



The measurements reported in this certificate were carried out using equipment whose values are traceable to the National Physical Laboratory reference No S5149.

The performance of the instrument was determined by comparison with the manufacturers specification as found in the instrument handbook or other technical publication. Any significant uncertainty of the measuring system will also be included.

The instrument was allowed to stabilise for a period of 30 minutes prior to measurements made.

The ambient temperature and relative humidity throughout calibration were  $22 \pm 2$  C and 36 %RH respectively.

**Instruments used to carry out this calibration are as follows:**

Multifunction Calibrator 4226 S/No 1551589.

## CERTIFICATE OF CALIBRATION

Issued By: Castle Group Ltd

Certificate no:064629/45375

Calibrated By:

Date of Calibration:01/12/05

Subject of Calibration:GA213

Serial Number:64629

Re-Calibration Date:01/01/07

Calibrated Status: Instrument Meets Required Calibration Tolerances

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## CALIBRATION TOLERANCES

The method of calibration employed was a direct acoustic reference source

**Acoustical Reference**      **IEC 61672-1: 2002 CLASS 2**  
    **IEC 60651: 2001 TYPE 2**  
    **EN 60651: 1994 TYPE 2**

### Acoustical Scaling

SPL (1KHz)	Tolerance
94.0 dBA	+/-1dB
104.0 dBA	+/-1dB
114.0 dBA	+/-1dB

**Measurement Uncertainty +/- 0.2dB**

### Acoustical Range

SPL (1KHz)	Tolerance
94.0 dBA	+/-0.7 dB

**Measurement Uncertainty +/- 0.2dB**

### Time Weighting

Time Weighting	Tone Burst (ms)	Reference	Tolerance
Fast	200	105.0 dBA	+1/-2 dB
Slow	500	101.9 dBA	+ / -2 dB

**Measurement Uncertainty +/- 0.2dB**

### Frequency Weighting

Frequency (Hz)	A (dB)	C (dB)
1K	92.4 - 95.4	92.4 - 95.4
2K	92.7 - 96.7	91.3 - 95.3
4K	90.3 - 96.3	88.5 - 94.5
8K	83.1 - 93.1	81.2 - 91.2
12.5K	-Infinity - 86.6	-Infinity - 84.7
500	89.3 - 92.3	92.5 - 95.5
250	83.9 - 86.9	92.5 - 95.5
125	76.4 - 79.4	92.3 - 95.3
63	65.8 - 69.8	91.2 - 95.2
31.5	51.6 - 57.6	88.0 - 94.0

**Measurement Uncertainty +/- 0.2dB**

### R.M.S Accuracy

Tone Burst

Crest Factor(dB)	Tolerance
108.0	+/-1dB

**Measurement Uncertainty +/- 0.2dB**

### Uncertainties of the Measurement

The uncertainties in the table of results correspond to an estimated confidence probability of not less than 95%. An analysis of the components of uncertainty is available on request.

\*Notes