



<h1>Test Report</h1> <p>Issued by University of Salford (Acoustics Test Laboratory)</p> <p>Date of Issue: 9th August 2024</p> <p>Report Number: 06681/09 Rev.2</p>		
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Determination of airborne noise from an appliance

Measurements described in this test report comply with:-
BS EN ISO 3744:2010 ‘Acoustics. Determination of sound power levels
and sound energy levels of noise sources using sound pressure.
Engineering methods for an essentially free field over a reflecting plane’

COMPANY NAME & ADDRESS:

Chauvet UK
 POD 1
 EVO Park
 Nottingham
 NG16 6NT

FOR ATTENTION OF:

Ben Virgo

UNIT UNDER TEST:

Lighting Unit, Force 2 Profile

DATE OF TEST:

5th March 2024

TEST ENGINEER:

Alex Spencer

MEASUREMENT PURPOSE:

To determine airborne noise by measurements to the above standards.

Results relate only to samples tested. Items tested are the samples supplied by the manufacturer, who was responsible for selecting at random from a standard production run.

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1.0 Description of Appliance Under Test

CATEGORY:	Lighting Unit
DESIGN CHARACTERISTICS:	Floor mounted
MANUFACTURER:	Chauvet
MODEL:	Force 2 Profile
TEST REF NUMBERS:	06681/09_1 to 7
SERIAL NUMBER:	Not Stated
POWER:	Not Stated
POWER SOURCE:	UK Mains
SETTINGS: <i>*See Table 1.0 below for explanation of settings</i>	06681/09_1 “Ambient” 06681/09_2 “Max” 06681/09_3 “Eco” 06681/09_4 “Auto” 06681/09_5 “Full” 06681/09_6 “TV25” 06681/09_7 “TV35”

** Table 1.0 – Explanation of the “Settings” used to create the Test Configuration of the sample for each measurement.*

Explanation of Settings Used for Each Test	
Setting Name	Test Configuration
Ambient	Unit is in idle state, switched on and no output or movements
Max	Unit is using all mechanical options and the light output is on
Eco	All Effects Static, 100% Light output — ECO Fan mode
Auto	All Effects Static, 100% Light output — Auto Fan mode
Full	All Effects Static, 100% Light output — Full Fan mode
TV25	All Effects Static, 100% Light output — TV25 Fan mode
TV35	All Effects Static, 100% Light output — TV35 Fan mode

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2.0 Test Conditions

2.1 The following conditions were measured over duration of the test:-

	Measured Average Value
TEST REF NUMBER:	06681/09_1 to 7
SERIAL NO. / SAMPLE REF.	Force 2 Profile
Atmospheric Pressure	100.676
Ambient Temperature	22.7
Ambient Relative Humidity	32.1

2.2 The test was carried out in the hemi-anechoic chamber at the University of Salford.

2.3 The unit under test was mounted directly on the floor, in the centre of the hemi-anechoic chamber.

2.4 Unit operation was controlled by the client from outside the chamber, after initial configuration directly at the unit. Measurements were taken immediately after each setting of the unit was set and confirmed by the client.

2.5 For measurement of the sound pressure level of the Reference Sound Source (RSS), the RSS was placed directly on the floor of the hemi-anechoic chamber at the same location as the unit under test as defined in BS EN ISO 3744: 2010.

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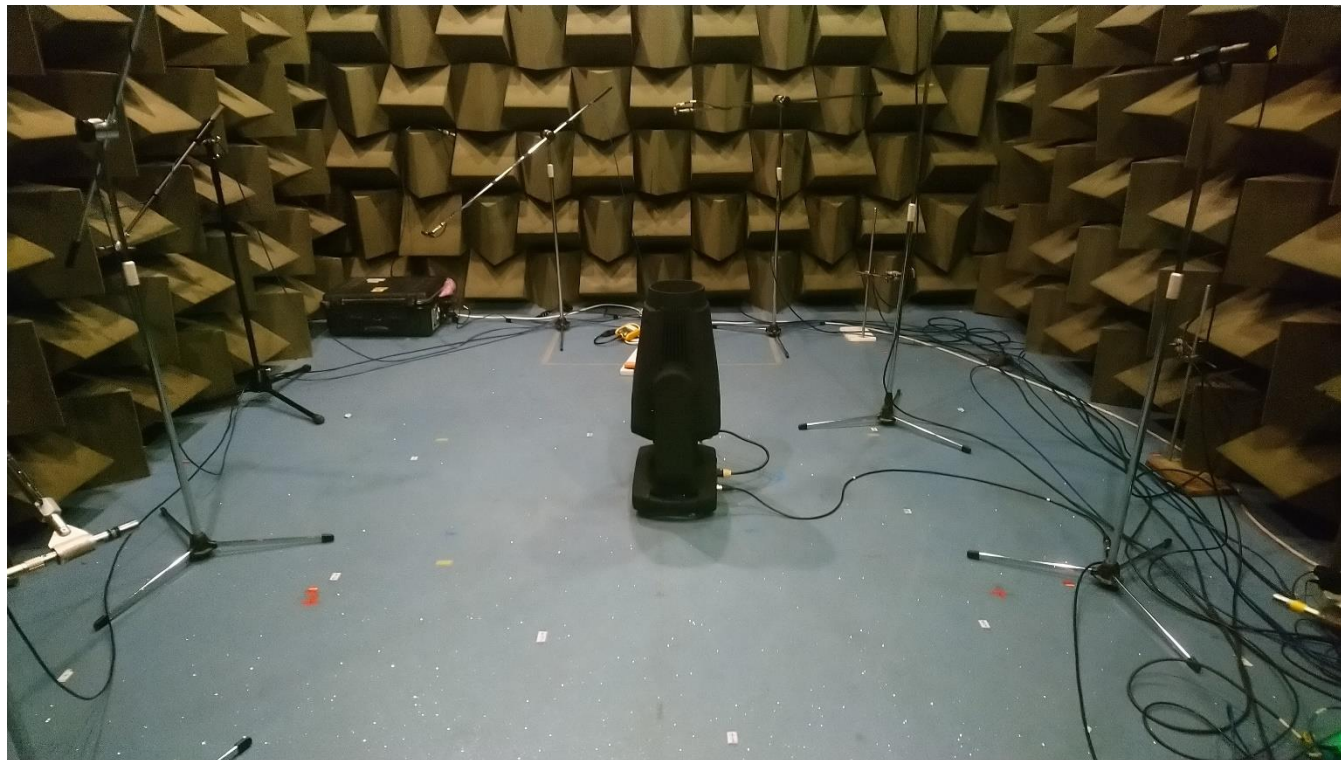


Figure 1 – unit under test mounted in the hemi-anechoic chamber at the University of Salford.

