



APPENDIX 12-3

SUMMARY OF BACKGROUND NOISE SURVEY



Trinity
Consultants

 **awnconsulting**

Background Noise Survey

Project Title: Slievegrine Wind Farm, Co. Waterford

CLIENT
MKO

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DATE
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Title	Acoustic Consultant	Director (Operations)
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1. INTRODUCTION

This note has been prepared to provide details and methodology of the background noise survey undertaken and confirm the derived background noise levels the various Noise Monitoring Locations (NMLs), for the Proposed Project.

2. BACKGROUND NOISE SURVEY

The noise survey and subsequent data analysis was carried out in accordance with best practice following the guidance contained in the Institute of Acoustics publication *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* (May 2013), (IOA GPG).

2.1 Measurement Locations

The background noise survey was conducted through installing unattended sound level meters at 8 no. representative locations in the surrounding area. The co-ordinates for selected locations for the noise monitoring locations are outlined in Table 2-1 and identified on a map in Figure 2-1.

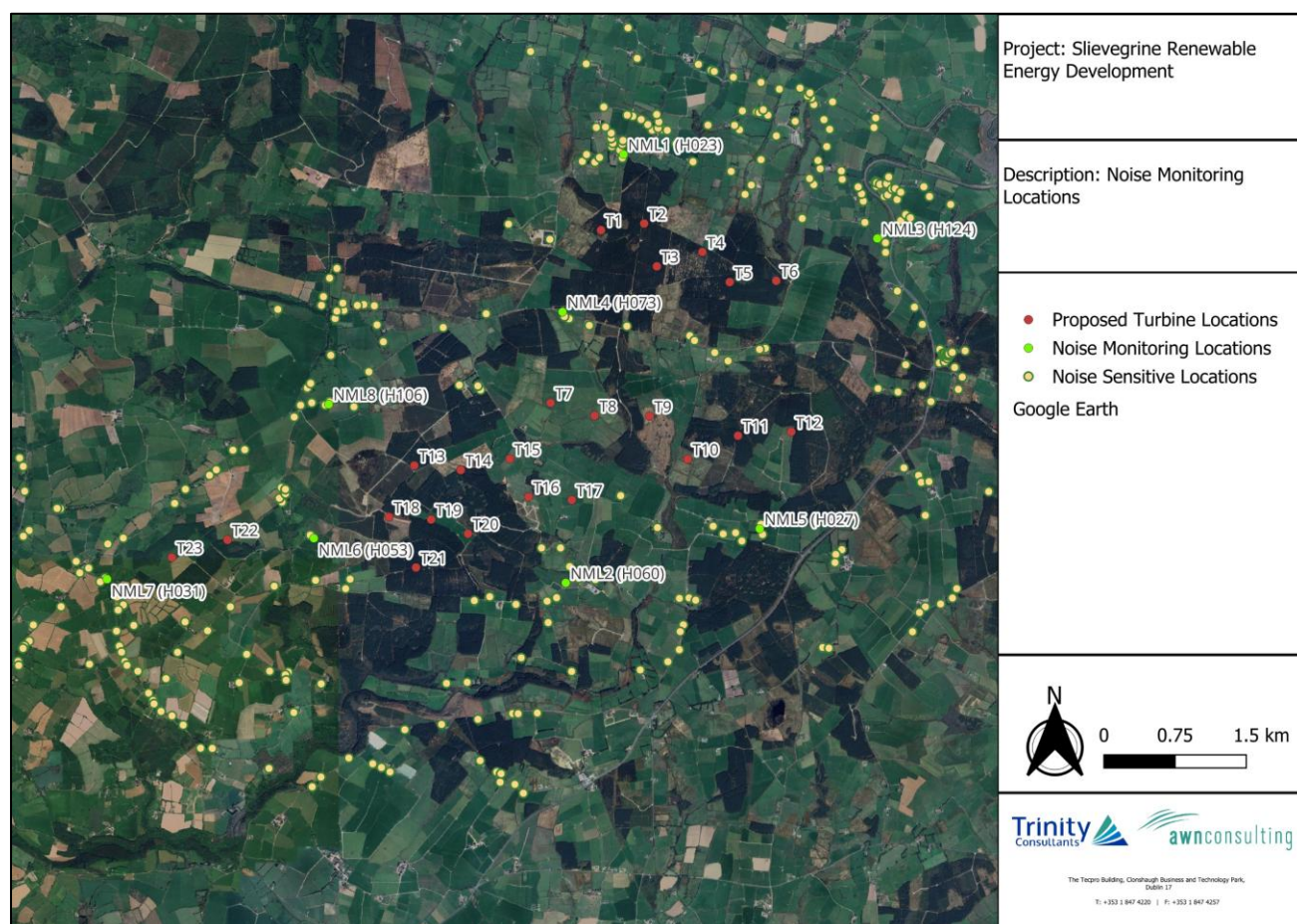
Table 2-1. Coordinates of Noise Monitoring Equipment

Location	Coordinates (ITM)	
	Easting	Northing
NML1 (H023)	620,108	590,355
NML2 (H060)	619,499	585,840
NML3 (H124)	622,783	589,469
NML4 (H073)	619,464	588,695
NML5 (H027)	621,543	586,410
NML6 (H053)	616,843	586,310
NML7 (H031)	614,662	585,879
NML8 (H106)	616,999	587,722

Site visits by survey personnel were carried out during morning and afternoon periods; during these visits, primary noise sources contributing to noise environment were noted as being occasional local traffic noise and farming activity, birdsongs and distant agricultural activity. In respect of night-time periods, when noise due to traffic on local roads, agricultural activities and other sources tend to reduce, there was no indication of any significant local night-time sources of noise at any location. No sources of vibration were noted at any of the survey locations.

