

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

KSQ spol. s r.o.
CAB number 2288, Calibration Laboratory
Lidická tř. 1937, 370 07 České Budějovice

CMC for the field of measured quantity: Length

Ord. number ¹	Calibrated quantity / Subject of calibration	Nominal range		Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty ²	Calibration principle	Calibration procedure identification ³	Location
		min. unit	max. unit					
1	Parallel gauge blocks	0.5 mm	to 100 mm		$(0.7 \cdot L + 0.08) \mu\text{m}$	Comparative measurement using parallel gauge blocks	KM 301	
2	Two-contact internal gauges with indicator	6 mm	to 400 mm		2 μm	Comparative measurement using setting rings	KM 303	
3*	Internal gauges	2 mm	to 315 mm	DS: 0.001 mm DS: 0.01 mm DS: 0.02 mm DS: 0.1 mm	2 μm 2 μm 10 μm 20 μm	Comparative measurement using setting rings	KM 304	
4	Inside micrometer gauges	25 mm 300 mm	to to 600 mm		2 μm 3 μm	Direct measurement by a distance meter	KM 305	
5*	Micrometer gauges for external measurement	0 mm 50 mm 100 mm 300 mm	to to 100 mm to 300 mm to 500 mm		1 μm 2 μm 3 μm 5 μm	Comparative measurement using parallel gauge blocks	KM 306	
	Micrometer depth gauges	0 mm	to 300 mm		2 μm			
6*	Slide gauges	0 mm 250 mm 1,500 mm	to to 1,500 mm to 2,500 mm	DS:0.01 mm	0.01 mm 0.02 mm 0.03 mm	Comparative measurement using parallel gauge blocks	KM 307	
		0 mm 450 mm	to to 1,200 mm	DS: 0.001 mm	2 μm 3 μm			
	Slide height gauges	0 mm	to 1,200 mm	DS: 0.0001 mm	$(3.5 \cdot L + 0.25) \mu\text{m}$	Comparison with a standard (step gauge)		

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7	Thread gauges – male Thread gauges – female	1 mm	to 200 mm		2 µm 2 µm	Direct measurement by a distance meter	KM 309	
8	Plain gauges – external measurement Plain gauges – internal measurement Limit rings	0 mm	to 500 mm		0.5 µm 0.8 µm 0.8 µm	Direct measurement by a distance meter	KM 310	
9	Measuring magnifiers	0 mm	to 100 mm		3 µm	Direct measurement by a microscope	KM 311	
10	Test sieves	0 mm	to 125 mm		3 µm	Direct measurement by a microscope	KM 312	
11	Steel rules	0 mm	to 2,000 mm		3 µm	Direct measurement by a microscope and comparison with a standard	KM 313	
12	Steel tape measures	0 mm	to 10 m		0.2 mm	Direct comparison with a standard (rule, gauge)	KM 314	
13*	Passimeters and thickness gauges	0 mm	to 500 mm	DS 0.001 mm to 0.002 mm DS 0.005 mm to 0.01 mm DS 0.02 mm DS 0.1 mm	1 µm 2 µm 10 µm 20 µm	Direct comparison with parallel gauge blocks	KM 317	
14*	Deviation meters	0 mm	to 200 mm		0.5 µm	Direct measurement by a special measuring device	KM 318	

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		min. unit	max. unit					
15*	Measuring microscopes and profile projectors	0 mm	to 300 mm		3 μm	Direct comparison with a standard (glass gauge)	KM 319	
	Optical measuring systems with camera recording	0 mm	to 280 mm		1.2 μm	Direct comparison with a glass gauge and spec. gauges		
16*	Optical scanners for measuring rotating parts - diameter	0 mm	to 180 mm		(3·L +0.6) μm	Direct comparison with a special diameter standard	KM 320	
	- length	0 mm	to 1,250 mm		(5·L +0.8) μm	Direct comparison with a special length standard		
17	Efflux viscometers	0 mm	to 10 mm		3 μm	Direct measurement by a microscope	KM 321	
18	Blade measuring rules	0 mm	to 150 mm		0.5 μm	Direct measurement by a distance meter	KM 322	
		150 mm	to 500 mm		1 μm			
19	Feeler gauges	0 mm	to 3 mm		0.5 μm	Direct measurement by a distance meter	KM 323	
20*	Coordinate measuring machines	0 mm	to 2,000 mm		(1.5·L +0.5) μm	Comparison with a standard (parallel gauge blocks)	KM 324	
					(0.8·L +0.1) μm	Measurement by a laser interferometer		
					(0.7·L +0.3) μm	Comparison with a standard (step gauge)		
21*	Measurement of flatness, surface plates	0 mm	to 110 mm	plate dimensions 50 mm to 8,000 mm	6 μm	Direct measurement by an electronic level	KM 308	
22*	Check squares 90°	0 mm	to 0.2 mm	arm length 0 mm to 200 mm	2 μm	Comparison with a standard (parallel gauge blocks, measuring cylinder)	KM 316	
				200 mm to 630 mm	3 μm			

