

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

Häfner Gewichte GmbH
MASSCAL - Kalibrierlaboratorium
Rottalstraße 95, 74420 Oberrot, Germany

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

Mechanical quantities

- Mass (mass standards) *)
- Volume of solids
- Density of solids

*) also on-site calibration

The accreditation certificate shall only apply in connection with the notice of accreditation of 25.05.2020 with the accreditation number D-K-15192-01. 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-15192-01-00**

Berlin,
25.05.2020

Dr. Heike Manke
Head of Division

Translation issued:
25.05.2020


Head of Division

The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found 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-15192-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 25.05.2020

Date of issue: 25.05.2020

Holder of certificate:

Häfner Gewichte GmbH
MASSCAL - Kalibrierlaboratorium
Rottalstraße 95, 74420 Oberrot, Germany

Calibration in the fields:

Mechanical quantities

- Mass (mass standards) *)
- Volume of solids
- Density of solids

*) also on-site calibration

Abbreviations used: see last page

The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.
<https://www.dakks.de/en/content/accredited-bodies-dakks>

Annex to the accreditation certificate D-K-15192-01-00

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks	
Mass Conventional mass / Mass standards	1 mg, 2 mg, 5 mg	OIML R 111-1: 2004	0,60 µg	for fixed nominal values with weights OIML R 111-1:2004 according to the class E ₁	
	10 mg		0,80 µg		
	20 mg		1,0 µg		
	50 mg		1,2 µg		
	100 mg		1,5 µg		
	200 mg		2,0 µg		
	500 mg		2,5 µg		
	1 g		3,0 µg		with weights OIML R 111-1:2004 according to the class E ₁ Determination of volume by an accredited laboratory is required. Without determination of volume the measurement uncertainty increases adequate to an assumed volume uncertainty.
	2 g		4,0 µg		
	5 g		5,0 µg		
	10 g		6,0 µg		
	20 g		8,0 µg		
	50 g		10 µg		
	100 g		15 µg		
200 g	30 µg	with weights OIML R 111-1:2004 according to the class F ₂			
500 g	5,0 g				
1000 kg	30 g	with weights OIML R 111-1:2004 according to the class M ₁			
2000 kg	30 g	for free nominal values with weights OIML R 111-1:2004 according to the class F ₂			
25 kg	0,12 g				
40 kg	0,20 g				
60 kg	0,30 g				
250 kg	1,2 g				
2500 kg	38 g	for free nominal values with weights OIML R 111-1:2004 according to the class M ₁			

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.

Annex to the accreditation certificate D-K-15192-01-00

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Mass	> 1 mg to 5 mg		1,8 µg	for free nominal values
Conventional mass / Mass standards	> 5 mg to 10 mg		2,3 µg	
	> 10 mg to 20 mg		2,8 µg	
	> 20 mg to 50 mg		3,0 µg	
	> 50 mg to 100 mg		3,2 µg	
	> 100 mg to 200 mg		3,5 µg	
	> 200 mg to 500 mg		3,8 µg	
	> 500 mg to 1 g		7,5 µg	
	> 1 g to 2 g		12 µg	for free nominal values Determination of volume by an accredited laboratory is required. Without determination of volume the measurement uncertainty increases adequate to an assumed volume uncertainty.
	> 2 g to 5 g		15 µg	
	> 5 g to 10 g		18 µg	
	> 10 g to 20 g		24 µg	
	> 20 g to 50 g		30 µg	
	> 50 g to 100 g		45 µg	
	> 100 g to 200 g		60 µg	
	> 200 g to 500 g		90 µg	
	> 500 g to 750 g		0,20 mg	
	> 750 g to 1 kg		0,45 mg	
	> 1 kg to 2 kg		0,90 mg	
	> 2 kg to 5 kg		2,2 mg	
	> 5 kg to 10 kg		4,5 mg	
	> 10 kg to 20 kg		9,0 mg	
	> 20 kg to 50 kg		20 mg	
	> 50 kg to 60 kg		30 mg	
	> 60 kg to 600 kg		$5,0 \cdot 10^{-6} \cdot m_N$	m_N Nominal value of the weight
	> 600 kg to 2500 kg		$1,5 \cdot 10^{-5} \cdot m_N$	

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Annex to the accreditation certificate D-K-15192-01-00

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Volume	1 g	Hydrostatic method OIML R 111-1: 2004	0,60 mm ³	Volume determination of mass standards with weights OIML R 111-1:2004 and of weights with free nominal values
	> 1 g to 2 g		0,80 mm ³	
	> 2 g to 5 g		0,90 mm ³	
	> 5 g to 10 g		1,2 mm ³	
	> 10 g to 20 g		1,5 mm ³	
	> 20 g to 50 g		2,0 mm ³	
	> 50 g to 100 g		2,8 mm ³	
	> 100 g to 200 g		6,0 mm ³	
	> 200 g to 500 g		14 mm ³	
	> 500 g to 1 kg		28 mm ³	
	> 1 kg to 2 kg		60 mm ³	
	> 2 kg to 5 kg		0,14 cm ³	
	> 5 kg to 10 kg		0,28 cm ³	
	> 10 kg to 20 kg		0,80 cm ³	
> 20 kg to 50 kg	2,0 cm ³			
Density	1 g	Hydrostatic method OIML R 111-1: 2004	33 kg/m ³	Density determination of mass standards with weights OIML R 111-1:2004 and of weights with free nominal values
	> 1 g to 2 g		20 kg/m ³	
	> 2 g to 5 g		11 kg/m ³	
	> 5 g to 10 g		7,0 kg/m ³	
	> 10 g to 20 g		4,0 kg/m ³	
	> 20 g to 50 g		2,0 kg/m ³	
	> 50 g to 100 g		1,8 kg/m ³	
	> 100 g to 200 g		1,8 kg/m ³	
	> 200 g to 500 g		1,8 kg/m ³	
	> 500 g to 1 kg		1,8 kg/m ³	
	> 1 kg to 2 kg		1,8 kg/m ³	
	> 2 kg to 5 kg		1,8 kg/m ³	
	> 5 kg to 10 kg		1,8 kg/m ³	
	> 10 kg to 20 kg		2,5 kg/m ³	
> 20 kg to 50 kg	2,5 kg/m ³			

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.

Annex to the accreditation certificate D-K-15192-01-00

On-site Calibration

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Mass Conventional mass	1 mg, 2 mg, 5 mg	OIML R 111-1: 2004	0,060 mg	for fixed nominal values with weights OIML R 111-1:2004 according to the class M ₁
	10 mg		0,080 mg	
	20 mg		0,10 mg	
	50 mg		0,12 mg	
	100 mg		0,16 mg	
	200 mg		0,20 mg	
	500 mg		0,25 mg	
	1 g		0,30 mg	
	2 g		0,40 mg	
	5 g		0,50 mg	
	10 g		0,60 mg	
	20 g		0,80 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		0,30 g	
	50 kg		0,80 g	
	100 kg		1,6 g	
	200 kg		3,0 g	
	500 kg		8,0 g	
	1000 kg		16 g	
	2000 kg		30 g	
	25 kg		0,4 g	for free nominal values with weights OIML R 111-1:2004 according to the class M ₁
	40 kg		0,6 g	
	60 kg		0,9 g	
	250 kg		4,0 g	
	2500 kg		38 g	
	100 g bis 2500 kg		$1,6 \cdot 10^{-5} \cdot m_N$	for free nominal values with weights OIML R 111-1:2004 mN Nominal value of the weight

Abbreviations used:

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.