In general, the significant noise sources in the area were noted to be local and distant traffic movements, activity in and around the residences, agricultural activities, wind generated noise from local foliage, and other typical anthropogenic sources typically found in such rural settings.

Figure 2-1 - Noise Monitoring Location Selection



2.2 Measurement Periods

The periods of noise measurements used in the background noise monitoring assessment are outlined in Table 2-2. The survey was deemed completed when an adequate number of datasets had been measured as recommended in the IOA GPG to determine a suitable representation of the typical background noise.

Table 2-2. Measurement periods of Noise Monitoring Equipment

Location Reference	Survey Period	
	Start Date	End Date
NML1 (H023)	09 January 2026	03 March 2026
NML2 (H060)	09 January 2026	30 January 2026
NML3 (H124)	09 January 2026	03 March 2026
NML4 (H073)	09 January 2026	17 February 2026
NML5 (H027)	09 January 2026	03 March 2026
NML6 (H053)	09 January 2026	18 February 2026
NML7 (H031)	09 January 2026	19 February 2026
NML8 (H106)	09 January 2026	15 February 2026

2.3 Measurement Procedure

Measurements were conducted at all locations over the survey periods outlined in Table 2-2. Data samples for all measurements (noise, rainfall, and wind) were logged continuously at 10-minute interval periods for the duration of the survey. The $L_{Aeq,10min}$ and $L_{A90,10min}$ noise parameters were measured in this instance and the results were saved to the instrument memory for later analysis.

Survey personnel noted potential primary noise sources contributing to noise build-up during the installation and removal of the sound level meters from site.

2.4 Instrumentation

Table 2-3 confirms the details of the noise monitoring instrumentation installed at each location.

Table 2-3. Details of Noise Measurement Instrumentation

Location Reference	Equipment Make and Model	Serial Number
NML1 (H023)	Rion NL 42	186667
NML2 (H060)	Rion NL 42	998410
NML3 (H124)	Rion NL 42	764925
NML4 (H073)	Rion NL 42	186668
NML5 (H027)	Rion NL 42	976162
NML6 (H053)	Rion NL 42	575785
NML7 (H031)	Rion NL 42	998409
NML8 (H106)	Rion NL 42	164426

Before and after the survey the measurement apparatus was check calibrated using a Brüel & Kjær type 4231 Sound Level Calibrator where appropriate. Instruments were calibrated on each interim visit and any drift noted. All calibration drifts were less than ± 0.2 dB and within acceptable tolerances outlined in the IOA GPG.

2.5 Rainfall Data

Rainfall was monitored and logged using one Rain Gauge data logger that was installed at NML 3 over the duration of the survey.

2.6 Wind Data

Average wind speed and direction was measured in 10-minute intervals at an on-site meteorological mast and provided to AWN. The coordinates of the met mast are provided in Table 2-4. A copy of the met mast installation report is included in Appendix 12.7 of the EIAR Chapter.

Table 2-4. Wind Measurement Location

Co-ordinates (ITM)	
Easting	Northing
618,143	586,564

2.6.1 Wind Shear

Wind speed collected at 65 m and 80 m were used to correct the wind speed up to an assessment hub height (HH) at 103.5 m, as per the methodology outlined in the IOA GPG.

The calculated HH wind speeds were then corrected to the 'standardised' 10 m height wind speed in accordance with the IOA GPG. The 'standardised' wind speed is the industry standard for referencing wind speeds with respect to wind turbines.

The calculated hub height wind speeds have been corrected standardised to 10 m height using a fixed correction. The standardised is a wind speed measured at a height different than 10 m (generally measured at the turbine hub height) which is expressed to a reference height of 10 m using a roughness length of 0.05 for standardisation purpose in accordance with the IEC 61400-11 standard:

Roughness Length Shear Profile: $U_1 = U_2 \times [(\ln(H_1/z))/ (\ln(H_2/z))]$

Where:

