TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

CAB number 2277, Calibration Laboratory for Geometrical Quantities Těšínská 2962/79b, Předměstí, 746 01 Opava

CMC for the field of measured quantity: Length

Ord.	Calibrated quantity / Subject	Noi	ninal r	ange	Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min. unit		max. unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
1	Standard scale	0 mm	to	1,000 mm		(2·L +0.7) μm	Measurement on a multi-sensor machine Werth Video-Check- HA	KP 1.1	
2	Parallel gauge blocks	0.5 mm	to	1,000 mm		(0.8·L +0.08) μm	Comparison with standard parallel gauge blocks	KP 1.2	
3	Glass gauges for the check of surface flatness and parallelity	0 mm	to	100 mm		0.2 μm	Direct measurement by a distance meter	KP 1.3	
4	Holder of basic gauges and accessories	0 mm	to	1,500 mm		0.25 μm	Direct measurement by a distance meter	KP 1.4	
5	Slide gauges	0 mm	to	3,000 mm		(20·L +20) μm	Direct measurement with standard parallel gauge blocks	KP 2.1	
6	Slide gauges with circular dial indicator and depth indicator	0 mm	to	1,000 mm		(30·L +30) μm	Direct measurement with standard parallel gauge blocks	KP 2.2	
7	Sliding depth gauges	0 mm	to	3,000 mm		(20·L +20) μm	Direct measurement with standard parallel gauge blocks	KP 2.3	
8	Slide height gauges	0 mm	to	1,000 mm		(20·L +20) μm	Direct measurement with standard parallel gauge blocks	KP 2.4	
9	Depth gauges with dial indicator	0 mm	to	1,000 mm		(30·L +30) μm	Direct measurement with standard parallel gauge blocks	KP 2.5	
10	Slide height gauges with a digital scale	0 mm	to	1,000 mm		(20·L +20) μm	Direct measurement with standard parallel gauge blocks	KP 2.6	

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject		Non	ninal r	ange		Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min.	unit		max.	unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
11	Slide depth gauges with a								Direct measurement with	KP 2.7	
	digital scale	0 r	mm	to	3,000 n	nm		(20·L +20) µm	standard parallel gauge blocks		
12	Slide gauges with a								Direct measurement with	KP 2.8	
	digital scale	0 r	nm	to	3,000 n	nm		$(20\cdot L + 20) \mu m$	standard parallel gauge blocks		
13	Standard height gauges with a micrometer screw	0 r	nm	to	1,000 n	nm		(5·L +2) µm	Direct measurement with standard parallel gauge blocks	KP 2.9	
14	Micrometer callipers for external measurement								Direct measurement with standard parallel gauge blocks	KP 2.10	
	with fixed anvils	0 1	mm	to	3,000 n	nm		(10·L +1.7) µm	D :		
15	Comparators	0 r	nm	to	1,000 m	nm		(1.2·L +0.3) μm	Direct measurement by a distance meter	KP 2.10	
		1,000 r	nm	to	3,000 n	nm		$(3\cdot L +2) \mu m$			
16	Micrometers with planar interchangeable								Direct measurement with standard parallel gauge blocks	KP 2.11	
	measuring anvils	0 r	mm	to	3,000 n	nm		$(14 \cdot L + 2.5) \mu m$			
17	Comparators	0 r	nm	to	1,000 n	nm		$(1.2 \cdot L + 0.3) \mu m$	Direct measurement by a distance meter	KP 2.11	
		1,000 r	nm	to	3,000 n	nm		$(3\cdot L +2) \mu m$			
18	Gear micrometers	0 r	nm	to	300 n	nm		(10·L +2) µm	Direct measurement with standard parallel gauge blocks	KP 2.12	
19	Comparators	0 r	nm	to	1,000 n	nm		(1.2·L +0.3) μm	Direct measurement with standard parallel gauge blocks	KP 2.12	
20	Micrometers for sheet metal	0 1	nm	to	100 n	nm		(20·L +3) μm	Direct measurement with standard parallel gauge blocks	KP 2.13	
21	Micrometer calliper gauges with extended anvils		nm	to	100 n			(10·L +2) μm	Direct measurement with standard parallel gauge blocks	KP 2.14	
22	Micrometers for wires		nm	to	20 n			(10·L +1.7) μm	Direct measurement with standard parallel gauge blocks	KP 2.15	

