

Practical 1

BASIC MEASUREMENT

1. AIM

The aims of this practical are to become familiar with concepts of frequency and loudness as well as to gain experience with use of a Sound Level Meter for basic noise level measurements.

2. Equipment

Sound level meter and calibrator, sound source, measuring tape, markers

3. Measurements using sound power source

- 3.1 Do the battery test and performance check of the SLM.
- 3.2 Set the sound power source in the centre of the class room and, using the wideband spectrum, adjust the output to a convenient level.
- 3.3 Measure the noise level in dB(A) at 1m, 2m and 4m from the center of the source.
- 3.4 Determine the linear frequency spectrum at 2m from the center of the source.
- 3.5 Do not adjust the output setting! But do either part a) or part b)
 - a) relocate the sound source to a more reverberant space such as stair well or foyer OR
 - b) relocate the sound source to a less reverberant space such as in the open well away from reflecting surfaces.
- 3.6 Measure the noise level in dB(A) at 1m, 2m and 4m from the center of the source.

4. Report

Produce a report summarizing the results of the measurements and include:

- 4.1 A summary table showing the change in sound pressure level with distance in the two environments. Comment on your findings and compare with general guidelines on reduction with distance from a source.
- 4.2 A calculation of the overall A weighted level and comparison with the value measured at that same location.
- 4.3 A chart of the octave band frequency spectrum in terms of dB. Use the values for the A weighting to calculate the A weighted frequency spectrum. Plot these A weighted values on the chart and comment on the shape of the two curves.

Name:

Report on Practical 1 Basic Sound Level Measurement

Sound Source:

Sound Level Meter:

Type/Model:..... **Serial Number**.....

Settings of meter:

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Portable Calibrator:

Type/Model:..... **Serial Number**.....

Performance Check Level on Meter:

Sketch of measurement arrangements:

Distance	1m	2m	4m
Sound Pressure Level, dB(A) in classroom			
Sound Pressure Level, dB(A) in alternate space			

Comments:

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Frequency Spectrum at 1 m

Octave Band Frequency, Hz	125	250	500	1000	2000	4000	8000
Measured Sound Level, dB							
A-Weighting							
Calculated Sound Level, dB(A)							

Overall A weighted value

Comments:

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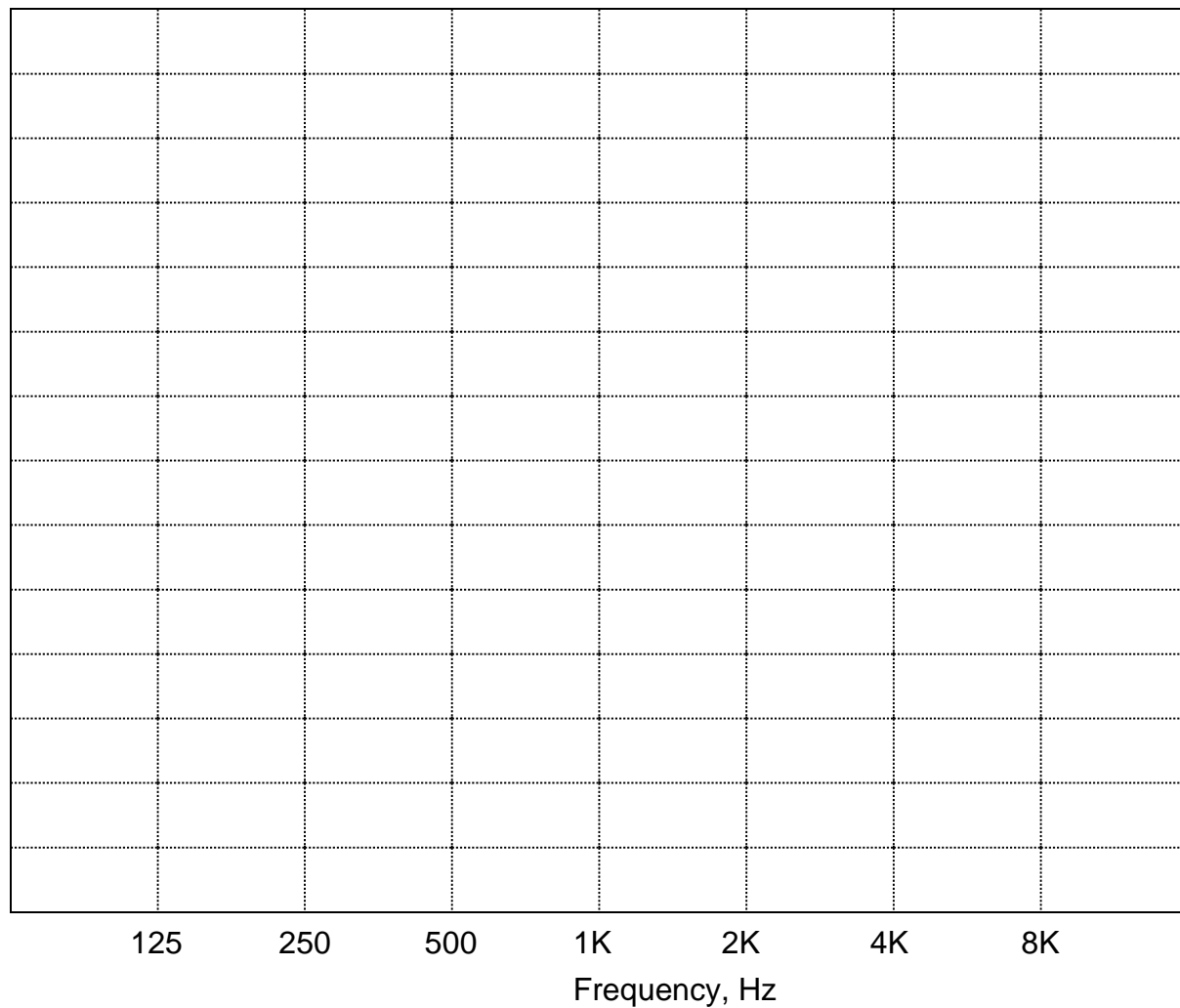
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Chart of Frequency Spectrum



Noise Source:

Measurement Distance:

Comments:

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