

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-K-20451-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 04.12.2020

Date of issue 04.12.2020

Holder of certificate:

Minebea Intec Bovenden GmbH & Co. KG
Leinetal 2, 37120 Bovenden

Calibration in the fields:

- mechanical quantities**
- Weighing instruments ^{a)}
- mass (weights) ^{b)}

^{a)} only on-site-calibrations

^{b)} also on-site-calibrations

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.

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Masse Conventional mass / Mass standards	1 mg	OIML R 111-1: 2004	$6,0 \cdot 10^{-2}$ mg	for fixed nominal values
	2 mg		$6,0 \cdot 10^{-2}$ mg	
	5 mg		$6,0 \cdot 10^{-2}$ mg	for weight pieces according to OIML R 111-1: 2004 to the class M ₁
	10 mg		$8,0 \cdot 10^{-2}$ mg	
	20 mg		$1,0 \cdot 10^{-1}$ mg	
	50 mg		$1,2 \cdot 10^{-1}$ mg	
	100 mg		$1,6 \cdot 10^{-1}$ mg	
	200 mg		$2,0 \cdot 10^{-1}$ mg	
	500 mg		$2,5 \cdot 10^{-1}$ mg	
	1 g		0,3 mg	
	2 g		0,4 mg	
	5 g		0,5 mg	
	10 g		0,6 mg	
	20 g		0,8 mg	
	50 g		1,0 mg	
	100 g		1,6 mg	
	200 g		3,0 mg	
	500 g		8,0 mg	
	1 kg		16 mg	
	2 kg		30 mg	
	5 kg		80 mg	
	10 kg		0,16 g	
	20 kg		0,3 g	
	50 kg		0,8 g	
	100 kg		1,6 g	
	200 kg		3,0 g	
	500 kg		8,0 g	
	1000 kg		16 g	

¹⁾ The expanded uncertainties according to EA-4/02 M:2013 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.

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Calibration and Measurement Capabilities (CMC)				
Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Masse Conventional mass / Mass standards	> 1 mg bis 5 mg	OIML R 111-1: 2004	6,0·10 ⁻² mg	For free nominal values
	> 5 mg bis 10 mg		8,0·10 ⁻² mg	
	> 10 mg bis 20 mg		1,0·10 ⁻¹ mg	
	> 20 mg bis 50 mg		1,2·10 ⁻¹ mg	
	> 50 mg bis 100 mg		1,6·10 ⁻¹ mg	
	> 100 mg bis 200 mg		2,0·10 ⁻¹ mg	
	> 200 mg bis 500 mg		2,5·10 ⁻¹ mg	
	> 500 mg bis 1 g		0,3 mg	
	> 1 g bis 2 g		0,4 mg	
	> 2 g bis 5 g		0,5 mg	
	> 5 g bis 10 g		0,6 mg	
	> 10 g bis 20 g		0,8 mg	
	> 20 g bis 50 g		1,0 mg	
	> 50 g bis 100 g		1,6 mg	
	> 100 g bis 200 g		3,0 mg	
	> 200 g bis 500 g		8,0 mg	
	> 500 g bis 1 kg		16 mg	
	> 1 kg bis 2 kg		30 mg	
	> 2 kg bis 5 kg		80 mg	
	> 5 kg bis 10 kg		0,16 g	
	> 10 kg bis 20 kg		0,3 g	
	> 20 kg bis 50 kg		0,8 g	
	> 50 kg bis 60 kg		0,96 g	
	> 60 kg bis 100 kg		1,6 g	
	> 100 kg bis 200 kg		3,0 g	
	> 200 kg bis 500 kg		8,0 g	
	> 500 kg bis 1000 kg		16 g	

¹⁾ The expanded uncertainties according to EA-4/02 M:2013 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.

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On-site Calibration

Measurement quantity / Calibration item	Calibration and Measurement Capabilities (CMC)			Remarks
	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	
Weighing instruments nonautomatic weighing instruments	to 10 kg	EURAMET Calibration Guide No. 18 Version 4.0	$1 \cdot 10^{-6}$	with weights OIML R 111-1: 2004 according to the class E ₂
	to 305 kg		$1 \cdot 10^{-5}$	with weights OIML R 111-1: 2004 according to the class F ₁
	to 9 000 kg		$1 \cdot 10^{-4}$	with weights OIML R 111-1: 2004 according to the class M ₁

Abbreviations used:

CMC	Calibration and measurement capabilities (Calibration and measurement options)
EURAMET	European Association of National Metrology Institutes
OIML	International Organization of Legal Metrology

¹⁾ The expanded uncertainties according to EA-4/02 M:2013 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.

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