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject	No	minal	range	Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min. unit		max. unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
23	Micrometers for tube						Direct measurement with	KP 2.16	
	walls	0 mm	to	100 mm		$(10\cdot L + 2.2) \mu\text{m}$	standard parallel gauge blocks		
24	Micrometers for threads						Direct measurement with	KP 2.17	
	with interchangeable anvils	0 mm	to	300 mm		(10·L +2) μm	standard parallel gauge blocks		
25	Comparators	O IIIII	ιο	JOO IIIII		(10·L +2) μm	Direct measurement by a	KP 2.17	
23	Comparators	0 mm	to	500 mm		(4·L +1.5) μm	distance meter	Kr 2.17	
26	Inside micrometer gauges						Direct measurement with	KP 2.18	
		3 mm	to	1,000 mm		(12·L +3) µm	standard rings		
27	Micrometers for products						Direct measurement with	KP 2.19	
	with a concave surface	0 mm	to	100 mm		(10·L +2) µm	standard parallel gauge blocks		
28	Micrometers with shape						Direct measurement with	KP 2.20	
	measuring anvils	0 mm	to	3,000 mm		(10·L +2) µm	standard parallel gauge blocks		
29	Micrometers with						Direct measurement with	KP 2.21	
	prismatic measuring						standard parallel gauge blocks		
	anvils	0 mm	to	200 mm		$(10\cdot L + 2.2) \mu\text{m}$			
30	Micrometers with a						Direct measurement with	KP 2.22	
	digital scale	0 mm	to	3,000 mm		(8·L +1) μm	standard parallel gauge blocks		
31	Micrometer depth gauges						Direct measurement with	KP 2.23	
		0 mm	to	200 mm		$(10\cdot L + 1.5) \mu m$	standard parallel gauge blocks		
32	Micrometric heads						Direct measurement by a	KP 2.24	
		0 mm	to	100 mm		(8·L +1.5) μm	distance meter		
33	Rigid inside micrometer						Direct measurement by a	KP 2.25	
	gauges	0 mm	to	3,000 mm		(4·L +2) μm	distance meter		
34	Folding inside						Direct measurement by a	KP 2.26	
	micrometer gauges with						distance meter		
	extension pieces	0 mm	to	1,000 mm		$(1.5 \cdot L + 0.3) \mu\text{m}$			
		1,000 mm	to	3,000 mm		(4·L +2) μm			

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject		Non	ninal r	ange		Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min.	unit		max.	unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
35	Micrometer heads with a digital scale	0	mm	to	100 r	nm		(2·L +1.5) μm	Direct measurement by a distance meter	KP 2.27	
36	Pasameters and micropasameters	0	mm	to	300 r	nm		(4·L +0.4) μm	Direct measurement with standard parallel gauge blocks	KP 2.28	
37	Lever gauges (callipers) for sheer metal and walls with dial indicator	0	mm	to	100 r	mm		(15·L +1.5) μm	Direct measurement with standard parallel gauge blocks	KP 2.29	
38	Two-contact internal dial gauges	0	mm	to	1,000 r	mm	DS = 1 μm DS = 10 μm	(8·L +1.5) μm (10·L +2.5) μm	Direct measurement by a special measuring device	KP 2.30	
39	Multipoint and special internal gauges	3	mm	to	500 r	mm	DS = 1 μm DS = 10 μm	(6·L +2) μm (7·L +2.5) μm	Direct measurement with measuring rings	KP 2.31	
40	Internal gauges with a digital scale	0	mm	to	1,000 r	nm		(6·L +2) μm	Direct measurement with measuring rings	KP 2.32	
41	Dial indicators with division 0.01 mm	0	mm	to	100 r	nm		(40·L +2) μm	Measurement by a special measuring device	KP 3.1	
42	Dial indicators with division 0.001 mm	0	mm	to	100 r	nm		(10·L +0.5) μm	Measurement by a special measuring device	KP 3.2	
43	Somcators (microcators), mycators, minimeters, milisoms, orthotests, with division from 0.1 µm	0	mm	to	1 r	mm		(5·L +0.1) μm	Direct measurement with parallel gauge blocks	KP 3.3	
44	Lever dial indicators with division 0.01 mm	0	mm	to	10 r	nm		(50·L +3) μm	Measurement by a special measuring device	KP 3.4	

