



REPORT 160095R1

Revision 0

Patrick Port Botany Terminal
Biannual Environmental
Noise Compliance Monitoring
May 2020

PREPARED FOR:

Patrick Stevedores Operations Pty Ltd,
Port Botany Terminal
PO Box 197, Botany NSW 1455

2 June 2020



Patrick Port Botany Terminal

Biannual Environmental

Noise Compliance Monitoring

May 2020

PREPARED BY:

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DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
160095R1	Revision 0	2 June 2020	Thomas Carney	Desmond Raymond	Rodney Stevens



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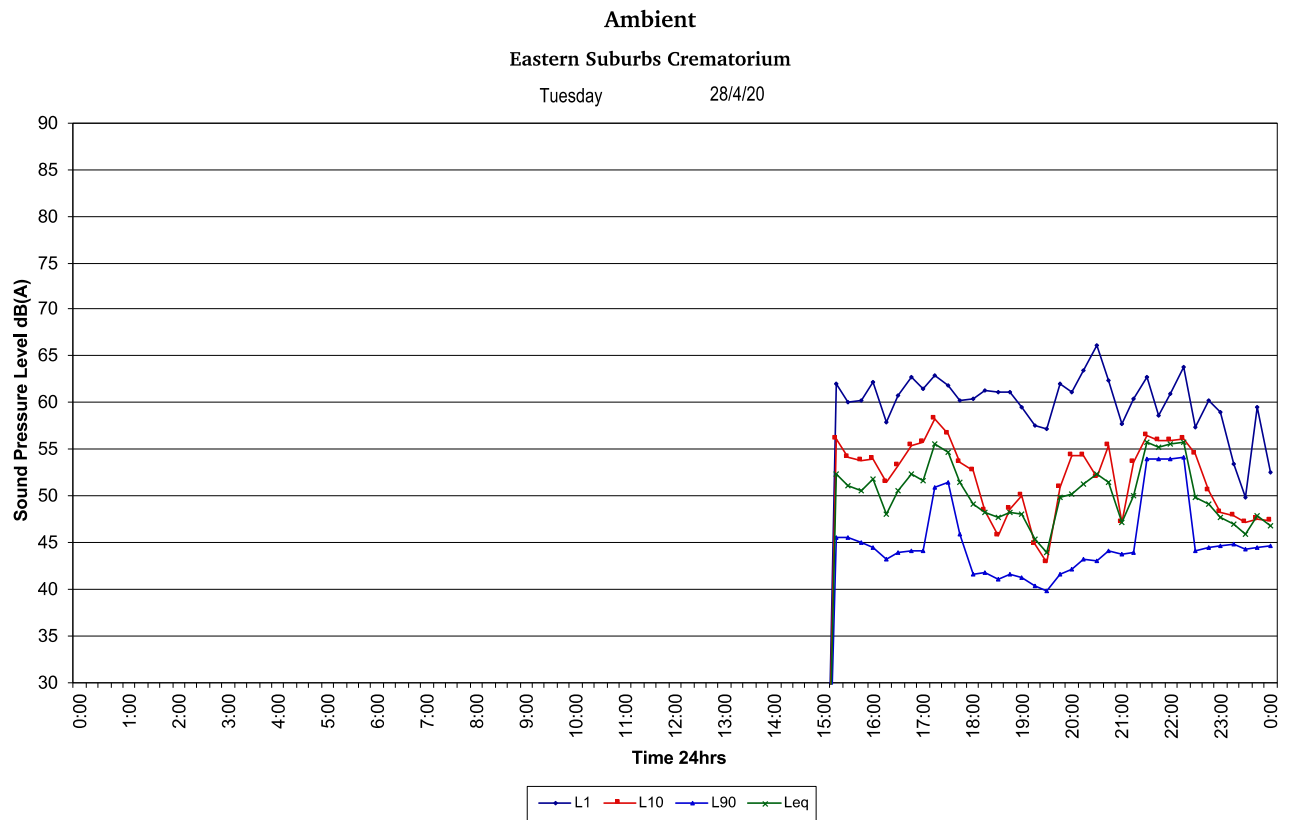
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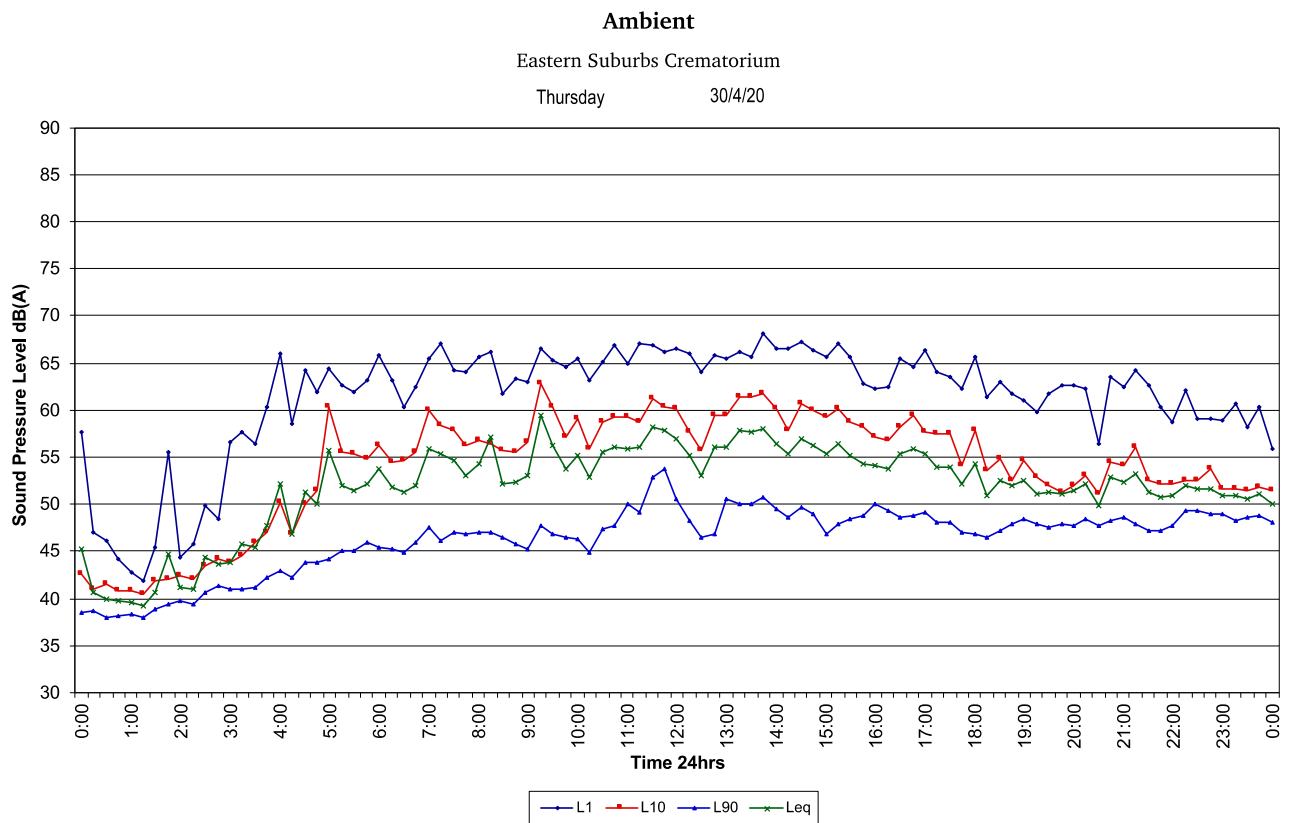