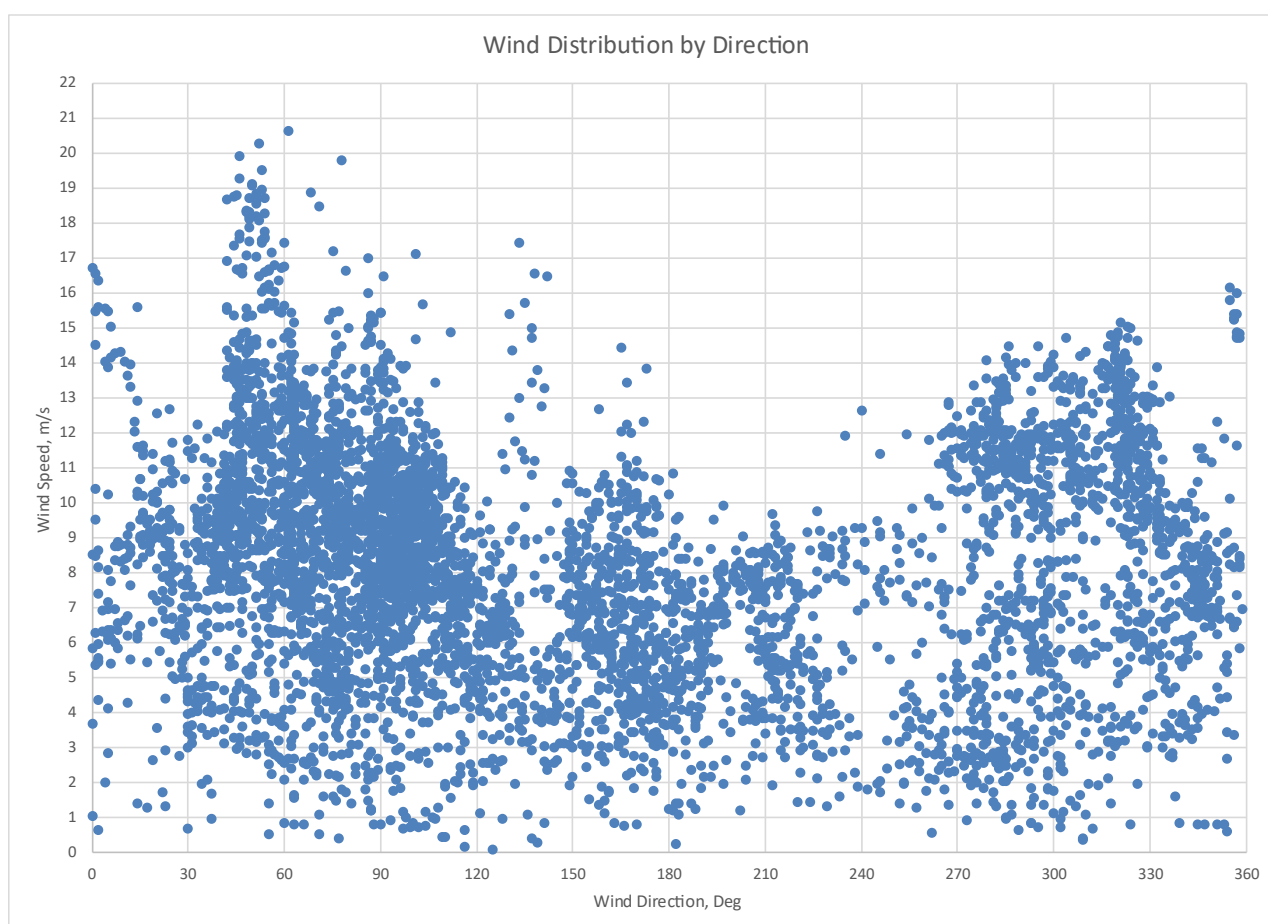
H_1	The height of the wind speed to be calculated (10m)
H_2	The height of the measured or calculated HH wind speed.
U_1	The wind speed to be calculated.
U_2	The measured or calculated HH wind speed.
Z	The roughness length.

Note: A roughness length of 0.05m is used to standardise hub height wind speeds to 10m height in the IEC 61400-11:2003 standard, regardless of what the actual roughness length seen on a site may have been. This 'normalisation' procedure was adopted for comparability between test results for different turbines.

Any reference to wind speed in this chapter should be understood to be the standardised 10 m height wind speed unless otherwise stated.

Figure 2-2 presents the distributions of the measured wind speed and wind direction over the survey period.

Figure 2-2. Distributions of Wind Speeds and Directions Over the Survey Period



2.7 Selection of Measurement Locations and Methodology

The purpose of the noise survey is to determine the background noise at representative noise sensitive locations (NSLs) within the receiving environment surrounding the Proposed Wind Farm site.

The survey locations were identified with consideration of the potential turbine noise contribution from the Proposed Wind Farm assessed using noise prediction modelling and supported by reviewing aerial images and street side images where available on website e.g., Google Earth and Bing Maps.

The assessment methodology in the EIAR is in accordance with the Institute of Acoustics document A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise (2013) hereafter referred to as the IOA GPG.

The following text summaries the guidance from the IOA GPG for the selection of background noise survey locations:

- ▶ The selection of suitable noise monitoring locations for background noise surveys is not straightforward, and only general guidance can be given as it is not possible to be prescriptive.
- ▶ Often there are practical constraints on where equipment can be placed, and a considerable degree of experience-based judgement is required when selecting these positions.
- ▶ Any contribution to background noise levels of noise from an existing wind farm must be excluded when assigning background noise and setting noise limits for a new development.
- ▶ No general guidance can therefore be given on the number of measurement locations as this will be site-specific.

