

**SPECSAVERS LTD
22 LONDON ROAD
BOGNOR REGIS
PO21 1PY**

24 HOUR ENVIRONMENTAL NOISE ASSESSMENT

Our Ref: CPT/190614/001

Report prepared on behalf of

Premier Cooling Ltd
New Premier House
47 Nork Way
Banstead
Surrey
SM7 1PB

By:

Eurovib Acoustic Products Ltd
Goodwood House
86 Holmethorpe Avenue
Redhill
Surrey
RH1 2NL

Written By:

Cliff Tucker AMIOA

Date: 18th June 2014

Checked By:

John Lesser AMIOA

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1.0 Brief

- 1.1 To carry out an Environmental Noise Assessment & Report in order to establish the prevailing environmental noise levels enjoyed by the site.
- 1.2 From these measurements we establish an acoustic design criterion (the Rating Level) 1.0 meters from the nearest acoustically critical location (the assessment point).
- 1.3 To analyse the published acoustic data for the proposed condensing unit/heat pumps, in relation to the rating level, in order to establish the likelihood of complaint.
- 1.4 To offer recommendations as to the general type of acoustic hardware to mitigate the noise levels, if required.
- 1.5 We have excluded the following from our brief:
 - Construction noise
 - Any Building Regulations noise considerations
 - Traffic noise/traffic count per se, though we have recorded LA10 percentiles.
 - Health and safety acoustics.

2.0 Executive Summary

- 2.1 An Environmental Noise Assessment has been carried out at Specsavers Ltd, 22 London Road, Bognor Regis, PO21 1PY.
- 2.2 Minimum background noise levels of 44 (43.6) dB LA90, 15mins for Day time hours and 44 (43.6) dB LA90, 15mins for Night Time has been measured.
- 2.3 A Rating Level is set at 10 dB below the relevant background noise levels, as per the requirements of Arun District Council.
- 2.4 The Day Time Rating Level will therefore be 34 dB LAeq, 15 mins.
- 2.5 The Night Time Rating Level will therefore be 34 dB LAeq, 15 mins.
- 2.6 The analysis of the noise data for the proposed air condenser indicates that the resultant level at the assessment point will be 16 dB LAeq, 15 mins for day time use and 10 dB LAeq, 15 mins for night time.
- 2.7 Therefore the Arun District Council's requirements have been met and complaints are unlikely.

3.0 Location

- 3.1 22 London Road is a three storey terraced property in a street of similar properties. The ground floor area is let to retail areas with office areas over.
- 3.2 It is bounded by mixed commercial property to the North; South; and West with mixed commercial/ residential property to the East on the far side of London Road.
- 3.3 The property is about to undergo refurbishment works and part of these works involves the installation of an air conditioning system.
- 3.4 It is proposed to locate the external condensers (2 no. Daikin RXS 50) for the air conditioning on the ground floor flat roof to the rear of the property. An aerial photo showing the proposed installation site can be found in Appendix A of this report.

4.0 Instrumentation

4.1 The instrumentation employed was:

- Rion NL-32/NX-22RT Class 1 Environmental Noise Analyser
- Rion NC74 Class1 Acoustic Calibrator
- Rion 12 mm Condenser Microphone & Foam Windshield on 1,5 meter Extension Pole.
- Rion Weatherproof Security Box

4.2 The instruments carry current calibration certificates – Appendix C – and were additionally hand calibrated both before and after completion of the survey, no slippage was recorded.

5.0 Time, Date & Environmental Conditions

- 5.1 The survey was conducted between 12.36 on 10th June 2014 through until 12.36 on 11th June 2014.
- 5.2 The weather throughout the survey period was warm with clear skies. There was no rainfall.
- 5.3 The site engineer was Cliff Tucker; the results were analysed & reported by Cliff Tucker and checked by John Lesser.

