point temperature)	0.5 %	
	> 30 % to 60 %		0.7 %	
	> 60 % to 98 %		0.9 %	
Measuring locations in climatic chambers with air circulation *)	10 % to 30 %	DKD-R 5-7:2018 method C air temperature: 10 °C to 95 °C	1.0 %	Measurement with reference aspiration psychrometers. Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % to 60 %		1.2 %	
	> 60 % to 98 %		1.4 %	
Climatic chambers with air circulation *)	10 % to 30 %	DKD-R 5-7:2018 method A and B air temperature: 10 °C to 95 °C	1.1 %	
	> 30 % to 60 %		1.3 %	
	> 60 % to 98 %		1.6 %	

DAkkS Deutsche Akkreditierungsstelle

On-site Calibration

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Temperature				
Measuring locations in climatic chambers with air circulation *)	−80 °C to −40 °C	DKD-R 5-7:2018 method C measurement in air	0.15 K	Comparison with reference thermometers
	> −40 °C to 0 °C		0.12 K	
	> 0 °C to 100 °C		0.08 K	
	> 100 °C to 150 °C		0.13 K	
	> 150 °C to 200 °C		0.20 K	
	> 200 °C to 300 °C		0.33 K	
Climatic chambers with air circulation *)	−80 °C to −40 °C	DKD-R 5-7:2018 method A and B measurement in air	0.5 K	
	> −40 °C to 0 °C		0.4 K	
	> 0 °C to 100 °C		0.2 K	
	> 100 °C to 150 °C		0.4 K	
	> 150 °C to 200 °C		0.6 K	
	> 200 °C to 300 °C		1.7 K	
Measuring locations in climatic chambers without air circulation *)	−80 °C to −40 °C	DKD-R 5-7:2018 method C measurement in air	0.5 K	
	> −40 °C to 0 °C		0.4 K	
	> 0 °C to 100 °C		0.3 K	
	> 100 °C to 150 °C		0.4 K	
	> 150 °C to 200 °C		0.5 K	
	> 200 °C to 300 °C		0.8 K	
Climatic chambers without air circulation *)	−80 °C to −40 °C	DKD-R 5-7:2018 method A and B measurement in air	3.0 K	
	> −40 °C to 0 °C		2.0 K	
	> 0 °C to 100 °C		2.2 K	
	> 100 °C to 150 °C		3.0 K	
	> 150 °C to 200 °C		3.5 K	
	> 200 °C to 300 °C		5.0 K	

On-site Calibration

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Relative humidity				
Measuring locations in climatic chambers with air circulation *)	5 % to 30 %	DKD-R 5-7:2018 method C air temperature: 5 °C to 140 °C (max 95 °C dew point temperature)	0.4 %	The humidity reference value is calculated from the dew point and the air temperature, each measured with reference instruments. Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % to 60 %		0.6 %	
	> 60 % to 98 %		0.8 %	
Climatic chambers with air circulation *)	5 % to 30 %	DKD-R 5-7:2018 method A and B air temperature: 5 °C to 140 °C (max 95 °C dew point temperature)	0.5 %	
	> 30 % to 60 %		0.7 %	
	> 60 % to 98 %		0.9 %	
Measuring locations in climatic chambers with air circulation *)	10 % to 30 %	DKD-R 5-7:2018 method C air temperature: 10 °C to 95 °C	1.0 %	Measurement with reference aspiration psychrometers. Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % to 60 %		1.2 %	
	> 60 % to 98 %		1.4 %	
Climatic chambers with air circulation *)	10 % to 30 %	DKD-R 5-7:2018 method A and B air temperature: 10 °C to 95 °C	1.1 %	
	> 30 % to 60 %		1.3 %	
	> 60 % to 98 %		1.6 %	

Abbreviations used:

CMC	Calibration and measurement capabilities
DIN	Deutsches Institut für Normung e.V. – German institute for standardization
DKD-R	Calibration Guideline of Deutscher Kalibrierdienst (DKD), published by Physikalisch-Technische Bundesanstalt
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
PB-D	Process description of Weiss Technik GmbH