Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-K-20746-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **03.12.2024**

Date of issue: 03.12.2024

Holder of accreditation certificate:

ELLAB GmbH
An der Autobahn 5, 27404 Bockel

with the location

ELLAB GmbH
An der Autobahn 5, 27404 Bockel

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.

Calibration in the fields:

Thermodynamic quantities

Temperature quantities

- **Direct reading thermometers**
- **Temperature transmitters, data loggers**

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.

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.

Abbreviations used: see last page

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Temperature Dataloggers with resistance sensor	–196 °C	DKD-R 5-1:2023 in liquid Nitrogen	35 mK	Comparison with standard resistance thermometer
	0 °C	DKD-R 5-1:2023 in ice bath	20 mK	
	–100 °C to 140 °C	DKD-R 5-1:2023 in dry block calibrator	35 mK	
	> 140 °C to 240 °C		80 mK	
	> 240 °C to 400 °C		0,15 K	
	–90 °C to 140 °C	DKD-R 5-1:2023 in liquid bath	25 mK	
Direct reading thermometers with resistance sensor	–196 °C	DKD-R 5-1:2023 in liquid Nitrogen, with compensation block	12 mK	
	0 °C	DKD-R 5-1:2023 in ice bath	5 mK	
	–80 °C to 250 °C	DKD-R 5-1:2023 in liquid bath, with compensation block	10 mK	
	> 250 °C to 420 °C		12 mK	
	–90 °C to 150 °C	DKD-R 5-1:2023 in liquid bath	25 mK	
	–100 °C to –80 °C	DKD-R 5-1:2023 in dry block calibrator	80 mK	
	> –80 °C to –40 °C		45 mK	
	> –40 °C to 150 °C		40 mK	
	> 150 °C to 240 °C		65 mK	
	> 240 °C to 420 °C		0,11 K	
Direct reading thermometers with base metal thermocouple sensor	–196 °C	DKD-R 5-3:2018 in liquid nitrogen	0,20 K	
	0 °C	DKD-R 5-3:2018 in ice bath	0,20 K	
	–100 °C to 140 °C	DKD-R 5-3:2018 in dry block calibrator	0,20 K	
	> 140 °C to 240 °C		0,25 K	
	> 240 °C to 400 °C		0,45 K	
	–90 °C to 150 °C	DKD-R 5-3:2018 in liquid bath	0,20 K	

Abbreviations used:

CMC	Calibration and measurement capabilities
DKD-R	Calibration Guideline of Deutscher Kalibrierdienst (DKD), published by Physikalisch-Technische Bundesanstalt (PTB)

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