

CERTIFICATE OF CALIBRATION

ISSUED BY AV CALIBRATION

Date of issue 03 August 2016 Certificate N° 09325



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ORDER No - Job No UKAS16/07239/05

DATE OF RECEIPT 21 July 2016

PROCEDURE AV Calibration Engineer's Handbook, section 25: periodic testing of sound level meters to IEC 61672-3:2006 (BS EN 61672-3:2006) as modified by UKAS TPS 49 Edition 2: June 2009

IDENTIFICATION Sound level meter Brüel & Kjær type 2250 serial No 2827269 connected via a preamplifier type ZC 0032 serial No 17696 to a half-inch microphone type 4189 serial No 2820204. Associated calibrator Brüel & Kjær type 4231 serial No 3006604 with one-inch housing and adapter type UC 0210 for half-inch microphone.

CALIBRATED ON 03 August 2016

PREVIOUS CALIBRATION Calibrated on 04 July 2014, Certificate No. U16543 issued by a UKAS accredited calibration laboratory No. 0789

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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The sound level meter was set up using the type 4231 sound calibrator supplied; it was set to frequency weighting A, and initially read 94.1 dB. It was then adjusted to read 94.2 dB (corresponding to 94.2 dB at standard atmospheric pressure). This reading was derived from Calibration Certificate no. 09314 supplied by this laboratory and manufacturers' information on the free-field response of the sound level meter. The calibration check frequency was 1 kHz. The final microphone sensitivity calculated and stored by the instrument was 47.06 mV/Pa.

Procedures from IEC 61672-3:2006 (BS EN 61672-3:2006) as modified by UKAS TPS 49 Edition 2: June 2009 were used to perform the periodic tests.

RESULTS

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006 (BS EN 61672-3:2006), for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organization responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2 : 2003 (BS EN 61672-2 : 2003), to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1 : 2002 (BS EN 61672-1 : 2003), the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1 : 2002 (BS EN 61672-1 2003).

The self-generated noise recorded with the microphone replaced by the electrical input device was:

12.5 dB (A) 12.6 dB (C) 17.9 dB (Z) 23.1 dB (Z, Extended low frequency range)

The environmental conditions recorded at the start and end of testing were:

Start: 23 to 24 °C, 49 to 59 %RH and 100.0 to 100.1 kPa

End: 24 to 25 °C, 51 to 61 %RH and 100.0 to 100.1 kPa

Technical information including adjustment data specified in the manufacturers' Instruction Manual BE 1712-19 (2012) and User Manual BE 1713-24 (2009) has been used to carry out this verification. These data include manufacturer-specified uncertainties.

Publicly-available evidence has been found that the B&K 2250 sound level meter design has successfully undergone pattern evaluation in accordance with IEC 61672-2:2002 (BS EN 61672-2:2003) by Physikalisch-Technische Bundesanstalt (PTB), an independent testing organisation responsible for pattern approvals.

All measurement data are held at AV Calibration for a period of at least six years.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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NOTES

Any opinions or interpretations which may be expressed in the following notes are not UKAS Accredited.

- 1 All tests were carried out in "Broad Band".
- 2 Windscreen autodetect was set to "Off", windscreen correction to "None", soundfield to "Free-field" and microphone to "4189".
- 3 The extended low-frequency facility was set to "off" for all tests except for the additional self-generated noise reading and "Frequency and time weightings at 1kHz" test.
- 4 No suitable microphone frequency response information was supplied with the instrument. It was therefore measured by this laboratory using the electrostatic actuator method. This response in isolation is not UKAS Accredited.
- 5 The electrical tests have been carried out with the instrument set for the nominal microphone sensitivity, as specified in the Instruction Manual. This may mean that the instrument has a slightly different linearity range when in normal use.
- 6 Typical case reflection factors specified by the manufacturer have been used for this verification.
- 7 Instrument labelled "SLM 35".

The instrument was running on hardware version 4.0

The instrument firmware settings were:

Module i.d.	Function	Version	Active?	Licenced?	Template used?
BZ 7222	SLM	4.4	N/A	Y	Y
BZ 7223	Frequency analysis	4.4	N/A	Y	N
BZ 7224	Logging	4.4	N/A	Y	N
BZ 7225	Enhanced logging	4.4	N/A	N	N
BZ 7226	Signal recording	4.4	N/A	N	N
BZ 7227	Reverberation time	4.4	N/A	N	N
BZ 7228	Building acoustics	4.4	N/A	N	N
BZ 7229	Dual-Channel Building acoustics	N/A	N/A	N/A	N/A
BZ 7230	FFT analysis	4.4	N/A	N	N
BZ 7231	Tone assessment	4.4	N/A	N	N
BZ 7232	Noise monitoring	4.4	N/A	N	N
BZ 7233	Sound intensity	N/A	N/A	N/A	N/A
BZ 7234	Low frequency option	4.4	N/A	N	N
BZ 7235	TM Basic engine	4.4	N/A	N	N
BZ 7236	TM Z41 Gear	4.4	N/A	N	N

END