

## Acoustics, Ultrasound and Vibration, Bulgaria, BIM (Bulgarian Institute of Metrology)

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty					Comments
Quantity	Instrument or Artifact	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?	
Pressure sensitivity level	Measurement microphone type LS1P	Pressure sequential comparison			dB (reference: 1 V/Pa)	Frequency	63 Hz to 1 kHz	0.08	dB	2	95%	No	Approved on 18 October 2005
Pressure sensitivity level	Measurement microphone type LS1P	Pressure sequential comparison			dB (reference: 1 V/Pa)	Frequency	1.25 kHz to 4 kHz	0.12	dB	2	95%	No	Approved on 18 October 2005
Pressure sensitivity level	Measurement microphone type LS1P	Pressure sequential comparison			dB (reference: 1 V/Pa)	Frequency	5 kHz to 10 kHz	0.18	dB	2	95%	No	Approved on 18 October 2005
Pressure sensitivity level	Working standard microphone	Pressure sequential comparison			dB (reference: 1 V/Pa)	Frequency	63 Hz to 4 kHz	0.14	dB	2	95%	No	Approved on 18 October 2005
Pressure sensitivity level	Working standard microphone	Pressure sequential comparison			dB (reference: 1 V/Pa)	Frequency	5 kHz to 10 kHz	0.26	dB	2	95%	No	Approved on 18 October 2005
Free-field sensitivity level	Measurement microphone	Sequential comparison			dB (reference: 1 V/Pa)	Frequency	63 Hz to 4 kHz	0.3	dB	2	95%	No	Approved on 18 October 2005
Free-field sensitivity level	Measurement microphone	Sequential comparison			dB (reference: 1 V/Pa)	Frequency	5 kHz to 10 kHz	0.5	dB	2	95%	No	Approved on 18 October 2005
Sound pressure level	Sound calibrator single frequency 160 Hz to 1000 Hz	Calibrated measurement microphone	70	125	dB (reference: 20 µPa)	Microphone type	LS1P	0.1	dB	2	95%	No	Approved on 18 October 2005
Sound pressure level	Sound calibrator single frequency 160 Hz to 1000 Hz	Calibrated measurement microphone	70	125	dB (reference: 20 µPa)	Microphone type	WS2P	0.15	dB	2	95%	No	Approved on 18 October 2005
Sound pressure response level	Sound level meter	Sound calibrator	94/124	94/124	dB (reference: 20 µPa)	Frequency	1 kHz / 250 Hz	0.2	dB	2	95%	No	Approved on 18 October 2005

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Free-field response level	Sound level meter	Sequential comparison			dB (reference: true sound pressure)	Frequency	63 Hz to 4 kHz	0.4	dB	2	95%	No	Approved on 18 October 2005
Free-field response level	Sound level meter	Sequential comparison			dB (reference: true sound pressure)	Frequency	5 kHz to 10 kHz	0.7	dB	2	95%	No	Approved on 18 October 2005
Acceleration	Calibrator	Laser interferometer, ISO 16063-11	0.1	1000	m/s <sup>2</sup>	Frequency	0.5 Hz to 1000 Hz	0.5	%	2	95%	Yes	Approved on 18 October 2005
Acceleration	Calibrator	Comparison, ISO 16063-21	0.1	1000	m/s <sup>2</sup>	Frequency	5 Hz to 5 kHz	1	%	2	95%	Yes	Approved on 18 October 2005
Acceleration	Calibrator	Comparison, ISO 16063-21	1	1000	m/s <sup>2</sup>	Frequency	6.3 kHz to 10 kHz	2	%	2	95%	Yes	Approved on 18 October 2005
Acceleration	Acceleration measuring instrument	Laser interferometer, ISO 16063-11	0.1	1000	m/s <sup>2</sup>	Frequency	5 Hz to 1000 Hz	0.5	%	2	95%	Yes	Approved on 18 October 2005
Acceleration	Acceleration measuring instrument	Comparison, ISO 16063-21	0.1	1000	m/s <sup>2</sup>	Frequency	5 Hz to 5 kHz	1	%	2	95%	Yes	Approved on 18 October 2005
Acceleration	Acceleration measuring instrument	Comparison, ISO 16063-21	1	1000	m/s <sup>2</sup>	Frequency	6.3 kHz to 10 kHz	2	%	2	95%	Yes	Approved on 18 October 2005
Charge sensitivity (magnitude)	Accelerometer	Laser interferometer, ISO 16063-11			C/(m/s <sup>2</sup> )	Frequency	5 Hz to 1000 Hz	0.5	%	2	95%	Yes	Approved on 18 October 2005
Charge sensitivity (magnitude)	Accelerometer	Comparison, ISO 16063-21			C/(m/s <sup>2</sup> )	Frequency	5 Hz to 5 kHz	1	%	2	95%	Yes	Approved on 18 October 2005
Charge sensitivity (magnitude)	Accelerometer	Comparison, ISO 16063-21			C/(m/s <sup>2</sup> )	Frequency	6.3 kHz to 10 kHz	2	%	2	95%	Yes	Approved on 18 October 2005

