Test Report

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University of Salford MANCHESTER

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, onAir Panel 2 IP
DATE OF TEST:	28th January 2025
TEST ENGINEER:	Sean Furlong
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.

1.0 Description of Appliance Under Test

CATEGORY:	Lighting Unit
DESIGN CHARACTERISTICS:	Floor mounted
MANUFACTURER:	Chauvet
MODEL:	onAir Panel 2 IP
TEST REF NUMBERS:	07607/12_1 to 4
SERIAL NUMBER:	0313171810240000120
POWER:	Not Stated
POWER SOURCE:	UK Mains
SETTINGS: **See Table 1.0 below for details of settings*	07607/12_1 "Auto" 07607/12_2 "On" 07607/12_3 "Off" 07607/12_4 "Silent"

** Table 1.0 – Manufacturer's description of the different settings of the sample that were used to create the Test Configuration for each measurement.*

Explanation of Settings Used for Each Test	
Setting Name	Test Configuration
Auto	All Effects Static, 100% Light output — Auto Fan mode
On	100% Light output — On Fan mode
Off	100% Light output — Off Fan mode
Silent	100% light — Output Silent Fan Mode

2.0 Test Conditions

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

	Measured Average Value
TEST REF NUMBER:	**07607/12_1 to 4**
SERIAL NO. / SAMPLE REF.	031317181024000120
Atmospheric Pressure	98.356
Ambient Temperature	22.0
Ambient Relative Humidity	33.3

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.

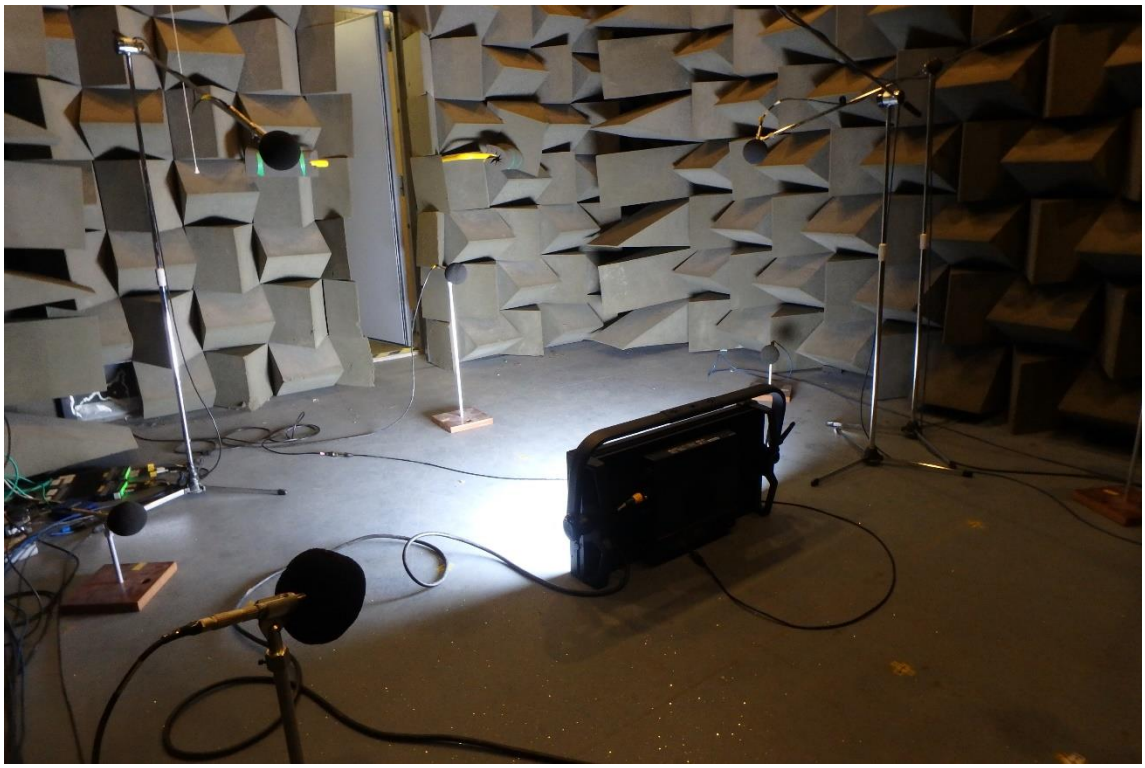

Figure 1 – unit under test mounted in the hemi-anechoic chamber at the University of Salford.