6.0 Methodology.

- 6.1 The survey and report generally follow the procedures, method and assessments as described in BS 4142: 1997 'Rating Industrial Noise Affecting Mixed Residential and Industrial Areas'.
- 6.2 Whilst this Code of Practice is not ideal for the purpose, it is the best available, and the basic principle of establishing an acoustic design criterion in relation to the existing Background Level, is generally accepted by most Planners and E.H.O's.
- 6.3 The Reference Time Interval used for the survey was 15 minutes.
- 6.4 The microphone position (the measurement position) was in the proposed equipment location. Please see Appendix A for the exact location.
- 6.5 The closest potential point of complaint (The Assessment Position) is taken to be the top floor window of the top floor apartment on the opposite side of London Road; a distance of not less than 35 m from the proposed plant location and significantly screened by 22 London Road.
- 6.6 The background level as measured at the microphone position is considered to be representative of the levels enjoyed at the assessment position.
- 6.7 The measurement position; assessment position; and the other relevant points of interest are shown on the plan within Appendix 'A'.
- 6.8 Although BS 4142 does not exactly specify a definition of Day Time and Night Time, it indicates that Night Time could be supposed to be a time when most people might normally be expected to go to bed, and Day Time, the hour at which they may normally rise in the morning. An alternative well known environmental standard, PPG 24 is explicit in defining Day Time as 07.00hrs through 23.00hrs Monday through Friday and 23.00hrs through 07.00hrs for Night Time. This is the definition we have adopted for the purposes of this report.
- 6.9 The measured levels were the principle LA percentiles as prescribed in BS 4142.
- 6.10 The most significant of the measured percentiles for our purposes are as follows:
 - LAeq, (the mean sound pressure level corresponding to a fluctuation level across time period 't'). Used for the measurement and assessment of the Ambient Noise Level; The Specific Noise Level; The Residual Level and the Rating Level

- LA10 ('A' weighted level exceeded for 10% of the time) is used for traffic noise assessment.
- LA90, ('A' weighted level exceeded for 90% of the time). Represents the Background Level and is often used as the target threshold against which the acoustic design criteria are set.

We also measured the maximum and minimum levels.

- 6.11 You will note the basic objective is to establish a Rating Level at the Assessment Point for the specific noise level from any new plant in order to predict the likelihood of noise complaint.
- 6.12 The requirement of Arun District Council is for new plant noise not to cause an increase in the background noise level at the Assessment Position. In effect this means that the specific noise from the condensers must be not less than 10 dB below the minimum external background noise level for the hours of operation for the plant.
- 6.13 The two air conditioning condensers to be installed have the propensity to operate 24 hours per day, 7 days per week.

7.0 Results Summary

- 7.1 The full set of measured levels are tabulated in Appendix 'B' of this report
- 7.2 The table below summarises the minimum background noise levels measured. It is apparent from the LA90 levels measured that there is the presence of a steady state noise source within the local area.

7.2.1 Day Time Minimum

- 43.6 dB LA90, 15 mins at 07.01 hrs on the 11th June 2014.

7.2.2 Night Time Minimum

- 43.6 dB LA90, 15 mins at 04.21 hrs on the 11th June 2014.

7.2.3 Rating Levels

The day time Rating Level is therefore 34 dB LAeq, 15 mins.

The night time Rating Level is therefore 34 dB LAeq, 15 mins.

8.0 Analysis

8.1 Proposed Plant & Location

The proposed item of plant is:

- 2 no. Daikin RXS 50.

The plant is to be installed on the ground floor flat roof to the rear of the property.

The closest neighbouring residential window (the Assessment Position) is the top floor apartment to the property opposite 22 London Road. It is not less than 35 metres from the proposed equipment position and is screened from the plant location.

The manufacturers published Sound Pressure Level at 1 metre for the unit under full load is as follows:

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Lp @ 1 m Cooling	53	58	51	44	43	41	39	34
Lp @ 1 m Heating	43	54	49	44	46	43	37	34

The plant noise has no tonal properties. Being inverter driven, there is no intermittency.

The units have a night set back mode which Daikin advise will reduce the night time noise levels by 6-9 dB-A.

8.2 Day Time Analysis

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Lp @ 1 m	53	58	51	44	43	41	39	34
Add for 2 no.	3	3	3	3	3	3	3	3
Less Dist loss 20 log(d1/d2)	31	31	31	31	31	31	31	31
Lp @ 35 m	19	24	17	10	9	7	5	0
A-Weight	26	16	9	3	0	-1	-1	1

Lp-A @ 5 m -7 8 8 7 9 8 6 -1

This is equivalent to 16 dB-A which is 18 dB below the Rating Level and therefore complaints are unlikely.