A robust assessment of the noise impacts of the wind farm necessitates a detailed survey of the background noise at houses in the vicinity of the Proposed Wind Farm.

2.8 Data Analysis

The following sections present a summary of the statistical analysis carried out on the noise monitoring data to derive the background noise curves at each NML. Background noise data sets can be re-analysed for various scenarios should this be required, for instance, if the proposed HH changes or alternative hub heights are considered.

2.8.1 Assessment Periods

The results presented in the following sections refer to the noise data collated during 'quiet periods' of the day and night as defined in the IOA GPG. These periods are defined in Table 2-5.

Table 2-5. Daytime and Night Periods

Period Description	Period Definition
Daytime (Amenity Hours)	ETSU-R-97 defines the amenity hours as: 18.00 to 23.00 Monday to Friday. 13.00 to 23.00 on Saturdays; and, 07.00 to 23.00 on Sundays.
Night	ETSU-R-97 defines the night-time hours as 23.00 to 07.00 every day

The data sets have been assessed separately for both daytime and night-time periods as outlined in Table 3 and analysed with respect to the methods outlined in the IOA GPG.

2.8.2 Atypical Noise Data

The data sets have been filtered to remove issues such as the dawn chorus and the influence of other atypical noise sources. An example of atypical sources would be short, isolated periods of raised noise levels attributable to local sources, vehicles, agricultural activity, boiler flues, operation of gardening equipment etc. In addition, sample periods affected by rainfall or when rainfall resulted in prolonged

periods of atypical noise levels have also been removed from the data sets. This approach is in line with the guidance contained in the IOA GPG.

2.9 Derived Background Noise Levels

The derived background noise levels dB $L_{A90,10min}$ for daytime and nighttime are presented in Table 2-6 and Table 2-7 respectively. These levels have been derived using regression analysis carried out on the data sets measured in line with best practice guidance contained in the IOA GPG and its SGN No. 2 Data Collection; Background noise levels are calculated based on a hub height of 100 m, this being the highest hub height of the candidate turbines.

Appendix C presents the regression analysis charts for daytime and night-time periods from each NML.

These background noise levels will be used to determine the appropriate turbine noise limits in accordance with the adopted turbine noise criteria as set out in the EIAR Chapter.

Table 2-6. Derived Background Noise Levels at Assessment Hub Height - Daytime

Locations	Period	Background Noise Levels dB L_{A90} at standardised 10m height wind speed m/s for 103.5 m Hub Height							
		3	4	5	6	7	8	9	10
NML1 (H023)	Day	29.0	29.2	29.8	30.8	32.3	34.0	36.0	38.1
NML2 (H060)	Day	35.7	35.7	35.8	35.8	35.9	36.1	36.4	36.9
NML3 (H124)	Day	40.3	40.0	39.9	40.0	40.4	41.0	41.8	42.8
NML4 (H073)	Day	26.4	26.9	27.6	28.7	30.0	31.7	33.5	35.6
NML5 (H027)	Day	37.2	37.2	37.5	38.1	39.0	40.1	41.5	43.0
NML6 (H053)	Day	28.0	28.3	28.8	29.6	30.6	31.8	33.3	35.0
NML7 (H031)	Day	25.1	25.4	26.0	26.7	27.7	28.9	30.3	31.9
NML8 (H106)	Day	26.7	27.4	28.6	30.2	32.2	34.5	37	39.7

Table 2-7. Derived Background Noise Levels at Assessment Hub Height – Night-time

Locations	Period	Background Noise Levels dB L_{A90} at standardised 10m height wind speed m/s for 103.5 m Hub Height							
		3	4	5	6	7	8	9	10
NML1 (H023)	Night	26.2	26.3	27.0	28.2	29.8	31.7	34.0	36.4
NML2 (H060)	Night	32.4	32.3	32.2	32.2	32.3	32.5	33.1	34.0
NML3 (H124)	Night	28.8	28.9	29.1	29.6	30.3	31.2	32.5	34.0
NML4 (H073)	Night	23.5	24.0	24.8	25.8	27.1	28.7	30.7	33.1
NML5 (H027)	Night	24.0	25.0	26.2	27.8	29.7	31.9	34.3	37.0
NML6 (H053)	Night	27.2	27.5	27.9	28.5	29.2	30.1	31.4	33.0
NML7 (H031)	Night	21.5	21.9	22.5	23.2	24.2	25.5	27.1	29.0

Locations	Period	Background Noise Levels dB L _{A90} at standardised 10m height wind speed m/s for 103.5 m Hub Height							
		3	4	5	6	7	8	9	10
NML8 (H106)	Night	24.2	24.8	25.8	27.3	29.1	31.2	33.5	35.9

APPENDIX A. GLOSSARY OF ACOUSTIC TERMS

Background noise	The noise level rarely fallen below in any given location over any given time period, often classed according to daytime, evening or night-time periods.
dB	Abbreviation for 'decibel'.
dB(A)	Abbreviation for the decibel level of a sound that has been A-weighted.
Dawn Chorus	Noise due to birds which can occur at sunrise.
Decibel	The unit normally employed to measure the magnitude of sound.
Directivity	The property of a sound source that causes more sound to be radiated in one direction than another.
L_{A90}	The noise level exceeded 90% of the time during a measurement period, often used for the measurement of background noise.
Level	The general term used to describe a sound once it has been converted into decibels.
Sound level meter	An instrument for measuring sound pressure level.

