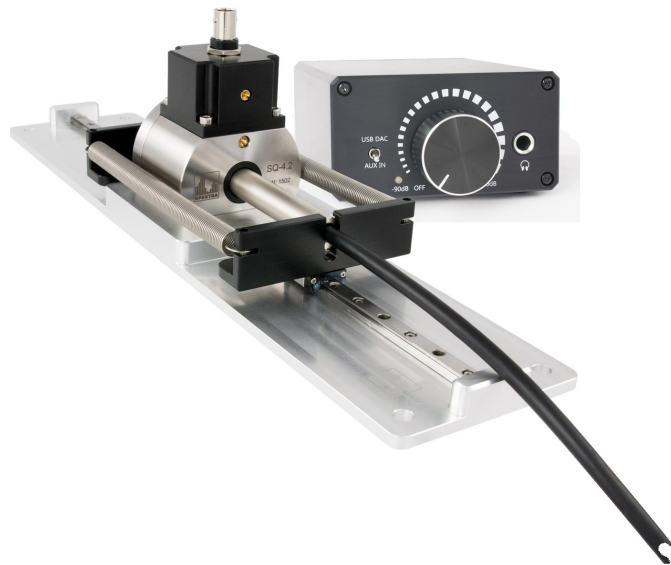


SQ-4.2

Electro-Acoustic Coupler



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 ... 16 kHz**
- Low **distortion**, even at low frequencies
- High sound pressure level up to 124 dB
- Symmetric very small pressure chamber

Features

- True **pressure chamber calibration** with an acoustic coupler
- **Calibration** of measuring microphones (capacitor and electrets microphones in the sizes 1/2" and with adapter 1/4")
- **Supply** of a sound pressure level for the calibration of sound level meters and measuring chains
- **Frequency range**
SQ-4.2, 1/2": 31.5 Hz ... 16 kHz
- **Sound pressure level**
64 dB ... 124 dB
- Including Microphone fixture unit
- Including High-End Power Amplifier
- **On request:** solution for 1" microphones available

SQ-4.2

Electro-Acoustic Coupler



System components

- SQ 4.2 active electro-acoustic coupler
- Microphone holder fixture
- High-End Power amplifier
- System cable

Optional reference standards (recommended):

- 1/2" condenser microphone cartridge type **LS2P** or **WS2P** with amplifier
- LS-Adapter (open grid for WS2P Microphone)

Optional calibration adapter:

- Calibration adapter for surface microphones
- Calibration adapter for ear simulators

Soundfield:	Pressure chamber	
Frequency range:	31.5 Hz ... 16 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	1/2" and with adapter 1/4"	
Maximum sound pressure level:	31.5 Hz ... < 63 Hz	104 dB
	63 Hz ... < 250 Hz	114 dB
	250 Hz ... 1.6 kHz	124 dB
	> 1.6 kHz ... 6.3 kHz	104 dB
	> 6.3 kHz ... 16 kHz	74 dB

Typical measurement uncertainty of a microphone calibration with LS2P:

- 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 6.3 kHz	
Typical expanded Uncertainty Frequency Range ¹⁾	Measuring Microphones with Diameter 1/2" Sound Level Meters and Sound Level Measuring Chains	31.5 Hz ... 5 kHz	0.20 dB
		> 5 Hz ... 10 kHz	0.25 dB
		> 10 kHz ... 16 kHz	0.50 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.