Our further calculations show that the Rating Level of 34 dB LAeq will be met at a distance of 9 m from the units. There are no potential points of complaint within 10 m of the proposed unit location.

8.3 Night Time Analysis

		Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k	8k
Lp @ 1 m	53	58	51	44	43	41	39	34
Add for 2 no.	3	3	3	3	3	3	3	3
Less Dist loss 20 log(d1/d2)	31	31	31	31	31	31	31	31
Less set back	6	6	6	6	6	6	6	6
Lp @ 35 m	13	18	11	4	3	1	-1	-6
A-Weight	26	16	9	3	0	-1	-1	1
Lp-A @ 5 m	-13	2	2	1	3	2	0	-7

This is equivalent to 10 dB-A which is 24 dB below the Rating Level and therefore complaints are unlikely.

Our further calculations show that the Rating Level of 34 dB LAeq will be met at a distance of 5 m from the units. There are no potential points of complaint within 10 m of the proposed unit location.

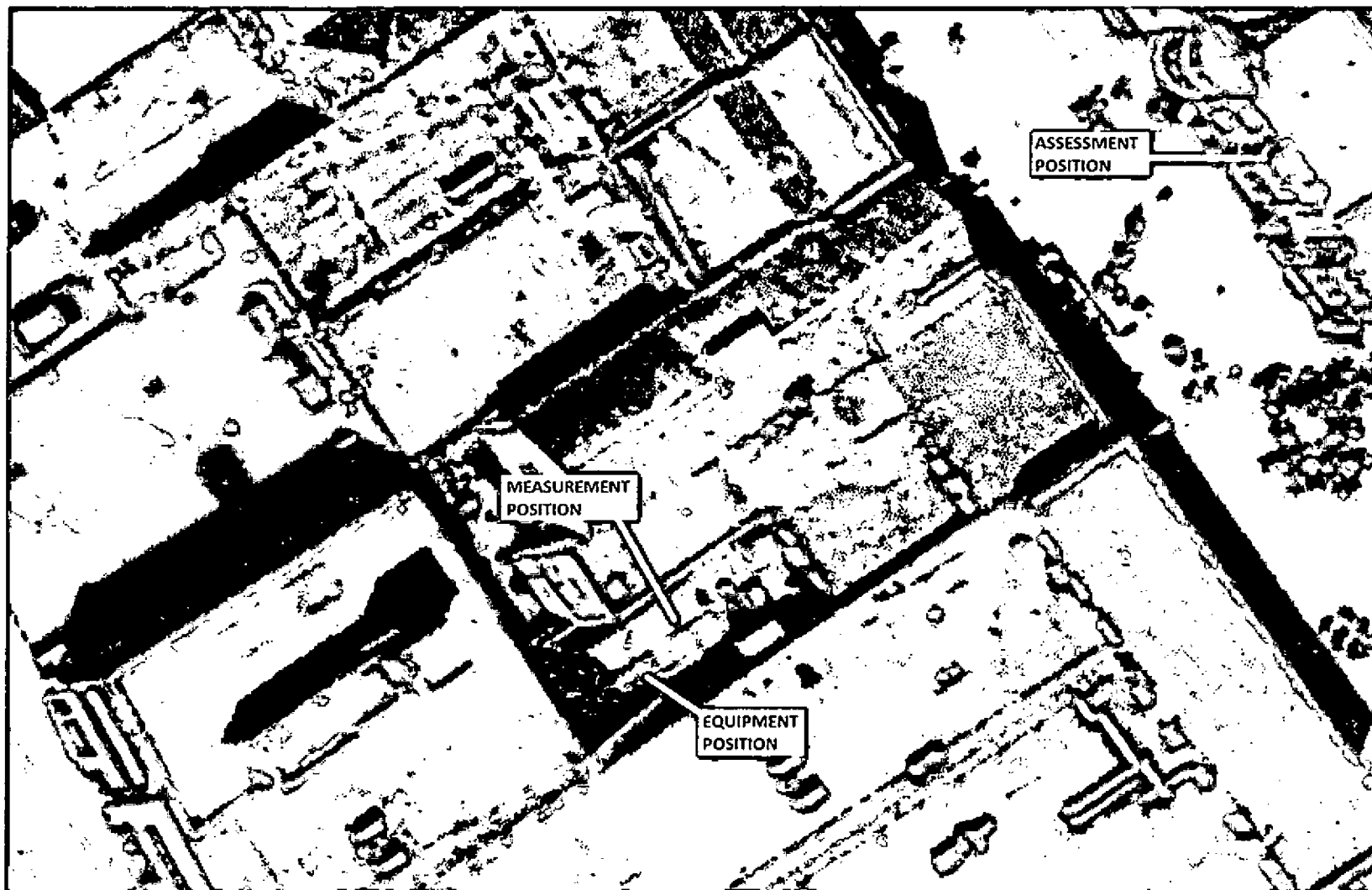
9.0 Conclusion

- 9.1 Assessed against the proposed installation location and the closest potential point of complaint (the Assessment Position) our calculations show that the Rating Level for neither day time nor night time operation of the unit will be exceeded.
- 9.2 Therefore Arun District Councils requirements have been met and complaints are unlikely.

Report ends

Cliff Tucker AMIOA
Eurovib (Acoustic Products) Ltd

APPENDIX A – Positions, Distances, & Locations



Appendix B – Full Measured Levels

Ref	Time	Duration	LAmx	LAmn	LA10	LA90	LAeq
1	10/06/2014 12:36	0:15:00	85.4	50.3	55.5	51.7	59.1
2	10/06/2014 12:51	0:15:00	60.8	51.3	53.8	52.3	53.0
3	10/06/2014 13:06	0:15:00	58.5	51.6	54.0	52.6	53.3
4	10/06/2014 13:21	0:15:00	77.9	52.0	56.7	53.0	57.4
5	10/06/2014 13:36	0:15:00	72.7	51.7	54.5	52.5	55.8
6	10/06/2014 13:51	0:15:00	77.0	52.1	58.1	53.1	58.2
7	10/06/2014 14:06	0:15:00	74.0	51.1	59.3	52.6	57.3
8	10/06/2014 14:21	0:15:00	67.4	51.0	55.7	52.3	54.3
9	10/06/2014 14:36	0:15:00	73.2	52.1	55.7	53.0	55.8
10	10/06/2014 14:51	0:15:00	67.5	51.6	55.0	52.8	53.9
11	10/06/2014 15:06	0:15:00	64.8	51.7	54.5	52.8	53.6
