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CAB number 2310, Calibration Laboratory Department Rohova 1506/6, 716 00 Ostrava-Radvanice

### CMC for the field of measured quantity: Length

		71		T												· ·										nun	
				6	5													4			3	V	2	,		number <sup>1</sup>	Ord.
			extension rods	Inside micrometer gauges.	Tape measures	Rules of portable microscopes	Telescopic tubes	Folding rules	Tape measures - digital		Tape measures	Measuring tapes	diameter	Tapes for the measurement of	circumference	Tapes for the measurement of		Length gauges	Height gauges	Siluc gauges	Clide course		Parallel gauge blocks	0	Micrometer calliper gauges	calibration	Calibrated quantity / Subject of
		1,000 mm	0 mm		0 m	0 mm	0 m	0 m	0 m	5 m	0 m	0 m	0 mm		0 mm		1,000 mm	0 mm	0 mm	0 mm	100 111111	0.5 mm		0 mm		min. unit	Nom
		to	to		to	to	to	to	to	to	to	to	to		to		to	to	to	to	5	5 5		to			Nominal range
	Vol. is	3,000 mm	1,000 mm		50 m	20 mm	5 m	5 m	5 m	10 m	5 m	10 m	700 mm		2,200 mm		5,000 mm	1,000 mm	1,000 mm	1,000 mm	200 111111	500 mm		1,000 mm		max. unit	nge
1101-P508 K-20221/22	GKÝ II	nm 2	KUI PIO OK	2																						the measurand	Parameter(s) of
21/22	,0,10,	9.5·L + 2) μm	(9·L + 1.5) μm		$(30 \cdot L + 35) \mu m$	4 μm	(40·L + 270) μm	(50·L + 170) μm	(2·L + 120) μm	(25·L + 200) μm	$(50 \cdot L + 150) \mu m$	(60·L + 145) μm			$(55 \cdot L + 145) \mu m$		(32·L + 22) μm	$(15 \cdot L + 22) \mu m$	(8·L + 0.7) μm	(5·L + 12) μm	( ± ± 0.10) min	$(2.1 \pm 0.13)  \mu \text{m}$		$(9 \cdot L + 1.5) \mu m$		uncertainty <sup>2</sup>	Lowe
			(	Measurement on a length gauge	Comparison with a standard scale	Measurement on a 3D microscope				er.								Comparison with a standard scale		gauge blocks	Comparison with standard parallel	gauge olocks	Comparison with standard parallel	gauge blocks	Comparison with standard parallel	Canbration principe	Calibration principle
Page 1 of 10			¥	PP-11.09	PP-11.08												3	PP-11.06			PP-11.05		PP-11.02		PP-11.01	identification <sup>3</sup>	Calibration
f 10					-										77							×				place	Work-

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			13						12	5		1	10		9			8	,	1	*				number¹	Ord.
			Film thickness standards	Cylindrical gauges	Measuring wires		check tubes	Spriere	Cylindrical, Hat and slot gauges	Cylindrical flat and elet course	devices	I over thickness massuring	Calibration foils		Dial indicators	Wedges for joints	Adjustable gauges for ultrasonic equipment	Feeler gauges	weld gauges	117	Micrometer depth gauges		Inside micrometers	Micrometric heads	calibration	Calibrated quantity / Subject of
		0.5 mm	0 mm	0 mm	0.17 mm	1,000 mm	0 mm	O IIIII	0 mm	0 mm	0 mm		0 mm	0 mm		0 mm	0 mm	0 mm	0 mm		0 mm	0 mm		0 mm	min. unit	Non
		to	to	to	to	to	to	5	5   5	5	6		to	to		to	to	to	to		to	to		to		Nominal range
		1.5 mm	0.5 mm	20 mm	6.35 mm	3,000 mm	1,000 mm	JUILL OC	50 mm	300 mm	1.5 mm		20 mm	100 mm		30 mm	250 mm	10 mm	100 mm		300 mm	300 mm		50 mm	max. unit	nge
1101-P508 K-202	SKÝ ING	title	YE OLD Y																						the measurand	Parameter(s) of
22 FT 22	o (ios)	8.5 μm	(0.01·1 + 2.3) µm	0.5 µm	0.5 µm	$(10 \cdot L + 1.5) \mu m$	(9·L + 1) μm	(5 L   0./) pm		(5·I + 0.7) IIM	1.3 µm		$(70 \cdot L + 0.5) \mu m$	$(4 \cdot L + 0.5)  \mu m$		15 µm	(8·L + 1) μm	$(20 \cdot L + 0.6) \mu m$	20 μm		$(8\cdot L + 2) \mu m$	$(6 \cdot L + 1.5) \mu m$		$(3 \cdot L + 1.2) \mu m$	uncertainty <sup>2</sup>	Parameter(s) of Lowest stated expanded
			Measurement by a layer thickness measuring instrument			30			INICASAL CHICHE OH A LOUGH BAABO	Measurement on a length gauge	standards	Comparison with layer thickness	Measurement on a length gauge	measuring device	Measurement by a special	Measurement by a length sensor		Measurement on a length gauge	gauge blocks	Comparison with standard parallal	Comparison with standard parallel gauge blocks		Comparison with measuring rings		Canni anon principio	Calibration principle
Page 2 of 10			PP-11.18							pp-11.17		PP-11.16	PP-11.15		PP-11.14			PP-11.13		pp_11 12					identification <sup>3</sup>	Calibration
f 10																									place	Work-

