

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

Daniel Zindler
Zindler Calibration Laboratory
Voženilkova 5561, 760 05 Zlín

CMC for the field of measured quantity: Length

Ord. number ¹	Calibrated quantity / Subject of calibration	Nominal range		Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified ²	Calibration principle	Calibration procedure identification ³	Workplace
		min. unit	max. unit					
1	Slide gauges, slide depth gauges, slide height gauges, sliding gear tooth calipers, gauges for checking welds	0 mm	to 2,000 mm		$(10 \cdot L + 10) \mu\text{m}$	Comparison with parallel gauge blocks, gauges and rings	KP 10	
	Linear height gauges	0 mm	to 1,000 mm		$(2 \cdot L + 0.5) \mu\text{m}$			
2	Micrometer calliper gauges	0 mm	to 1,000 mm		$(7 \cdot L + 1.3) \mu\text{m}$	Comparison with parallel gauge blocks, gauges and rings	KP 11	
	Micrometer depth gauges	0 mm	to 300 mm		$(15 \cdot L + 1.5) \mu\text{m}$			
	Micrometers with prismatic anvils	1 mm	to 150 mm		$(10 \cdot L + 1.5) \mu\text{m}$			
	Pasameters	0 mm	to 200 mm		$(4 \cdot L + 0.5) \mu\text{m}$			
	Micropasameters	0 mm	to 200 mm		$(7 \cdot L + 1.3) \mu\text{m}$			
	Two-contact and three-contact inside micrometers	2 mm	to 250 mm		$(5 \cdot L + 1.6) \mu\text{m}$	Comparison with rings		
	Inside micrometer gauges, extension rods	0 mm	to 1,000 mm		$(5 \cdot L + 1.5) \mu\text{m}$	Direct measurement on a length gauge	KP 12	
Micrometric heads	0 mm	to 50 mm		$(5 \cdot L + 1.2) \mu\text{m}$	Direct measurement on a length gauge			
3	Thread gauges	1 mm	to 300 mm		$(5 \cdot L + 2.5) \mu\text{m}$	Direct measurement on a length gauge	KP 12	
	Threaded rings	3.5 mm	to 200 mm		$(3 \cdot L + 2.5) \mu\text{m}$			
	Threaded rings	1 mm	to 16 mm		$(6 \cdot L + 3.0) \mu\text{m}$	Comparison with a threaded wear gauge		
	Conical thread gauges and rings	1 mm	to 50 mm		$(6 \cdot L + 10) \mu\text{m}$	Comparison with a threaded comparison pin gauge, ring		
4	Cylindrical, flat, slot, square and hexagonal gauges	0 mm	to 300 mm		$(5 \cdot L + 0.4) \mu\text{m}$	Direct measurement on a length gauge	KP 12	
	Setting gauges for micrometers	0 mm	to 1,000 mm		$(5 \cdot L + 0.4) \mu\text{m}$			

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	Measuring wires and cylindrical gauges	0 mm	to 100 mm		$(5 \cdot L + 0.4) \mu\text{m}$			
	Snap gauges	2 mm	to 250 mm		$(5 \cdot L + 0.7) \mu\text{m}$			
	Setting and limit rings	2 mm	to 250 mm		$(5 \cdot L + 0.7) \mu\text{m}$			
	Feeler gauges	0 mm	to 10 mm		$(20 \cdot L + 0.6) \mu\text{m}$			
	Calibration foils	0 mm	to 20 mm		0.4 μm			
	Wedges for joints	0 mm	to 30 mm		15 μm			
5	Dial and digital indicators	0 mm	to 100 mm		$(5 \cdot L + 0.4) \mu\text{m}$	Direct measurement by a special measuring device or a length gauge	KP 12	
	Lever indicators	0 mm	to 10 mm		$(5 \cdot L + 0.4) \mu\text{m}$			
	Length sensors	0 mm	to 100 mm		$(5 \cdot L + 0.4) \mu\text{m}$			
	Internal gauges with indicator	0 mm	to 300 mm		$(5 \cdot L + 0.4) \mu\text{m}$			
6	Tape measures	0 mm	to 15 m		$(50 \cdot L + 150) \mu\text{m}$	Comparison with a standard scale	KP 13	
	Folding rules	0 mm	to 5 m		$(50 \cdot L + 180) \mu\text{m}$			
	Tape measures	0 mm	to 100 m		$(70 \cdot L + 40) \mu\text{m}$			
	Length gauges	0 mm	to 5 m		$(50 \cdot L + 50) \mu\text{m}$			
	Measuring tapes	0 mm	to 10 m		$(70 \cdot L + 50) \mu\text{m}$			
	Telescopic tubes	0 mm	to 5 m		$(50 \cdot L + 270) \mu\text{m}$			
	Laser distance meters	0 mm	to 5 m		0.2 mm			
	Gauges	0 mm	to 200 mm		$(5 \cdot L + 2.0) \mu\text{m}$	Direct measurement by a 2D microscope		
Measuring tapes for circumference and diameter measurement	0 mm	to 300 mm		$(100 \cdot L + 30) \mu\text{m}$	Comparison with cylindrical gauges			
7	Thickness gauges with dial indicator	0 mm	to 100 mm		$(10 \cdot L + 1.0) \mu\text{m}$	Comparison with parallel gauge blocks	KP 14	
	Ultrasonic thickness gauges	0 mm	to 200 mm		$(10 \cdot L + 3.0) \mu\text{m}$	Comparison with ultrasonic gauges		
	Layer thickness measuring devices	0 mm	to 1.5 mm		2.0 μm	Comparison with layer thickness standards		