12	10/06/2014 15:21	0:15:00	61.0	51.8	54.2	52.9	53.5
13	10/06/2014 15:36	0:15:00	71.9	51.0	57.4	52.7	55.3
14	10/06/2014 15:51	0:15:00	63.2	53.9	57.0	55.3	56.1
15	10/06/2014 16:06	0:15:00	76.5	54.4	59.7	55.3	59.8
16	10/06/2014 16:21	0:15:00	66.9	54.3	56.6	55.1	56.1
17	10/06/2014 16:36	0:15:00	69.2	54.3	59.4	55.3	57.3
18	10/06/2014 16:51	0:15:00	71.0	54.8	59.6	55.7	58.0
19	10/06/2014 17:06	0:15:00	68.3	54.8	57.0	55.7	56.3
20	10/06/2014 17:21	0:15:00	65.7	54.5	57.1	55.5	56.4
21	10/06/2014 17:36	0:15:00	63.1	55.0	57.2	55.9	56.5
22	10/06/2014 17:51	0:15:00	78.9	54.8	59.7	55.8	59.1
23	10/06/2014 18:06	0:15:00	77.5	55.0	64.7	55.9	61.9
24	10/06/2014 18:21	0:15:00	72.5	54.8	62.1	56.0	59.5
25	10/06/2014 18:36	0:15:00	74.0	54.5	58.5	55.6	57.7
26	10/06/2014 18:51	0:15:00	59.8	54.5	56.7	55.6	56.1
27	10/06/2014 19:06	0:15:00	63.4	54.6	56.8	55.6	56.2
28	10/06/2014 19:21	0:15:00	64.2	54.9	57.2	55.8	56.5
29	10/06/2014 19:36	0:15:00	62.7	54.7	56.9	55.6	56.2
30	10/06/2014 19:51	0:15:00	75.4	54.6	57.7	55.7	57.3
31	10/06/2014 20:06	0:15:00	71.2	54.9	57.2	55.8	56.6
32	10/06/2014 20:21	0:15:00	71.6	54.8	59.7	55.9	57.9
33	10/06/2014 20:36	0:15:00	67.1	55.0	58.4	56.0	57.1
34	10/06/2014 20:51	0:15:00	70.5	55.0	60.2	56.1	58.3
35	10/06/2014 21:06	0:15:00	75.1	55.1	62.3	56.1	60.5
36	10/06/2014 21:21	0:15:00	65.0	55.3	58.2	56.4	57.3
37	10/06/2014 21:36	0:15:00	73.4	55.4	59.3	56.5	58.3
38	10/06/2014 21:51	0:15:00	72.4	55.3	58.9	56.2	58.0
39	10/06/2014 22:06	0:15:00	75.8	52.0	57.8	53.3	56.8
40	10/06/2014 22:21	0:15:00	64.7	52.3	55.7	53.3	54.6
41	10/06/2014 22:36	0:15:00	68.8	50.9	54.6	52.7	53.9
42	10/06/2014 22:51	0:15:00	72.9	50.8	55.1	52.1	55.0
43	10/06/2014 23:06	0:15:00	73.2	50.2	55.8	52.3	55.8
44	10/06/2014 23:21	0:15:00	64.2	50.2	54.6	51.7	53.5
45	10/06/2014 23:36	0:15:00	59.3	49.7	53.0	51.2	52.1
46	10/06/2014 23:51	0:15:00	69.8	49.5	52.0	50.9	52.5
47	11/06/2014 00:06	0:15:00	64.5	49.2	53.9	50.5	52.4
48	11/06/2014 00:21	0:15:00	67.6	49.1	52.2	50.4	51.4