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				S	200 11111	8	J.J IIIII		
		Measurement on a length gauge	mil (E E + 1·V/O		300 mm	†	2 5 mm		
		gauge	$f_{\rm c}$ (5.5·L + 3) μm	1 pio a	16 mm	to	2 mm	cylindrical and conical	
	PP-11.34	Comparison with a threaded wear	7					Thread gauges – rings,	21
		microscope and height gauge	$(5.5 \cdot L + 3) \mu m$		300 mm	to	0 mm	cylindrical and conical	
	PP-11.33	Measurement on a length gauge,						Thread gauges – male gauges,	20
	×	ultrasonic gauges	10 µm		200 mm	to	0 mm		
	PP-11.32	Comparison with standard						Ultrasonic thickness gauges	19
		gauge blocks	$(3 \cdot L + 0.6) \mu m$		300 mm	to	1 mm		
		comparison with standard parallel							
		Measurement on a length gauge and						Snap gauges	
	PP-11.31	Measurement on a length gauge	$(4 \cdot L + 0.7) \mu m$		300 mm	to	1 mm	Limit and end measuring rings	18
	PP-11.29	Comparison with a standard scale	$(0.003 \cdot L + 0.13) \text{ m}$		250 m	to	0 m	Roller length gauges	17
	PP-11.23	Measurement on a length gauge	$(4 \cdot L + 0.45)  \mu m$		100 mm	to	0 mm	Length sensors	16
		gauge blocks	$(8\cdot L + 2) \mu m$		150 mm	to	0 mm	indicator	
		Comparison with standard parallel						Depth gauges with dial	
		measuring device	2 μm		300 mm	to	0 mm	indicator	
		Direct measurement by a special						Internal gauge with dial	
		and standard parallel gauge blocks	$(7 \cdot L + 1) \mu m$		300 mm	to	0 mm	arms for internal measurement	
		Comparison with measuring rings	7					Dial indicators with measuring	
			$(10 \cdot L + 1.5) \mu m$		300 mm	to	0 mm	arms for external measurement	
								Dial indicators with measuring	
			1.5 µm		100 mm	oto	0 mm		
		gauge blocks						indicator	
	PP-11.22	Comparison with standard parallel						Thickness gauges with dial	15
			(6·L + 1) μm		200 mm	to	0 mm	Micropasameters	
		gauge blocks	$(3.5 \cdot L + 0.7) \mu m$		200 mm	to	0 mm		
	PP-11.19	Comparison with standard parallel						Pasameters	14
place	identification <sup>3</sup>	Campi anton Principio	uncertainty <sup>2</sup>	the measurand	max. unit		min. unit	calibration	number <sup>1</sup>
Work-	Calibration	Calibration principle	Parameter(s) of Lowest stated expanded	Parameter(s) of	ınge	Nominal range	Z	Calibrated quantity / Subject of	Ord.