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 = 1.50 m) with guidance from BS EN ISO 3744: 2010. The location of each measurement position is provided in Appendix 1 to this report.

3.4 Measured sound pressure levels of the unit

Each unit was run at the selected setting. Three 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	**07607/12_1**	**07607/12 _2**	**07607/12 _3**	**07607/12 _4**
Setting	Auto	On	Off	Silent
A-weighted sound power level, L_{wA} in dBA	20.9 !	33.3	19.1 !	29.0

! 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.

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 parallelpiped 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, 13.0 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	**07607/12_1**	**07607/12 _2**	**07607/12 _3**	**07607/12 _4**
Setting	Auto	On	Off	Silent
A-weighted sound pressure level, L_p in dBA	7.8	20.3	6.1	15.9

**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.*

Appendix 1 – Locations of measurement positions

Defining measurement surface & Co-ordinates

Measurement distance, d 1.50 m

	x, mm	y, mm	z, mm
Microphone Position 1	-1485	0	225
Microphone Position 2	750	-1290	225
Microphone Position 3	750	1290	225
Microphone Position 4	-675	1155	675
Microphone Position 5	-675	-1155	675
Microphone Position 6	1335	0	675
Microphone Position 7	495	855	1125
Microphone Position 8	-990	0	1125
Microphone Position 9	495	-855	1125
Microphone Position 10	0	0	1500

Surface Area, m^2	14.14 m^2

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.

