

Accreditation

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

**Laboratory of National Standards of Center for Standardization and Metrology under the Ministry of Economy and Commerce of the Kyrgyz Republic
197, Panfilov street, Bishkek, 720040, Kyrgyz Republic**

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 confirm generally with the principles of DIN EN ISO 9001.

This accreditation was issued 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 with accreditation number D-K-20448-01 is valid to 14.03.2027. It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 6 pages.

Registration number of the accreditation certificate: **D-K-20448-01-00**



Berlin, 18.10.2023

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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.

The accreditation certificate shall be recognised as equivalent 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-20448-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 18.10.2023 **Valid to:** 14.03.2027
Date of issue: 18.10.2023

Holder of accreditation certificate:

**Laboratory of National Standards of Center for Standardization and Metrology under
the Ministry of Economy and Commerce of the Kyrgyz Republic
197, Panfilov street, Bishkek, 720040, Kyrgyz Republic**

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 confirm generally with the principles of DIN EN ISO 9001.

Calibrations in the fields:

Mechanical quantities

- Mass (mass standards)
- Pressure
- Weighing instruments ^{a)}

Chemical and medical quantities

- Chemical analysis, reference materials**
- Volume of liquids

Thermodynamic quantities

Temperature quantities

- Resistance thermometers
- Liquid in glass thermometers
- Thermocouples
- Direct reading thermometers

Humidity quantities

- Devices for relative humidity

^{a)} only 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>.

Annex to the Accreditation Certificate D-K-20448-01-00

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
Mass standard Conventional Mass	1 mg, 2 mg, 5 mg 10 mg, 20 mg	OIML R 111-1: 2004	0.003 mg	For weight pieces according to OIML recommendation R 111-1:2004, Class E ₂
	50 mg		0.004 mg	
	100 mg		0.005 mg	
	200 mg		0.006 mg	
	500 mg		0.008 mg	
	1 g		0.010 mg	
	2 g		0.012 mg	
	5 g		0.016 mg	
	10 g		0.020 mg	
	20 g		0.025 mg	
	50 g		0.03 mg	
	100 g		0.05 mg	
	200 g		0.10mg	
	500 g		0.25mg	
	1 kg		0.5 mg	
	2 kg		3.0 mg	For weight pieces according to OIML recommendation R 111-1:2004, Class F ₁
	5 kg		8.0 mg	
	10 kg		16 mg	
	20 kg		30 mg	

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Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Conventional Mass	> 1 mg to 20 mg	OIML R 111-1: 2004	0.003 mg	For free nominal values
	> 20 mg to 50 mg		0.004 mg	
	> 50 mg to 100 mg		0.005 mg	
	> 100 mg to 200 mg		0.006 mg	
	> 200 mg to 500 mg		0.008 mg	
	> 500 mg to 1 g		0.010 mg	
	> 1 g to 2 g		0.012 mg	
	> 2 g to 5 g		0.016 mg	
	> 5 g to 10 g		0.020 mg	
	> 10 g to 20 g		0.025 mg	
	> 20 g to 50 g		0.03 mg	
	> 50 g to 100 g		0.05 mg	
	> 100 g to 200 g		0.10 mg	
	> 200 g to 500 g		0.25 mg	
	> 500 g to 1 kg		0.5 mg	
	> 1 kg to 2 kg		3.0 mg	
	> 2 kg to 5 kg		8.0 mg	
	> 5 kg to 10 kg		16 mg	
> 10 kg to 20 kg	30 mg			