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				28		27*					0.7	*96				25	1	2/	23*				22	number <sup>1</sup>	Ord.
				Knife, flat and trying angles	(comparators)	Instruments for the calibration	surface plates	Surface rules and blocks,	coordinate measuring machines	projectors, measuring systems,	microscopes and profile	I enoth ganges measuring	fixtures	measuring instruments and	scales, special gauges, special	Templates, measuring wedges,	Length measuring man aments	I enoth measuring instruments	Measuring microscopes, profile projectors	Check bars			Rules	calibration	Calibrated quantity / Subject of
		630 mm 1,000 mm	0 mm		0 mm		0 mm		0 mm				0 mm				0 mm		0 mm	0 mm	1,000 mm	0 mm		min. unit	Nom
		to	to		to		to		to				to				to		to	to 4	to	to			Nominal range
		1,000 mm 2,000 mm	630 mm		100 mm		15 m		40 m				160 mm				500 mm		250 mm	4,000 mm	2,000 mm	1,000 mm		max. unit	ge
11_01-P608 K-29221122	SKÝ I	1Stiffer	, pro																					the measurand	Parameter(s) of
21122 21122	, io,	35 µm/H	- 10·H + 5)/H μm/H		0.04 µm		$(1.6 \cdot M + 0.1) \mu m$		$(1 \cdot L + 0.1) \mu m$				$(5 \cdot L + 4.5) \mu m$				$(3 \cdot L + 0.15) \mu m$		2 μm	40 µm	$(6 \cdot L + 5) \mu m$	$(3 \cdot L + 3.5) \mu m$		uncertainty <sup>2</sup>	Lowest stated expanded
			gauge blocks and perpendicularity standard	Comparison with standard parallel	9	Comparison with standard parallel					interferometer	Measurement by a laser				Measurement on a 3D microscope	gauge blocks	Comparison with standard parallel	Comparison with a standard scale			plane	Comparison with standard parallel gauge blocks from the standard	Cambration principle	Calibration principle
Page 4 of 10				PP-11.04		PP-11.57		PP-11.50	10			PP-11.50				PP-11.59		PP-11.58	PP-11.48				PP-11.45	identification <sup>3</sup>	Calibration
of 10																								place	Work-

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		roughness gauge	0.07 µm		800 μm	to 80	0.1 μm	templates	
		Contact measurement with						Roughness standards and	
		reference plates	3,6%		800 µm	to 80	0.1 µm	instruments – roughness gauges	
	PP-11.49	Measurement using roughness		1				Contact roughness measuring	30*
			$(4.3 \cdot L + 1) \mu m$		1500 mm	to 150	0 mm	surface plates, rulers	
								male gauges, rings, calipers,	
								special meters and fixtures,	
								templates, special gauges,	
								rulers, prismatic blocks,	
		measuring machine						perpendicularity cylinders, sine	
	PP-11.52	Measurement on a 3D coordinate						Angle standards,	29
place	13	Canbration principle	uncertainty <sup>2</sup>	max. unit the measurand	k. unit	max	min. unit		number¹
Work-	Calibration	Calibration principle	Lowest stated expanded	Parameter(s) of		Nominal range	Nomi	Calibrated quantity / Subject of	Ord.

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.

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)

 $L-\ measured\ length\ [m],\ l-\ measured\ thickness\ [m],\ M-\ largest\ length\ dimension\ [m],\ H-\ arm\ length\ [m]$ 



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### CMC for the field of measured quantity: Plane angle

Ord.	Calibrated quantity / Subject	Nomi	Nominal range	ıge	Parameter(s) of	Lowest stated expanded	Calibration principle	Calibration	Work-
number <sup>1</sup>	of calibration	min. unit		max. unit	the measurand	measurement uncertainty <sup>2</sup>	Canada	identification <sup>3</sup> place	place
-	Universal angle gauges						Comparison with standard angle   PP-11.07	PP-11.07	
	(	0°	to	360°		2′	gauges		
5	Locksmith's angle gauges								
	and protractors	0°	to	$180^{\circ}$		0.17°			
2	Liquid and electronic						Measurement on a level gauge	PP-11.37	43
	levels						or comparison with standard		
							parallel gauge blocks and sine		
		-2 mm/m	to	2 mm/m		4 μm/m	bar		
		-20 mm/m	to	20 mm/m		8 μm/m			
	Clinometers	-90°	to	90°		9"			
	Builder's level up to 2m						Microscope measurements in		
		-2 mm/m	to	2 mm/m		0.18 mm/m	relation to the horizontal plane		
	Builder's level with angle						Comparison with angle gauges		
	gauge or clinometer	-180°	to	180°		0.2°			

