CERTIFICATE

DAkkS accreditation ISO/IEC 17025

Häfner

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DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

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

Häfner Gewichte GmbH
MASSCAL – Kalibrierlaboratorium
Rottalstraße 95, 74420 Oberrot

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 in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, 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 only applies in connection with the notices of 20.03.2023 with accreditation number D-K-15192-01.
It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 5 pages.

Registration number of the accreditation certificate: **D-K-15192-01-00**

Berlin, 20.03.2023 Dipl.-Wirtsch.-Ing. (BA) Tim Harnisch
Head of Technical Unit

Translation issued: 21.04.2023 Dipl.-Wirtsch.-Ing. (BA) Tim Harnisch
Head of Technical Unit

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 can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

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See notes overleaf

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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.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as 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

This accreditation certificate is the property of the German Accreditation Body.

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Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-K-15192-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **20.03.2023**

Date of issue: 21.04.2023

Holder of accreditation certificate:

Häfner Gewichte GmbH
MASSCAL - Kalibrierlaboratorium
Rottalstraße 95, 74420 Oberrot

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.

Mechanical quantities

- **Mass (Mass standards)** [a)]
- **Volume of solids**
- **Density of solids**

[a)] also 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.

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Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Mass Conventional mass / Mass standards	1 mg, 2 mg, 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg	OIML R 111-1: 2004	0,60 µg 0,80 µg 1,0 µg 1,2 µg 1,5 µg 2,0 µg 2,5 µg	**for fixed nominal values** for weights according to OIML R 111-1:2004, Class E_1
	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g		3,0 µg 4,0 µg 5,0 µg 6,0 µg 8,0 µg 10 µg 15 µg 30 µg 75 µg	for weights according to OIML R 111-1:2004, Class E_1 Determination of volume by an accredited calibration laboratory required. Measurement uncertainty increases in accordance with an estimated volume uncertainty, if no volume determination is carried out.
	1 kg 2 kg 5 kg 10 kg 20 kg 50 kg		0,15 mg 0,30 mg 0,75 mg 1,5 mg 3,0 mg 8,0 mg	
	100 kg 200 kg 500 kg 1000 kg		0,5 g 1,0 g 2,5 g 5,0 g	for weights according to OIML R 111-1:2004, Class F_2
	2000 kg 5000 kg		30 g 80 g	for weights according to OIML R 111-1:2004, Class M_1
	0,05 mg, 0,1 mg, 0,2 mg, 0,5 mg		0,50 µg	**for free nominal values** for weights according to OIML R 111-1:2004, Class E_1
	25 kg 40 kg 60 kg 250 kg		0,12 g 0,20 g 0,30 g 1,2 g	**for free nominal values** for weights according to OIML R 111-1:2004, Class F_2
	2 500 kg		38 g	**for free nominal values** for weights according to OIML R 111-1:2004, Class M_1

Permanent Laboratory

Calibration and Measurement Capabilities (CMC))

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Mass Conventional mass / Mass standards	> 1 mg to 5 mg > 5 mg to 10 mg > 10 mg to 20 mg > 20 mg to 50 mg > 50 mg to 100 mg > 100 mg to 200 mg > 200 mg to 500 mg > 500 mg to 1 g	OIML R 111-1: 2004	1,8 µg 2,3 µg 2,8 µg 3,0 µg 3,2 µg 3,5 µg 3,8 µg 7,5 µg	**for free nominal values**
	> 1 g to 2 g > 2 g to 5 g > 5 g to 10 g > 10 g to 20 g > 20 g to 50 g > 50 g to 100 g > 100 g to 200 g > 200 g to 500 g > 500 g to 750 g > 750 g to 1 kg > 1 kg to 2 kg > 2 kg to 5 kg > 5 kg to 10 kg > 10 kg to 20 kg > 20 kg to 50 kg > 50 kg bis 60 kg	OIML R 111-1: 2004	12 µg 15 µg 18 µg 24 µg 30 µg 45 µg 60 µg 90 µg 0,20 mg 0,45 mg 0,90 mg 2,2 mg 4,5 mg 9,0 mg 20 mg 30 mg	**for free nominal values** Volume determination by an accredited calibration laboratory required. Measurement uncertainty increases in accordance with an estimated volume uncertainty, if no volume determination is carried out.
	> 60 kg bis 600 kg > 600 kg to 2500 kg		$5{,}0 \cdot 10^{-6} \cdot m_N$ $1{,}5 \cdot 10^{-5} \cdot m_N$	m_N nominal value of weights

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Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Volume of solids	1 g	Hydrostatic procedure OIML R 111-1: 2004	0,60 mm^3	Volume determination of weights according to OIML R 111-1:2004 and mass standards 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 of solids	1 g	Hydrostatic procedure OIML R 111-1: 2004	33 kg/m^3	Density determination of weights according to OIML R 111-1:2004 and mass standards 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	

On-site Calibration

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Mass Conventional mass	1 mg, 2 mg, 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg	OIML R 111-1: 2004	0,060 mg 0,080 mg 0,10 mg 0,12 mg 0,16 mg 0,20 mg 0,25 mg	**for fixed nominal values** for weights according to OIML R 111-1:2004, Class M_1
	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g		0,30 mg 0,40 mg 0,50 mg 0,60 mg 0,80 mg 1,0 mg 1,6 mg 3,0 mg 8,0 mg	
	1 kg 2 kg 5 kg 10 kg 20 kg 50 kg		16 mg 30 mg 80 mg 0,16 g 0,30 g 0,80 g	
	100 kg 200 kg 500 kg 1 000 kg 2 000 kg 5 000 kg		1,6 g 3,0 g 8,0 g 16 g 30 g 80 g	
	25 kg 40 kg 60 kg 250 kg 2 500 kg		0,4 g 0,6 g 0,9 g 4,0 g 38 g	**for free nominal values** for weights according to OIML R 111-1:2004, Class M_1
	100 g to 5 000 kg		$1{,}6 \cdot 10^{-5} \cdot m_N$	**for free nominal values** for weights according to OIML R 111-1:2004 m_N nominal value of weights

Abbreviations used:

CMC	Calibration and measurement capabilities
OIML	International Organization of Legal Metrology