Ref	Time	Duration	LAmx	LAmin	LA10	LA90	LAeq
49	11/06/2014 00:36	0:15:00	65.5	49.8	53.7	51.1	52.6
50	11/06/2014 00:51	0:15:00	60.8	49.0	52.3	50.3	51.4
51	11/06/2014 01:06	0:15:00	58.0	48.6	51.6	49.8	50.7
52	11/06/2014 01:21	0:15:00	55.4	47.9	51.4	49.2	50.3
53	11/06/2014 01:36	0:15:00	56.4	47.5	50.4	48.7	49.5
54	11/06/2014 01:51	0:15:00	59.6	47.2	50.4	48.6	49.6
55	11/06/2014 02:06	0:15:00	60.9	47.4	50.0	48.4	49.2
56	11/06/2014 02:21	0:15:00	60.1	47.1	50.3	48.6	49.6
57	11/06/2014 02:36	0:15:00	60.0	44.4	50.4	47.8	49.4
58	11/06/2014 02:51	0:15:00	65.8	43.8	50.5	45.0	48.4
59	11/06/2014 03:06	0:15:00	55.3	43.7	47.2	44.7	46.0
60	11/06/2014 03:21	0:15:00	72.0	43.7	55.2	44.9	55.8
61	11/06/2014 03:36	0:15:00	56.2	43.2	48.3	44.5	46.6
62	11/06/2014 03:51	0:15:00	56.9	43.1	47.0	44.2	45.6
63	11/06/2014 04:06	0:15:00	51.7	42.9	46.0	43.8	44.9
64	11/06/2014 04:21	0:15:00	51.4	42.7	45.2	43.6	44.3
65	11/06/2014 04:36	0:15:00	51.1	43.0	45.9	43.9	44.8
66	11/06/2014 04:51	0:15:00	57.0	42.6	47.3	43.8	45.6
67	11/06/2014 05:06	0:15:00	70.1	43.2	57.3	44.2	54.9
68	11/06/2014 05:21	0:15:00	65.0	43.2	58.1	44.6	55.9
69	11/06/2014 05:36	0:15:00	54.7	42.9	47.4	44.0	45.4
70	11/06/2014 05:51	0:15:00	71.1	42.8	47.6	43.8	47.5
71	11/06/2014 06:06	0:15:00	64.2	42.8	56.7	43.9	51.0
72	11/06/2014 06:21	0:15:00	59.7	43.5	56.3	45.0	54.9
73	11/06/2014 06:36	0:15:00	55.3	42.9	46.4	44.0	45.7
74	11/06/2014 06:51	0:15:00	60.0	42.9	45.8	43.8	44.9
75	11/06/2014 07:06	0:15:00	56.9	42.5	46.1	43.6	45.2
76	11/06/2014 07:21	0:15:00	54.1	43.2	46.0	44.1	45.1
77	11/06/2014 07:36	0:15:00	59.2	43.2	47.6	44.3	46.4
78	11/06/2014 07:51	0:15:00	52.2	43.6	46.8	44.4	45.5
79	11/06/2014 08:06	0:15:00	58.2	43.4	47.6	44.5	46.4
80	11/06/2014 08:21	0:15:00	58.8	43.9	49.9	45.4	48.0
81	11/06/2014 08:36	0:15:00	67.2	44.7	48.9	46.1	47.6
82	11/06/2014 08:51	0:15:00	72.9	46.2	51.5	47.3	49.9
83	11/06/2014 09:06	0:15:00	62.9	46.3	50.7	47.6	49.4
84	11/06/2014 09:21	0:15:00	63.3	48.2	52.7	49.7	51.4
85	11/06/2014 09:36	0:15:00	61.9	48.3	52.8	49.6	51.4
86	11/06/2014 09:51	0:15:00	73.0	48.2	53.1	49.3	54.4
87	11/06/2014 10:06	0:15:00	65.8	49.2	59.6	50.8	55.3
88	11/06/2014 10:21	0:15:00	73.0	50.0	57.0	51.5	54.7
89	11/06/2014 10:36	0:15:00	63.1	49.7	53.4	51.0	52.3
90	11/06/2014 10:51	0:15:00	75.3	50.0	56.6	51.0	56.2
91	11/06/2014 11:06	0:15:00	60.8	53.3	55.8	54.2	55.0
92	11/06/2014 11:21	0:15:00	67.5	53.1	60.4	54.1	56.8
93	11/06/2014 11:36	0:15:00	69.1	52.9	56.4	54.0	55.6
94	11/06/2014 11:51	0:15:00	68.1	53.0	56.6	54.1	55.7
95	11/06/2014 12:06	0:15:00	61.6	53.1	55.3	54.0	54.6
96	11/06/2014 12:21	0:15:00	74.4	53.4	56.9	54.4	57.0

