

Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV

Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition

Accreditation



The Deutsche Akkreditierungsstelle GmbH attests that the calibration laboratory

Weiss Technik GmbH
Beethovenstraße 34, 72336 Balingen

is competent under the terms of DIN EN ISO/IEC 17025:2018 to carry out calibrations in the following fields:

Thermodynamic quantities

Temperature quantities

- Resistance thermometers
- Direct reading thermometers
- Temperature transmitters, data loggers
- Climatic chambers (temperature) ^{a)}

Humidity quantities

- Devices for absolute humidity
- Devices for relative humidity
- Climatic chambers (humidity) ^{a)}

^{a)} also on-site calibration

The accreditation certificate shall only apply in connection with the notice of accreditation of 14.04.2022 with the accreditation number D-K-20681-02. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 5 pages.

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

Berlin,

14.04.2022


Dipl.-Wirtsch.-Ing. (BA)

Tim Harnisch

Technical Unit

Translation issued:

14.04.2022

by proxy

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 may be found respectively in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH <https://www.dakks.de/en/content/accredited-bodies-dakks>.

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

See notes overleaf.

Deutsche Akkreditierungsstelle GmbH

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The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkKS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.

No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkKS.

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). 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 Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.

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 GmbH

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

Valid from: 14.04.2022

Date of issue 14.04.2022

Holder of certificate:

Weiss Technik GmbH
Beethovenstraße 34, 72336 Balingen

Calibration in the fields:

Thermodynamic quantities

Temperature quantities

- Resistance thermometers
- Direct reading thermometers
- Temperature transmitters, data loggers
- Climatic chambers (temperature) ^{a)}

Humidity quantities

- Devices for absolute humidity
- Devices for relative humidity
- Climatic chambers (humidity) ^{a)}

^{a)} also on-site calibration

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.

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

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 may be found respectively in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH <https://www.dakks.de/en/content/accredited-bodies-dakks>.

Abbreviations used: see last page

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

Annex to the accreditation certificate D-K-20681-02-00

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Temperature Resistance thermometers; direct reading thermometers, measuring transducers and data loggers with resistance sensor *)	-80 °C to -40 °C	in liquid bath DKD-R 5-1:2018	0,10 K	Comparison with reference thermometer
	> -40 °C to 0 °C		0,06 K	
	> 0 °C to 100 °C		0,04 K	
	> 100 °C to 200 °C		0,06 K	
	100 °C to 350 °C	in dry block calibrator DKD-R 5-1:2018	0,15 K	
	-80 °C to -40 °C	in climatic chamber (measurement in air) DKD-R 5-1:2018	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 thermocouple sensor *)	- 80 °C to 100 °C	in liquid bath or in climatic chamber (measurement in air) DKD-R 5-3:2018	0,25 K	Comparison with reference thermometer
	> 100 °C to 200 °C		0,35 K	
	> 100 °C to 200 °C	in dry block calibrator DKD-R 5-3:2018	0,35 K	
	> 200 °C to 350 °C		0,45 K	
Measuring locations in climatic chambers with air circulation *)	-80 °C to -40 °C	measurement in air DKD-R 5-7:2018 Method C	0,15 K	Comparison with reference thermometer
	> -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	measurement in air DKD-R 5-7:2018 Method A and B	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	measurement in air DKD-R 5-7:2018 Method C	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	measurement in air DKD-R 5-7:2018 Method A and B	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	

¹⁾ The expanded uncertainties according to EA-4/02 M:2022 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.

