SQ-4.1

Electro-Acoustic Coupler

figure simliar

Application

- Pressure chamber **secondary calibration** of microphones according to **IEC 61094-5**
- Pressure chamber **secondary calibration** of sound level meters and sound level measuring chains according to **IEC 61672**

Range of Use

- **Certified calibration laboratories**
- Departments of **measuring instrument verification** in research and industry, for example test laboratories in the automotive field or in the aviation and space industry
- **Quality assurance** in manufacturing of microphones, sound level meters and dosimeters

Advantages

- Wide **frequency range 31.5 Hz…8 kHz**
- Low **distortion**, even at low frequencies
- Symmetric very small pressure chamber

Features

- True **pressure chamber calibration** with an acoustic coupler
- **Calibration** of measuring microphones (1” capacitor and electrets microphones)
- **Supply** of a sound pressure level for the calibration of sound level meters and measuring chains
- **Frequency range** 31.5 Hz…8 kHz
- Including Microphone holder fixture
- Including High-End Power Amplifier

- **On request**: there is a solution for 1/2“ microphones available: the SQ-4.2 electro-acoustic coupler of SPEKTRA.

SQ-4.1
Electro-Acoustic Coupler

System components

- SQ 4.1 active electro-acoustic coupler
- High-End Power amplifier S.M.S.L sAp-8, including power plug and plug adapter
- Microphone holder fixture
- System cable

Optional reference standards (recommended):

- 1” condenser microphone cartridge type **LS1P** or **WS1P** with amplifier

Sound field:	**Pressure chamber**	
Frequency range:	31.5 Hz…8 kHz	
Maximum electrical power of the sound source:	0.5 W	
Distortion factor at 94 dB (31,5 Hz…1 kHz):	< 3% (THD)	
Stability at 94 dB:	< 0.2 dB	
Diameter of Microphones	1“	
Maximum sound pressure level: *(* only temporary peak value, depending on frequency range)*	31.5 Hz…2.5 kHz > 2.5 kHz…3.15 kHz > 3.15 kHz…6.3 kHz > 6.3 kHz…8 kHz	94 dB* 84 dB* 74 dB* 64 dB*

Typical measurement uncertainty of a microphone calibration with LS1P:

- For environmental conditions: temperature 23 °C (± 2 °C) and relative humidity 30 %...75 %
- Measurement uncertainties determined with SPEKTRA calibration system CS18 SPL

Calibration Method		**Comparison calibration**	
Sound pressure level		94 dB [2] up to 2.5 kHz	
Typical expanded Uncertainty Frequency Range [1]	**Measuring Microphones** with Diameter 1" **Sound Level Meters** and Sound Level Measuring Chains	31.5 Hz...5 kHz	0.2 dB
		> 5 kHz...8 kHz	0.5 dB

[1] Determined according to GUM (ISO Guide to the expression of uncertainty in measurement, 1995) with k = 2 (coverage factor)
[2] 94 dB sound pressure level is preferred. Stated values of expanded uncertainty apply to this level.

All data are subject to change without notice

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