Appendix C – Calibration Certificate

CERTIFICATE OF CALIBRATION

Issued By BSRIA Instrument Solutions
Date of Issue 08 May 2012

Certificate Number
STD45547

Page 1 of 2 Pages



BSRIA Instrument Solutions
Old Bracknell Lane West, Bracknell, Berkshire RG12 7AH UK
Tel: +44 (0) 1344 459314 Fax: +44 (0) 1344 465556
e mail: info@bis.fm website: www.bis.fm



Approved Signatory

Customer : Impulse Acoustics Ltd

Date Received : 08 May 2012

Instrument -	System ID :	74085
	Description :	Sound Level Meter, Type 1
	Manufacturer :	Rion
	Model Number :	NL32
	Serial Number :	00403194
	Procedure Version :	NO381V1

Environmental Conditions

Temperature :	20°C +/- 4°C	Mains Voltage :	240V +/- 10V
Relative Humidity :	<70% +/- %	Mains Frequency :	50Hz +/- 1Hz

Comments

Calibration tolerances quoted are those as stated in BS EN 61672-1:2003
Unless otherwise stated all readings are made at 1kHz.
Calibration performed acoustically.
Preamp Serial Number 32499.
Barometric Pressure= 997.0 mbar. Ambient Temperature = 22.0 °C

Traceability Information

Instrument description	Serial number	Certificate number	Cal. Date	Cal. Period
B & K 4228 Calibrator (Lab 0174)	1551580	C1009558	15/11/2010	104

Calibrated By : D. M. Tovey

This certificate provides traceability of measurement to the National Measurement Laboratory or other recognised National Laboratory.
Copyright of this certificate is owned by the issuing laboratory and may not be reproduced except with the prior written approval of the issuing laboratory.
This certificate complies with the requirements of BS EN ISO 10012:2003.