3 Acoustical Data

3.1 Measurement method

A direct measurement method was used as stated in BS EN ISO 3744: 2010.

3.2 Reference Sound Source

The Laboratory reference sound source (RSS) type B&K 4204, serial number 1460189 was used on mains supply.

3.3 Microphone Array

Ten laboratory free field, low noise microphones were used for the measurement, placed in fixed positions 1 to 10 on a hemispherical surface ($d = 1.75$ m) with guidance from BS EN ISO 3744: 2010. The location of each measurement position is provided in Appendix 1 to this report.

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3.4 Measured sound pressure levels of the appliance

Each unit was run at the selected setting. Six measurements were made at each setting,

Mean sound pressure levels were measured over 30 seconds to give the measured sound pressure levels, L_{pi} at each measurement position in each third octave band. The sound power level was then calculated.

The background noise corrections K_1 , environmental correction calculated from RSS levels K_2 , measured sound pressure levels, L_{pi} at each measurement point, corrected sound pressure levels, L_{pf} , and the sound power level, L_w of the source in each third octave frequency band are given in Appendix 2 of this report. The measured time averaged sound pressure level of the RSS, $L'_{P(RSS)}$, at each microphone position is reported in Appendix 3 to this report.

3.5 Calculated sound power levels

The calculated A-Weighted sound power level, L_{WA} in dBA for each setting are given in table 3.1.

Table 3.1 –A-weighted noise emissions for each setting, averaged over 30 seconds and over 10 microphone positions.

Test Number	06681/9_1	06681/9_2	06681/9_3	06681/9_4	06681/9_5	06681/9_6	06681/9_7
Setting	Ambient	Max	Eco	Auto	Full	TV25	TV35
A-weighted sound power level, L_{WA} in dBA	38.4	53.1	49.0	56.4	59.6	57.1	57.1

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3.6 Sound Pressure Level at 1 m from the source (not covered by BS EN 3744: 2010)

The A-weighted Sound Power Level can be used to calculate the A-weighted sound pressure level expected at different distances from the source in hemi-anechoic free field conditions*.

The calculation of the sound pressure levels is based on the formulae in BS EN 3744: 2010 for a parallelepiped measurement surface (for a noise source measured, in this case, above a single reflective plane).

The calculations show that to estimate the average sound pressure level expected at a distance of 1 m from the surface of the unit, 13.3 dB should be subtracted from the sound power value. This would give A-weighted average sound pressure levels in table 3.2 for each unit setting at 1 m from the surface of the unit:-

Table 3.2 – Calculated A-weighted sound pressure level* for each setting at 1 m from the unit surface

Test Number	06681/9_1	06681/9_2	06681/9_3	06681/9_4	06681/9_5	06681/9_6	06681/9_7
Setting	Ambient	Max	Eco	Auto	Full	TV25	TV35
A-weighted sound pressure level, L_p in dBA	25.1	39.8	35.7	43.1	46.3	43.8	43.8

**This calculation represents an estimate of the levels that would be obtained in hemi-anechoic free field conditions and should not be assumed to be valid for any specific building environments where the characteristics of the room should be accounted for.*

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Appendix 1 – Locations of measurement positions

Defining measurement surface & Co-ordinates

Measurement distance, d

1.75 m

	x, mm	y, mm	z, mm
Microphone Position 1	280	-1680	385
Microphone Position 2	1365	-1050	350
Microphone Position 3	1365	962.5	542.5
Microphone Position 4	280	1575	717.5
Microphone Position 5	-1452.5	560	787.5
Microphone Position 6	-1452.5	-700	665
Microphone Position 7	-455	-1137.5	1242.5
Microphone Position 8	1295	-122.5	1172.5
Microphone Position 9	-455	875	1452.5
Microphone Position 10	175	-175	1732.5

Surface Area, m²

19.24 m²

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Appendix 2 – Measurements and calculations according to BS EN ISO 3744

The following tables include measurement details that provide in each third octave band, for each of the seven settings:-

- measured L_{pi} , averaged over 30 s, at each measurement position
- background noise corrections K_1
- environmental correction K_2 , calculated from RSS levels
- corrected sound pressure levels, L_{pf}
- the sound power level, L_w of the source
- the A-weighted sound power level, L_{wA} of the source

! The levels at these frequencies are affected by background level and therefore levels quoted represent an upper limit for the sound pressure levels of the noise source.

