



INM - Instituto Nacional de Metrología

Dimensional

**Calibration and Measurement Capability (CMC)**

Calibration or Measurement Service			Measurand Level or Range			Expanded Uncertainty					Reference Standard used in calibration	
Quantity/ Class	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	Standard	Source of traceability
Standard length	Gauge Blocks: Central length, L	Mechanical standard with gauge blocks	0.1	100	mm	0.03+0.001L, L in m	µm	2	95%	No		CENAM
Standard length	Gauge Blocks: Central length, L	Mechanical standard with gauge blocks	100	500	mm	0.03+0.002L, L in m	µm	2	95%	No		CENAM
Standard length	Outside micrometer	Direct measurement	0	500	mm	2	µm	2	95%	No		CENAM
Standard length	Outside micrometer	Direct measurement	500	1000	mm	5	µm	2	95%	No		CENAM
Standard length	Depth micrometer	Direct measurement	0	25	mm	2	µm	2	95%	No		CENAM
Standard length	Caliper Type Inside Micrometer	Direct measurement	0	500	mm	5	µm	2	95%	No		CENAM
Standard length	Caliper	Direct measurement	0	1000	mm	35	µm	2	95%	No		CENAM
Standard length	Coordinate Measuring Machines	Direct comparison	20	620	mm	0.4+0.45L, L in m	µm	2	95%	No		CENAM
Standard length	Profile projector	Direct comparison	0	150	mm	4	µm	2	95%	No		CENAM
Standard length	Precision Granite Surface Plate	Indirect measurement	0	1000	mm	2	µm	2	95%	No		CENAM
Standard area	Area Measuring Machine	Direct measurement	10	100	dm <sup>2</sup>	1	dm <sup>2</sup>	2	95%	No		CENAM
Angular standard	Protactor (angle gage)	Direct measurement	0.1	90	° (or ', or ")	2	"	2	95%	No		CENAM
Angles generator	Level gauge	Indirect measurement	0	0.5	mm/m	7	µm/m	2	95%	No		CENAM
Calibration Tester for for indicators	Indicators	Direct measurement	0	25	mm	2	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Sine table	Indirect measurement	0	300	mm	5	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Calibration Tester for indicators	Direct measurement	0	25	mm	2	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Precision Square	Indirect measurement	20	630	mm	2.7+L/60, L in mm	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Angle gauge blocks	Indirect measurement	0.1	90	° (or ', or ")	10	"	2	95%	No		CENAM
Coordinate Measuring Machines	Complex geometries	Indirect measurement	4	1000	mm	2.7+L/60, L in mm	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Standard bar	Direct measurement	4	1000	mm	2.7+L/60, L in mm	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Ring Gage	Indirect measurement	4	100	mm	2	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Thread gage	Indirect measurement	4	100	mm	2	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Outer conical threaded gauge	Indirect measurement	4	100	mm	2	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Height Master	Indirect measurement	0	400	mm	2	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Precision ruler	Indirect measurement	0	2000	mm	15	µm	2	95%	No		CENAM
Coordinate Measuring Machines	Micrometer Head	Indirect measurement	4	100	mm	2	µm	2	95%	No		CENAM
One coordinate machine	Feeler Gauges	Direct measurement	0	30	mm	2	µm	2	95%	No		CENAM

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One coordinate machine	Pin gages	Direct measurement	0	10	mm	2	μm	2	95%	No		CENAM
Vision Measuring System	Standard Scale	Direct measurement	0	150	mm	3.2	μm	2	95%	No		CENAM
Vision Measuring System	Sieve	Direct measurement	0	150	mm	3.2	μm	2	95%	No		CENAM
Autocollimator	Ruler of righteousness	Indirect measurement	0	1000	mm	2	μm	2	95%	No		CENAM
Standard tape measure	Tape measure	Direct comparison	0	50	m	29.7+9.6*L, L in m	μm	2	95%	No		PTB
Standard tape measure	Counter meter	Direct comparison	0	100	m	0,05	m	2	95%	Yes		PTB
Standard tape measure	Tape measure with ballast	Direct comparison	0	30	m	29.7+9.6*L, L in m	μm	2	95%	No		PTB
Standard ruler	Area Standard	Indirect measurement	0	100	dm <sup>2</sup>	0.2	dm <sup>2</sup>	2	95%	No		CENAM

Last updated November 06, 2015