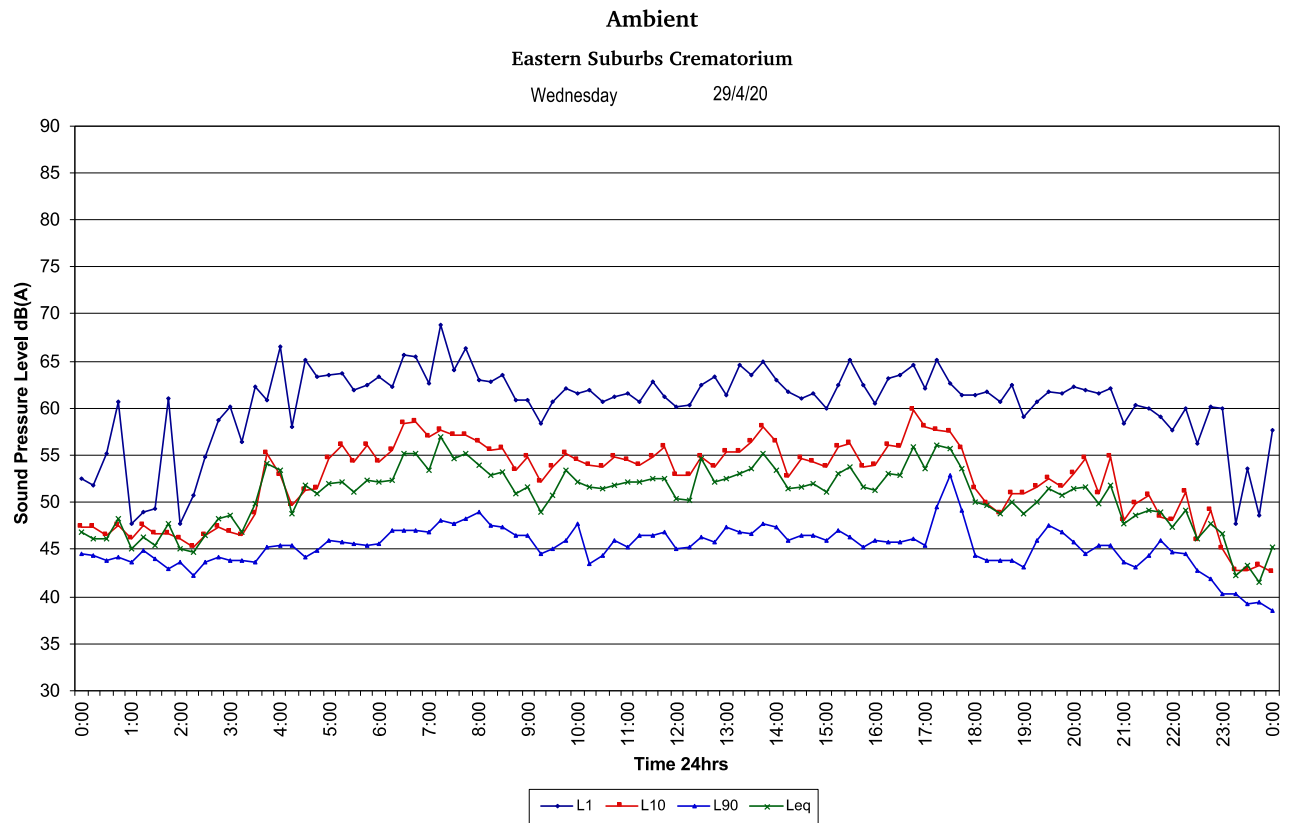
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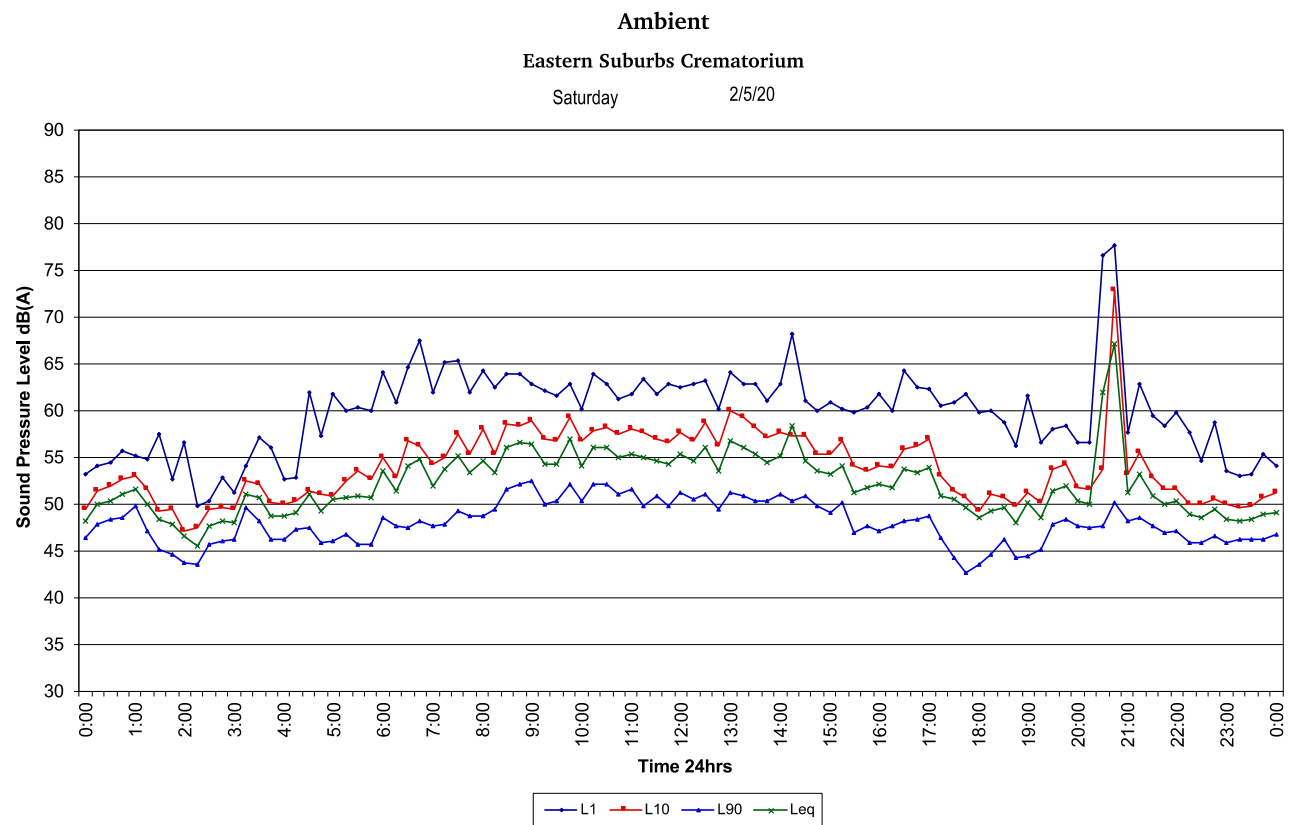
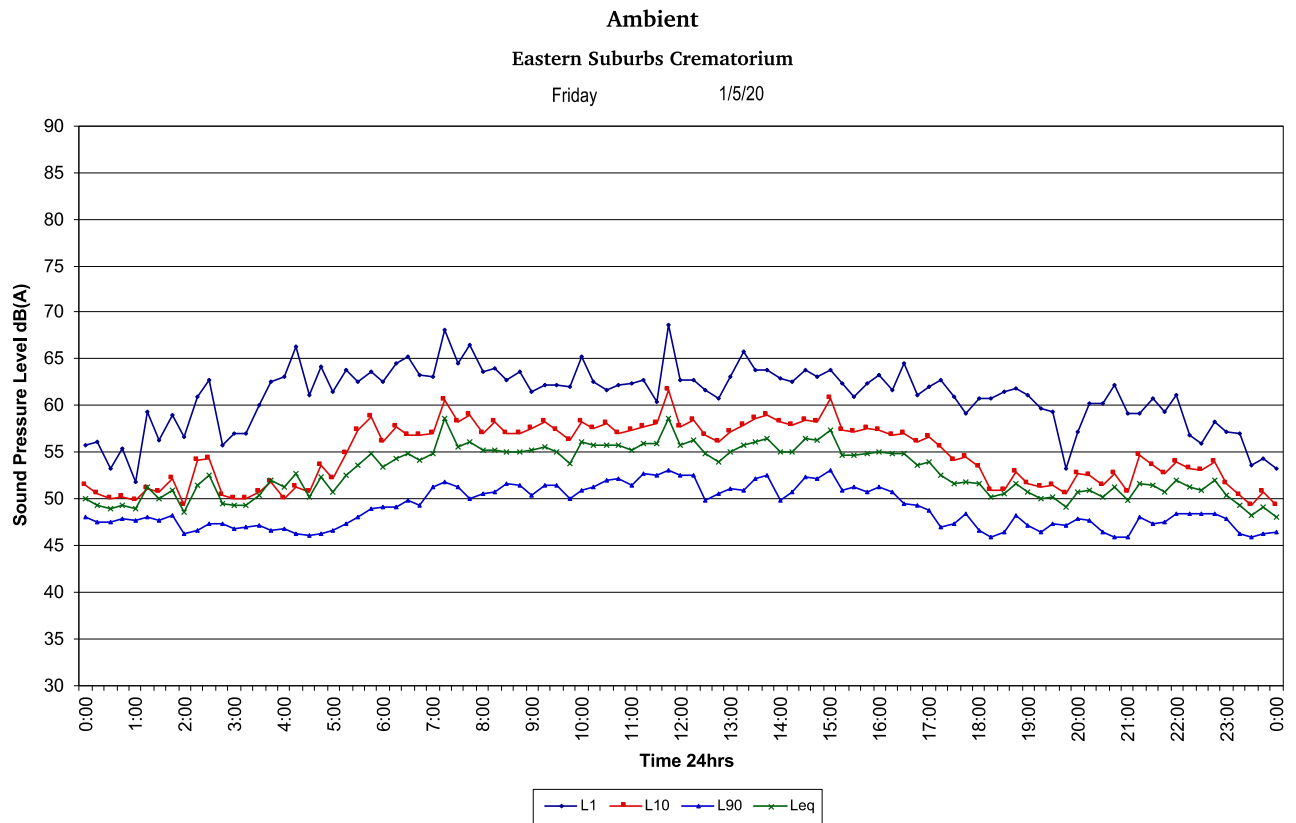
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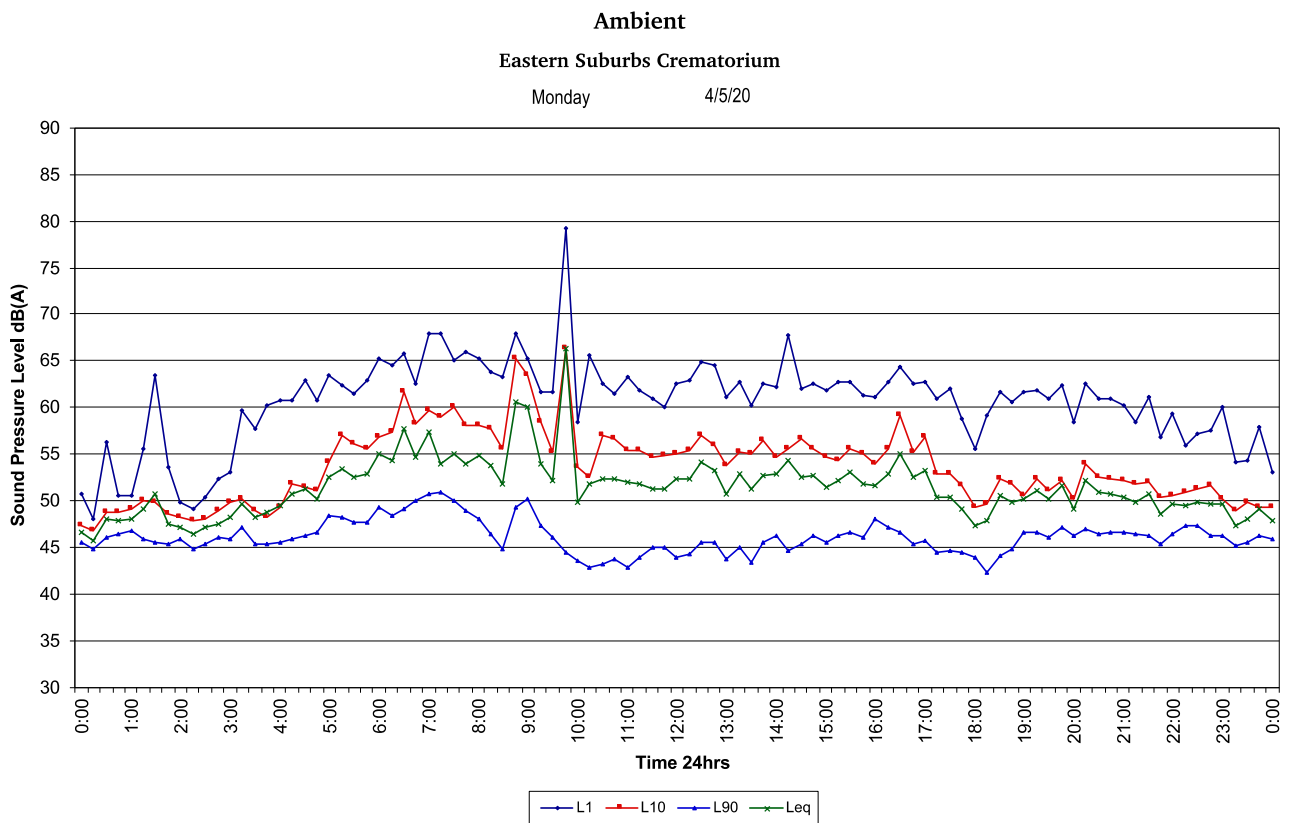
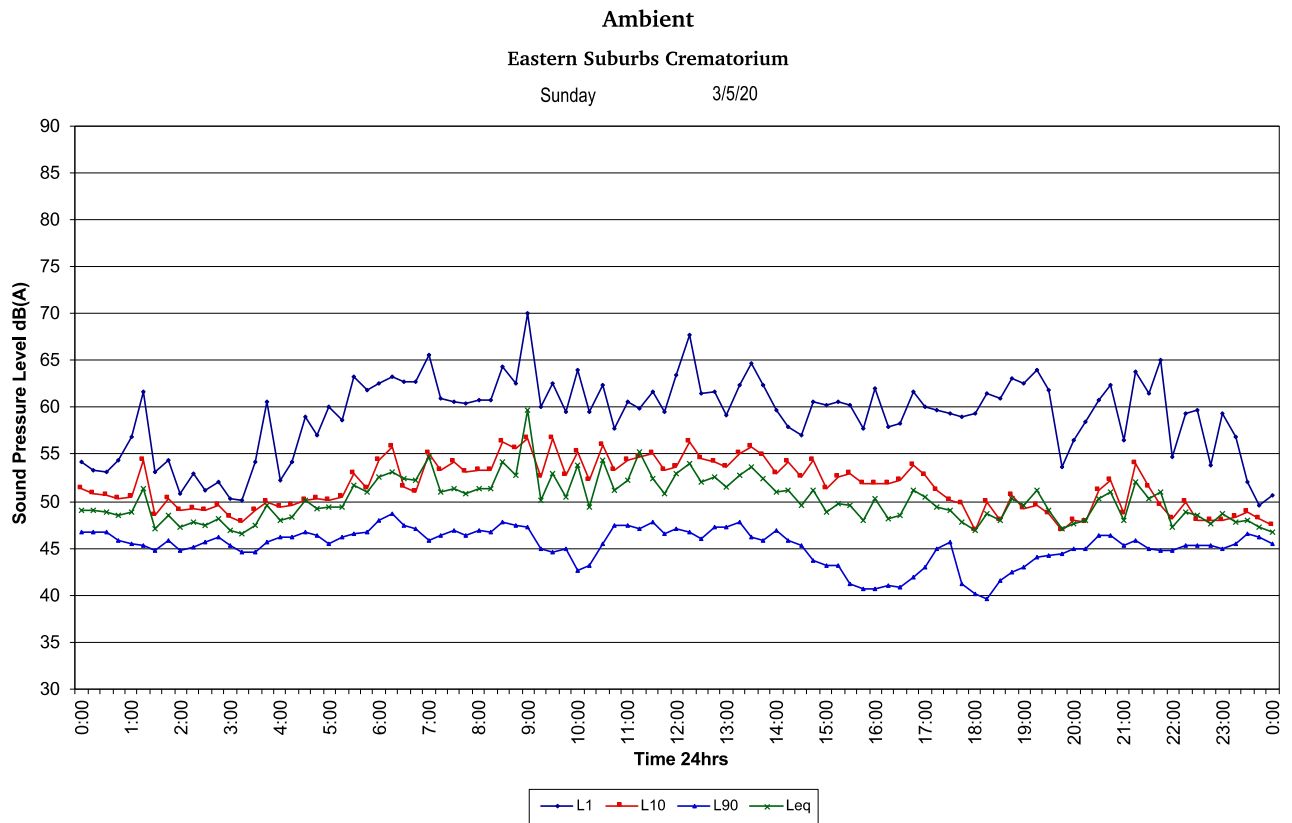