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MEASURED TIME AVERAGED SPL at 1.75 m, L'P - [06681/9_1 – Ambient Setting]											Mean L _p over mic positions	ΔL _p [dB]	BG corr. K ₁ , [dB]	Env corr. K ₂ , [dB]	L _p [dB]	Sound Power, L _w [dB]	A- weighting corrections [dB]	Sound Power, L _{wA} [dB]
Frequency [Hz]	Mic 1 [dB]	Mic 2 [dB]	Mic 3 [dB]	Mic 4 [dB]	Mic 5 [dB]	Mic 6 [dB]	Mic 7 [dB]	Mic 8 [dB]	Mic 9 [dB]	Mic 10 [dB]								
100	10.7	11.4	8.7	5.8	12.1	12.0	5.4	9.5	5.0	5.2	9.4	-3.3	1.30	-2.4	10.5	23.3	-19.1	4.2
125	2.8	5.8	2.5	4.3	3.1	3.7	4.9	3.2	3.3	2.5	3.7	-3.1	1.30	1.1	1.3	14.1	-16.1	-2.0
160	2.5	2.2	2.3	1.3	2.7	3.0	-0.4	1.3	0.1	1.4	1.8	-1.2	1.30	0.5	-0.1	12.8	-13.4	-0.6
200	6.9	9.2	8.3	4.7	7.0	8.2	5.4	4.6	7.8	4.3	7.0	11.2	0.34	1.3	5.3	18.1	-10.9	7.2
250	14.7	15.2	15.1	12.2	14.7	15.4	11.3	11.4	11.8	12.4	13.7	19.5	0.00	1.4	12.3	25.1	-8.6	16.5
315	18.4	17.2	16.8	18.1	20.2	20.4	18.3	16.9	17.1	18.9	18.4	26.3	0.00	-0.5	18.9	31.8	-6.6	25.2
400	20.5	19.2	19.3	20.1	22.4	22.8	18.2	19.4	17.4	19.1	20.1	28.4	0.00	0.6	19.5	32.4	-4.8	27.6
500	25.4	22.3	19.2	22.0	28.7	28.6	23.8	26.7	19.8	22.7	25.1	33.6	0.00	0.2	24.9	37.7	-3.2	34.5
630	15.0	14.8	16.3	15.5	17.3	18.4	16.4	15.6	11.6	18.9	16.4	25.4	0.00	-0.3	16.6	29.5	-1.9	27.6
800	10.6	9.6	9.0	12.2	13.0	13.6	8.7	13.2	10.0	10.5	11.4	20.2	0.00	-0.5	11.8	24.7	-0.8	23.9
1000	11.7	9.4	12.0	9.9	7.5	11.8	11.3	15.6	9.9	15.7	12.2	20.4	0.00	-0.9	13.1	26.0	0	26.0
1250	8.1	10.6	8.6	6.4	11.5	8.1	7.5	14.7	10.6	10.9	10.4	17.9	0.00	-0.7	11.1	24.0	0.6	24.6
1600	12.5	11.1	8.6	9.8	10.2	10.8	14.8	15.7	15.8	10.4	12.7	19.7	0.00	-0.2	12.9	25.8	1	26.8
2000	11.2	10.0	6.2	10.8	8.4	10.0	11.9	12.6	10.5	8.7	10.4	16.6	0.00	0.3	10.0	22.9	1.2	24.1
2500	11.0	6.5	7.6	12.6	12.6	13.4	11.0	10.1	9.1	10.3	10.9	16.4	0.00	-0.3	11.2	24.1	1.3	25.4
3150	8.3	6.2	7.5	7.9	6.4	7.3	8.4	5.0	7.7	1.7	7.0	11.9	0.29	0.1	6.6	19.4	1.2	20.6
4000	6.2	4.6	4.6	3.4	0.0	2.5	5.2	4.3	3.5	0.7	3.9	8.1	0.72	0.4	2.7	15.6	1	16.6
5000	6.3	2.6	4.4	1.9	2.1	4.9	7.9	1.7	5.4	2.8	4.5	8.5	0.67	-0.8	4.6	17.5	0.5	18.0
6300	8.1	9.6	4.2	3.8	6.7	6.4	4.4	8.1	1.6	1.0	6.2	10.3	0.42	-0.5	6.2	19.1	-0.1	19.0
8000	10.9	13.5	15.5	10.0	12.7	10.3	9.1	15.6	7.8	7.0	12.2	15.9	0.00	-0.2	12.4	25.2	-1.1	24.1
10000	4.6	8.2	11.1	5.5	7.7	6.7	4.7	11.2	4.6	3.8	7.6	10.4	0.42	0.1	7.1	19.9	-2.5	17.4
A-WEIGHTED SOUND POWER LEVEL																		38.4