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- 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.
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L nominal length (m)

DS ... division of the scale

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CMC for the field of measured quantity: Plane angle

Ord. number 1	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty ²	Calibration principle	Calibration procedure identification ³	Loca- tion
		min.	unit	max.	unit					
1*	Angle gauges							Comparison with a standard (angle gauges and parallel gauge blocks)	KM 315	
		0 °		to	360 °		2'			

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CMC for the field of measured quantity: Torque

Ord. number 1	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty ²	Calibration principle	Calibration procedure identification ³	Location
		min.	unit	max.	unit					
1*	Torque wrench, torque screwdriver, torque driver	0.2 N·m		to	250 N·m		1 %	Comparison with a standard torque meter	KM 501 (ČSN EN ISO 6789-2)	

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CMC for the field of measured quantity: Pressure

Ord. num- ber ¹	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty ²	Calibration principle	Calibration procedure identification ³	Loca- tion
		min.	unit	max.	unit					
1 *	Deformation pressure gauges (manometers), electromechanical pressure gauges, pressure transducers, pressure measuring chains	-95 kPa	to	0 kPa		Vacuum – gas	75 Pa	Comparison with the standard	KM 401 KM 402	
		0 kPa	to	35 kPa		Overpressure – gas	10 Pa			
		35 kPa	to	200 kPa			75 Pa			
		0.2 MPa	to	2 MPa			0.6 kPa			
		2 MPa	to	7 MPa		Overpressure – liquid, gas	2.1 kPa			
		7 MPa	to	20 MPa		Overpressure – gas	21 kPa			
		7 MPa	to	35 MPa		Overpressure – liquid	21 kPa			
		35 MPa	to	70 MPa		Overpressure – liquid	42 kPa			
		0 kPa	to	200 kPa		Absolute pressure – gas	60 Pa			
		0.2 MPa	to	2 MPa			0.6 kPa			

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CMC for the field of measured quantity: Temperature

Ord. number ¹	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty ²	Calibration principle	Calibration procedure identification ³	Location
		min.	unit	max.	unit					
1*	Direct-indicating dial thermometers	-10 °C	to	80 °C			0.2 °C	Comparative measurement with a standard in a liquid bath/dry block calibrator	KM 102	
		80 °C	to	100 °C			0.3 °C			
		100 °C	to	300 °C			0.8 °C			
2*	Direct-indicating electronic thermometers (indicating) and dataloggers, including temperature measuring chains	-90 °C	to	-50 °C			0.09 °C	Comparative measurement with a standard in a liquid bath/dry block calibrator, in a conditioning chamber	KM 105	
		-50 °C	to	0 °C			0.07 °C			
		0 °C					0.06 °C			
		0 °C	to	100 °C			0.07 °C			
		100 °C	to	250 °C			0.09 °C			
		250 °C	to	300 °C			0.10 °C			
		350 °C	to	420 °C			0.11 °C			
		420 °C	to	650 °C			0.14 °C			
		650 °C	to	1,100 °C			1.4 °C			
		1,100 °C	to	1,300 °C			2.0 °C			
		1,300 °C	to	1,600 °C			2.4 °C			
3*	Non-contact thermometers (pyrometers)	23 °C	to	50 °C			1.7 °C	Comparative measurement with a standard on a black body	KM 106	
		50 °C	to	150 °C			1.8 °C			
		150 °C	to	200 °C			2.0 °C			
		200 °C	to	250 °C			2.3 °C			
		250 °C	to	300 °C			2.8 °C			
		300 °C	to	400 °C			3.3 °C			
		400 °C	to	500 °C			3.8 °C			

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CMC for the field of measured quantity: Air humidity

Ord. number ¹	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty ²	Calibration principle	Calibration procedure identification ³	Location
		min.	unit	max.	unit					
1	Hygrometers for measuring relative air humidity, electronic and combined hygrometers, dataloggers	30 % RH	to	80 % RH		20 °C to 25 °C	2.0 % RH	Comparison with a standard relative humidity meter, measurement in a conditioning chamber	KM 201	
		80 % RH	to	90 % RH		20 °C to 25 °C	2.3 % RH			

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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. "