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Quantity	Instrument or Artifact	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?	
Voltage sensitivity (magnitude)	Accelerometer, acceleration measuring chain	Laser interferometer, ISO 16063-11			V/(m/s <sup>2</sup> )	Frequency	5 Hz to 1000 Hz	0.5	%	2	95%	Yes	Approved on 18 October 2005
Voltage sensitivity (magnitude)	Accelerometer, acceleration measuring chain	Comparison, ISO 16063-21			V/(m/s <sup>2</sup> )	Frequency	5 Hz to 5 kHz	1	%	2	95%	Yes	Approved on 18 October 2005
Voltage sensitivity (magnitude)	Accelerometer, acceleration measuring chain	Comparison, ISO 16063-21			V/(m/s <sup>2</sup> )	Frequency	6.3 kHz to 10 kHz	2	%	2	95%	Yes	Approved on 18 October 2005
Acceleration (shock)	Acceleration measuring instrument	ISO 16063-13 parametric shock standard	10	2000	m/s <sup>2</sup>	Duration	0.5 ms to 10 ms	2	%	2	95%	Yes	Approved on 18 October 2005
Acceleration (shock)	Acceleration measuring instrument	Comparison, ISO 16063-22	10	2000	m/s <sup>2</sup>	Duration	0.5 ms to 10 ms	2.5	%	2	95%	Yes	Approved on 18 October 2005
Charge sensitivity (shock, modulus)	Accelerometer	ISO 16063-13 parametric shock standard			C/(m/s <sup>2</sup> )	Peak value	10 m/s <sup>2</sup> to 2000 m/s <sup>2</sup>	2	%	2	95%	Yes	Approved on 18 October 2005
						Duration	0.5 ms to 10 ms						

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Quantity	Instrument or Artifact	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?	
Charge sensitivity (shock, modulus)	Accelerometer	Comparison, ISO 16063-22			C/(m/s <sup>2</sup> )	Peak value	10 m/s <sup>2</sup> to 2000 m/s <sup>2</sup>	2.5	%	2	95%	Yes	Approved on 18 October 2005
						Duration	0.5 ms to 10 ms						
Voltage sensitivity (shock, modulus)	Acceleration measuring chain	ISO 16063-13 parametric shock standard			V/(m/s <sup>2</sup> )	Peak value	10 m/s <sup>2</sup> to 2000 m/s <sup>2</sup>	2	%	2	95%	Yes	Approved on 18 October 2005
						Duration	0.5 ms to 10 ms						
Voltage sensitivity (shock, modulus)	Acceleration measuring chain	Comparison, ISO 16063-22			V/(m/s <sup>2</sup> )	Peak value	10 m/s <sup>2</sup> to 2000 m/s <sup>2</sup>	2.5	%	2	95%	Yes	Approved on 18 October 2005
						Duration	0.5 ms to 10 ms						