CS18 SPL

Calibration System Sound Pressure Level

Application

- Pressure chamber **secondary calibration** of measuring microphones acc. to **IEC 61094-5**
- Pressure chamber **secondary calibration** of sound level meters and sound level measuring chains according to **IEC 61672-3** (comparison method)
- Calibration of the sound intensity probes
- Calibration of acoustic calibrators according to **IEC 60942**

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

Features

- Reference standards **traceable to P**hysikalisch **T**echnische **B**undesanstalt Braunschweig (**PTB**) by the SPEKTRA Calibration Laboratory DKD-K-27801 **(DKD Calibration Certificate)**
- True **pressure chamber calibration** with an acoustic calibrator
- **Calibration** of measuring microphones (capacitor and electrets microphones in the sizes ½" and ¼")
- **Supply** of a sound pressure level for the calibration of sound level meters and measuring chains
- **Calibration** of acoustic calibrators
- **Upgradeable** to a combined acoustical calibration system e.g. CS18 SPL / FF

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Components

- Vibration control system **SRS-35**, SPEKTRA
- **SQ-02** Sound-intensity-calibrator
- **Reference standard**
  - **BN-A-01** ½" condenser microphone cartridge **LS2P**, with ½" VIC (Voltage Insert Calibration) preamplifier
- **Optional reference standards**
  - **BN-A-02** Acoustic calibrator class **LS**, (94 dB / 1,000 Hz and 114 dB / 1,000 Hz)
  - **BN-A-03** Acoustic calibrator pistonphone type **LS** (124 dB / 250 Hz)
- **Working standard**
  - **GN-A-02** ½" condenser microphone cartridge type **WS2P**, with preamplifier
- Standard-PC

Type of Sound Field: Pressure Chamber			
Calibration Method 1		Comparison with the Reference Standard Microphone **Comparison Method**	
Sound Pressure Level		94 dB [2]; (Adjustable in the Range of 84 dB … 114 dB)	
Frequency Range and Expanded Uncertainty[1]	Measuring Microphones with Diameter (½" and ¼") Sound Level Meters and Sound Level Measuring Chains	31.5 Hz ... 2,000 Hz	0.3 dB
		> 2,000 Hz ... 5,000 Hz	0.5 dB
Further calibration methods available with additional reference standards			
Calibration Method 2		**Absolute Calibration with Acoustic Calibrator**	
Frequency, Sound Pressure Level and Expanded Uncertainty[1]	**Measuring Microphones** with Diameter (1", ½" and ¼"), **Sound Level Meters** and Measuring Chains	250 Hz / 124 dB	0.2 dB
		1,000 Hz / 94 dB	0.2 dB
		1,000 Hz / 114 dB	0.2 dB
Calibration Method 3		Comparison with the Reference Standard Microphone **Substitution Method**	
Frequency and Expanded Uncertainty[1]	Acoustic Calibrators and Pistonphones	Approved Acoustic Calibrators and Pistonphones (class 1 and 2)	0.15 dB
		Other Acoustic Calibrators and Pistonphones	0.25 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.

Option for calibration system:

CLP - Temperature, Hygrometer and Air Pressure sensor with all automatic data transfer to the calibration system. This option is especially recommended if the system is operated with the additional reference standards (pistonphone and calibrator) are used, in order to get the correction factors depending on the environmental conditions.

All data are subject to change without notice

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