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MEASURED TIME AVERAGED SPL at 1.75 m, L'P - [06681/9 2 – Max Setting]											Mean L _p over mic positions	ΔL_p [dB]	BG corr. K ₁ , [dB]	Env corr. K ₂ , [dB]	L _p [dB]	Sound Power, L _w [dB]	A- weighting corrections [dB]	Sound Power, L _{wA} [dB]
Frequency [Hz]	Mic 1 [dB]	Mic 2 [dB]	Mic 3 [dB]	Mic 4 [dB]	Mic 5 [dB]	Mic 6 [dB]	Mic 7 [dB]	Mic 8 [dB]	Mic 9 [dB]	Mic 10 [dB]								
100	19.5	18.7	17.5	16.5	18.5	18.4	16.1	20.1	15.8	16.4	18.0	5.2	1.30	-2.4	19.0	31.9	-19.1	12.8
125	19.9	22.0	20.7	18.8	21.7	21.7	19.2	22.7	19.0	16.5	20.6	13.8	0.19	1.1	19.3	32.1	-16.1	16.0
160	22.1	22.7	22.0	20.5	24.2	24.4	19.3	22.6	18.2	19.2	22.0	19.0	0.00	0.5	21.4	34.3	-13.4	20.9
200	25.2	28.0	27.0	22.7	26.7	27.3	23.4	25.5	22.6	21.0	25.5	29.8	0.00	1.3	24.2	37.0	-10.9	26.1
250	34.3	36.3	34.6	30.3	32.7	33.4	28.9	30.0	28.0	31.0	32.7	38.5	0.00	1.4	31.3	44.1	-8.6	35.5
315	34.4	35.2	32.9	30.8	30.0	31.3	30.6	29.7	31.6	34.1	32.5	40.3	0.00	-0.5	33.0	45.8	-6.6	39.2
400	32.2	32.0	31.9	30.5	30.0	31.3	30.2	30.0	29.2	30.9	30.9	39.2	0.00	0.6	30.3	43.1	-4.8	38.3
500	33.2	32.8	32.2	31.3	30.6	31.4	32.0	32.2	31.9	34.8	32.4	40.9	0.00	0.2	32.2	45.0	-3.2	41.8
630	34.3	35.4	33.5	31.9	33.7	33.1	33.3	34.7	32.7	31.9	33.6	42.7	0.00	-0.3	33.9	46.7	-1.9	44.8
800	33.5	33.1	31.7	32.0	31.3	32.3	33.0	31.6	31.7	27.0	32.0	40.8	0.00	-0.5	32.4	45.3	-0.8	44.5
1000	30.6	32.6	31.7	29.1	30.4	31.7	30.6	30.0	29.6	27.2	30.6	38.7	0.00	-0.9	31.5	44.3	0	44.3
1250	30.8	30.3	28.8	28.8	29.3	30.0	27.2	29.1	26.3	24.9	28.9	36.4	0.00	-0.7	29.6	42.4	0.6	43.0
1600	31.3	29.0	27.3	29.3	27.3	27.0	27.4	27.7	27.4	25.5	28.2	35.1	0.00	-0.2	28.4	41.3	1	42.3
2000	32.3	29.9	29.0	28.9	27.8	27.5	28.0	27.2	27.2	23.8	28.7	34.9	0.00	0.3	28.3	41.2	1.2	42.4
2500	29.9	28.4	28.7	28.2	27.0	28.4	28.0	27.7	26.8	21.8	27.9	33.4	0.00	-0.3	28.2	41.0	1.3	42.3
3150	23.7	25.2	25.3	25.4	24.4	24.6	23.8	23.4	22.1	17.9	24.0	28.9	0.00	0.1	23.9	36.7	1.2	37.9
4000	19.0	22.0	22.6	22.2	20.2	21.4	20.8	19.8	19.3	15.6	20.7	24.9	0.00	0.4	20.2	33.1	1	34.1
5000	19.0	18.4	20.3	18.5	18.3	18.3	18.7	19.3	17.8	13.8	18.5	22.5	0.00	-0.8	19.3	32.1	0.5	32.6
6300	16.3	17.3	16.4	14.8	15.3	15.9	14.1	14.7	13.5	8.4	15.2	19.3	0.00	-0.5	15.6	28.5	-0.1	28.4
8000	15.4	15.5	16.7	14.8	15.2	15.3	14.3	16.6	14.1	8.4	15.0	18.8	0.00	-0.2	15.2	28.1	-1.1	27.0
10000	11.7	10.8	13.4	11.6	12.8	12.7	10.6	12.8	11.8	6.2	11.8	14.5	0.16	0.1	11.5	24.3	-2.5	21.8
A-WEIGHTED SOUND POWER LEVEL																		53.1

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Frequency [Hz]	Mic 1 [dB]	Mic 2 [dB]	Mic 3 [dB]	Mic 4 [dB]	Mic 5 [dB]	Mic 6 [dB]	Mic 7 [dB]	Mic 8 [dB]	Mic 9 [dB]	Mic 10 [dB]								
100	17.5	15.3	14.1	15.7	15.3	15.2	13.5	16.2	13.8	15.9	15.4	2.7	1.30	-2.4	16.5	29.3	-19.1	10.2
125	18.0	17.6	17.2	17.8	16.8	17.3	17.1	17.6	15.9	15.6	17.2	10.3	0.42	1.1	15.6	28.4	-16.1	12.3
160	22.9	20.5	20.0	20.6	20.0	21.0	19.0	19.5	16.4	18.2	20.1	17.2	0.00	0.5	19.6	32.4	-13.4	19.0
200	23.5	24.3	23.7	21.0	21.8	23.1	20.1	20.0	19.5	20.0	22.0	26.3	0.00	1.3	20.7	33.6	-10.9	22.7
250	30.4	31.2	30.2	27.2	25.9	27.6	25.1	23.8	23.9	27.4	28.0	33.7	0.00	1.4	26.6	39.4	-8.6	30.8
315	37.4	38.4	38.0	35.6	31.8	34.0	31.9	30.1	31.2	35.2	35.2	43.1	0.00	-0.5	35.8	48.6	-6.6	42.0
400	28.7	28.0	27.6	26.9	26.9	27.7	26.6	25.7	25.2	26.5	27.1	35.3	0.00	0.6	26.5	39.3	-4.8	34.5
500	31.1	29.4	28.0	28.0	30.5	30.4	28.1	30.4	26.9	31.2	29.6	38.2	0.00	0.2	29.4	42.3	-3.2	39.1
630	28.8	28.5	27.0	26.8	26.4	27.0	27.2	26.5	25.1	27.8	27.2	36.3	0.00	-0.3	27.5	40.3	-1.9	38.4
800	28.2	28.1	26.3	26.1	26.3	26.9	28.4	27.2	27.2	24.8	27.1	36.0	0.00	-0.5	27.5	40.4	-0.8	39.6
1000	26.6	27.3	25.9	23.4	24.6	25.9	26.8	26.2	26.8	24.6	26.0	34.1	0.00	-0.9	26.9	39.7	0	39.7
1250	25.2	25.7	22.5	25.2	24.6	23.9	25.7	26.5	24.3	23.5	24.9	32.3	0.00	-0.7	25.6	38.4	0.6	39.0
1600	26.4	23.5	22.4	24.6	22.9	22.6	22.4	23.4	22.4	19.7	23.3	30.3	0.00	-0.2	23.6	36.4	1	37.4
2000	26.5	23.8	23.0	24.1	21.2	21.8	24.4	23.1	23.3	20.7	23.5	29.7	0.00	0.3	23.2	36.0	1.2	37.2
2500	23.2	21.2	21.5	21.7	19.7	22.1	21.0	21.4	19.8	17.7	21.2	26.7	0.00	-0.3	21.5	34.3	1.3	35.6
3150	17.3	20.2	20.9	19.1	18.3	18.8	18.9	18.0	16.5	12.1	18.5	23.4	0.00	0.1	18.4	31.2	1.2	32.4
4000	14.6	18.5	18.6	16.3	15.8	16.1	16.0	14.7	14.5	11.0	16.0	20.3	0.00	0.4	15.6	28.5	1	29.5
5000	15.5	16.2	15.1	13.3	12.9	14.4	14.8	12.2	12.9	8.5	14.0	18.0	0.00	-0.8	14.8	27.6	0.5	28.1
6300	11.7	13.5	9.5	9.6	9.8	10.3	8.6	10.8	8.0	4.4	10.2	14.3	0.16	-0.5	10.5	23.3	-0.1	23.2
8000	11.9	13.5	15.2	11.2	14.7	11.8	9.9	15.3	12.4	6.1	12.9	16.6	0.00	-0.2	13.1	25.9	-1.1	24.8
10000	9.5	9.7	11.8	9.9	10.5	9.4	7.5	13.0	9.0	5.0	10.0	12.7	0.24	0.1	9.6	22.5	-2.5	20.0
A-WEIGHTED SOUND POWER LEVEL																		49.0

