



SCARLET TECH

Class 1 Sound Calibrator ST-120

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Introduction

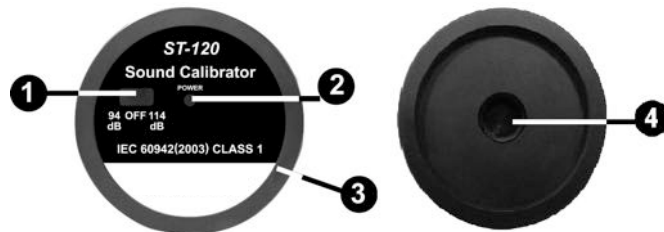
Overview

The **ST-120** Sound Level Calibrator is used for the calibration of the pressure sensitivity of the microphone and sound level measuring equipment.

ST-120 conforms to the standard of IEC60942 (2003) Class 1. The design of ST-120 is based on a feedback arrangement to ensure a high stable sound pressure level. The performance is very stable; it does not required for the revision to the microphone equivalent volume.

ST-120 Calibrator Overview

1. Power & output level select switch
2. Low battery indicator
3. Battery cover
4. 1/2" adapter.



Equivalent Free-Field

The principle of the calibrator is depended on the free-field microphone. For example, when using the ST-120 to calibrate the sound level meter and other environmental noise measuring equipments, it will need to revise the pressure-field to the equivalent free-field. The corrected value is the difference between the pressure-field response and free-field response when at 1000 Hz. The value for the 23.77mm (1 inch) microphone is -0.4 dB, and for the 12.7 mm (1/2 inch) microphone is -0.2 dB.

Also the equivalent free-field for the 23.77 mm (1 inch) microphone is 93.6 dB, and for the 12.7 mm (1/2 inch) microphone is 93.8 dB.

Operating Instructions

1. Insert the 1/2 inches microphone to the hole of ST120 Sound Calibrator until you hear a "click" sound. (refer to Fig. 1)
2. Select output dB level and turn on power, LED will be lightened and the meter emits a sound.
3. Read the value on the sound level meter's display and perform the calibration.
4. Extract the microphone.



Calibration and Adjustment

If calibration out of specification, you can calibrate and adjustment it:

1. Unscrew the metal silver battery cover completely.
2. Uses a small screw driver trimming interior variable resistor(VR1) until it attains a designated standard which reaches the accurate 94dB normal value.

Caution: When performing verification test, users should use the pressure field response laboratory scale microphone as well as the precision measurement amplifier carries on the measuring. The adjustment does not require 114.0 dB to carry on.

Battery Replacement

The battery voltage should maintain more than 7 V, when the LED flash, please change the battery soon.

- ▶ Unscrew completely the metal silver battery cover.
- ▶ Remove the battery.
- ▶ Replace the battery with the new one of the same type

Technical Specification

Instrument

Standard	IEC 60942 (2003), ANSI S1.40 (1984)
Sound Pressure Level	94 and 114 dB (in the reference of 2×10^{-5} Pa)
Accuracy	94 ± 0.3 dB and 114 ± 0.5 dB
Frequency	1000 Hz \pm 1%.
Distortion	≤ 3 %
Battery	9V 006P or IEC6F22 or NEDA 1604
Dimensions	62 x 134 (mm)
Weight	350 g (including 1/2" adaptor and a 9V battery)
Stable Time	20 sec
Operating Temperature	0°...40° C
Storage Temp	-10°...60° C
Humidity	< 90%
Atmospheric Pressure	65KPa - 100Kpa

NOTE: Environmental conditions: temperature $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, relative humidity < 80%rh.

Accessories

- ST-120
- 9V battery x 1
- User Manual
- Carrying case

EMC This instrument was designed in accordance with EMC Standards in force and its compatibility has been tested in accordance with EN61326-2 (2006).



Warranty & Services

Warranty conditions

This instrument is guaranteed for one year against material or production defects, in accordance with our general sales conditions. During the warranty period the manufacturer reserves the right to decide either to repair or replace the product.

Should you need for any reason to return back the instrument for repair or replacement take prior agreements with the local distributor from whom you bought it. Do not forget to enclose a report describing the reasons for returning (detected fault). Use only original packaging. Any damage occurred in transit due to non-original packaging will be charged anyhow to the customer.

The warranty doesn't apply to:

Accessories and batteries (not covered by warranty)

Repairs made necessary by improper use (including adaptation to particular applications not foreseen in the instructions manual) or improper combination with incompatible accessories or equipment.

Repairs made necessary by improper shipping material causing damages in transit.

Repairs made necessary by previous attempts for repair carried out by non-skilled or unauthorized personnel.

Instruments for whatever reason modified by the customer himself without explicit authorization of our Technical Dept.

The contents of this manual may not be reproduced in any form whatsoever without the manufacturer's authorization.

Our products are patented. The logotypes are registered. We reserve the right to modify characteristics and prices as part of technological developments which might require them.

Services

Shouldn't the instrument work properly, before contacting your distributor make sure that batteries are correctly installed and working, check the test leads and replace them if necessary.

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