MEASURED TIME AVERAGED SPL at 1.5 m, L'P - [07607/12_1 – "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	11.0	11.4	9.6	7.4	6.9	11.6	5.8	7.3	4.6	7.0	8.9	3.2	1.30	-2.0	9.6	21.1	-19.1	2.0	!
125	4.7	3.6	4.1	3.5	4.0	1.6	2.2	1.5	2.9	-1.6	2.9	-2.0	1.30	1.5	0.2	11.7	-16.1	-4.4	!
160	1.4	2.1	-0.3	-2.3	-2.9	-3.4	-2.8	-4.4	-2.9	-3.4	-1.3	-1.0	1.30	0.3	-2.9	8.6	-13.4	-4.8	!
200	-2.5	-4.2	-3.1	-5.6	-5.5	-5.7	-4.0	-5.0	-5.3	-6.3	-4.6	1.9	1.30	-0.1	-5.8	5.8	-10.9	-5.1	!
250	-6.1	-6.4	-7.1	-8.7	-8.0	-8.6	-7.5	-7.1	-8.1	-8.1	-7.5	0.6	1.30	1.1	-9.9	1.6	-8.6	-7.0	!
315	-8.1	-6.9	-7.6	-9.1	-8.5	-10.6	-8.1	-8.9	-9.4	-9.4	-8.5	-0.3	1.30	0.6	-10.5	1.0	-6.6	-5.6	!
400	-8.4	-6.9	-8.4	-10.6	-9.3	-10.2	-8.4	-9.0	-9.5	-9.3	-8.9	0.5	1.30	0.5	-10.7	0.8	-4.8	-4.0	!
500	-8.6	-7.2	-8.5	-10.8	-9.9	-10.8	-8.7	-9.2	-10.1	-9.5	-9.2	0.1	1.30	0.5	-11.0	0.5	-3.2	-2.7	!
630	-1.2	-5.5	-8.1	-7.9	-8.1	-10.3	-7.6	-4.0	-9.4	-5.1	-5.8	3.2	1.30	0.6	-7.8	3.7	-1.9	1.8	!
800	-9.5	-5.9	-7.7	-9.2	-9.2	-9.6	-7.7	-6.7	-9.3	-7.8	-8.1	0.5	1.30	0.7	-10.1	1.4	-0.8	0.6	!
1000	0.1	-4.1	-5.9	-4.7	-6.2	-6.3	-6.4	-4.1	-7.3	-1.8	-4.0	3.9	1.30	0.6	-5.9	5.6	0	5.6	!
1250	7.2	4.1	2.0	2.8	-1.7	2.7	0.7	7.0	0.8	12.0	5.7	13.0	0.22	0.5	4.9	16.4	0.6	17.0	
1600	-7.9	-4.8	-6.1	-6.9	-6.4	-6.6	-5.4	-5.8	-6.7	-6.0	-6.2	0.4	1.30	0.6	-8.0	3.5	1	4.5	!
2000	-6.9	-4.0	-5.1	-6.2	-5.9	-6.2	-5.2	-4.7	-6.0	-5.6	-5.5	0.2	1.30	0.9	-7.7	3.8	1.2	5.0	!
2500	-5.3	-1.7	-2.7	-1.6	-4.0	-4.0	-3.3	0.6	-2.3	-1.0	-2.2	3.1	1.30	-1.4	-2.2	9.4	1.3	10.7	!
3150	-1.7	-2.3	-4.0	-2.7	-3.0	-4.6	-3.5	-1.9	-4.6	-2.9	-3.0	1.8	1.30	-0.5	-3.8	7.7	1.2	8.9	!
4000	-1.0	0.2	-0.3	-0.2	-1.6	-3.2	-2.2	-1.4	-3.0	-0.7	-1.2	2.3	1.30	0.1	-2.6	8.9	1	9.9	!
5000	-4.9	-2.2	-3.1	-3.9	-3.7	-3.9	-2.8	-1.5	-3.9	-3.6	-3.2	0.7	1.30	-0.1	-4.4	7.1	0.5	7.6	!
6300	-1.5	-2.9	-3.8	0.6	-1.1	-3.3	-3.3	0.8	-2.7	-3.8	-1.8	2.3	1.30	0.2	-3.3	8.2	-0.1	8.1	!
8000	1.4	-2.6	-3.2	1.2	0.7	-2.6	-3.0	1.6	-1.1	-3.4	-0.6	3.0	1.30	-0.6	-1.3	10.2	-1.1	9.1	!
10000	1.9	-2.7	-1.8	-1.1	-1.4	-2.4	-1.9	3.0	-1.8	-0.2	-0.4	2.3	1.30	-0.3	-1.4	10.1	-2.5	7.6	!
																	A-WEIGHTED SOUND POWER LEVEL	**20.9**	!