Annex to the accreditation certificate D-K-20681-02-00
Permanent Laboratory
Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Dew point temperature				
Dew point hygrometers	-30 °C to 95 °C	in climatic chamber PB-D-000014, Rev. 8	0,1 K	Comparison with reference dew point hygrometer
Relative humidity				
Measuring devices for direct recording of the relative humidity, no psychrometers	5 % to 30 %	in climatic chamber air temperature: 5 °C to 140 °C (max 95 °C dew point temperature) DKD-R 5-8:2019	0,4 %	The humidity reference value is calculated from the dew point and air temperature, each measured with reference instruments.
	> 30 % to 60 %		0,6 %	
	> 60 % to 98 %		0,8 %	
Electrical psychrometers	5 % bis 30 %	in climatic chamber air temperature: 5 °C to 140 °C (max 95 °C dew point temperature) PB-D-000015, Rev. 9	0,4 %	Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % bis 60 %		0,6 %	
	> 60 % bis 98 %		0,8 %	
Measuring locations in climatic chambers with air circulation *)	5 % to 30 %	air temperature: 5 °C to 140 °C (max 95 °C dew point temperature) DKD-R 5-7:2018 Method C	0,4 %	The humidity reference value is calculated from the dew point and air temperature, each measured with reference instruments.
	> 30 % to 60 %		0,6 %	
	> 60 % to 98 %		0,8 %	
Climatic chambers with air circulation *)	5 % to 30 %	air temperature: 5 °C to 140 °C (max 95 °C dew point temperature) DKD-R 5-7:2018 Method A and B	0,8 %	Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % to 60 %		1,2 %	
	> 60 % to 98 %		1,6 %	
Measuring locations in climatic chambers with air circulation *)	10 % to 30 %	air temperature: 10 °C to 95 °C DKD-R 5-7:2018 Method C	1,0 %	Measurement with reference aspiration psychrometer. 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 %	air temperature: 10 °C to 95 °C DKD-R 5-7:2018 Method A and B	1,6 %	
	> 30 % to 60 %		2,0 %	
	> 60 % to 98 %		2,4 %	

¹⁾ The expanded uncertainties according to EA-4/02 M:2022 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.

On-site Calibration

Calibration and Measurement Capabilities (CMC)				
Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Temperature Measuring locations in climatic chambers with air circulation *)	-80 °C to -40 °C	measurement in air DKD-R 5-7:2018 Method C	0,15 K	Comparison with reference thermometer
	> -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	measurement in air DKD-R 5-7:2018 Method A and B	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	measurement in air DKD-R 5-7:2018 Method C	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	measurement in air DKD-R 5-7:2018 Method A and B	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	

¹⁾ The expanded uncertainties according to EA-4/02 M:2022 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.

Annex to the accreditation certificate D-K-20681-02-00
On-site Calibration

Calibration and Measurement Capabilities (CMC)				
Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Relative humidity Measuring locations in climatic chambers with air circulation *)	5 % to 30 %	air temperature: 5 °C to 140 °C (max 95 °C dew point temperature) DKD-R 5-7:2018 Method C	0,4 %	The humidity reference value is calculated from the dew point and air temperature, each measured with reference instruments.
	> 30 % to 60 %		0,6 %	
	> 60 % to 98 %		0,8 %	
Climatic chambers with air circulation *)	5 % to 30 %	air temperature: 5 °C to 140 °C (max 95 °C dew point temperature) DKD-R 5-7:2018 Method A and B	0,8 %	Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % to 60 %		1,2 %	
	> 60 % to 98 %		1,6 %	
Measuring locations in climatic chambers with air circulation *)	10 % to 30 %	air temperature: 10 °C to 95 °C DKD-R 5-7:2018 Method C	1,0 %	Measurement with reference aspiration psychrometer.
	> 30 % to 60 %		1,2 %	
	> 60 % to 98 %		1,4 %	Measurement uncertainty expressed as the absolute value of the relative humidity
Climatic chambers with air circulation *)	10 % to 30 %	air temperature: 10 °C to 95 °C DKD-R 5-7:2018 Method A and B	1,6 %	Measurement uncertainty expressed as the absolute value of the relative humidity
	> 30 % to 60 %		2,0 %	
	> 60 % to 98 %		2,4 %	

Abbreviations used:

CMC	Calibration and measurement capabilities
DKD-R	Calibration Guideline of Deutscher Kalibrierdienst (DKD), published by Physikalisch-Technische Bundesanstalt
PB-D	Process description of Weiss Technik GmbH

¹⁾ The expanded uncertainties according to EA-4/02 M:2022 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.