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject		Nomin	al ran	ige	Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min.	unit	r	nax. unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
45	Lever dial indicators with division from 0.001 mm	0 m	ım t	0	10 mm		(80·L +0.35) μm	Measurement by a special measuring device	KP 3.5	
46	Dial indicators with a digital scale	0 m	nm t	0	100 mm		(6·L +1.2) μm	Measurement by a special measuring device	KP 3.6	
47	Cylindrical gauges	0 m	ım t	0	1,000 mm		(2.5·L +0.2) μm	Direct measurement by a distance meter	KP 4.1	
48	Slot gauges	0 m	ım t	0	3,000 mm		(2.5·L +0.2) μm	Direct measurement by a distance meter	KP 4.2	
49	Inside micrometers with spherical surfaces	0 m	ım t	0	3,000 mm		(1.5·L +0.15) μm	Direct measurement by a distance meter	KP 4.3	
50	Single- and double-ended snap gauges	0.5 m 10 m			10 mm 500 mm		0.5 μm (4·L +0.3) μm	Direct measurement by a distance meter	KP 4.4	
51	Measuring rings	0.3 m 2 m	nm t	0	2 mm 1,000 mm		1.1 μm (6·L +0.6) μm	Direct measurement by a distance meter	KP 4.6	
52	Cylindrical plug gauges for checks and drawing	0 m	nm t	0	300 mm		(4·L +0.4)μm	Direct measurement by a distance meter	KP 4.7	
53	Thread gauges and comparison pin gauges for metric threads	0 m	nm t	0	300 mm		(7·L +2) μm	Direct measurement on a length gauge	KP 4.9	
54	Good fixed and faulty fixed thread rings for metric threads	1 m	ım t	0	3 mm		7 μm	Direct measurement by a distance meter	KP 4.10	
		3 m	nm t	0	300 mm		$(10 \cdot L + 3) \mu m$			

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject	N	Nominal	range	Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min. un	it	max. un		measurement uncertainty ²	Calibration principle	procedure identification ³	tion
55	Thread gauges for pipe threads not fitting to threads – male gauge	0 mm	to	300 mm		(10·L +2.2) μm	Direct measurement by a distance meter	KP 4.11	
56	Thread gauges for pipe threads not fitting to threads – ring	3 mm	to	300 mm		(10·L +3) μm	Direct measurement by a distance meter	KP 4.11	
57	Limit thread snap gauges – male gauge	0 mm	to	300 mm		(10·L +2) μm	Direct measurement by a distance meter	KP 4.12	
58	Limit thread snap gauges – ring	3 mm	to	300 mm		(20·L +10) μm	Comparison with a comparison pin gauge	KP 4.12	
59	Thread gauges for other threads – male gauge	0 mm	to	300 mm		(10·L +2) µm	Direct measurement by a distance meter	KP 4.13	
60	Thread gauges for other threads – ring	1 mm 3 mm		3 mm 300 mm		7 μm (10·L +3) μm	Direct measurement by a distance meter	KP 4.13	
61	Thread-measuring wires	0 mm	to	10 mm		(5·L +0.15) μm	Direct measurement by a distance meter	KP 4.14	
62	Feeler gauges for radius	0 mm	to	100 mm		(10·L +3) μm	Direct measurement on a profile projector	KP 5.1	
63	Feeler gauges	0 mm	to	100 mm		(2.5·L +0.7) μm	Direct measurement by a distance meter	KP 5.2	
64	Thread gauges for metric threads	0 mm	to	10 mm		3 μm	Direct measurement on a profile projector	KP 5.3	
65	Thread gauges for Whitworth and tube thread	0 mm	to	10 mm		3 μm	Direct measurement on a profile projector	KP 5.4	

