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## Manual Sound Calibrator PCE-SC 42



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## 1 Introduction

Thank you for purchasing a PCE-SC 42 from PCE Instruments.

This sound calibrator is light weight, small, handy and easy to transport. Despite its complexity, it is easy to operate. If the safety notes are adhered to, then the PCE-SC 42 will give you many years of service, due to its robust construction. The calibrator is mostly used to calibrate sound level meters, sound measurement systems and microphones and can be used on-site as well as in laboratories.

## 2 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. There is no warranty of damages or injuries caused by non-observance of the manual.

- If anything is spilled on the device, remove immediately with a damp cloth. Any corrosive material or fluid must be removed with an appropriate detergent.
- When the device is not in use, ensure it is switched off.
- Do not to expose it to extreme environmental conditions (temperature, humidity), vibrations, mechanical vibrations, dust, corrosive vapors and electrostatic and electromagnetic influences.
- Ensure the transducer cap is closed firmly at all times.
- If the device has not been used for more than 30 days, check if the battery is empty and if so replace it.
- If the device is not going to be used for longer than 30 days, remove the battery to prevent leakage.

This user's handbook is published by PCE Instruments, no liability is taken.

Please read our General Guarantee Terms which can be found in our General Terms of Business.

If you have any queries, please contact PCE Instruments

### 3 Specification

Frequency	1 kHz $\pm$ 0.1 %
Sound pressure level	94 dB and 114 dB
Accuracy	$\pm$ 0.3 dB (at 20 °C and 760 mm Hg)
Microphone	1/2" and 1" microphone opening
Standard	IEC 942 class 2
Power supply	9 V block battery NEDA 1604, Burgess 2U6 or similar
Battery life	Approx. 100 hours
Environmental conditions	-10 ... 50 °C
Storage conditions	-40 ... +65 °C (remove battery beforehand)
Temperature coefficient	0 ... 0.01 dB / °C
Altitude effect	Reduction of approx. 0.1 dB per altitude gain from 2000 feet from the sea level up to 12000 feet or comparable changes of the atmospheric pressure (approx. at every decrease of 50 mm Hg)
Dimensions	48 x 48 x 138 mm
Weight	Approx. 250 g

### 4 System description



- 1 Transducer cap
- 2 Microphone adapter
- 3 Battery compartment cover
- 4 ON / OFF (selection switch 94 or 114 dB)
- 5 Battery level notification (LED)

## 5 Instructions

### 5.1 Calibration

The PCE-SC 42 can be used to test various sound devices. If a device with a 1 inch microphone is being tested, then the appropriate adapter ring for a 1 inch microphone head should be used. Ensure that the microphone is inserted into the adapter and is resting on the bottom edge, thereby supporting the microphone and providing an inner seal. To take a measurement reading, proceed as follows:

1. Using the switch, set the calibrator to 94 or 114 dB. A sound with a frequency of 1000 Hz will be audible.
2. Switch on the sound level meter to be tested.
3. Carefully connect the microphone with the connector. Ensure that the microphone is fully inserted into the connector and is resting on the bottom edge.
4. When the calibration procedure is completed, then remove the microphone and switch the calibrator off.

### 5.2 Replacing the batteries

If the battery level notification turns dark, then the battery must be replaced. Unscrew the bottom ring (the battery compartment cover), remove the switch carefully and take the used battery out and insert the new one.

## 6 Influence of the atmospheric pressure and temperature

The effects of normal fluctuations of the atmospheric pressure are usually irrelevant, regardless of the location. However altitude influences the PCE-SC 42 in the same way as most calibrators. The convertor membrane in the calibrator creates sound through the vibrations impacting on the air. If the air is thin (in higher altitudes) then a lower sound level is produced. This sound calibrator is intended to produce 94 dB at sea level. If the device is used above sea level, a lower sound level will be produced depending on the altitude.

For every 2000 feet, above sea level, the PCE-SC 42 produces 0.1 dB less than 94 dB. For example, at the altitude of 6000 feet the calibrator produces only 93.7dB. Therefore, the sound level meter should be set on 93.7dB instead of 94dB. The temperature influences are lower than  $\pm 0.05$  dB/°C, at a reference temperature of 23 °C.

## 7 Disposal

For the disposal of batteries, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

If you have any questions, please contact PCE Instruments.



## 8 Contact

If you have any questions about our range of products or measuring instruments please contact PCE Instruments.

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