MEASURED TIME AVERAGED SPL at 1.5 m, L'P - [07607/12 _2 – "On" 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	9.6	7.1	7.1	5.5	5.9	7.2	5.6	7.1	4.6	7.1	6.9	1.2	1.30	-2.0	7.5	19.1	-19.1	0.0	!
125	16.2	14.0	17.2	15.7	15.7	18.8	18.0	16.9	15.9	16.9	16.7	11.8	0.30	1.5	14.9	26.4	-16.1	10.3	
160	7.1	4.4	5.1	4.7	3.6	7.9	3.9	6.0	3.2	3.4	5.2	5.5	1.30	0.3	3.6	15.1	-13.4	1.7	!
200	6.5	3.0	3.4	2.8	1.2	5.5	4.6	4.1	4.0	5.2	4.3	10.7	0.38	-0.1	4.0	15.5	-10.9	4.6	
250	12.1	6.5	7.0	8.9	6.7	10.5	6.5	8.5	6.8	6.0	8.4	16.5	0.00	1.1	7.3	18.8	-8.6	10.2	
315	14.5	8.6	9.2	9.7	7.8	14.2	7.7	11.4	7.3	7.8	10.7	18.9	0.00	0.6	10.0	21.5	-6.6	14.9	
400	18.3	11.6	12.1	12.4	8.9	17.3	9.5	13.1	9.2	7.9	13.4	22.9	0.00	0.5	12.9	24.4	-4.8	19.6	
500	22.0	16.2	16.3	15.6	12.9	19.5	9.9	13.1	9.8	6.1	16.4	25.6	0.00	0.5	15.9	27.4	-3.2	24.2	
630	24.7	21.4	21.8	18.9	16.3	19.5	7.9	14.0	5.8	18.4	19.5	28.6	0.00	0.6	18.9	30.4	-1.9	28.5	
800	20.0	16.0	16.1	12.0	10.4	16.6	7.6	12.0	6.4	17.8	15.3	23.9	0.00	0.7	14.6	26.1	-0.8	25.3	
1000	15.2	7.8	8.2	6.0	1.4	11.6	8.2	10.5	7.5	11.3	10.1	18.0	0.00	0.6	9.5	21.0	0	21.0	
1250	11.2	14.0	17.6	17.0	6.8	13.5	14.3	11.5	12.8	13.4	14.1	21.4	0.00	0.5	13.5	25.0	0.6	25.6	
1600	7.5	6.4	10.6	10.3	7.5	8.5	8.8	6.7	8.2	2.8	8.2	14.7	0.15	0.6	7.5	19.0	1	20.0	
2000	2.8	1.3	1.3	2.7	-0.6	3.4	2.5	5.5	1.5	-2.3	2.3	7.9	0.76	0.9	0.6	12.1	1.2	13.3	
2500	-1.8	0.2	1.2	2.1	-1.1	1.1	0.7	1.7	0.6	2.4	0.9	6.2	1.19	-1.4	1.1	12.6	1.3	13.9	
3150	-3.9	-2.2	-2.6	-1.7	-3.5	-2.4	-2.2	-2.4	-2.9	-2.6	-2.6	2.3	1.30	-0.5	-3.4	8.1	1.2	9.3	!
4000	-2.4	-0.7	1.0	-0.5	-1.7	0.3	-0.6	-0.4	-0.9	-0.3	-0.5	3.0	1.30	0.1	-2.0	9.5	1	10.5	!
5000	-3.1	-1.1	-0.3	0.2	-2.3	0.0	-0.9	-1.0	-1.5	-2.1	-1.1	2.8	1.30	-0.1	-2.3	9.2	0.5	9.7	!
6300	-3.6	-2.1	-2.2	-2.1	-2.6	-2.9	-2.3	-1.5	-2.9	-3.4	-2.5	1.6	1.30	0.2	-4.0	7.5	-0.1	7.4	!
8000	-1.5	-2.3	-2.5	-1.5	-1.4	-2.3	-1.9	-0.9	-1.8	-2.5	-1.8	1.8	1.30	-0.6	-2.5	9.0	-1.1	7.9	!
10000	0.4	-1.7	0.2	-0.7	-1.2	1.8	-0.2	3.6	-0.4	-1.1	0.4	3.1	1.30	-0.3	-0.6	10.9	-2.5	8.4	!
																	A-WEIGHTED SOUND POWER LEVEL	**33.3**	!