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject		Nomin	al ran	nge	Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min.	unit	r	nax. unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
66	Gauges for the							Direct measurement with	KP 5.5	
	measurement of fillet							standard parallel gauge blocks		
	welds	0 m	nm t	О.	100 mm		40 μm			
67	Gauges for thread tools							Direct measurement on a profile	KP 5.10	
	for metric and Whitworth							projector		
	thread	0 m	nm t	0	20 mm		5 μm			
68	Gauges for flat and sharp							Direct measurement on a profile	KP 5.11	
	thread tools	0 m	nm t	0	100 mm		5 μm	projector		
69	Layer thickness	_						Direct measurement with	KP 5.12	
	measuring gauges	0 m	nm t	0	10 mm		(20·L +3) µm	standard setting sheets		
70	External and internal							Direct measurement on a profile	KP 5.13	
	gauges for radius	0 m	nm t	0	500 mm		(10·L +4) µm	projector		
71	Steel tape measures				• • • •		400	Direct measurement with a	KP 6.1	
	~ .	0 m	nm t	0	2,000 mm		100 µm	linear scale of a steel ruler		
72	Steel tape measures	0			0.000		(10 T 100)	Direct measurement with a	KP 6.2	
		0 m	nm t	o 1	0,000 mm		(10·L +100) µm	linear scale of a steel ruler		
73	Steel length gauges	_						Direct measurement with a	KP 6.3	
		0 m	nm t	0	5,000 mm		(20·L +10) μm	linear scale of a steel ruler		
74	Tape measures,				• •			Direct measurement with a	KP 6.4	
		0 m		0	20 m		$(15\cdot L + 100) \mu m$	linear scale of a steel ruler		
		20 m	ı t	О.	100 m		(40·L +200) μm			
	distance meters	0 m	n t	0	20 m		$(60 \cdot L + 500) \mu m$			
75*	Flatness / surface plates;							Measurement by a laser	KP 7.1	
	straightness / ribbed							interferometer		
	surface rules, surface									
	blocks, cast-iron ribbed	0	4		500	1	1.5			
	rules	0 μι	m t	0	500 µm	length up to 5,000 mm	1.5 µm			

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject		Non	ninal r	ange		Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min.	unit		max.	unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
76	Check and drawing								Direct measurement on a 3D	KP 7.21	
	blocks	0	mm	to	500) mm		(6·L +2) μm	machine		
77	Point instruments	0	mm	to	1,200) mm		(2·L +3) μm	Measurement using male gauges and a dial indicator	KP 7.22	
78	Flatness / measuring tables for comparative								Direct measurement on a 3D machine	KP 7.23	
	measurement	0	mm	to	1,000) mm		0.8 µm			
79	Sliding mechanical gear	0	mm	to	200) mm		20	Direct measurement with	KP 8.1	
80	tooth calipers Optical gear tooth	U	111111	to	200	7 111111		20 μm	standard parallel gauge blocks Direct measurement with	IZD 0.2	-
80	calipers	0	mm	to	100) mm		15 µm	standard parallel gauge blocks	KP 8.2	
81	Surface roughness							·	Direct measurement by a	KP 8.3	
	standards	0	mm	to	12.5	μm		6 %	roughness meter		
82*	Universal length meters	0			c 000			(1.10.15)	Measurement by a laser	KP 8.4	
	** .	0	mm	to	6,000	mm		$(1\cdot L + 0.15) \mu m$	interferometer		
83*	Universal measuring microscopes	0	mm	to	3.000) mm		(1·L +0.15) μm	Measurement by a laser interferometer	KP 8.5	
84*	Profile projectors	U	111111	ιο	3,000	7 111111		(1·L ±0.13) μIII	Measurement by a laser	KP 8.6	+
84**	Trome projectors	0	mm	to	3,000) mm		(1·L +0.15) μm	interferometer	KP 8.0	
85*	One- to three-axis							/ 1	Measurement by a laser	KP 8.7	
	coordinate measuring								interferometer		
	machines	0	mm	to	6,000) mm		$(1.3 \cdot L + 0.15) \mu\text{m}$			
86*	Three-axis coordinate								Measurement by a laser	KP 8.8	
	measuring machines	0	mm	to	6,000) mm		$(1.3 \cdot L + 0.15) \mu\text{m}$	interferometer		
87	Checking instruments for								Direct measurement with	KP 8.9	
	dial indicators	0	mm	to	100) mm		$(0.5 \cdot L + 0.06) \mu\text{m}$	standard parallel gauge blocks		
88*	Instruments for checking of								Direct measurement with	KP 8.10	
	steel parallels by comparative method	0	mm	to	200) mm		(0.5·L +0.06) µm	standard parallel gauge blocks		