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

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### CMC for the field of measured quantity: Mass

Ord.	Calibrated quantity / Subject of	Nomi	Nominal range	Parameter(s) of the	Lowest stated expanded	Calibration principle	Calibration	Work-
number <sup>1</sup>	calibration	min. unit	max. unit	measurand	uncertainty <sup>2</sup>		=	3 place
-*	Electronic and mechanical scales					Comparative measurement with	PP-11.75	
	with non-automatic operation	1 mg 1	to 20 kg	Weight E2, F1 5·10-6	5.10-6	standard weights		
		20 kg	20 kg to 100 kg	F1, M1 5·10 <sup>-5</sup>	5·10-5			

- 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.
- 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 lowest expanded measurement uncertainty is stated without accounting for the effect of the calibrated meter.



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### CMC for the field of measured quantity: Torque

			0.5 %		1,500 Nm	1,500	0.5 Nm to	0.5		
		standard torque sensor	1 %		0.5 Nm		0.1 Nm to	0.1	and screwdrivers	
	PP-11.70	Comparison with a							Torque wrenches	1
place	identification <sup>3</sup>		uncertainty <sup>2</sup>	measurand	unit	max.	unit	min.	number <sup>1</sup> Subject of calibration	number <sup>1</sup>
Work-	Calibration procedure	Calibration principle	Lowest stated expanded	Parameter(s) of the		Nominal range	Nomina		Calibrated quantity /	Ord.

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

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. 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

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### Certificate of Accreditation No.425/2023 of 10/08/2023 The Appendix is an integral part of

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## CMC for the field of measured quantity: Temperature

Ord.	Calibrated quantity / Subject of	Non	Nominal range	ge	Parameter(s)	Parameter(s) Lowest stated expanded	Calibration principle	Calibration	Work-
1 IIIIIIDEI	calibration	min. unit		max. unit	measurand	uncertainty <sup>2</sup>	Campi accom principos	identification <sup>3</sup>	place
-	Direct indication electronic						Comparison with a standard	PP-11.90	
	thermometers	-30 °C	to	100 °C		0.10 °C	thermometer in a dry block		
		100 °C	to	300 °C		0.20 °C			
		300 °C	to	500 °C		0.40 °C			
		500 °C	to	650 °C		0.60 °C			
2	Direct indication electronic non-								
	contact thermometers	-30 °C	to	100 °C		2 °C			
		100 °C	to	200 °C		3 °C			
	2	200 °C	to	300 °C	\ \ \ \	5°C			
		300 °C	to	500 °C		6°C			
3	Thermometers for air temperature						Comparison with a standard	PP-11.91	
	measurement, data loggers, outdoor						thermometer in a climatic	7	
	thermometers	-10 °C	to	100 °C		0.3 °C	chamber		
4	Non-contact thermometers	35 °C	to	100 °C		1.3 °C	Comparison with black body	PP-11.92	
		100 °C	to	300 °C		2.2 °C			
		300 °C	to	500 °C		3.3 °C			
-				1.0 1.					

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

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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.

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### CMC for the field of measured quantity: Humidity

Ord.	Calibrated quantity / Subject of	No	Nominal range	ge	Parameter(s) of	Lowest stated expanded	Calibration principle	Calibration	Work-
1 Tulliper	calibration	min. unit	В	max. unit	the measurand	uncertainty <sup>2</sup>		_ω	place
-	Hygrometers, measuring chains for						Comparison with a	PP-11.95	
	measuring relative humidity, data						standard hygrometer in a		
	loggers for measuring relative						climatic chamber		
	humidity	10 % RH	to	50 % RH		1.5 %			
		50 % RH	to	70 % RH		2.0 %			
		70 % RH	to	90 % RH		2.5 %			

- 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.
- 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).

RH -Relative Humidity