Annex to the Accreditation Certificate D-K-20448-01-00
Permanent Laboratory
Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Temperature quantities Resistance thermometers	5 °C to 50 °C	DKD-R 5-1:2018	15 mK	Water bath
	> 50 °C to 80 °C		30 mK	
	50 °C to 150 °C		20 mK	Oil bath
	> 150 °C to 250 °C		35 mK	
	-50 °C to -20 °C		30 mK	Low temperature bath
	> -20 °C to 0 °C		15 mK	
	> 0 °C to 50 °C		15 mK	Dewar vessel
	0 °C		10 mK	
	50 °C to 220 °C		0.25 K	Dry-block-calibrator
	> 220 °C to 660 °C		0.5 K	
Direct reading thermometers with resistance sensor	5 °C to 50 °C	DKD-R 5-1:2018 Out-mode	15 mK	Water bath
	> 50 °C to 80 °C		30 mK	
	50 °C to 150 °C		25 mK	Oil bath
	> 150 °C to 250 °C		35 mK	
	-50 °C to -20 °C		30 mK	Low temperature bath
	> -20 °C to 0 °C		15 mK	
	> 0 °C to 50 °C		15 mK	Dewar vessel
	0 °C		10 mK	
	> 5 °C to 35 °C		0.1 K	Temperature/humidity generator
	> 35 °C to 70 °C		0.1 K	
5 °C to 70 °C	DKD-R 5-1:2018 In-mode	0.2 K	Climatic chamber	
Liquid-in-glass thermometers	5 °C to 50 °C	PTB testing instructions "Liquid-in-glass thermometers":1999	20 mK	Water bath
	> 50 °C to 80 °C		50 mK	
	50 °C to 150 °C		40 mK	Oil bath
	> 150 °C to 250 °C		70 mK	
	-50 °C to -35 °C		0.10 K	Low temperature bath
	> -35 °C to -20 °C		55 mK	
	> -20 °C to 0 °C		30 mK	Dewar vessel
	> 0 °C to 50 °C		20 mK	
0 °C	10 mK			
Thermocouples, direct reading thermometers with thermocouple sensor	300 °C to 660 °C	EURAMET cg-8, Version 3.1	0.74 K	Furnace
	> 660 °C to 1100 °C		1.5 K	

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Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Humidity quantities Direct reading hygrometers for relative humidity, except psychrometers	15 % to 90 %	Temperature 20 °C DKD-R 5-8:2019	1.5 %	Climatic chamber Measurement uncertainty is an absolute value of the relative humidity
Pressure Negative and positive Gauge pressure p_e	-0.8 bar to 0.0 bar	DKD-R 6-1:2014, EURAMET Calibration Guide No. 17 Version 3.0	1.0 mbar	Pressure medium: Gas
	> 0 bar to 20 bar		2.5 mbar	
	> 20 bar to 34 bar		4.0 mbar	
Positive Gauge pressure p_e	1 bar to 70 bar	EURAMET Calibration Guide No. 3 Version 1.0	$10 \text{ mbar} + 8.0 \cdot 10^{-5} \cdot p_e$	Pressure medium: Oil
	> 70 bar to 700 bar		$15 \text{ mbar} + 9.0 \cdot 10^{-5} \cdot p_e$	Reference value ($p_e = 0 \text{ bar}$)
Pressure Balance	1 bar to 70 bar	EURAMET Calibration Guide No. 3 Version 1.0	$1.5 \text{ mbar} + 8.4 \cdot 10^{-5} \cdot p_e$	Pressure medium: hydraulic mineral oil p_e - measured value
Absolute pressure p_{ab}	0 bar to 20 bar	DKD-R 6-1:2014, EURAMET Calibration Guide No. 17 Version 3.0	1.0 mbar	Pressure medium: Gas
	> 20 bar to 70 bar		$10 \text{ mbar} + 8.0 \cdot 10^{-5} \cdot p_{abs}$	
	> 4 bar to 700 bar		$15 \text{ mbar} + 9.0 \cdot 10^{-5} \cdot p_{abs}$	Pressure medium: Oil to be measured as $p_{abs} = p_e + p_{amb}$ p_{amb} : atmospheric pressure
Volume of liquids Volume Piston pipettes (fixed and variable volume) and hand dispensers	1 μL to < 10 μL	Gravimetric method according to ISO 8655 part 6:2002 (withdrawn) and DKD-R 8-1:2011	0.5 %	
	10 μL to < 100 μL		0.20 %	
	100 μL to < 10 mL		0.15 %	
	10 mL to 100 mL		0.20 %	
Laboratory glassware adjusted as to deliver "Ex"	0.1 mL to < 1 mL	Gravimetric method according to ISO 4787:2021	0.4 %	
	1 mL to < 10 mL		0.07 %	
	10 mL to 100 mL		0.03 %	
Laboratory glassware adjusted as to contain "In"	1 mL to < 10 mL	Gravimetric method according to ISO 4787:2021	0.16 %	
	10 mL to < 100 mL		0.03 %	
	100 mL to 1 L		0.02 %	

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On-site Calibration

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Weighing instruments Non-automatic electronic weighing instruments	up to 600 g	EURAMET Calibration Guide No. 18 Version 4.0	$2.0 \cdot 10^{-6}$	with weights according to OIML R 111, Class E ₂
	up to 120 kg		$7.0 \cdot 10^{-6}$	with weights according to OIML R 111, Class F ₁

Abbreviations used:

DKD-R	Guideline of Deutscher Kalibrierdienst (DKD), published by Physikalisch-Technische Bundesanstalt (PTB)
EURAMET	European Association of National Metrology Institutes
OIML	International Organization of Legal Metrology
ISO	International Organization for Standardization