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Test Report

Issued by University of Salford (Acoustics Test Laboratory)

Date of Issue: 9th August 2024

Report Number: 06681/09 Rev.2

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MEASURED TIME AVERAGED SPL at 1.75 m, L'P - [06681/9 4 – Auto Setting]											Mean L _p over mic positions	ΔL_p [dB]	BG corr. K ₁ , [dB]	Env corr. K ₂ , [dB]	L _p [dB]	Sound Power, L _w [dB]	A- weighting corrections [dB]	Sound Power, L _{wA} [dB]
Frequency [Hz]	Mic 1 [dB]	Mic 2 [dB]	Mic 3 [dB]	Mic 4 [dB]	Mic 5 [dB]	Mic 6 [dB]	Mic 7 [dB]	Mic 8 [dB]	Mic 9 [dB]	Mic 10 [dB]								
100	23.1	20.5	19.8	20.3	20.1	20.1	18.9	22.4	18.5	19.2	20.5	7.8	0.79	-2.4	22.1	35.0	-19.1	15.9
125	23.0	24.5	23.5	22.0	24.1	24.2	22.0	25.3	21.3	18.7	23.2	16.4	0.00	1.1	22.1	34.9	-16.1	18.8
160	25.6	25.2	24.7	24.2	26.5	26.9	22.8	24.7	20.8	21.6	24.7	21.7	0.00	0.5	24.1	37.0	-13.4	23.6
200	27.2	29.1	28.5	24.8	28.2	29.0	24.7	27.1	23.7	22.5	27.0	31.3	0.00	1.3	25.7	38.5	-10.9	27.6
250	32.1	33.6	32.7	28.8	30.0	30.8	28.3	28.1	26.7	29.4	30.6	36.3	0.00	1.4	29.1	42.0	-8.6	33.4
315	38.0	39.7	37.4	35.4	35.4	35.7	36.3	29.2	37.5	39.5	37.1	45.0	0.00	-0.5	37.6	50.5	-6.6	43.9
400	33.9	33.6	33.6	32.2	32.4	33.5	32.2	31.7	30.9	32.1	32.7	41.0	0.00	0.6	32.1	44.9	-4.8	40.1
500	36.0	34.2	34.3	34.7	34.6	35.4	34.4	34.7	34.3	37.5	35.1	43.7	0.00	0.2	35.0	47.8	-3.2	44.6
630	36.9	38.8	36.0	34.5	36.5	36.0	35.4	36.2	35.0	33.7	36.1	45.2	0.00	-0.3	36.4	49.2	-1.9	47.3
800	38.1	39.1	36.5	35.3	36.9	37.2	38.0	36.5	36.9	32.1	37.0	45.8	0.00	-0.5	37.4	50.3	-0.8	49.5
1000	34.1	35.8	34.5	31.1	33.1	34.7	34.3	32.6	33.7	29.5	33.7	41.8	0.00	-0.9	34.6	47.4	0	47.4
1250	33.8	33.8	31.1	32.1	32.1	32.5	30.2	32.2	29.4	27.0	31.8	39.3	0.00	-0.7	32.5	45.4	0.6	46.0
1600	35.1	32.5	30.2	32.4	30.5	30.1	29.6	30.4	29.6	27.8	31.3	38.2	0.00	-0.2	31.5	44.4	1	45.4
2000	35.9	33.2	32.1	32.0	30.1	30.1	30.7	29.6	30.2	27.2	31.7	38.0	0.00	0.3	31.4	44.2	1.2	45.4
2500	33.1	31.7	32.8	31.9	29.3	32.6	31.7	32.0	29.7	25.4	31.5	37.0	0.00	-0.3	31.8	44.6	1.3	45.9
3150	26.9	28.9	29.7	29.7	27.7	28.9	27.7	27.2	25.7	20.4	27.8	32.7	0.00	0.1	27.7	40.6	1.2	41.8
4000	23.4	26.1	26.9	25.9	24.5	25.6	24.6	23.8	23.6	18.5	24.8	29.0	0.00	0.4	24.3	37.2	1	38.2
5000	22.6	23.2	23.9	23.0	22.4	22.3	22.1	23.3	21.3	16.5	22.4	26.4	0.00	-0.8	23.2	36.0	0.5	36.5
6300	20.2	21.7	20.7	19.3	19.0	19.6	18.2	18.5	17.2	11.7	19.2	23.3	0.00	-0.5	19.7	32.5	-0.1	32.4
8000	18.2	18.4	19.1	16.3	18.7	17.7	15.9	19.4	17.1	10.4	17.6	21.4	0.00	-0.2	17.8	30.7	-1.1	29.6
10000	14.9	14.2	15.8	14.5	15.2	15.0	13.1	16.1	14.2	8.2	14.5	17.2	0.00	0.1	14.4	27.2	-2.5	24.7
A-WEIGHTED SOUND POWER LEVEL																		56.4

