

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

Evident Service Center Europe s.r.o.
 CAB number 2371, NDT Calibration Laboratory
 Evropská 16/176, Vokovice, 160 00 Praha 6

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	Ultrasonic thickness gauges	0.150 mm	to	5.100 mm		0.005 mm	Comparison with the value of a standard	DOC-23-00018		
		1.00 mm	to	100.00 mm		0.01 mm				
2	Magnamike thickness gauges	0.250 mm	to	25.340 mm		0.005 mm	Comparison with the value of a standard	DOC-23-00018		

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 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.

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).

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CMC for the field of measured quantity: Testing of properties and defects of materials

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	Olympus ultrasonic thickness gauges by automatic method								DOC-23-00018	
	Pulse repetition frequency	3 Hz		to	34 Hz		1 %	Signal measurement with an oscilloscope (ČSN EN 15317) Measurement with an oscilloscope (ČSN EN 15317) Reading from the power supply (ČSN EN 15317) Comparison with reference standard value (ČSN EN 15317)		
	Transmit pulse voltage	2 V		to	500 V		2 %			
	Pulse tail	2 V		to	500 V		2 %			
	Pulse rise time	2 ns		to	1000 ns		0.8 %			
	Pulse duration	2 ns		to	1000 ns		0.8 %			
	Current operating range	0.1 A		to	0.3 A		1.5 %			
Precision and resolution	0.25 mm		to	100 mm		0.15 %				
2	Olympus ultrasonic flaw detectors by automatic method								DOC-23-00019	
	Stability after heating							Instrument display reading (ČSN EN 12668-1)		
	- signal amplitude	5 % SH		to	100 % SH		0.14 % SH			
	- signal position	5 % SW		to	100 % SW		0.12 % SW			
	Display instability									
	- signal amplitude	5 % SH		to	100 % SH		0.14 % SH			
	- signal position	5 % SW		to	100 % SW		0.12 % SW			
	Stability at voltage fluctuation									
	- signal amplitude	5 % SH		to	100 % SH		0.14 % SH			
	- signal position	5 % SW		to	100 % SW		0.12 % SW			
	Transmit pulse voltage	2 V		to	500 V		3 %			
	Pulse tail	2 V		to	500 V		3 %			
	Pulse rise time	2 ns		to	1100 ns		2 %			
Pulse duration	2 ns		to	1100 ns		2 %				
Amplifier frequency response	0.1 MHz		to	26.5 MHz		2 %				

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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					
	Equivalent input noise level	1 nV/√Hz		80 nV/√Hz		7 %	Calculation from measured values (ČSN EN 12668-1)			
	Calibrated attenuator accuracy	0 dB	to	110 dB		0.7 dB	Comparison with a reference standard (ČSN EN 12668-1)			
	Display unit vertical linearity	5 % SH	to	100 % SH		1 % SH	Simulation by el. signal (ČSN EN 12668-1)			
	Time base linearity	5 % SW	to	100 % SW		0.0004 % SW				
	Time resolution	50 ns	to	150 ns		2 ns				
	Transmit pulse voltage	2 V	to	500 V		3 %	Measurement with an oscilloscope (ČSN EN ISO 22232-1)			
	Pulse rise time	2 ns	to	1100 ns		2 %				
	Pulse duration	2 ns	to	1100 ns		2 %				
	Amplifier frequency response	0.1 MHz	to	26.5 MHz		2 %	Instrument display reading (ČSN EN ISO 22232-1)			
	Equivalent input noise level	1 nV/√Hz	to	80 nV/√Hz		7 %	Calculation from measured values (ČSN EN ISO 22232-1)			
	Calibrated attenuator accuracy	0 dB	to	110 dB		0.7 dB	Comparison with a reference standard (ČSN EN ISO 22232-1)			
	Display unit vertical linearity	5 % SH	to	100 % SH		1 % SH	Simulation by el. signal (ČSN EN ISO 22232-1)			
	Time base linearity	5 % SW	to	100 % SW		0.0004 % SW				
3	Reserved									
4	Olympus Nortec 500 series eddy current flaw detectors							DOC-23-00021		
	Instrument current demand	550 mA	to	850 mA		0.006 mA	Power supply reading			
	Instrument switching-off	7.0 V	to	8.0 V		0.06 V	Power supply reading			
	Instrument charging current	1.0 A	to	1.7 A		0.5 mA	Power supply reading			
	Output signal amplitude	0.4 V	to	4.2 V		0.05 mV	Measurement by a multimeter			
	Instrument driving pulse	8.20 V _{p-p}	to	10.27 V _{p-p}		0.06 V _{p-p}				