MEASURED TIME AVERAGED SPL at 1.5 m, L'P - [07607/12 _3 – "Off" 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	4.5	3.1	3.4	0.7	1.8	1.1	0.7	2.1	-1.6	1.6	2.0	-3.6	1.30	-2.0	2.7	14.2	-19.1	-4.9	!
125	0.3	-0.2	-1.4	-1.5	-1.2	-3.9	-4.2	-2.5	-2.9	-5.4	-2.0	-6.9	1.30	1.5	-4.7	6.8	-16.1	-9.3	!
160	-4.0	-3.5	-4.5	-7.6	-7.6	-8.8	-7.4	-8.5	-7.9	-7.9	-6.3	-6.0	1.30	0.3	-7.9	3.6	-13.4	-9.8	!
200	-7.9	-7.0	-6.8	-10.0	-9.9	-10.2	-8.1	-9.2	-9.7	-9.6	-8.7	-2.2	1.30	-0.1	-9.9	1.6	-10.9	-9.3	!
250	-9.9	-7.9	-8.7	-11.5	-11.1	-11.5	-8.9	-10.0	-10.5	-10.1	-9.9	-1.8	1.30	1.1	-12.3	-0.8	-8.6	-9.4	!
315	-11.0	-7.6	-8.7	-11.7	-11.1	-11.0	-9.4	-10.0	-10.8	-10.3	-10.0	-1.7	1.30	0.6	-11.9	-0.4	-6.6	-7.0	!
400	-9.2	-7.5	-7.3	-10.8	-11.0	-10.0	-7.4	-9.8	-10.6	-9.5	-9.1	0.3	1.30	0.5	-10.9	0.6	-4.8	-4.2	!
500	-10.8	-7.3	-8.2	-11.1	-10.2	-9.4	-8.5	-9.4	-10.1	-9.4	-9.3	0.0	1.30	0.5	-11.1	0.4	-3.2	-2.8	!
630	-9.3	-6.7	-6.7	-10.6	-9.7	-10.2	-7.9	-8.9	-8.9	-7.7	-8.5	0.6	1.30	0.6	-10.4	1.1	-1.9	-0.8	!
800	-9.8	-5.7	-7.5	-10.0	-9.1	-8.2	-7.6	-8.4	-8.9	-8.0	-8.2	0.4	1.30	0.7	-10.2	1.3	-0.8	0.5	!
1000	-9.0	-4.0	-4.9	-7.7	-8.2	-5.9	-6.7	-6.9	-7.3	-4.0	-6.1	1.8	1.30	0.6	-8.0	3.5	0	3.5	!
1250	-6.1	1.0	4.4	-2.8	-2.5	2.4	-3.5	-3.3	-2.3	8.6	2.0	9.3	0.54	0.5	0.9	12.4	0.6	13.0	
1600	-8.5	-4.8	-6.0	-7.2	-6.9	-6.4	-5.4	-6.0	-6.8	-6.3	-6.3	0.2	1.30	0.6	-8.2	3.3	1	4.3	!
2000	-7.4	-4.1	-4.6	-6.3	-6.0	-6.1	-5.2	-5.1	-6.1	-4.9	-5.5	0.2	1.30	0.9	-7.7	3.8	1.2	5.0	!
2500	-6.2	-2.0	2.3	-3.4	-3.2	-2.4	-3.3	-1.8	-2.1	3.9	-0.8	4.5	1.30	-1.4	-0.7	10.8	1.3	12.1	!
3150	-5.6	-3.4	-4.0	-5.0	-4.9	-4.9	-4.0	-3.9	-4.7	-2.9	-4.3	0.6	1.30	-0.5	-5.0	6.5	1.2	7.7	!
4000	-3.9	-2.3	0.0	-3.2	-4.2	-3.8	-3.0	-2.4	-3.0	-0.4	-2.4	1.1	1.30	0.1	-3.8	7.7	1	8.7	!
5000	-5.2	-2.0	-2.3	-4.2	-4.0	-3.6	-2.7	-3.5	-3.5	-3.0	-3.3	0.6	1.30	-0.1	-4.5	7.0	0.5	7.5	!
6300	-5.1	-3.0	-2.7	-4.0	-3.9	-3.3	-3.1	-3.2	-3.6	-3.7	-3.5	0.5	1.30	0.2	-5.0	6.5	-0.1	6.4	!
8000	-4.4	-2.7	-2.7	-3.6	-3.3	-2.7	-2.0	-2.8	-2.6	-3.3	-3.0	0.6	1.30	-0.6	-3.6	7.9	-1.1	6.8	!
10000	-3.7	-1.3	1.1	-2.6	-2.5	1.4	0.7	-1.4	-0.8	-1.3	-0.7	2.0	1.30	-0.3	-1.7	9.8	-2.5	7.3	!
																	A-WEIGHTED SOUND POWER LEVEL	**19.1**	!

