

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-K-20448-01-00 according to ISO/IEC 17025:2017

Period of validity: 15.03.2022 to 14.03.2027

Date of issue: 15.03.2022

Holder of certificate:

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

Calibrations in the fields:

Mechanical quantities

- Mass (mass standards class E₂ and worse)
- 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

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 ISO/IEC 17025 are written in language relevant to 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>*

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	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	
Conventional Mass *)	> 1 mg to 20 mg		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		

¹⁾ The expanded uncertainties according to EA-4/02 M:2021 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.

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	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		
> 220 °C to 660 °C	0.5 K	Dry-block-calibrator			
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		
	> 35 °C to 70 °C		0.1 K	Temperature/humidity generator	
	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
> 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, also direct reading *)	300 °C to 660 °C	EURAMET cg-8, Version 2.1	0.5 K	Furnace	
	> 660 °C to 1100 °C		0.7 K		

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Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	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		10 mbar + $8.0 \cdot 10^{-5} \cdot p_e$	Pressure medium: Oil
	> 70 bar to 700 bar	15 mbar + $9.0 \cdot 10^{-5} \cdot p_e$	Reference value ($p_e = 0$ 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
Volume of liquids Volume Piston pipettes (fixed and variable volume) and hand dispensers *)	1 μL to < 10 μL	Gravimetric method according to ISO 8655:2002 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		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 ¹⁾	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

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