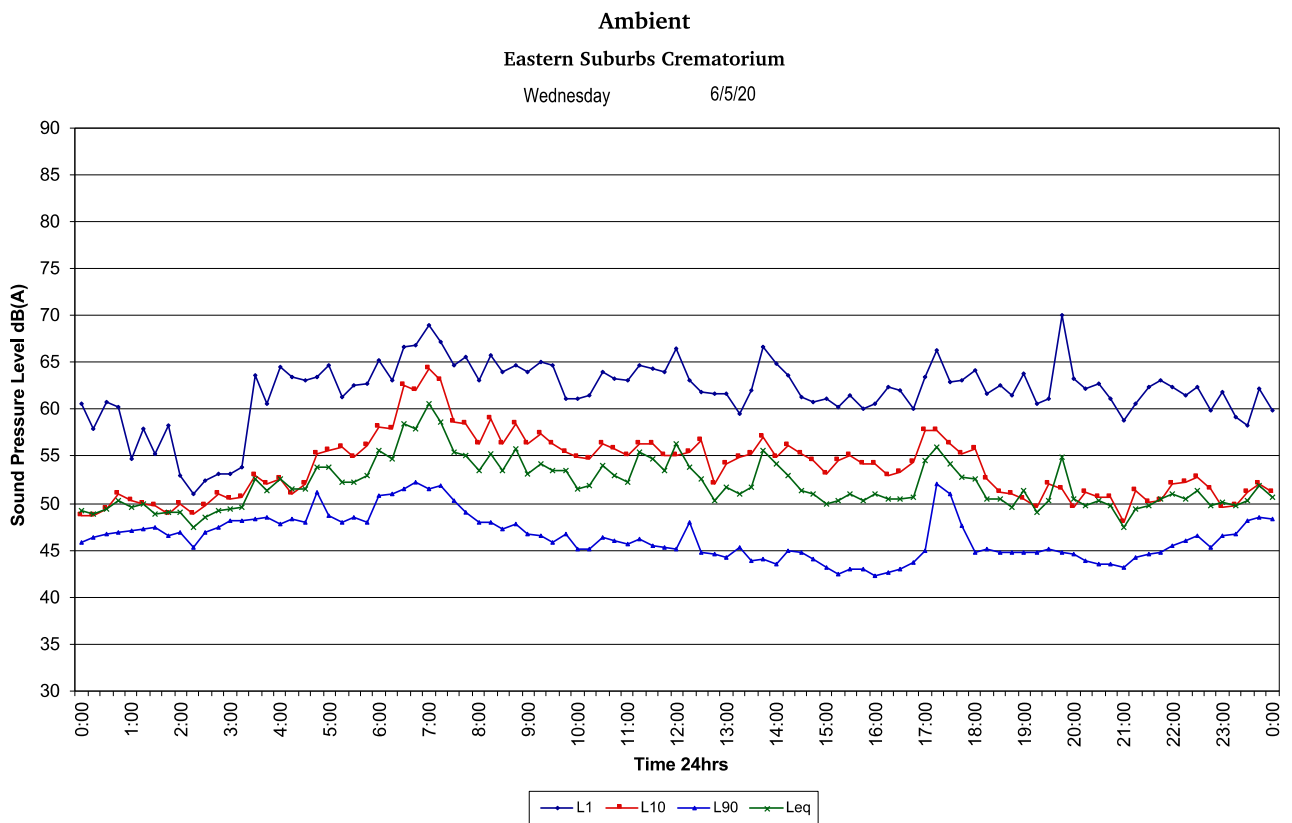
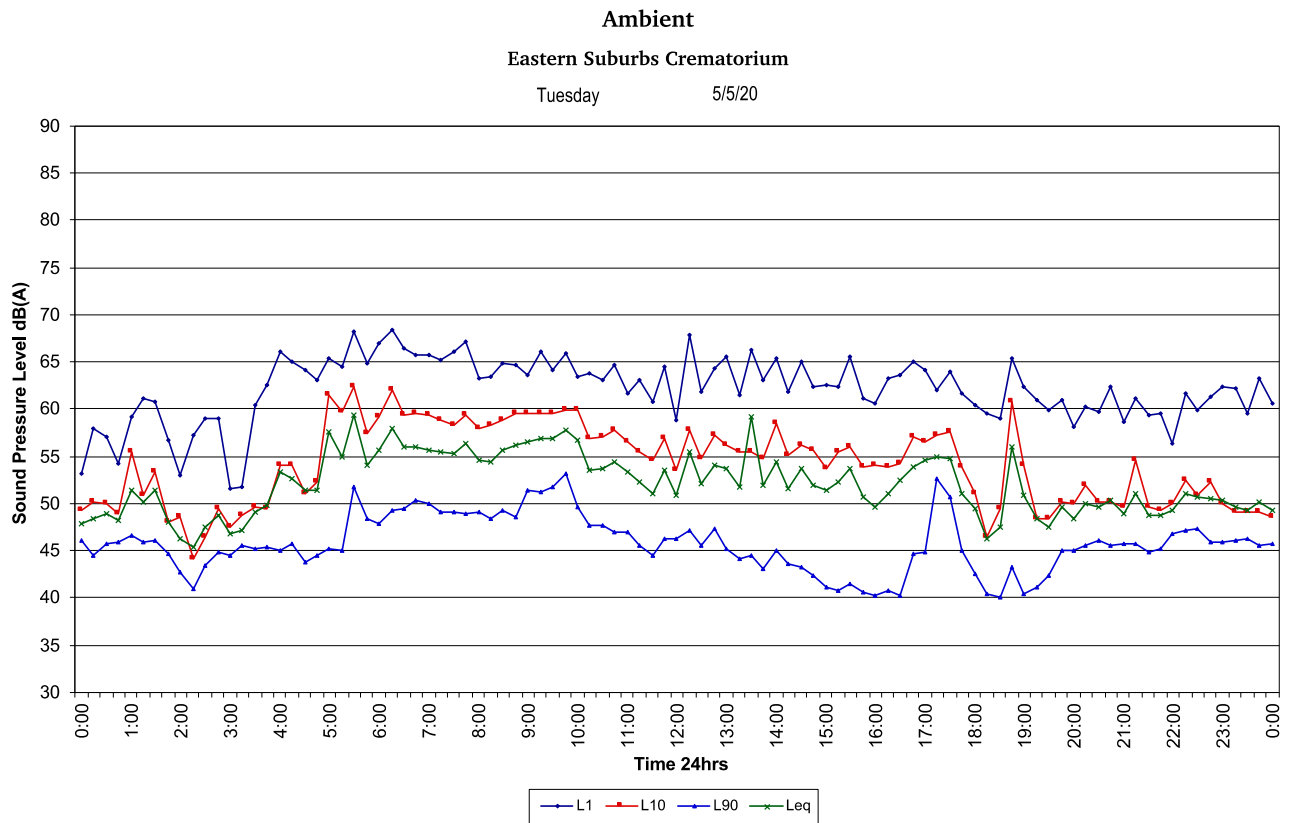
Appendix G – Unattended Logger Results – Military Road