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	Instrument output frequency			100 Hz		0.1 Hz	Instrument display reading Measurement by an oscilloscope			
	Filter test	2 Hz	to	12 MHz		12 · 10 ⁻⁶ MHz				
	Scanner output frequency			8 Hz		0.057 Hz				
	- for 1200 RPM			20 Hz		0.02 Hz	Comparison with a reference standard Measurement by an oscilloscope			
	- for 3000 RPM			50 Hz		0.05 Hz				
	Instrument conductivity	30 % IACS	to	60 % IACS		0.17 % IACS				
	Additional outputs Frequency No. 1 & No. 2			5 V		0.06 V				
5	Olympus Nortec 600 series eddy current flaw detectors						Measurement with an oscilloscope (ČSN EN ISO 15548-1)	DOC-23-00021		
	Excitation frequency	10 · 10 ⁻⁶ MHz	to	10 MHz		2 %				
	Harmonic distortion	10 · 10 ⁻⁶ MHz	to	10 MHz		0.3 %				
	Maximum output voltage	1.8 V _{p-p}	to	2.2 V _{p-p}		0.3 %				
	Maximum permissible output voltage	0.1 V _{p-p}	to	14.4 V _{p-p}		0.5 %				
	Signal processing frequency response	0.1 kHz	to	2 kHz		0.1 %				
	Phase linearity			360 °		0.002°				
	Gain setting accuracy			100 dB		0.07 dB				
	Instrument maximum noise	1.8 μV	to	15.0 μV		0.5 %	Instrument display reading (ČSN EN ISO 15548-1) Comparison with a reference standard (ČSN EN ISO 15548-1) Calculation from measured values (ČSN EN ISO 15548-1)			
6	Olympus BondMaster 600 series eddy current flaw detectors									
	Excitation frequency	1 kHz	to	500 kHz		2 %	Measurement by an oscilloscope	DOC-23-00021		
	Harmonic distortion	10 · 10 ⁻⁶ MHz	to	10 MHz		0.3 %				

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		min	unit	max	unit					
	Maximum output voltage of TX generator (MIA, RESONANCE) and HV generator (MIA)	0.9 V _{p-p}		to	140 V _{p-p}		0.3 %			
	Output voltage linearity	0.01 %		to	0.75 %		0.5 %			
	Signal processing frequency response	70 Hz		to	80 Hz		0.1 %			
	Phase linearity				360 °		0.002°			
	Gain setting accuracy				100 dB		0.07 dB		Instrument display reading Comparison with a reference standard	
	Instrument maximum noise	1.8 μV		to	15 μV		0.5 %		Calculation from measured values	
7	Olympus Omniscan series ultrasonic flaw detectors									
	Stability after heating									
	- signal amplitude	5 % SH		to	100 % SH		0.14 % SH			
	- signal position	5 % SW		to	100 % SW		0.12 % SW		Instrument display signal reading (ČSN EN 12668-1)	
	Display unit instability									
	- signal amplitude	5 % SH		to	100 % SH		0.14 % SH			
	- signal position	5 % SW		to	100 % SW		0.12 % SW			
	Stability at voltage variations									
	- signal amplitude	5 % SH		to	100 % SH		0.14 % SH			
	- signal position	5 % SW		to	100 % SW		0.12 % SW			
	Transmit pulse voltage	2 V		to	500 V		3 %		Measurement with an oscilloscope (ČSN EN 12668-1)	
	Pulse tail	2 V		to	500 V		3 %			
	Pulse rise time	2 ns		to	1100 ns		2 %			
	Pulse duration	2 ns		to	1100 ns		2 %			
	Amplifier frequency response	0.1 MHz		to	26.5 MHz		2 %		Instrument display reading (ČSN EN 12668-1)	
	Equivalent input noise level				80 nV/√Hz		7 %		Calculation from measured values (ČSN EN 12668-1)	