**The Appendix is an integral part of
Certificate of Accreditation No. 8/2021 of 04/01/2021**

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	Dial indicators with measuring arms for external measurement	0 mm	to 300 mm		(10·L + 1.0) μm	Comparison with parallel gauge blocks		
	Dial indicators with measuring arms for internal measurement	2 mm	to 200 mm		(10·L + 2.0) μm	Comparison with rings		
8	Parallel gauge blocks					Comparison with parallel gauge blocks using a comparator or a length gauge	KP 15	
	4th order	0.5 mm	to 100 mm		(2·L + 0.2) μm			
	5th order	0.5 mm	to 500 mm		(5·L + 0.5) μm			
9	Roughness meters	0.01 μm	to 6,000 μm		5 %	Comparative measurement by roughness standards	KP 04	
	Roughness standards	0.01 μm	to 6,000 μm		5 %	Comparative measurement on a roughness meter		
10	Rules					Direct measurement with a linear height gauge with a length sensor for the measurement of perpendicularity and straightness	KP 29	
		0 mm	to 1,000 mm		(2·L + 1.5) μm	Comparison with parallel gauge blocks from the standard plane		
		1,000 mm	to 2,000 mm		(4·L + 4.0) μm			
	Check bars	0 mm	to 2,000 mm		30 μm			
11	Angles	0 mm	to 400 mm		(4·L + 2.0) μm	Comparison with a perpendicularity standard and parallel gauge blocks	KP 18	
		0 mm	to 1,000 mm		(4·L + 2.0) μm	Direct measurement with a linear height gauge with a length sensor for the measurement of perpendicularity and straightness		

¹ 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, 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 value measured. If the calibration is carried out outside the laboratory premises, the measurement uncertainty may be affected.

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).

L length in metres

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CMC for the field of measured quantity: Temperature

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		min. unit	max. unit					
1	Direct indicating thermometers	0 °C			0.05 °C	Comparative measurement with a standard thermometer in a mixture of ice and water	KP 31	
		20 °C	to 150 °C		0.1 °C	Comparative measurement with a standard thermometer in a liquid bath		
		-18 °C	to 25 °C		0.2 °C	Comparative measurement with a standard thermometer in a climatic chamber		
		25 °C 50 °C 150 °C	to to to	50 °C 150 °C 300 °C	0.2 °C 0.3 °C 0.4 °C	Comparative measurement with a standard thermometer in a dry block		
		300 °C 400 °C 600 °C 800 °C	to to to to	400 °C 600 °C 800 °C 1,100 °C	1.3 °C 1.5 °C 2.0 °C 2.5 °C	Comparative measurement with a standard thermometer in a horizontal furnace		
2	Non-contact thermometers	35 °C	to 100 °C		1.9 °C	Comparison with a standard target black body and with a standard non-contact thermometer	KP 34	
		100 °C	to 200 °C		2.1 °C			
		200 °C	to 350 °C		2.7 °C			
		350 °C	to 500 °C		3.2 °C			

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