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Test Report

Issued by University of Salford (Acoustics Test Laboratory)

Date of Issue: 9th August 2024

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MEASURED TIME AVERAGED SPL at 1.75 m, L'P - [06681/9 5 – Full Setting]											Mean L _p over mic positions	ΔL _p [dB]	BG corr. K ₁ , [dB]	Env corr. K ₂ , [dB]	L _p [dB]	Sound Power, L _w [dB]	A- weighting corrections [dB]	Sound Power, L _{wA} [dB]
Frequency [Hz]	Mic 1 [dB]	Mic 2 [dB]	Mic 3 [dB]	Mic 4 [dB]	Mic 5 [dB]	Mic 6 [dB]	Mic 7 [dB]	Mic 8 [dB]	Mic 9 [dB]	Mic 10 [dB]								
100	26.4	24.0	22.8	23.4	23.4	23.2	21.9	24.8	21.1	22.6	23.6	10.9	0.37	-2.4	25.6	38.5	-19.1	19.4
125	25.7	26.3	25.5	25.0	25.8	26.1	24.8	26.8	23.7	21.6	25.3	18.5	0.00	1.1	24.2	37.0	-16.1	20.9
160	28.4	27.1	26.7	26.8	28.1	28.7	25.1	26.3	23.4	23.8	26.8	23.8	0.00	0.5	26.2	39.1	-13.4	25.7
200	30.2	31.4	30.7	27.5	29.9	30.8	26.9	28.5	26.1	25.8	29.2	33.5	0.00	1.3	27.9	40.7	-10.9	29.8
250	34.9	36.3	34.7	31.0	32.0	33.0	30.4	29.6	29.5	32.8	33.0	38.7	0.00	1.4	31.6	44.4	-8.6	35.8
315	37.4	38.7	36.3	34.0	33.8	34.9	34.3	30.4	35.3	37.7	35.8	43.7	0.00	-0.5	36.4	49.2	-6.6	42.6
400	36.6	35.8	35.6	34.6	34.0	35.0	34.5	33.2	33.1	34.3	34.8	43.1	0.00	0.6	34.2	47.0	-4.8	42.2
500	43.5	38.4	42.0	41.6	40.4	40.3	42.3	40.2	41.1	44.4	41.7	50.3	0.00	0.2	41.5	54.4	-3.2	51.2
630	38.7	39.0	37.4	37.1	37.0	37.2	37.3	36.8	36.2	36.9	37.4	46.5	0.00	-0.3	37.7	50.5	-1.9	48.6
800	40.9	41.2	38.5	37.8	39.7	39.4	40.5	39.2	40.0	36.2	39.6	48.4	0.00	-0.5	40.0	52.9	-0.8	52.1
1000	38.1	38.5	36.9	34.4	35.3	36.6	37.9	37.1	37.8	34.7	36.9	45.1	0.00	-0.9	37.9	50.7	0	50.7
1250	36.3	36.4	33.8	36.3	35.3	35.0	35.7	37.2	34.7	31.4	35.5	43.0	0.00	-0.7	36.2	49.0	0.6	49.6
1600	38.4	35.1	34.4	36.4	35.8	35.4	33.9	34.1	33.6	31.6	35.2	42.2	0.00	-0.2	35.5	48.3	1	49.3
2000	38.4	35.7	35.2	36.6	34.4	34.6	36.8	32.2	36.0	31.2	35.6	41.8	0.00	0.3	35.2	48.1	1.2	49.3
2500	36.2	34.2	35.2	34.7	32.4	35.1	34.5	34.2	33.1	28.5	34.2	39.7	0.00	-0.3	34.5	47.3	1.3	48.6
3150	30.3	31.8	32.6	31.9	30.6	31.1	31.0	29.2	29.4	25.1	30.7	35.5	0.00	0.1	30.6	43.4	1.2	44.6
4000	27.8	29.7	29.7	29.7	28.6	30.0	29.0	27.3	28.9	23.6	28.7	33.0	0.00	0.4	28.3	41.1	1	42.1
5000	25.0	24.9	27.5	26.4	25.3	26.0	26.3	26.2	25.5	20.5	25.6	29.6	0.00	-0.8	26.4	39.3	0.5	39.8
6300	24.4	24.0	24.2	22.9	21.9	23.2	21.9	21.5	21.5	15.9	22.6	26.8	0.00	-0.5	23.1	35.9	-0.1	35.8
8000	21.5	21.3	21.8	20.5	20.8	20.9	19.9	21.1	20.3	14.5	20.6	24.3	0.00	-0.2	20.8	33.6	-1.1	32.5
10000	18.7	17.2	19.1	18.4	17.5	18.4	17.4	17.7	17.3	12.0	17.7	20.4	0.00	0.1	17.6	30.4	-2.5	27.9
A-WEIGHTED SOUND POWER LEVEL																		59.6