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject		Nom	inal ra	nge		Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	of calibration	min.	unit		max.	unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
89*	Roughness meters	0 n	nm	to	100	μm		8 %	Direct measurement with a roughness standard	KP 8.11	
90	Length gauges								Special measurement on 1, 2 and 3-axis measuring machines	KP 8.12	
	1 axis	0 n	nm	to	3,000	mm		$(3\cdot L + 0.5) \mu m$			
	2 axes	0 n	nm	to	1,000	mm		$(3\cdot L + 0.7) \mu m$			
	3 axes	0 n	nm	to	1,000	mm		$(3\cdot L + 0.1) \mu m$			
91	Check rules	0 μ	ım	to	50	μm	length up to 5,000 mm	(1.8·L +1.2) μm	Measurement by a laser interferometer	KP 7.2	
92	Shop rules	0 μ	ım	to		μm	length up to 5,000 mm	(1.8·L +1.5) μm	Measurement by a laser interferometer	KP 7.3	
93	Blade measuring rules	0 μ	ım	to	30	μm	length up to 5,000 mm	3 μm	By parallel gauge blocks on a surface plates	KP 7.4	
94	Squareness measuring cylinders	0 n	nm	to	5 :	mm	height up to 1,000 mm	(2.5·L +0.5) μm	Measurement using a pasameter, length gauge and dial indicator	KP 7.14	
95	Check squares 90°	0 n	nm	to	4:		length up to 200 mm	(4·L +1)μm (5·L +2) μm	Direct measurement with standard parallel gauge blocks and perpendicularity standard Direct measurement on a 3D machine	KP 7.15	
96	Check squares 90°	0 n	nm	to	8	mm	length up to 2,500 mm	(30·L +10) μm	Direct measurement on a 3D machine	KP 7.16	

Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

³ If the document identifying the calibration procedure is dated only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

CAB number 2277, Calibration Laboratory for Geometrical Quantities Těšínská 2962/79b, Předměstí, 746 01 Opava

Explanatory notes:

L - Length in [m]

DS - Division of the Scale - for lengths in [µm]

KP - Calibration Procedure

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

CAB number 2277, Calibration Laboratory for Geometrical Quantities Těšínská 2962/79b, Předměstí, 746 01 Opava

