

Sound Calibrator 42AB

Typical applications

- Microphone calibration
- Microphone comparisons

The G.R.A.S. Sound Calibrator 42AB (Fig. 1) is a small battery-operated precision microphone calibrator. The calibrator can be used directly on 1" microphones and ½" microphones. Adapters for calibrating ¼" microphones and ⅛" microphones are included.

The 42AB works at the reference frequency (1 kHz) of the internationally standardized weighting filters A, B, C, and D. This means that it can be used directly for calibrating sound level meters and other similar equipment with these weighting filters activated without having to make corrections. The calibration level is 114 dB (re. 20 µPa) which corresponds to 10 Pa. This is enough to ensure immunity to background noise without overloading the equipment.

The 42AB consists of a sound source, a reference microphone, and an electronic control circuit. The special reference microphone is extremely stable and independent of variations in barometric pressure, temperature, and humidity. The reference microphone and control circuit together maintain a constant sound pressure level inside the calibration chamber and automatically adjust for changes in load volume, temperature, humidity, and barometric pressure.



Fig. 1 Sound Calibrator 42AB

Additionally, the calibrator will automatically switch off when the microphone under test is removed from the calibration chamber.

The output level of the 42AB, viz. 114 dB (re. 20 µPa) at 1 kHz, meets the requirements of IEC Standard 60942 (2003-01) Class 1 and is therefore in accordance with international standards. It complies with ANSI S1.40 (1997).

The Type 42AB is supplied with a leather protection case and an individual calibration certificate.

Specifications

<p>Output signal: Specified on the calibrator for reference conditions.</p> <p>Reference conditions: Ambient temperature: 20°C Ambient pressure: 101.3 kPa Humidity: 65% RH Effective load volume: 250 mm³</p> <p>Accuracy: SPL: 114 dB ± 0.2 dB re. 20 µPa Frequency: 1000 Hz ± 0.2% Complies with IEC 60942 (2003-01) Class 1.</p> <p>General: Typical sensitivity to change in load volume: 0.0003 dB/mm³ at 1000 Hz Time for level to stabilize: max. 2 sec.</p> <p>Microphone sizes: According to IEC 1094-4 With adapters removed: 1" With adapters: ½", ¼", and ⅛"</p> <p>Harmonic distortion: Maximum: 1%</p> <p>Controls: Push-button start. Automatic switch-off.</p> <p>CE classification: EMC: EN561000-6-1, EN61000-6-3 following the provisions for the LVD and EMC directive Safety: EN 61010-1, 1993 For portable equipment, pollution category 2.</p>	<p>Ambient requirements for specified operation: Temperature: -10°C to +50°C Ambient pressure: 65 kPa to 108 kPa Humidity: 10% to 90% RH</p> <p>Battery: Type: 6LR61, 9V Life: ≈ 30 hours Battery type 6F22G has a shorter life, whereas a 9V lithium battery gives an extended operating time.</p> <p>External supply voltage: 7.5V to 15V Automatic shut-off when voltage drops below 7.5V</p> <p>Overall weight and dimensions: Weight: 185 gm with battery Length: 109.5 mm Diameter: 40 mm</p> <p>Accessories included: Delivered fitted with a removable adapter for calibrating ½" microphones. Remove this for calibrating 1" microphones. Adapter for ¼" microphones: RA0049 Adapter for ⅛" microphones: RA0069 9V alkaline battery: EL0003</p>
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