MEASURED TIME AVERAGED SPL at 1.5 m, L'P - [07607/12 _4 – "Silent" 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	16.0	15.1	14.8	11.7	12.8	17.3	12.7	13.5	11.1	13.8	14.3	8.6	0.64	-2.0	15.6	27.1	-19.1	8.0	
125	15.8	13.9	14.7	14.9	14.7	17.0	16.1	16.2	15.1	14.8	15.4	10.5	0.41	1.5	13.5	25.0	-16.1	8.9	
160	4.4	3.7	2.5	1.6	1.3	4.5	1.4	2.4	1.2	0.9	2.6	2.9	1.30	0.3	1.0	12.5	-13.4	-0.9	!
200	3.8	0.7	1.3	0.1	-0.8	2.4	1.8	1.4	1.3	1.9	1.5	8.0	0.75	-0.1	0.9	12.4	-10.9	1.5	
250	8.3	2.9	2.7	4.2	4.3	6.6	2.6	4.8	3.3	2.2	4.6	12.7	0.24	1.1	3.3	14.8	-8.6	6.2	
315	10.6	4.7	5.1	4.3	5.1	10.1	3.6	7.4	3.4	4.0	6.7	14.9	0.14	0.6	5.9	17.4	-6.6	10.8	
400	14.3	7.4	7.7	6.4	6.3	12.9	4.8	8.8	4.7	3.1	9.1	18.6	0.00	0.5	8.6	20.1	-4.8	15.3	
500	16.7	10.5	10.5	8.6	8.5	13.9	4.5	7.8	4.5	0.7	10.8	20.1	0.00	0.5	10.3	21.8	-3.2	18.6	
630	18.9	15.2	15.5	12.1	11.3	13.4	2.0	7.9	0.2	12.3	13.5	22.6	0.00	0.6	12.9	24.4	-1.9	22.5	
800	15.0	10.1	9.8	4.9	4.9	12.2	1.5	6.6	0.7	11.5	9.8	18.4	0.00	0.7	9.1	20.6	-0.8	19.8	
1000	9.6	3.2	3.1	-0.3	-1.6	6.6	1.7	4.7	2.0	5.7	4.6	12.6	0.25	0.6	3.8	15.3	0	15.3	
1250	11.8	10.8	14.8	13.3	5.2	12.4	11.9	10.7	11.8	13.4	12.2	19.5	0.00	0.5	11.6	23.1	0.6	23.7	
1600	4.3	2.7	7.9	6.4	4.7	5.6	3.6	2.4	4.9	0.3	4.8	11.3	0.33	0.6	3.9	15.4	1	16.4	
2000	-2.2	-0.7	-0.3	-2.4	-2.2	-1.7	0.4	-1.5	0.3	-3.9	-1.2	4.4	1.30	0.9	-3.4	8.1	1.2	9.3	!
2500	-1.9	-1.5	-0.4	-1.1	-1.4	-0.9	-0.9	0.1	-0.9	0.8	-0.7	4.6	1.30	-1.4	-0.7	10.8	1.3	12.1	!
3150	-4.7	-3.0	-3.4	-3.7	-3.4	-3.4	-2.9	-2.3	-3.5	-3.1	-3.3	1.5	1.30	-0.5	-4.1	7.4	1.2	8.6	!
4000	-3.3	-2.3	0.3	-1.5	-1.2	-0.8	-1.4	-0.3	-1.4	-0.9	-1.2	2.3	1.30	0.1	-2.6	8.9	1	9.9	!
5000	-3.8	-1.9	-1.1	-0.7	-1.9	-1.0	-1.8	-1.2	-2.1	-3.2	-1.8	2.2	1.30	-0.1	-2.9	8.6	0.5	9.1	!
6300	-3.3	-2.3	-2.3	-3.2	-2.3	-3.0	-2.8	-1.7	-3.3	-3.3	-2.7	1.4	1.30	0.2	-4.2	7.3	-0.1	7.2	!
8000	-1.6	-2.3	-1.9	-2.6	-2.1	-3.0	-2.6	-2.3	-2.1	-3.0	-2.3	1.3	1.30	-0.6	-3.0	8.5	-1.1	7.4	!
10000	-0.8	-1.3	-0.5	-1.0	1.4	1.2	0.2	-0.1	-0.9	-0.7	-0.2	2.5	1.30	-0.3	-1.1	10.4	-2.5	7.9	!
																	A-WEIGHTED SOUND POWER LEVEL	**29.0**	!