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	Calibrated attenuator accuracy			110 dB		0.7 dB	Comparison with a reference standard (ČSN EN 12668-1)			
	Display unit vertical linearity	5 % SH	to	100 % SH		1.0 % SH	Instrument display reading (ČSN EN 12668-1)			
	Time base linearity			5,125 μs		0.004 μs	Simulation by el. signal(ČSN EN 12668-1)			
	Transmit pulse voltage (PA)	2 V	to	500 V		3 %	Transmit pulse voltage			
	Pulse rise time (PA)	2 ns	to	1100 ns		2 %	Pulse rise time			
	Pulse duration (PA)	2 ns	to	1100 ns		2 %	Pulse duration			
	Emission delay (PA)			5 ns		0.08 ns	Measurement by an oscilloscope			
	Bandwidth (PA)	0.2 MHz	to	26.5 MHz		2 %	Instrument display reading			
	Display linearity (PA)	5 % SH	to	100 % SH		0.23 % SH				
	Instrument absolute gain (PA)	5 % SH	to	100 % SH		0.23 % SH	Measurement by an oscilloscope			
	Display linearity delay (PA)	0.01 μs	to	10.01 μs		0.001 μs	Electrical signal simulation			
	Transmit pulse voltage (UT)	2 V	to	500 V		3 %	Transmit pulse voltage			
	Pulse rise time (UT)	2 ns	to	1100 ns		2 %	Pulse rise time			
	Pulse duration (UT)	2 ns	to	1100 ns		2 %	Pulse duration			
	Instrument absolute gain (UT)	5 % SH	to	100 % SH		0.23 % SH	Measurement by an oscilloscope			
	Bandwidth (UT)	0.2 MHz	to	26.5 MHz		2 %	Instrument display reading			
	Display linearity delay	0.01 μs	to	10.01 μs		0.001 μs	Electrical signal simulation			
	Display linearity	5 % SH	to	100 % SH		0.23 % SH	Instrument display reading			
	Transmit pulse voltage (UT)	2 V	to	500 V		3 %	Transmit pulse voltage			
	Pulse rise time (UT)	2 ns	to	1100 ns		2 %	Pulse rise time			
	Pulse duration (UT)	2 ns	to	1100 ns		2 %	Pulse duration			
	Amplifier frequency response	0.2 MHz	to	26.5 MHz		2 %	(ČSN EN ISO 22232-1) Signal generation			
	Equivalent input noise level			80 nV/√Hz		7 %	(ČSN EN ISO 22232-1) Calculation from measured values			
							(ČSN EN ISO 22232-1)			

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	Calibrated attenuator accuracy			110 dB		0.7 dB	Comparison with a reference standard (ČSN EN ISO 22232-1)			
	Display unit vertical linearity	5 % SH	to	100 % SH		1.0 % SH	Instrument display reading (ČSN EN ISO 22232-1)			
	Channel gain deviation	5 % SH	to	100 % SH		0.2 % SH	Instrument display reading			
	Transmit pulse voltage	2 V	to	500 V		3 %	Transmit pulse voltage			
	Pulse rise time	2 ns	to	1100 ns		2 %	Pulse rise time			
	Pulse duration	2 ns	to	1100 ns		2 %	Pulse duration (ČSN EN ISO 18563-1)			
	Delay linearity			55 ns		0.07 ns	Simulation by el. signal (ČSN EN ISO 18563-1)			
	Transmit channel position deviation			5 ns		0.07 ns	Electrical signal simulation			
	Amplifier frequency response	0.2 MHz	to	26.5 MHz		2 %	Signal generation (ČSN EN ISO 18563-1)			
	Channel gain deviation	5 % SH	to	100 % SH		0.2 % SH	Instrument display reading (ČSN EN ISO 18563-1)			
	Equivalent input noise level			80 nV/√Hz		7 %	Calculation from measured values (ČSN EN ISO 18563-1)			
	Calibrated attenuator accuracy			110 dB		0.7 dB	Comparison with a reference standard (ČSN EN ISO 18563-1)			
	Vertical display linearity	5 % SH	to	100 % SH		1 % SH	Instrument display reading (ČSN EN ISO 18563-1)			
	Linearity of individual transmit pulses			55 ns		0.07 ns	Simulation by el. signal (ČSN EN ISO 18563-1)			
	Instrument absolute gain (ECA)			1.5 V		0.01 V	Measurement by an oscilloscope			
	Gain linearity (ECA)	0.1 %	to	3.0 %		0.7 %	Comparison with a reference standard			

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		min	unit	max	unit					
	Generator excitation frequency (ECA)	0.1 MHz		to	6.1 MHz		2.0 %	Measurement by an oscilloscope		
	Output voltage verification (ECA)									
	- voltage	1 V		to	10 V		0.7 %			
	- frequency	1 Hz		to	20 Hz		2.0 %			
	General test (ECA)									
	- voltage on a connector				12 V		0.08 V			
	- voltage on a BNC connector				12 V		0.08 V			

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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).

Explanatory notes:

IACS International Annealed Copper Standard

RPM Revolutions per minute

SH Screen Height

SW Screen Width

"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. "