

SPEECH LEVEL REDUCTION MEASUREMENTS FOR HIGHLAND POD FROM BOOM INTERIOR

CONCLUSIONS

The speech level reduction for Highland Pod from Boom Interior has been measured according to ISO 23351-1:2020.

The measurement results are presented in the table below.

f (Hz)	Speech level reduction, D (dB)
125	18.7
250	21.5
500	21.9
1000	22.8
2000	21.5
4000	28.5
8000	27.8
$D_{s,A}$	22.2
Class	C

1 CLIENT

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2 ASSIGNMENT

To measure and evaluate the speech level reduction according to ISO 23351-1:2020, for Highland Pod from Boom Interior.

3 TEST OBJECT

The Highland Pod is an enclosed booth with glass on two sides of which one is the door. The fan in the ceiling was not running during the measurement. Dimensions are: 1000 x 1000 x 2300 (mm). Weight 230 kg.

4 MEASUREMENT PROCEDURE

The sound power of an omnidirectional speaker was measured according to ISO 3741:2010, when the speaker was placed in an empty room and when the speaker was placed inside the booth (in the same position in the room) as for a standing person (height 1,55 m), as stated by ISO 23351-1:2020. Six fixed microphone positions were used. No background correction was needed. The result for speech level reduction was evaluated according to ISO 23351-1:2020.

The measurements were performed by Carl Nyqvist 2021-06-23 in Akustikverkstan's reverberation room in Skultorp, Skövde, Sweden.

During the measurement, the room temperature was 21°C, RH 61% and air pressure 994 hPa. More information on the test facilities can be found in appendix 1.

The measurement equipment that was used can be found in appendix 2.

Photos of the measurement setups can be seen in appendix 3.

5 RESULTS

The results for speech level reduction are presented in table 1 below. They can also be found in measurement protocol 21-720-R2-M1 belonging to this report.

f (Hz)	Speech level reduction, D (dB)
125	18.7
250	21.5
500	21.9
1000	22.8
2000	21.5
4000	28.5
8000	27.8
$D_{s,A}$	22.2
Class	C

Table 1: Speech level reduction according to ISO 23351-1:2010 for Highland Pod

The results are only valid for the tested specimen configuration. Changes in size, geometry or materials can lead to significant changes in reported results.

Carl Nyqvist

Reviewed by Magnus Karlsson 2021-07-08

APPENDIX 1: INFORMATION ABOUT THE REVERBERATION ROOM

The reverberation room is rectangular, measuring Length x Width x Height = 5.85 x 4.65 x 7.35 m. The room volume is 200 m³ and the total area of the walls, ceiling and floor is 209 m². There are 22 diffusors (size 0.775 x 1.25 m) randomly installed in the room. The reverberation time between 50 and 200 Hz is controlled with membrane absorbers on the walls.

The test specimen is put on the floor on the mounting area (10 m², 2.6 x 3.85 m) according to figure B2.1. The mounting area consists of a concrete slab that can be lowered up to 700 mm below the floor.

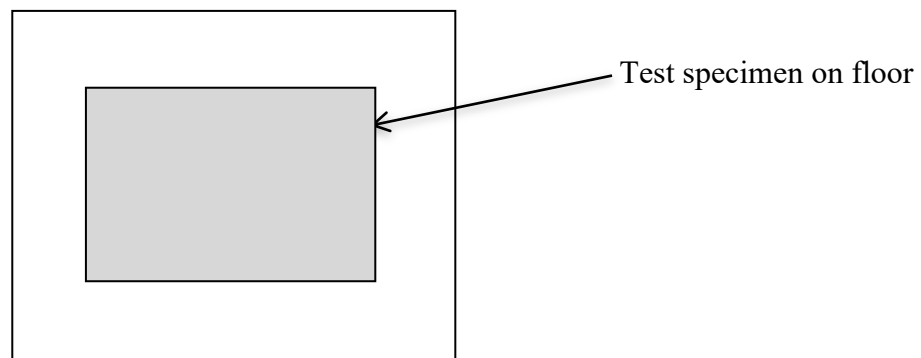


Figure A1.1: Plane drawing of the reverberation room with the positions of the test specimens.

APPENDIX 2: MEASUREMENT EQUIPMENT

Table A2.1 lists the equipment used during the measurements. The equipment fulfils class 1 according to SS-EN 61672-1, 60942 and 61260. Date for the latest calibration is available in the instrument journal of Akustikverkstan.

Instrument	Manufacture and type	Serial number	Internal designation
Analyser	Norsonic 140	1404881	AN07
Microphone	Norsonic 1225	149475	MI04
Microphone preamp	Norsonic 1209	14567	-
Calibrator	Norsonic 1256	125626092	KA05
Speaker	IMA Kub 1	8	HÖ7
Speaker	IMA Kub 1	9	HÖ8
Speaker	IMA Kub 1	10	HÖ9
Equalizer	Monacor MEQ-2152	-	Lab
Amplifier	Denon POA-2200	-	Lab

Table A2.1: Equipment used during the measurements.

APPENDIX 3: PHOTOS

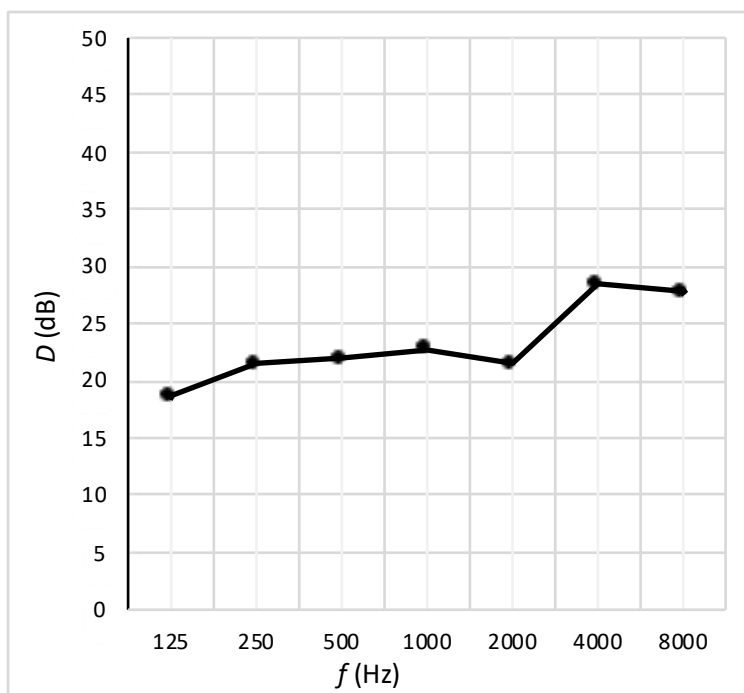


Figure A3.1: Highland Pod measurement setup.

Determination of speech level reduction according to ISO 23351-1

Product: Highland Pod
Operating condition: Normal, closed door, no fan running
Manufacturer: Boom Interior
Test laboratory: Akustikverkstan Lab AB
Name of the operator: Carl Nyqvist
Test date: 2021-06-23

Frequency f Hz	Speech level reduction D dB
125	18,7
250	21,5
500	21,9
1000	22,8
2000	21,5
4000	28,5
8000	27,8
$D_{S,A}$	22,2



Class: C

Key

f 1/1 octave frequency band, in Hz
 D level reduction, in dB
 $D_{S,A}$ speech level reduction, in dB