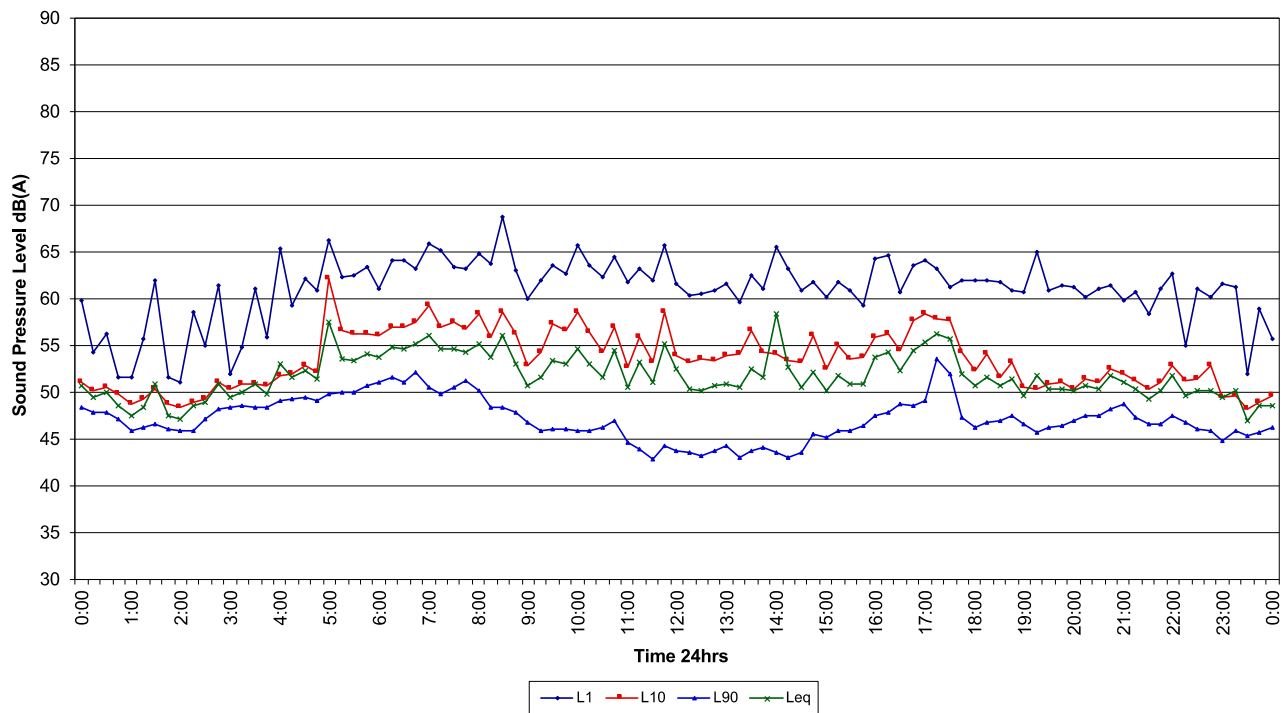




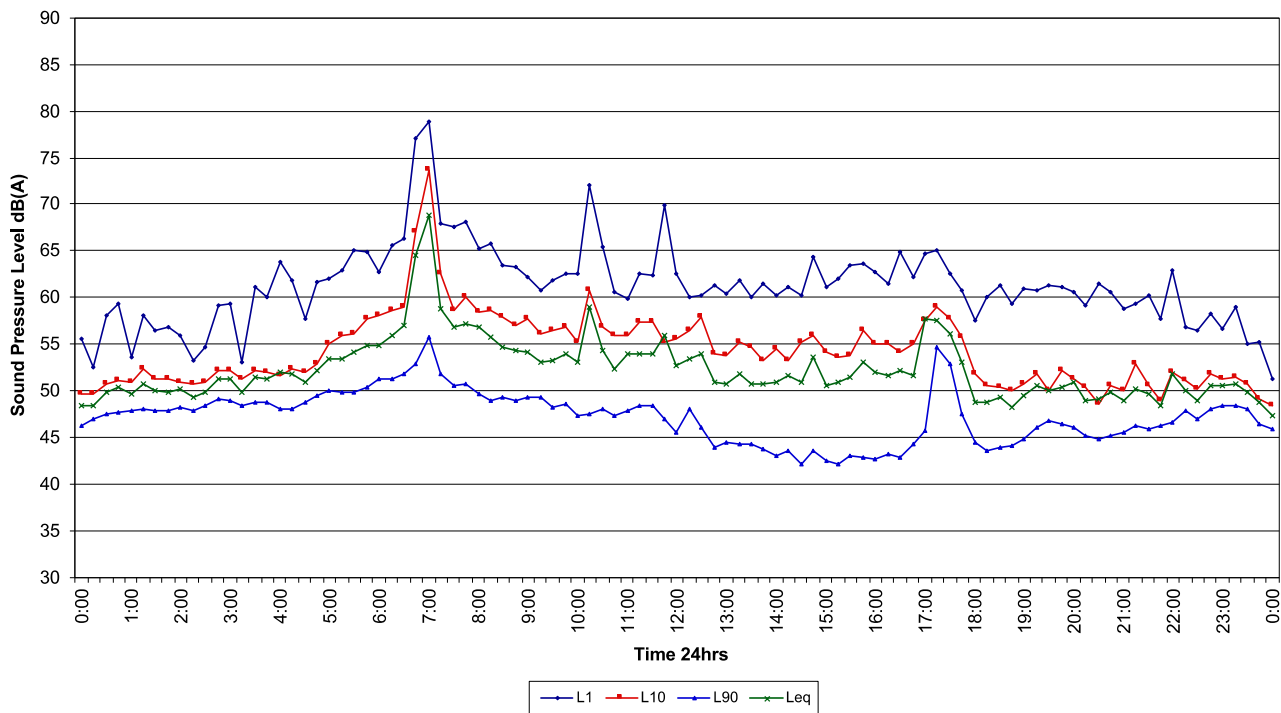