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Test Report

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MEASURED TIME AVERAGED SPL at 1.75 m, L'P - [06681/9_6 – TV25 Setting]											Mean L _p over mic positions	ΔL_p [dB]	BG corr. K ₁ , [dB]	Env corr. K ₂ , [dB]	L _p [dB]	Sound Power, L _w [dB]	A- weighting corrections [dB]	Sound Power, L _{WA} [dB]
Frequency [Hz]	Mic 1 [dB]	Mic 2 [dB]	Mic 3 [dB]	Mic 4 [dB]	Mic 5 [dB]	Mic 6 [dB]	Mic 7 [dB]	Mic 8 [dB]	Mic 9 [dB]	Mic 10 [dB]								
100	23.0	22.0	21.1	20.3	21.5	21.6	19.5	23.5	18.9	18.8	21.3	8.6	0.65	-2.4	23.0	35.9	-19.1	16.8
125	23.5	25.5	24.5	22.5	25.1	25.2	22.8	26.4	22.1	18.5	24.1	17.2	0.00	1.1	22.9	35.8	-16.1	19.7
160	25.8	25.8	25.4	24.1	27.2	27.7	22.9	25.7	21.2	20.5	25.2	22.2	0.00	0.5	24.6	37.5	-13.4	24.1
200	26.6	29.5	28.6	24.1	28.6	29.0	24.3	27.8	23.5	21.6	27.1	31.4	0.00	1.3	25.7	38.6	-10.9	27.7
250	31.6	33.4	32.3	28.7	29.6	30.5	28.2	28.8	26.8	28.4	30.3	36.0	0.00	1.4	28.9	41.7	-8.6	33.1
315	37.7	38.9	38.5	36.1	32.9	34.8	32.9	31.7	32.1	35.6	35.8	43.7	0.00	-0.5	36.4	49.2	-6.6	42.6
400	33.1	32.7	33.0	31.7	32.1	33.2	31.8	31.6	29.9	31.2	32.2	40.4	0.00	0.6	31.5	44.4	-4.8	39.6
500	36.1	34.8	35.1	35.2	35.0	36.1	35.1	35.2	34.8	37.8	35.6	44.1	0.00	0.2	35.4	48.3	-3.2	45.1
630	36.1	37.6	35.9	34.7	35.8	36.0	35.8	35.7	34.7	33.7	35.7	44.8	0.00	-0.3	36.0	48.8	-1.9	46.9
800	40.3	40.8	37.6	37.2	39.2	38.7	39.5	38.0	39.4	32.6	38.8	47.6	0.00	-0.5	39.2	52.1	-0.8	51.3
1000	34.6	36.6	35.1	31.7	33.7	35.6	34.8	32.9	33.7	28.3	34.2	42.3	0.00	-0.9	35.1	47.9	0	47.9
1250	34.4	34.6	31.7	32.1	32.4	33.3	30.7	32.7	29.6	27.8	32.4	39.9	0.00	-0.7	33.1	45.9	0.6	46.5
1600	36.2	33.6	31.1	32.9	31.3	30.7	30.0	31.0	29.7	28.1	32.1	39.0	0.00	-0.2	32.3	45.1	1	46.1
2000	36.8	34.1	32.7	32.8	30.5	30.6	31.0	30.4	30.5	28.1	32.4	38.7	0.00	0.3	32.1	44.9	1.2	46.1
2500	35.8	33.0	33.3	32.0	30.2	32.8	31.8	32.3	30.5	24.5	32.3	37.8	0.00	-0.3	32.6	45.5	1.3	46.8
3150	27.9	29.6	30.4	30.7	28.7	29.9	28.4	27.9	26.3	20.2	28.7	33.5	0.00	0.1	28.6	41.4	1.2	42.6
4000	24.4	27.1	27.9	27.1	25.4	26.8	25.4	24.7	24.6	18.7	25.7	30.0	0.00	0.4	25.3	38.1	1	39.1
5000	23.4	23.5	24.8	24.0	23.4	23.0	22.9	24.6	22.0	16.6	23.2	27.2	0.00	-0.8	24.0	36.9	0.5	37.4
6300	21.3	23.0	22.3	20.5	20.3	21.1	19.3	19.7	18.3	12.2	20.5	24.6	0.00	-0.5	20.9	33.8	-0.1	33.7
8000	19.1	19.7	20.3	17.5	19.6	19.2	16.9	20.5	18.1	11.1	18.8	22.5	0.00	-0.2	19.0	31.8	-1.1	30.7
10000	16.1	15.3	17.7	15.3	16.3	16.2	14.2	17.0	15.3	8.4	15.7	18.4	0.00	0.1	15.6	28.4	-2.5	25.9
A-WEIGHTED SOUND POWER LEVEL																		57.1