CMC for the field of measured quantity: Plane angle

Ord.	Calibrated quantity / Subject of		Nomii	al rang	;	- Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	calibration	min.	unit	max	unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	4:am
1	Gauges for cone-face joints – male gauge	0 °	t	o 50	0	diameter up to 300mm	9"	Direct measurement on a 3D machine	KP 4.5	
2	Gauges for cone-face joints – ring	0 °	t	o 50	0	diameter up to 300mm	13"	Direct measurement on a 3D machine	KP 4.5	
3	Gauges for checking straight groove joints - male gauge	0 °	t	o 60	0	diameter up to 200 mm	9"	Direct measurement on a 3D machine	KP 4.8	
4	Gauges for checking straight groove joints - ring	0,	t	o 6	0 °	diameter 3 mm to 200 mm	13"	Direct measurement on a 3D machine	KP 4.8	
5	Meter for checking screw augers	0 °	t	o 12	0 °	diameter up to 100 mm	9′	Direct measurement on a profile projector	KP 5.6	
6	Meters for checking the angle of face of circular thread tools	-30 °	t	o +3	0 °		9′	Direct measurement on a profile projector	KP 5.7	
7	Gauges for the measurement of angle of turning tools with sintered carbide cutting edges	0 °	t	o 18	0 °		4'	Direct measurement on a profile projector	KP 5.8	
8	Gauges for angles of backs of cylindrical cutters	0 °	t	o 18			5'	Direct measurement on a profile projector	KP 5.9	
9	Sine bars	0 °	t	o 5	0 °	length up to 1,000 mm	2.2"	Measurement with standard parallel gauge blocks	KP 7.5	
10	Sine bars with centres	0 °	t	o 5	0 °	length up to 1,000 mm	2.1"	Measurement with standard parallel gauge blocks	KP 7.6	
11	Sine bars for checking cones	0 °	t	o 5	0 °	length up to 500 mm	4"	Measurement with standard parallel gauge blocks	KP 7.7	
12	Angle sine bars	0 °	t	o 5	0 °	length up to 200 mm	4"	Measurement with standard parallel gauge blocks	KP 7.8	
13	Cross sine bars	0 °	t	o 5	0 °	length up to 200 mm	4"	Measurement with standard parallel gauge blocks	KP 7.9	
14	Folding sine bars with a stop	0 °	t	o 5	0 °	length up to 200 mm	4"	Measurement with standard parallel gauge blocks	KP 7.10	
15	Sine vices	0 °	t	o 5	0 °	length up to 200 mm	5"	Measurement with standard parallel gauge blocks	KP 7.11	

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

Ord.	Calibrated quantity / Subject of	Non	ninal r	range		Parameter(s) of the	Lowest stated expanded		Calibration	Loca-
number ¹	calibration	min. unit	1	max. ı	unit	measurand	measurement uncertainty ²	Calibration principle	procedure identification ³	tion
16	Levels	-20 mm/m	to	+20 mr	m/m		3 μm/m	Comparison with standard parallel gauge blocks and sine rule	KP 7.12	
17	Clinometers	0 °	to	360 °			1'	Comparison with standard parallel gauge blocks and sine rule	KP 7.13	
18	Mechanical angle gauges with vernier	0 °	to	360 °			6'	Comparison with an angle standard	KP 7.17	
19	Optical angle gauges	0 °	to	360 °			3'	Comparison with an angle standard	KP 7.18	
20	Angle gauges with a digital scale	0 °	to	360 °			1'10"	Comparison with an angle standard	KP 7.19	
21	Angle gauges with a dial indicator	0 °	to	360 °			3'	Comparison with an angle standard	KP 7.20	
22	Angle gauges	0 °	to	100 °			7"	Direct measurement on 3D machines	KP 7.24	
23	Special gauges on 2- axis and 3-axis measuring machines	0 °	to	360 °		length up to 1,000 mm	9"	Measured on 2D and 3D machines	KP 8.12	

Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

² The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

³ If the document identifying the calibration procedure is dated only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

The Appendix is an integral part of Certificate of Accreditation No. 568/2024 of 25/10/2024

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

TECHNICKÉ LABORATOŘE OPAVA, akciová společnost

CAB number 2277, Calibration Laboratory for Geometrical Quantities Těšínská 2962/79b, Předměstí, 746 01 Opava

CMC for the field of measured quantity: Torque

Ord.	Calibrated quantity / Subject		N	ominal ra	nge		Parameter	r(s) of the	Lowest stated expanded measurement	Calibration principle	Calibration procedure	Location
number ¹	of calibration	min	unit		max	unit	measu	rand	uncertainty ²	Canoration principic	identification ³	Location
1	Torque / Torque wrenches and screwdrivers									Direct measurement on torque calibration	KP 9.1	
		0.2 Nı	m	to	2,00	00 Nm			0.25 %	instruments		

Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

³ If the document identifying the calibration procedure is dated only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

[&]quot;This document is an appendix to the certificate of accreditation. In case of any discrepancies between the English and Czech versions, the Czech version shall prevail, both for the certificate appendix and the certificate itself."