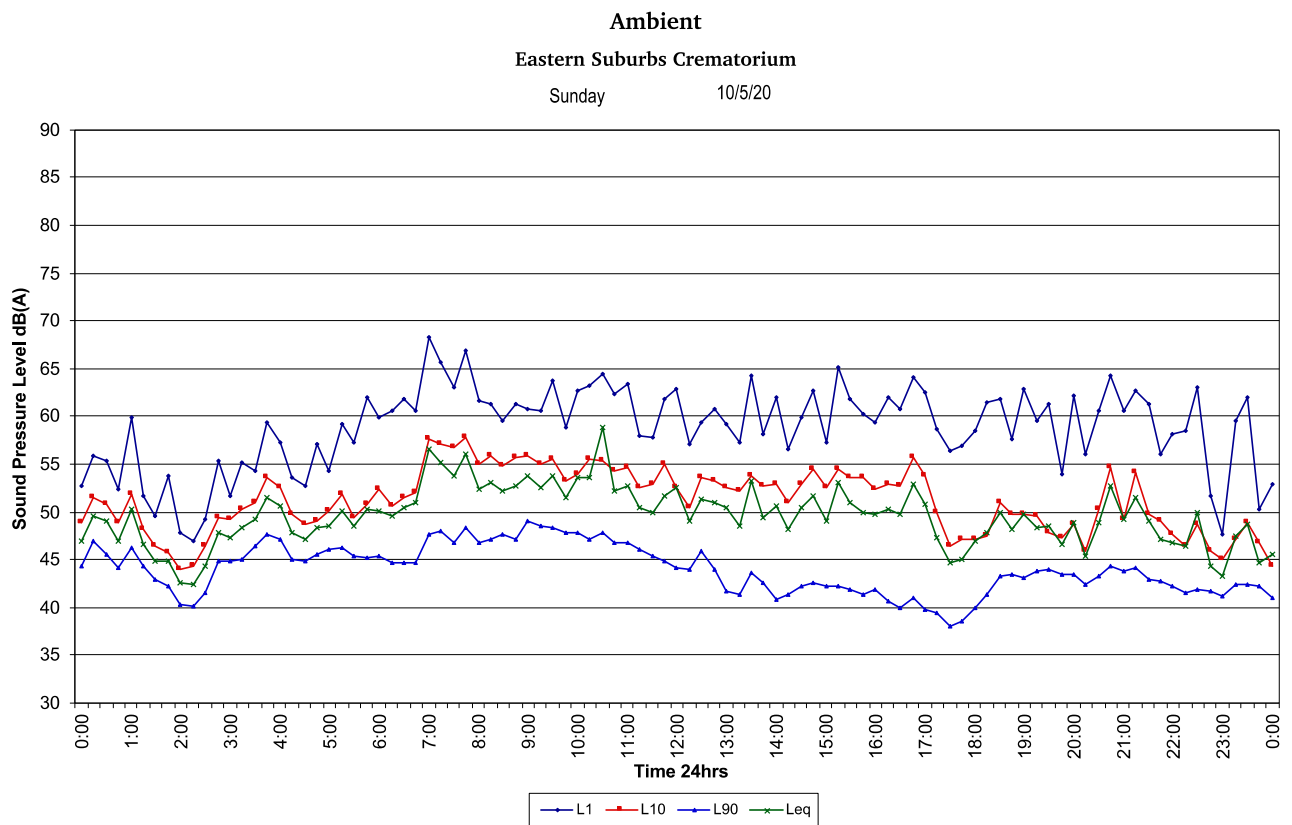
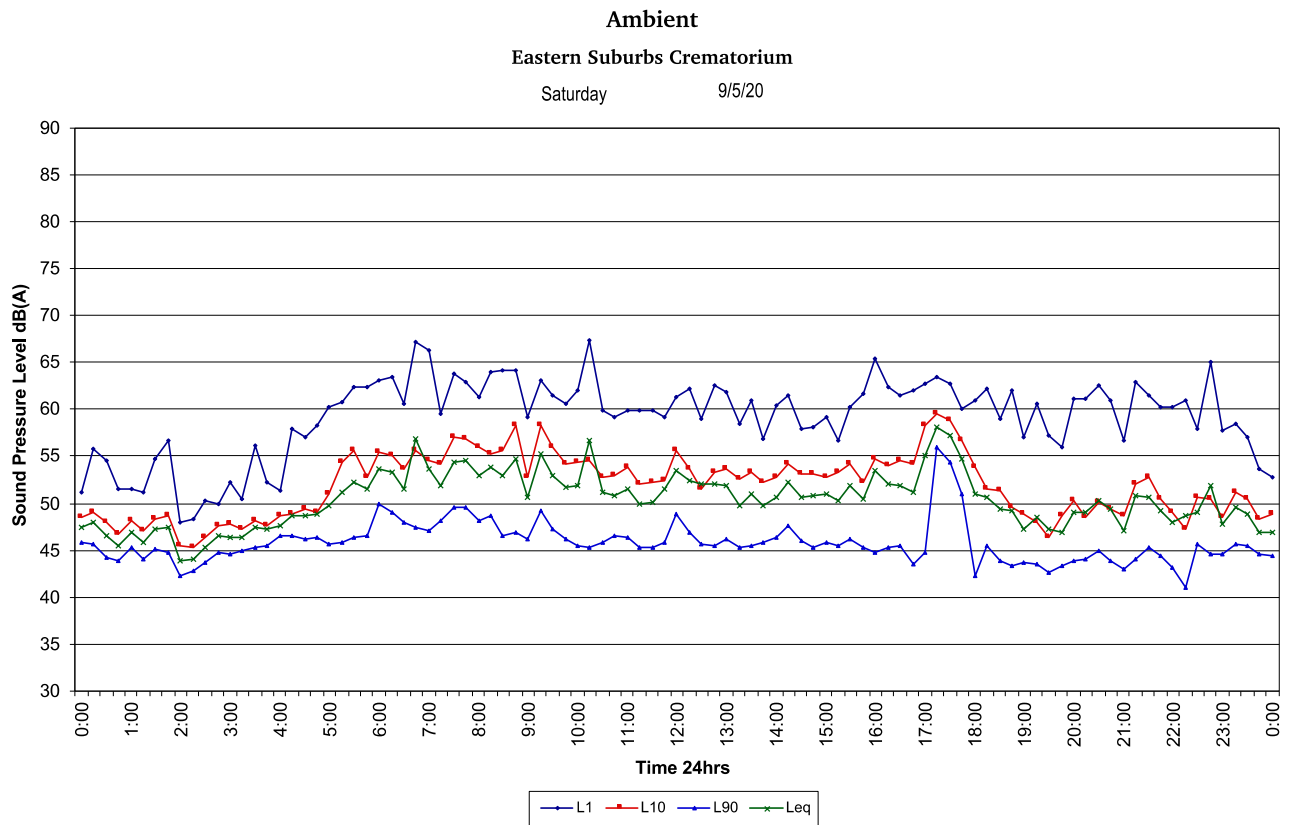