APPENDIX B. INSTALLATION PHOTOGRAPHS

Appendix Figure B-1. Location NML 1 Installation



Appendix Figure B-2. Location NML 2 Installation



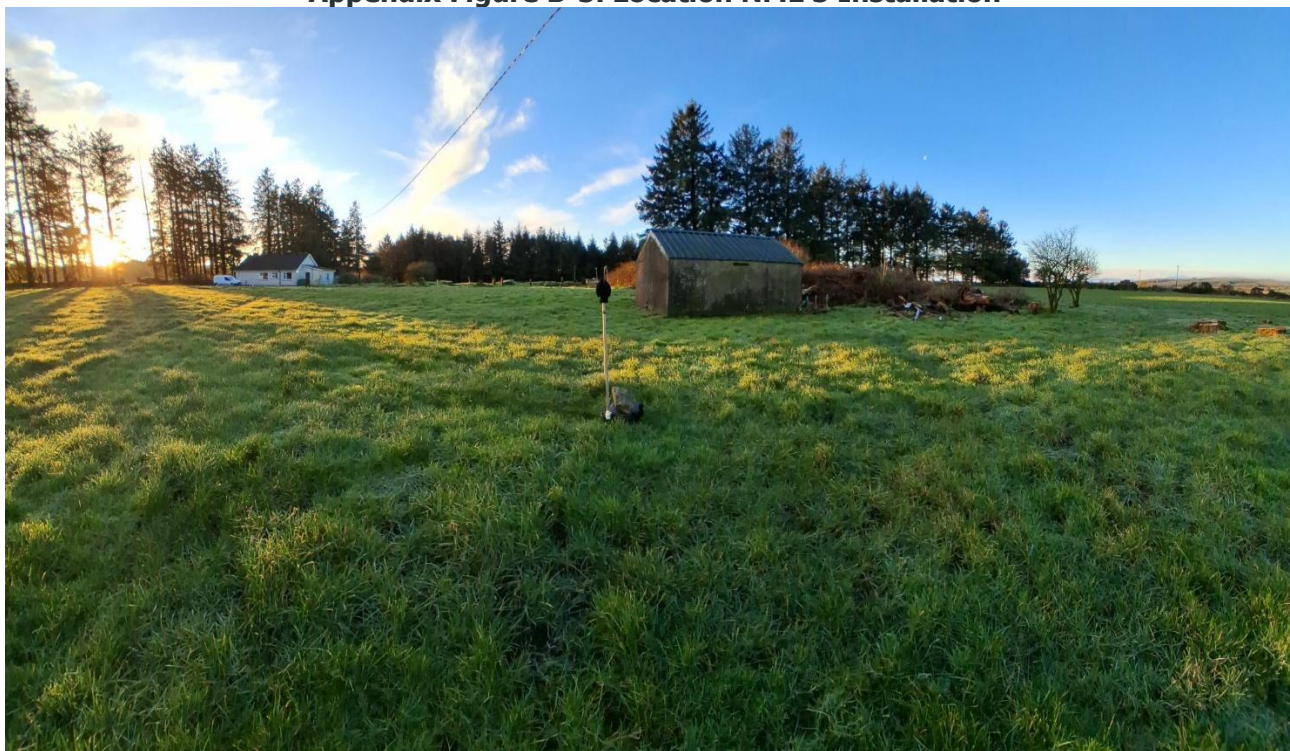
Appendix Figure B-3. Location NML 3 Installation



Appendix Figure B-4. Location NML 4 Installation



Appendix Figure B-5. Location NML 5 Installation



Appendix Figure B-6. Location NML 6 Installation



Appendix Figure B-7. Location NML 7 Installation



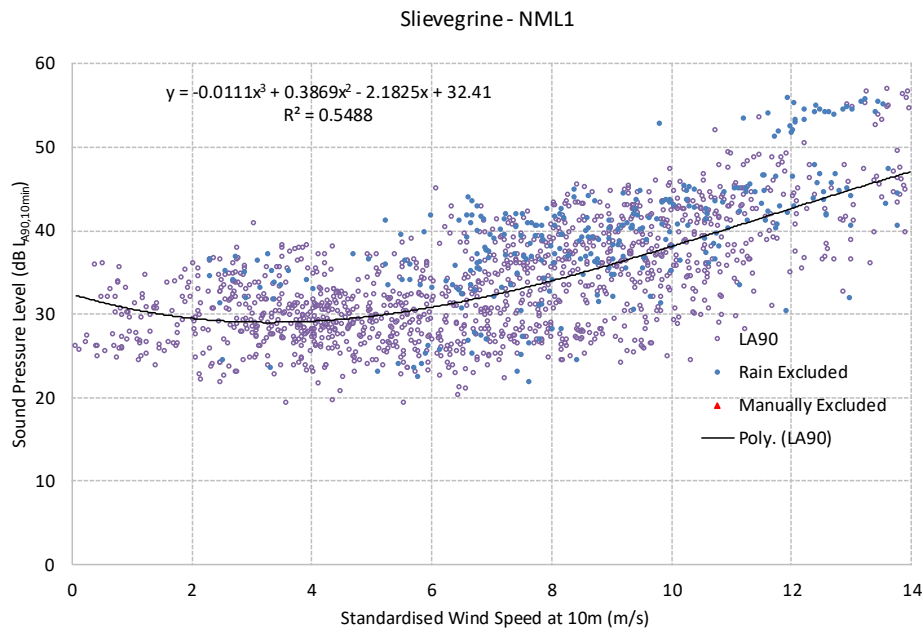
Appendix Figure B-8. Location NML 8 Installation



