

Acoustics, Ultrasound and Vibration, The Netherlands, NMI-VSL (Nederlands Meetinstituut - Van Swinden Laboratorium)



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 LS1	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	63 Hz	0.08	dB	2	95%	No	Approved on 29 September 2004
Pressure sensitivity level	Measurement microphone type LS1	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	80 Hz to 3.15 kHz	0.06	dB	2	95%	No	Approved on 29 September 2004
Pressure sensitivity level	Measurement microphone type LS1	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	4 kHz to 8 kHz	0.07	dB	2	95%	No	Approved on 29 September 2004
Pressure sensitivity level	Measurement microphone type LS1	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	10 kHz	0.1	dB	2	95%	No	Approved on 29 September 2004
Pressure sensitivity level	Measurement microphone type LS2	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	63 Hz to 6.3 kHz	0.06	dB	2	95%	No	Approved on 29 September 2004
Pressure sensitivity level	Measurement microphone type LS2	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	8 kHz to 10 kHz	0.08	dB	2	95%	No	Approved on 29 September 2004
Pressure sensitivity level	Measurement microphone type LS2	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	12.5 kHz	0.1	dB	2	95%	No	Approved on 29 September 2004
Pressure sensitivity level	Measurement microphone type LS2	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	16 kHz	0.12	dB	2	95%	No	Approved on 29 September 2004
Pressure sensitivity level	Measurement microphone type LS2	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	20 kHz	0.2	dB	2	95%	No	Approved on 29 September 2004

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Sound pressure level	Sound calibrator single frequency (pistonphone type)	Calibrated measurement microphone	114	124	dB (reference: 20 μ Pa)	Microphone type	LS1P	0.08	dB	2	95%	No	Approved on 29 September 2004
Sound pressure level	Sound calibrator single frequency (pistonphone type)	Calibrated measurement microphone	114	124	dB (reference: 20 μ Pa)	Microphone type	LS2P	0.08	dB	2	95%	No	Approved on 29 September 2004
Sound pressure level	Sound calibrator (single frequency in the range 125 Hz to 1 kHz)	Calibrated measurement microphone	94	114	dB (reference: 20 μ Pa)	Microphone type	LS2P	0.08	dB	2	95%	No	Approved on 29 September 2004
Sound pressure level	Sound calibrator multi frequency	Calibrated measurement microphone	94	114	dB (reference: 20 μ Pa)	Frequency	31.5 Hz	0.2	dB	2	95%	No	Approved on 29 September 2004
						Microphone type	LS2P						
Sound pressure level	Sound calibrator multi frequency	Calibrated measurement microphone	94	114	dB (reference: 20 μ Pa)	Frequency	63 Hz to 4 kHz	0.1	dB	2	95%	No	Approved on 29 September 2004
						Microphone type	LS2P						
Sound pressure level	Sound calibrator multi frequency	Calibrated measurement microphone	94	114	dB (reference: 20 μ Pa)	Frequency	8 kHz	0.3	dB	2	95%	No	Approved on 29 September 2004
						Microphone type	LS2P						
Free-field sensitivity level	Hydrophone	Two transducer reciprocity method			dB (reference: 1 μ V/Pa)	Frequency	0.5 MHz to 15 MHz	6 to 9	%	2	95%	Yes	Approved on 29 September 2004

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Ultrasonic power	Transducers	Radiation force balance	10	1000	mW	Frequency	1 MHz to 5 MHz	3 to 4	%	2	95%	Yes	Approved on 29 September 2004
Ultrasonic power	Transducers	Radiation force balance	10	1000	mW	Frequency	10 MHz	3 to 6	%	2	95%	Yes	Approved on 29 September 2004
Ultrasonic power	Transducers	Radiation force balance	1	20	W	Frequency	0.8 MHz to 3 MHz	3 to 4	%	2	95%	Yes	Approved on 29 September 2004. Method limited to the region where the product of the wavenumber by the radius is superior to 20.
Charge sensitivity (magnitude)	Accelerometer	ISO 16063-11			C/(m/s ²)	Frequency	50 Hz to 800 Hz	0.5	%	2	95%	Yes	Approved on 29 September 2004
Charge sensitivity (magnitude)	Accelerometer	ISO 16063-11			C/(m/s ²)	Frequency	1 kHz to 2.5 kHz	1.0	%	2	95%	Yes	Approved on 29 September 2004
Charge sensitivity (magnitude)	Accelerometer	ISO 16063-11			C/(m/s ²)	Frequency	3.15 kHz to 5 kHz	2.0	%	2	95%	Yes	Approved on 29 September 2004
Charge sensitivity (magnitude)	Accelerometer	ISO 16063-21			C/(m/s ²)	Frequency	50 Hz to 800 Hz	0.8	%	2	95%	Yes	Approved on 29 September 2004
Charge sensitivity (magnitude)	Accelerometer	ISO 16063-21			C/(m/s ²)	Frequency	1 kHz to 2.5 kHz	1.5	%	2	95%	Yes	Approved on 29 September 2004

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Charge sensitivity (magnitude)	Accelerometer	ISO 16063-21			C/(m/s ²)	Frequency	3.15 kHz to 5 kHz	3.0	%	2	95%	Yes	Approved on 29 September 2004