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	64.3	61.5	63.0	61.9	62.5	63.1	61.5	63.0	61.4	57.0	62.2	73.7
125	66.6	65.9	65.0	66.5	65.1	67.3	63.4	65.3	65.6	57.8	65.4	76.9
160	65.9	66.2	65.5	65.1	64.4	67.6	62.7	63.1	63.9	57.5	64.8	76.3
200	67.0	65.4	65.4	65.0	64.0	65.4	63.3	63.1	63.1	58.7	64.5	76.0
250	68.1	66.7	66.9	67.2	67.2	65.2	63.1	61.9	63.7	59.2	65.6	77.1
315	67.1	68.0	67.9	66.1	66.6	65.3	61.3	62.3	61.5	62.4	65.5	77.0
400	67.8	68.4	68.2	65.3	64.7	65.2	61.0	60.9	61.1	60.6	65.3	76.8
500	68.9	68.5	68.7	64.5	64.8	64.6	60.8	60.6	60.8	62.0	65.6	77.1
630	69.4	69.1	69.3	63.4	63.6	63.2	63.2	63.0	63.0	65.8	66.2	77.7
800	69.9	70.4	70.8	62.7	62.4	62.1	67.4	67.2	67.1	69.0	67.9	79.4
1000	70.9	70.3	71.0	63.0	62.9	62.4	69.8	69.8	69.9	66.9	68.8	80.3
1250	70.9	71.0	71.1	70.4	70.1	69.6	69.9	69.8	69.7	71.5	70.4	81.9
1600	68.5	69.0	69.5	73.2	73.2	72.6	68.8	68.7	69.1	69.7	70.7	82.2
2000	68.3	68.8	69.0	72.2	72.1	71.6	71.3	70.9	71.4	67.2	70.6	82.1
2500	63.4	63.9	64.4	67.2	67.1	66.7	68.1	68.0	68.2	64.9	66.5	78.0
3150	65.4	63.7	63.7	70.1	69.6	68.9	66.8	66.8	67.2	62.8	67.2	78.7
4000	66.8	66.5	66.7	70.2	69.6	68.9	66.6	66.7	67.0	63.3	67.6	79.1
5000	69.1	67.9	68.7	66.2	66.7	66.9	65.4	65.3	65.9	60.3	66.8	78.3
6300	68.3	67.4	68.6	65.9	66.2	66.2	64.0	63.4	64.0	59.4	66.0	77.5
8000	64.7	63.3	64.5	64.8	64.0	63.9	63.3	62.0	63.2	57.2	63.5	75.0
10000	63.0	61.3	62.9	62.9	62.6	62.7	61.4	59.9	61.6	55.9	61.8	73.3