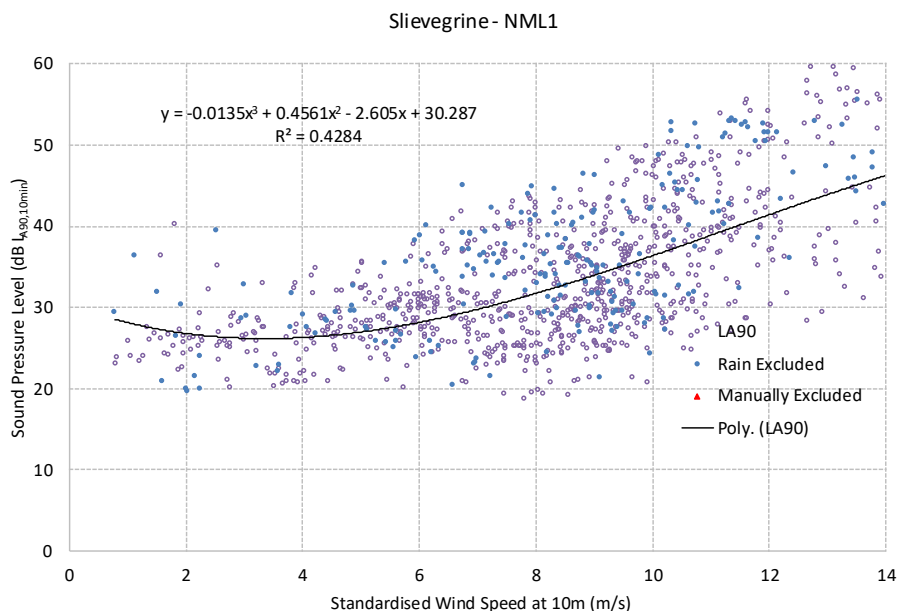
APPENDIX C. REGRESSION ANALYSIS ON DATA SETS

The following graphs present the data sets for each location. In each case, the daytime data is presented first and the night-time data below.

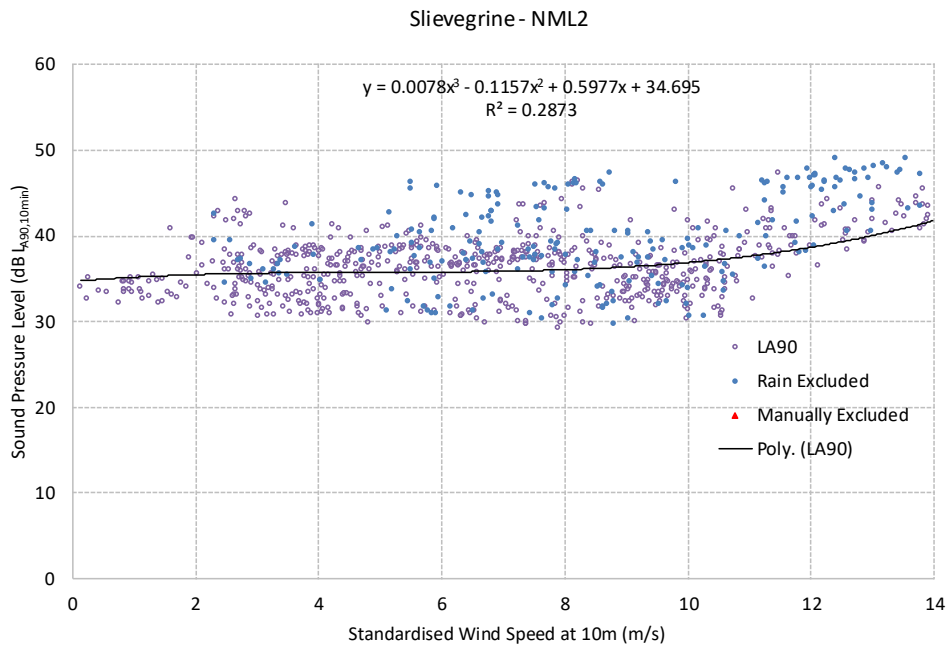
Appendix Figure C-1. Location NML 1 Daytime noise levels