CERTIFICATE OF CALIBRATION

Certificate Number

STD45547

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Test Title	Tolerance	Applied Value	Reading	% Of Spec.
<i>Acoustic Pre Calibration Check at 1kHz, 20 to 110dB Range. Lp Mode.</i>				
As Found	1.1dB	94.0dB	94.0dB	0%
As left	1.1dB	94.0dB	94.0dB	0%
CALIBRATION RESULTS				
<i>Lp Mode, 1kHz, Fast Response.</i>				
Range, 20 to 100dB	1.1dB	94.0dB	94.0dB	0%
Range, 20 to 110dB	1.1dB	94.0dB	94.0dB	0%
	1.1dB	104.0dB	104.0dB	0%
Range, 30 to 120dB	1.1dB	94.0dB	93.9dB	9%
	1.1dB	104.0dB	103.9dB	9%
	1.1dB	114.0dB	113.9dB	9%
Range, 40 to 130dB	1.1dB	114.0dB	113.9dB	9%
<i>A level of 94dB, at the frequency shown, was applied to the instrument and its dB(A) weighted response recorded. Range Lc 20 to 110dB</i>				
94dB @ 125Hz	1.5dB	77.8dB	77.8dB	7%
94dB @ 1kHz	1.1dB	94.0dB	94.0dB	0%
94dB @ 4kHz	1.6dB	95.0dB	95.7dB	44%
<i>A level of 94dB, at the frequency shown, was applied to the instrument and its dB(C) weighted response recorded. Range Lc 20 to 110dB</i>				
94dB @ 125Hz	1.5dB	93.8dB	93.8dB	0%
94dB @ 1kHz	1.1dB	94.0dB	94.0dB	0%
94dB @ 4kHz	1.6dB	93.2dB	93.9dB	44%
<i>Lp Filter Mode, Fast Response, 20 to 110dB Range.</i>				
94dB @ 63Hz	1.5dB	94.0dB	94.0dB	0%
94dB @ 125Hz	1.5dB	94.0dB	94.0dB	0%
94dB @ 250Hz	1.4dB	94.0dB	93.9dB	7%
94dB @ 500Hz	1.4dB	94.0dB	93.9dB	7%
94dB @ 1kHz	1.1dB	94.0dB	94.0dB	0%
94dB @ 2kHz	1.6dB	94.0dB	94.3dB	19%
94dB @ 4kHz	1.6dB	94.0dB	94.7dB	44%

End.

Uncertainties

Sound Level ± 0.5 dB
 Instrument Stability An additional uncertainty of 1 std should be added to all values.

Appendix D – Definitions

DECIBEL - The ratio of sound pressures that we can hear is a ratio of 106. A logarithmic measurement scale is therefore used for convenience. The resulting parameter is called the 'sound pressure level' (L_p) and the associated measurement unit is the decibel (dB). As the decibel is a logarithmic ratio, the laws of logarithmic addition and subtraction apply.

The threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain.

A change of 1 dB is only perceptible under controlled conditions.

dB(A) - The unit generally used for measuring environmental, traffic or industrial noise is the A-weighted sound pressure level in decibels, denoted dB(A). An 'A'-weighting network can be built into a sound level measuring instrument such that sound levels in dB(A) can be read directly from a meter. The weighting is based on the frequency response of the human ear and has been found to correlate well with human subjective reactions to various sounds. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds to a subjective halving or doubling of the loudness of a sound.

EQUIVALENT CONTINUOUS SOUND LEVEL (LEQ) - An index often used for the assessment of overall noise exposure is the equivalent continuous sound level, (LEQ). This is a notional steady level which would, over a given period of time, deliver the same sound energy as the actual time-varying sound over the same period. Hence fluctuating levels can be described in terms of a single figure level.

The 'A' weighted statistical sound level over a time period, T, is denoted LAEQ,T.

AMBIENT NOISE - The total encompassing sound in a given situation at a given time. Most often described in terms of the index LAEQ,T.

SPECIFIC NOISE (LAEQ,T) - The equivalent continuous A-Weighted sound pressure level at the assessment position produced by the specific noise source over a time interval T.

STATISTICAL NOISE LEVELS - For levels of noise that vary widely with time, for example road traffic noise, it is necessary to employ an index which allows for this variation.

- The L10, the level exceeded for ten per cent of the time period under consideration, has been adopted in this country for the assessment of road traffic noise.
- The L90, the level exceeded for ninety per cent of the time, has been adopted to represent the background noise level.

'A' weighted statistical noise levels are generally used and are denoted LA10, LA90 etc. The reference time period (T) is normally included, e.g. LA10, 15 mins