Ambient
Eastern Suburbs Crematorium
Thursday 7/5/20



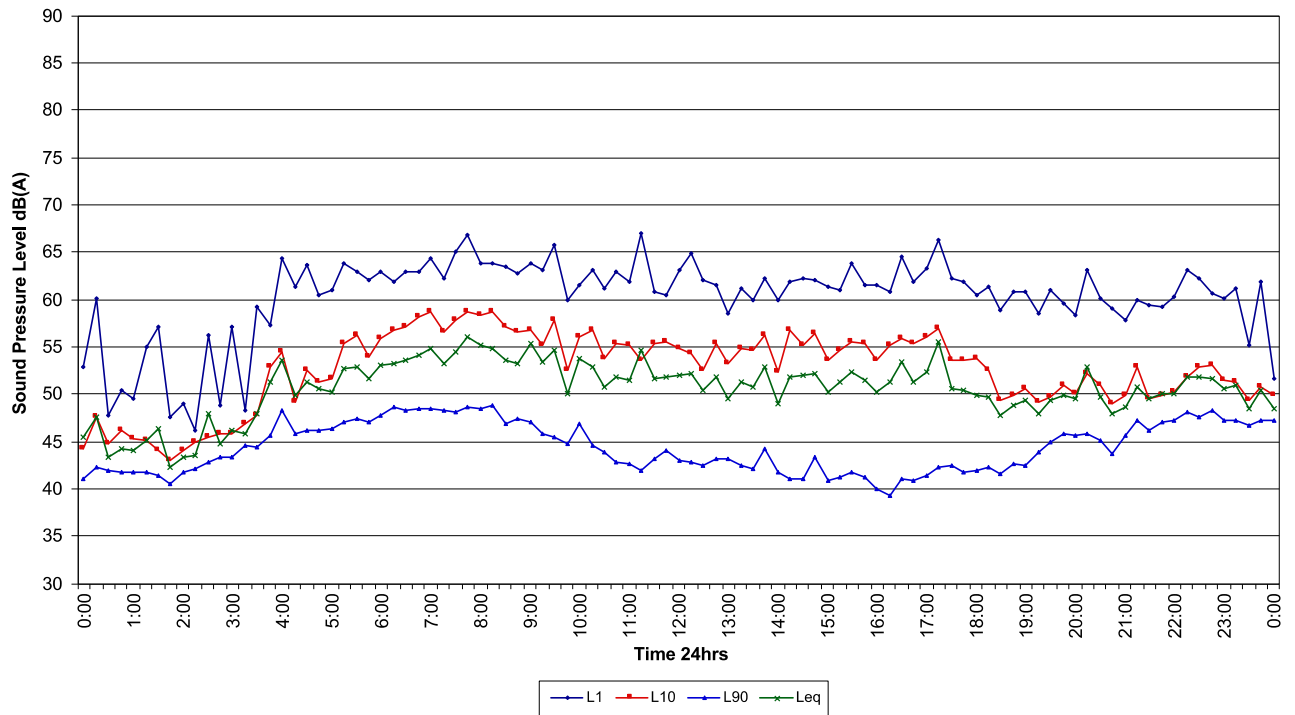
Ambient
Eastern Suburbs Crematorium
Friday 8/5/20



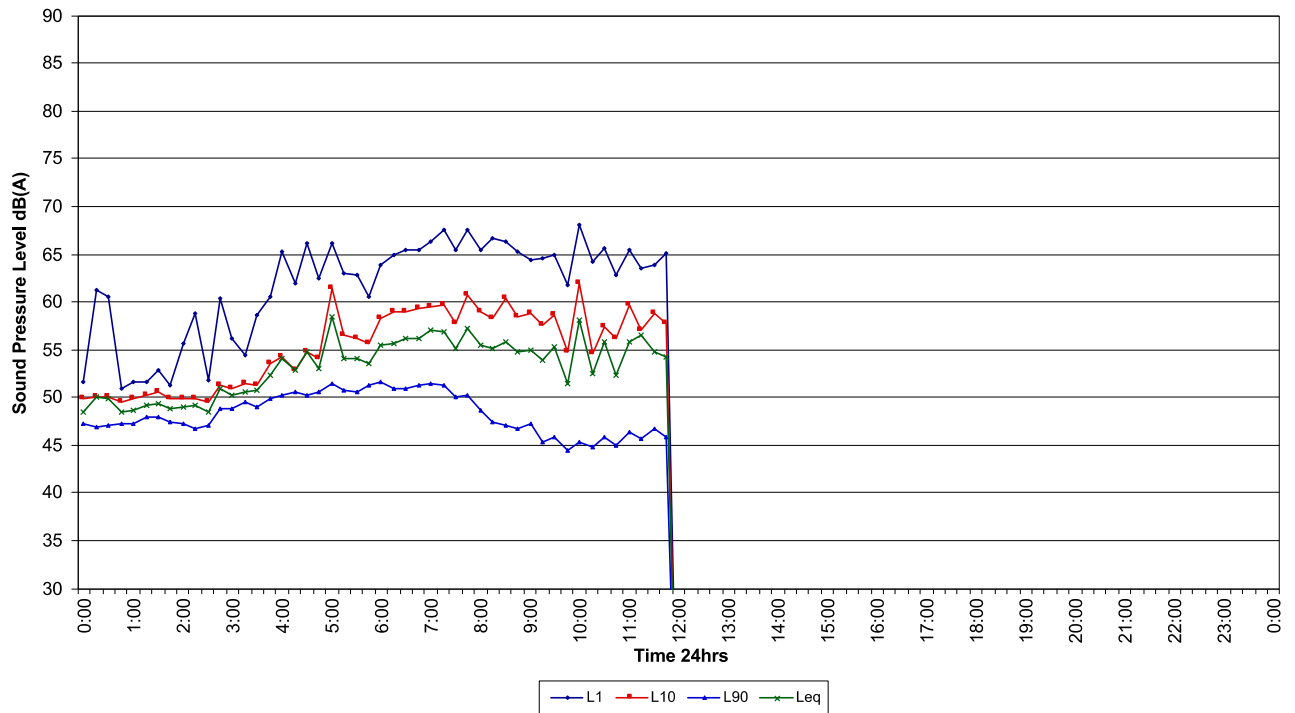




Ambient
Eastern Suburbs Crematorium
Monday 11/5/20



Ambient
Eastern Suburbs Crematorium
Tuesday 12/5/20





Appendix H – Calibration Certificates



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Sound Level Meter
IEC 61672-3:2013
Calibration Certificate
Calibration Number C19414

Client Details		Rodney Stevens Acoustics Pty Ltd 1 Majura Close St Ives Chase NSW 2075	
Equipment Tested/ Model Number :		Rion NL-42EX	
Instrument Serial Number :		00572559	
Microphone Serial Number :		170395	
Pre-amplifier Serial Number :		72897	
Pre-Test Atmospheric Conditions		Post-Test Atmospheric Conditions	
Ambient Temperature : 24°C		Ambient Temperature : 24.2°C	
Relative Humidity : 42.9%		Relative Humidity : 42.1%	
Barometric Pressure : 99.94kPa		Barometric Pressure : 99.9kPa	
Calibration Technician : Lucky Jaiswal		Secondary Check: Eloise Burrows	
Calibration Date : 11 Jul 2019		Report Issue Date : 15 Jul 2019	
Approved Signatory :		 Ken Williams	
Clause and Characteristic Tested		Result	
12: Acoustical Sig. tests of a frequency weighting		Pass	
13: Electrical Sig. tests of frequency weightings		Pass	
14: Frequency and time weightings at 1 kHz		Pass	
15: Long Term Stability		Pass	
16: Level linearity on the reference level range		Pass	
Clause and Characteristic Tested		Result	
17: Level linearity incl. the level range control		Pass	
18: Toneburst response		Pass	
19: C Weighted Peak Sound Level		Pass	
20: Overload Indication		Pass	
21: High Level Stability		Pass	

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	±0.15dB	Temperature	±0.2°C
12.5kHz	±0.21dB	Relative Humidity	±2.4%
16kHz	±0.29dB	Barometric Pressure	±0.015kPa
Electrical Tests			
31.5 Hz to 20 kHz	±0.12dB		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.



This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

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Sound Level Meter
IEC 61672-3:2013
Calibration Certificate
Calibration Number C20180

Client Details Rodney Stevens Acoustics Pty Ltd
1 Majura Close
St Ives Chase NSW 2075

Equipment Tested/ Model Number : Rion NL-42EX
Instrument Serial Number : 00184112
Microphone Serial Number : 173008
Pre-amplifier Serial Number : 74638

Pre-Test Atmospheric Conditions
Ambient Temperature : 25.3°C
Relative Humidity : 59%
Barometric Pressure : 100.7kPa

Post-Test Atmospheric Conditions
Ambient Temperature : 24.3°C
Relative Humidity : 55.4%
Barometric Pressure : 100.7kPa

Calibration Technician : Lucky Jaiswal
Calibration Date : 1 Apr 2020

Secondary Check: Max Moore
Report Issue Date : 9 Apr 2020

Approved Signatory :

Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	Pass
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
125Hz	±0.13dB	Temperature	±0.2°C
1kHz	±0.13dB	Relative Humidity	±2.4%
8kHz	±0.14dB	Barometric Pressure	±0.015kPa
Electrical Tests	±0.10dB		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.