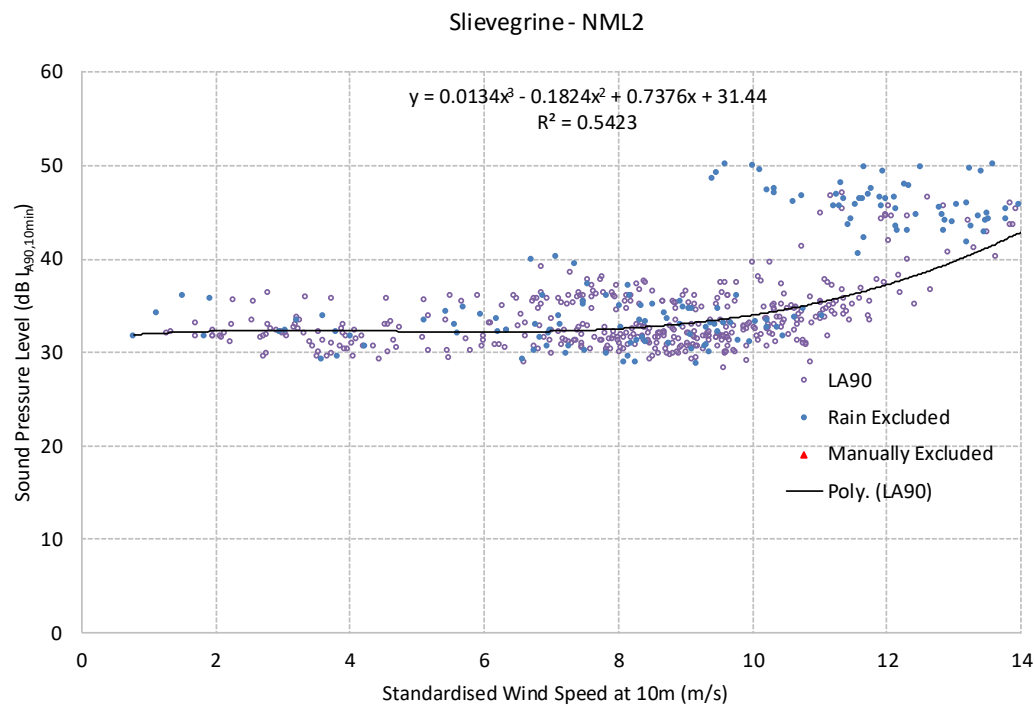
Appendix Figure C-2. Location NML 1 Night-time noise levels