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Test Report

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MEASURED TIME AVERAGED SPL at 1.75 m, L'P - [06681/9_7 – TV35 Setting]											Mean L _p over mic positions	ΔL _p [dB]	BG corr. K ₁ , [dB]	Env corr. K ₂ , [dB]	L _p [dB]	Sound Power, L _w [dB]	A- weighting corrections [dB]	Sound Power, L _{wA} [dB]
Frequency [Hz]	Mic 1 [dB]	Mic 2 [dB]	Mic 3 [dB]	Mic 4 [dB]	Mic 5 [dB]	Mic 6 [dB]	Mic 7 [dB]	Mic 8 [dB]	Mic 9 [dB]	Mic 10 [dB]								
100	22.7	21.6	20.8	20.3	20.9	21.0	19.2	23.3	18.8	18.8	21.0	8.2	0.71	-2.4	22.6	35.5	-19.1	16.4
125	23.4	25.3	24.4	22.5	25.0	25.3	22.8	26.3	21.9	18.6	24.0	17.2	0.00	1.1	22.8	35.7	-16.1	19.6
160	25.5	25.7	25.2	24.0	27.1	27.3	22.5	25.5	21.0	20.3	25.0	22.0	0.00	0.5	24.4	37.2	-13.4	23.8
200	26.4	29.3	28.5	23.9	28.4	28.9	24.2	27.7	23.4	21.5	26.9	31.2	0.00	1.3	25.6	38.4	-10.9	27.5
250	31.7	33.4	32.3	28.8	29.6	30.5	28.2	28.7	26.8	28.5	30.3	36.1	0.00	1.4	28.9	41.7	-8.6	33.1
315	37.7	38.9	38.5	36.1	32.9	34.7	32.8	31.7	32.1	35.5	35.8	43.7	0.00	-0.5	36.3	49.2	-6.6	42.6
400	33.0	32.8	33.0	31.8	32.2	33.3	31.7	31.7	30.0	31.2	32.2	40.4	0.00	0.6	31.5	44.4	-4.8	39.6
500	36.1	34.8	35.0	35.0	34.9	36.1	35.0	35.0	34.6	37.8	35.5	44.1	0.00	0.2	35.4	48.2	-3.2	45.0
630	36.0	37.4	35.8	34.7	35.6	35.8	35.7	35.6	34.6	33.7	35.6	44.7	0.00	-0.3	35.8	48.7	-1.9	46.8
800	40.3	40.8	37.6	37.1	39.2	38.7	39.4	38.0	39.3	32.5	38.7	47.6	0.00	-0.5	39.2	52.0	-0.8	51.2
1000	34.6	36.5	35.0	31.6	33.6	35.5	34.7	32.8	33.6	28.3	34.1	42.3	0.00	-0.9	35.0	47.9	0	47.9
1250	34.5	34.7	31.7	31.9	32.3	33.2	31.3	32.9	30.0	28.5	32.4	39.9	0.00	-0.7	33.2	46.0	0.6	46.6
1600	36.0	33.6	31.0	32.8	31.1	30.5	29.8	30.9	29.5	27.9	31.9	38.9	0.00	-0.2	32.2	45.0	1	46.0
2000	36.6	33.9	32.7	32.7	30.5	30.5	31.0	30.3	30.5	27.9	32.3	38.6	0.00	0.3	32.0	44.8	1.2	46.0
2500	35.4	32.9	33.3	31.9	30.0	32.7	31.6	32.3	30.4	24.0	32.2	37.7	0.00	-0.3	32.5	45.3	1.3	46.6
3150	27.8	29.6	30.4	30.7	28.5	29.8	28.3	27.7	26.1	19.9	28.6	33.5	0.00	0.1	28.5	41.3	1.2	42.5
4000	24.3	26.9	27.8	26.9	25.3	26.7	25.3	24.5	24.4	18.4	25.6	29.8	0.00	0.4	25.2	38.0	1	39.0
5000	23.3	23.3	24.7	23.8	23.2	22.9	22.9	24.6	21.8	16.3	23.1	27.1	0.00	-0.8	23.9	36.7	0.5	37.2
6300	21.2	22.9	22.1	20.4	20.3	21.1	19.1	19.7	18.1	12.1	20.4	24.5	0.00	-0.5	20.8	33.7	-0.1	33.6
8000	18.9	19.6	20.1	17.5	19.5	19.1	16.8	20.4	18.1	10.7	18.6	22.4	0.00	-0.2	18.8	31.7	-1.1	30.6
10000	16.0	15.0	17.5	15.1	16.1	16.1	14.1	16.8	15.2	8.0	15.5	18.2	0.00	0.1	15.4	28.2	-2.5	25.7
A-WEIGHTED SOUND POWER LEVEL																		57.1

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Test Report

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Appendix 3 – Measured time averaged sound pressure level of RSS, $L'_{P(RSS)}$ at each microphone position

Frequency	Mic 1	Mic 2	Mic 3	Mic 4	Mic 5	Mic 6	Mic 7	Mic 8	Mic 9	Mic 10	Average $L'_{P(RSS)}$ over microphone positions	Calculated Sound Power of RSS
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
100	63.7	60.7	60.1	62.6	60.5	59.3	59.1	61.7	57.7	55.2	60.6	73.5
125	65.0	65.0	63.5	64.2	64.1	64.2	62.2	64.9	62.9	56.7	63.7	76.6
160	65.8	63.9	63.9	64.0	66.1	65.5	61.8	62.7	61.2	57.9	63.8	76.7
200	65.2	66.7	66.3	63.6	66.4	66.8	61.4	64.7	60.5	56.5	64.7	77.5
250	65.6	67.7	66.6	64.1	64.2	65.0	63.5	63.3	61.5	58.7	64.6	77.5
315	64.6	65.1	64.0	62.8	63.2	63.6	61.3	62.0	60.0	60.0	63.0	75.8
400	66.4	66.2	65.9	64.9	64.4	65.3	59.9	61.9	59.2	58.8	64.1	76.9
500	67.2	66.4	65.7	63.9	63.2	64.6	59.8	60.6	59.7	60.1	64.0	76.8
630	66.4	66.8	65.7	63.2	62.0	63.7	62.1	59.7	62.7	64.0	64.1	77.0
800	66.8	68.0	65.1	61.5	60.4	62.9	65.9	62.8	66.6	67.5	65.4	78.3
1000	67.0	68.5	64.1	60.0	60.9	60.1	68.8	67.1	68.3	65.1	66.1	78.9
1250	67.4	68.2	60.9	66.7	68.0	64.8	69.3	70.8	66.8	69.4	67.9	80.7
1600	63.6	64.6	65.1	71.0	71.2	69.9	67.2	67.9	69.5	68.5	68.5	81.4
2000	65.4	61.7	69.3	71.3	70.0	70.8	69.4	67.0	68.6	65.9	68.7	81.6
2500	66.7	62.8	69.0	66.5	65.3	67.6	65.9	67.9	65.1	62.7	66.4	79.2
3150	68.1	68.3	68.0	66.8	67.7	65.6	65.3	66.7	63.9	61.0	66.6	79.4
4000	66.6	69.7	65.5	68.0	67.5	67.4	65.6	66.3	64.3	61.1	66.7	79.5
5000	64.5	64.6	66.2	66.0	65.5	65.8	64.8	65.5	63.7	58.9	64.9	77.7
6300	66.2	65.0	65.3	64.7	64.2	64.8	61.7	63.6	61.6	57.5	64.0	76.8
8000	65.3	63.0	63.3	62.7	62.7	62.9	61.7	62.4	61.4	55.6	62.6	75.4
10000	61.9	61.0	62.3	61.6	61.2	61.6	59.4	61.0	59.7	54.2	60.8	73.6

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