

## Length, Slovakia, SMU (Slovensky Metrologicki Ustav)

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty						
Class	Instrument or Artifact: Measurand	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	NMI Internal Service Identifier	Comments
Laser radiations	Stabilized laser of the mise en pratique: vacuum wavelength	Optical beat frequency	633	633	nm			0.032	fm	2	95%	No	1	Approved on 19 May 2007
Laser radiations	Stabilized laser of the mise en pratique: absolute frequency	Optical beat frequency	474	474	THz			20	kHz	2	95%	No	1	Approved on 19 May 2007
Laser radiations	Other stabilized laser: vacuum wavelength	Optical beat frequency	633	633	nm			1E-09		2	95%	Yes	2	
End standards	Gauge blocks: central length $L$	Interferometry, exact fractions	0.5	100	mm			Q[20, 0.2L], $L$ in mm	nm	2	95%	No	5	
End standards	Gauge blocks: central length $L$	Mechanical comparison to gauge block	0.5	100	mm			Q[50, 0.5L], $L$ in mm	nm	2	95%	No	6	
Line standards	Precision line scale: line spacing $L$	Interferometry, photoelectric microscope	0.05	1000	mm			Q[210, 0.35L], $L$ in mm	nm	2	95%	No	7	Modified on 09 October 2012
Line standards	Precision line scale: line spacing $L$	Mechanical comparison to line scale	0.05	1000	mm			Q[200, 0.5L], $L$ in mm	nm	2	95%	No	8	
Line standards	Precision line scale: line spacing $L$	Interferometry, optical microscope	0.001	10	mm			Q[100, 0.2L], $L$ in mm	nm	2	95%	No	9	
Line standards	Precision line scale: line spacing $L$	Photoelectric microscope	0.001	0.3	mm			Q[100, 0.2L], $L$ in mm	nm	2	95%	No	10	
Angle by circle dividers	Optical polygons: face angle	Laser goniometer	0	360	°			0.1	"	2	95%	No	13	
Angle by circle dividers	Optical polygons: face angle	Rotary table and two autocollimators	5	360	°	Minimum step	5 °	0.1	"	2	95%	No	14	

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Angle instruments	Autocollimator: error of indicated angle, orthogonality	Small angle generator	0	200	'	Orientation	horizontal or vertical	0.1	"	2	95%	No	15	
Angle artefacts	Angle block: included angle, pyramid error	Laser goniometer	0	360	°			0.2	"	2	95%	No	16	
Angle instruments	Bubble level: error of indicated inclination angle	Small angle generator	0	200	'			1	"	2	95%	No	18	
Angle instruments	Electronic level: error of indicated inclination angle	Small angle generator	0	200	'			0.1	"	2	95%	No	19	
Angle by circle dividers	Index table: index angle	Standard polygons and autocollimator	5	360	°			0.2	"	2	95%	No	20	
Angle by circle dividers	Rotary table, heads and goniometers: angle	Standard polygons and autocollimator	5	360	°			0.2	"	2	95%	No	20	
Angle Instruments	Clinometers; error of indicated inclination angle	Optical dividing head	0	360	°			3	"	2	95%	No	22	
Angle artefacts	90 ° square: squareness	Column	90	90	°	Orientation	vertical	0.5	"	2	95%	No	23	
						Size	up to 1100 mm							
Angle artefacts	90 ° square: straightness	Column	0	500	µm	Orientation	vertical	0.2	µm	2	95%	No	24	
						Size	up to 1100 mm							
Angle artefacts	90 ° cylinder square: squareness	Column	90	90	°	Orientation	vertical	0.5	"	2	95%	No	25	
						Size	up to 1100 mm							

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Angle artefacts	90 ° cylinder square: straightness	Column	0	500	µm	Orientation	vertical	0.2	µm	2	95%	No	26	
						Size	up to 1100 mm							
Length instrument	EDM instrument, error of indicated distance $L$	Steel reference tape 50 m	0.3	40	m			$Q[0.69, 0.031L]$ , $L$ in m	mm	2	95%	No	26	Approved on 22 September 2015