

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

EKOLA group, spol. s r. o.
CAB number 2416, EKOLA group Calibration Laboratory
Mistrovská 7, 108 00 Praha 10

CMC for the field of measured quantity: Mechanical motion (speed)

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	Work place
		min	unit	max	unit					
1	Speedometers for four-cylinder four-stroke engines vibration tachometers			800 min ⁻¹			1.03 min ⁻¹	Speed calibration tool	SOP_04	
				1200 min ⁻¹		0.68 min ⁻¹				
				2398 min ⁻¹		0.64 min ⁻¹				
				3606 min ⁻¹		0.66 min ⁻¹				
				4808 min ⁻¹		0.71 min ⁻¹				
				5971 min ⁻¹		1.04 min ⁻¹				
	induction tachometers			800 min ⁻¹		0.58 min ⁻¹				
				1200 min ⁻¹		0.58 min ⁻¹				
				2398 min ⁻¹		0.58 min ⁻¹				
				3606 min ⁻¹		0.58 min ⁻¹				
				4808 min ⁻¹		0.58 min ⁻¹				
	tachometers with measurement from a 12 V or 24 V electrical signal			5971 min ⁻¹		0.60 min ⁻¹				
				800 min ⁻¹		0.64 min ⁻¹				
				1200 min ⁻¹		0.66 min ⁻¹				
				2398 min ⁻¹		0.58 min ⁻¹				
			3606 min ⁻¹		0.59 min ⁻¹					
		4808 min ⁻¹		0.60 min ⁻¹						
		5971 min ⁻¹		0.59 min ⁻¹						

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).

**The Appendix is an integral part of
Certificate of Accreditation No. 561/2023 of 26/10/2023**

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Mistrovská 7, 108 00 Praha 10

CMC for the field of measured quantity: Acoustic quantities and mechanical vibration

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	Work place
		min unit	max unit					
1	Frequency weightings by acoustic signals / Sound analyzers	70 dB	up to 95 dB	31.5 Hz to 250 Hz 500 Hz to 1 kHz 2 kHz to 4 kHz 8 kHz 12.5 kHz 16 kHz	0.24 dB 0.25 dB 0.33 dB 0.46 dB 0.63 dB 0.80 dB	Multifunctional acoustic calibrator	ČSN EN 61672-3 ed. 2, par. 12	
2	Frequency weightings by electric signals / Sound analyzers	17 dB	up to 140 dB	10 Hz to 20 kHz	0.08 dB	Simulated electrical signal	ČSN EN 61672-3 ed. 2, par. 13	
3	Frequency and time weightings at 1 kHz / Sound analyzers	17 dB	up to 140 dB	1 kHz	0.08 dB	Simulated electrical signal	ČSN EN 61672-3 ed. 2, par. 14	
4	Long-term stability / Sound analyzers	17 dB	up to 140 dB	10 Hz to 20 kHz	0.08 dB	Simulated electrical signal	ČSN EN 61672-3 ed. 2, par. 15	
5	Level linearity on the reference level range / Sound analyzers	17 dB	up to 140 dB	10 Hz to 20 kHz	0.12 dB	Simulated electrical signal	ČSN EN 61672-3 ed. 2, par. 16	
6	Toneburst response / Sound analyzers	17 dB	up to 140 dB	10 Hz to 20 kHz	0.08 dB	Simulated electrical signal	ČSN EN 61672-3 ed. 2, par. 18	
7	C-weighted peak sound level / Sound analyzers	17 dB	up to 140 dB	10 Hz to 20 kHz	0.08 dB	Simulated electrical signal	ČSN EN 61672-3 ed. 2, par. 19	
8	Overload indication / Sound analyzers	17 dB	up to 140 dB	10 Hz to 20 kHz	0.06 dB	Simulated electrical signal	ČSN EN 61672-3 ed. 2, par. 20	
9	High-level stability / Sound analyzers	17 dB	up to 140 dB	10 Hz to 20 kHz	0.08 dB	Simulated electrical signal	ČSN EN 61672-3 ed. 2, par. 21	

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		min unit	max unit					
10	Relative attenuation at midband frequency / Fractional-octave-band filters	17 dB	up to 140 dB	10 Hz to 20 kHz	0.10 dB	Simulated electrical signal	ČSN EN 61260-3, par. 10.2	
11	Effective bandwidth deviation / Fractional-octave-band filters	17 dB	up to 140 dB	10 Hz to 20 kHz	0.12 dB	Simulated electrical signal	ČSN EN 61260-3, par. 10.3	
12	Linear operating range, measurement range and overload indicator / Fractional-octave-band filters	17 dB	up to 140 dB	10 Hz to 20 kHz	0.10 dB	Simulated electrical signal	ČSN EN 61260-3, par. 11	
13	Measurement of relative attenuation / Fractional-octave-band filters	17 dB	up to 140 dB	10 Hz to 20 kHz	0.10 dB	Simulated electrical signal	ČSN EN 61260-3, par. 13	
14	Frequency response in octave bands / Measurement microphones size 1/2 ^{''}	31,5 Hz	up to 16 kHz	31.5 Hz to 250 Hz 500 Hz to 1 kHz 2 kHz to 4 kHz 8 kHz 12.5 kHz 16 kHz	0.27 dB 0.28 dB 0.35 dB 0.48 dB 0.64 dB 0.81 dB	Measurement by sound analyzer using multifunctional acoustic calibrator	SOP_01 (ČSN EN 61094-6, par. 9)	
15	Open-circuit sensitivity / Measurement microphones size 1/2 ^{''}	-45 dB	up to -20 dB	250 Hz	0.13 dB	Comparative method acc. to the nominal sensitivity of the standard microphone	SOP_02 (ČSN EN 61094-5 ed. 2, par. 5)	

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		min	unit					
16	Sound pressure level / Sound calibrators for microphones size 1“ and 1/2“					Comparative method acc. to the nominal sound pressure level of the standard calibrator	ČSN EN IEC 60942 ed. 2, par. B.4.6	
				94 dB	250 Hz	0.15 dB		
				114 dB	250 Hz	0.14 dB		
				94 dB	1 kHz	0.14 dB		
				114 dB	1 kHz	0.13 dB		
17	Sound signal frequency / Sound calibrators for microphones size 1“ and 1/2“					Frequency counter measurement	ČSN EN IEC 60942 ed. 2, par. B.4.7	
				250 Hz	94 dB and 114 dB	0.08 %		
				1000 Hz	94 dB and 114 dB	0.04 %		
18	Total distortion / Sound calibrators for microphones size 1“ and 1/2“	0 %	up to	100 %		Calculation based on sound analyzer measurement	ČSN EN IEC 60942 ed. 2, par. B.4.8	
				94 dB and 114 dB	250 Hz and 1 kHz	0.06 % (abs.)		

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