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Sound Level Meter
IEC 61672-3:2013
Calibration Certificate
Calibration Number C19007

Client Details	Rodney Stevens Acoustics Pty Ltd 1 Majura Close St Ives NSW 2075
Equipment Tested/ Model Number :	Rion NL-42EX
Instrument Serial Number :	00546393
Microphone Serial Number :	152907
Pre-amplifier Serial Number :	46605
Pre-Test Atmospheric Conditions	Post-Test Atmospheric Conditions
Ambient Temperature : 24.3°C	Ambient Temperature : 23.6°C
Relative Humidity : 59.3%	Relative Humidity : 54.3%
Barometric Pressure : 99.74kPa	Barometric Pressure : 99.74kPa
Calibration Technician : Lucky Jaiswal	Secondary Check: Lewis Boorman
Calibration Date : 11 Jan 2019	Report Issue Date : 11 Jan 2019
Approved Signatory : 	Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	Pass
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	±0.15dB	Temperature	±0.2°C
12.5kHz	±0.21dB	Relative Humidity	±2.4%
16kHz	±0.29dB	Barometric Pressure	±0.015kPa
Electrical Tests			
31.5 Hz to 20 kHz	±0.12dB		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.



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Sound Level Meter

IEC 61672-3:2013

Calibration Certificate

Calibration Number C19415

Client Details Rodney Stevens Acoustics Pty Ltd
1 Majura Close
St Ives Chase NSW 2075

Equipment Tested/ Model Number : Rion NL-42EX
Instrument Serial Number : 00572558
Microphone Serial Number : 170393
Pre-amplifier Serial Number : 72896

Pre-Test Atmospheric Conditions
Ambient Temperature : 22.1°C
Relative Humidity : 36.7%
Barometric Pressure : 100.84kPa

Post-Test Atmospheric Conditions
Ambient Temperature : 23.2°C
Relative Humidity : 34.5%
Barometric Pressure : 100.8kPa

Calibration Technician : Lucky Jaiswal
Calibration Date : 16 Jul 2019

Secondary Check: Eloise Burrows
Report Issue Date : 16 Jul 2019

Approved Signatory :

Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	Pass
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	±0.15dB	Temperature	±0.2°C
12.5kHz	±0.2dB	Relative Humidity	±2.4%
16kHz	±0.29dB	Barometric Pressure	±0.015kPa
Electrical Tests			
31.5 Hz to 20 kHz	±0.11dB		

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Sound Level Meter

IEC 61672-3:2013

Calibration Certificate

Calibration Number C19621

Client Details Rodney Stevens Acoustics Pty Ltd
1 Majura Close
St Ives Chase NSW 2075

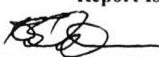
Equipment Tested/ Model Number : Rion NL-42EX
Instrument Serial Number : 00810779
Microphone Serial Number : 148338
Pre-amplifier Serial Number : 22257

Pre-Test Atmospheric Conditions
Ambient Temperature : 23.9°C
Relative Humidity : 33.4%
Barometric Pressure : 100.22kPa

Post-Test Atmospheric Conditions
Ambient Temperature : 24.3°C
Relative Humidity : 32.7%
Barometric Pressure : 100.21kPa

Calibration Technician : Lucky Jaiswal
Calibration Date : 18 Oct 2019

Secondary Check: James Jepsen
Report Issue Date : 21 Oct 2019

Approved Signatory : 

Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	Pass
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	±0.18dB	Temperature	±0.2°C
12.5kHz	±0.19dB	Relative Humidity	±2.4%
16kHz	±0.29dB	Barometric Pressure	±0.015kPa
Electrical Tests			
31.5 Hz to 20 kHz	±0.11dB		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.



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Sound Level Meter
IEC 61672-3:2013
Calibration Certificate
Calibration Number C19620

Client Details	Rodney Stevens Acoustics Pty Ltd 1 Majura Close St Ives Chase NSW 2075
Equipment Tested/ Model Number :	Rion NL-42EX
Instrument Serial Number :	00710677
Microphone Serial Number :	147121
Pre-amplifier Serial Number :	33998
Pre-Test Atmospheric Conditions	Post-Test Atmospheric Conditions
Ambient Temperature : 24.5°C	Ambient Temperature : 24.6°C
Relative Humidity : 33.4%	Relative Humidity : 34.5%
Barometric Pressure : 100.19kPa	Barometric Pressure : 100.19kPa
Calibration Technician : Lucky Jaiswal	Secondary Check: James Jepsen
Calibration Date : 18 Oct 2019	Report Issue Date : 21 Oct 2019
Approved Signatory : 	Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	Pass
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

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Least Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	±0.18dB	Temperature	±0.2°C
12.5kHz	±0.19dB	Relative Humidity	±2.4%
16kHz	±0.29dB	Barometric Pressure	±0.015kPa
Electrical Tests			
31.5 Hz to 20 kHz	±0.11dB		

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Sound Level Meter
IEC 61672-3:2013
Calibration Certificate
Calibration Number C19389

Client Details		Rodney Stevens Acoustics Pty Ltd 1 Majura Close St Ives Chase NSW 2075	
Equipment Tested/ Model Number :		Rion NL-42EX	
Instrument Serial Number :		00133010	
Microphone Serial Number :		144601	
Pre-amplifier Serial Number :		23060	
Pre-Test Atmospheric Conditions		Post-Test Atmospheric Conditions	
Ambient Temperature : 25°C		Ambient Temperature : 24.8°C	
Relative Humidity : 41.7%		Relative Humidity : 41.5%	
Barometric Pressure : 100.8kPa		Barometric Pressure : 100.8kPa	
Calibration Technician : Lucky Jaiswal		Secondary Check: Eloise Burrows	
Calibration Date : 2 Jul 2019		Report Issue Date : 8 Jul 2019	

Approved Signatory :

Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	Pass
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
31.5 Hz to 8 kHz	±0.15dB	Temperature	±0.2°C
12.5 kHz	±0.2dB	Relative Humidity	±2.4%
16 kHz	±0.29dB	Barometric Pressure	±0.015kPa
Electrical Tests			
31.5 Hz to 20 kHz	±0.11dB		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.



This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

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Sound Level Meter
IEC 61672-3:2013
Calibration Certificate
Calibration Number C20032

Client Details Rodney Stevens Acoustics Pty Ltd
1 Majura close
St Ives Chase NSW 2075

Equipment Tested/ Model Number : Bruel & Kjaer Type 2250
Instrument Serial Number : 3011625
Microphone Serial Number : 3099640
Pre-amplifier Serial Number : 25774

Pre-Test Atmospheric Conditions
Ambient Temperature : 25.1°C
Relative Humidity : 64.3%
Barometric Pressure : 99.9kPa

Post-Test Atmospheric Conditions
Ambient Temperature : 25.6°C
Relative Humidity : 63%
Barometric Pressure : 99.8kPa

Calibration Technician : Lucky Jaiswal
Calibration Date : 17 Jan 2020

Secondary Check: Max Moore
Report Issue Date : 22 Jan 2020

Approved Signatory :

Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	Pass
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz:	±0.18dB	Temperature	±0.2°C
12.5kHz:	±0.19dB	Relative Humidity	±2.4%
16kHz:	±0.29dB	Barometric Pressure	±0.015kPa
Electrical Tests			
31.5 Hz to 20 kHz:	±0.11dB		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.



This calibration certificate is to be read in conjunction with the calibration test report.

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