Appendix Figure C-3. Location NML 2 Daytime noise levels

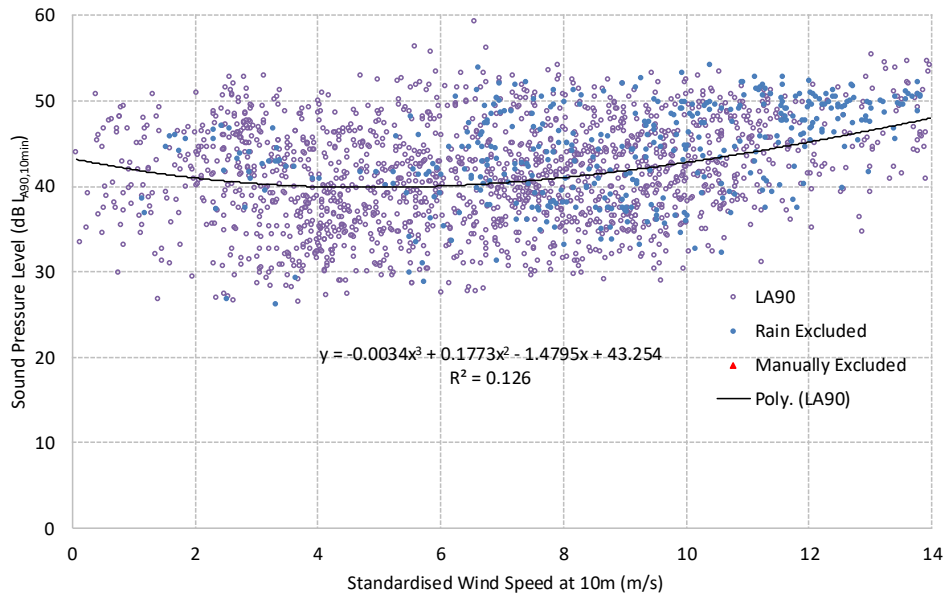


Appendix Figure C-4. Location NML 2 Night-time noise levels



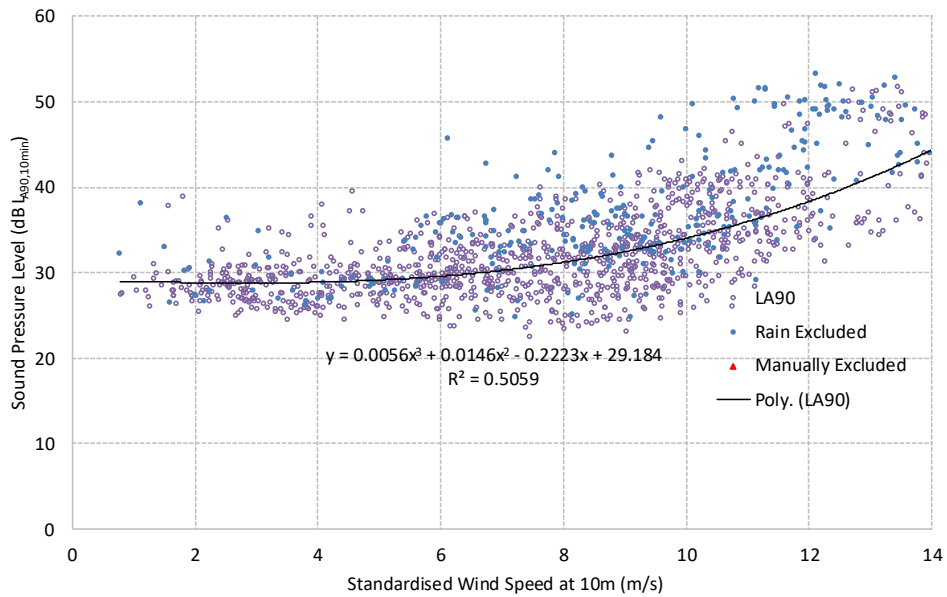
Appendix Figure C-5. Location NML 3 Daytime noise levels

Slievegrine - NML3



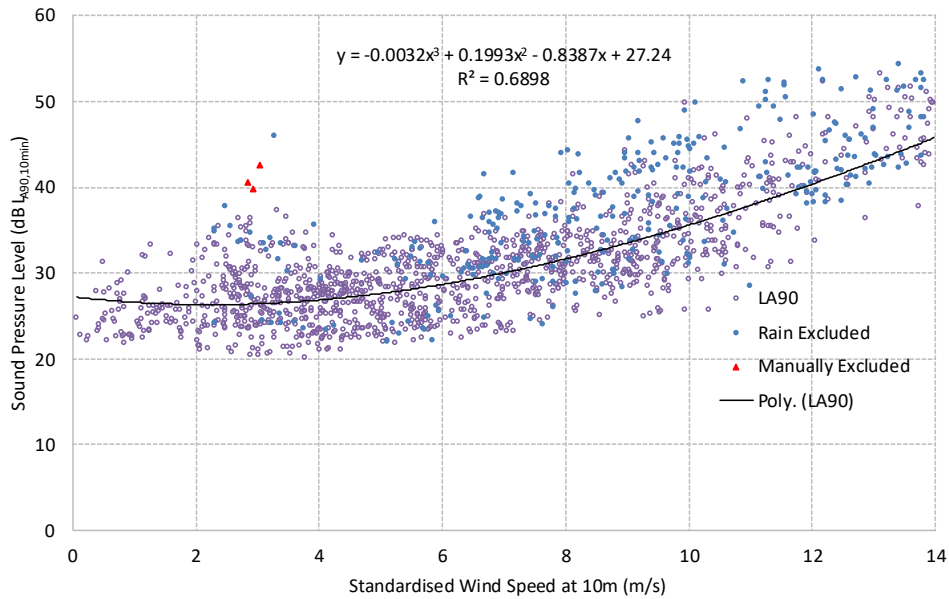
Appendix Figure C-6. Location NML 3 Night-time noise levels

Slievegrine - NML3



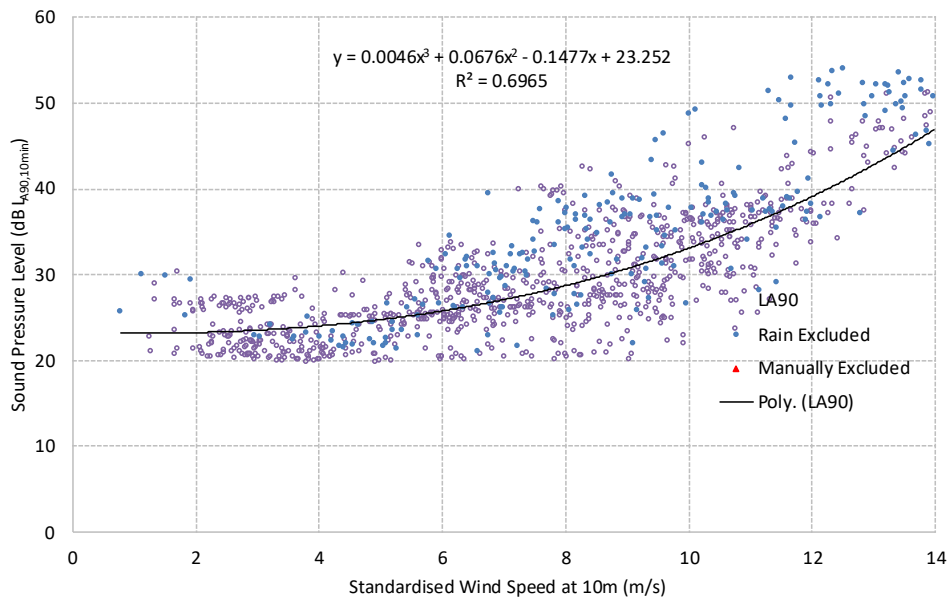
Appendix Figure C-7. Location NML 4 Daytime noise levels

Slievegrine - NML4



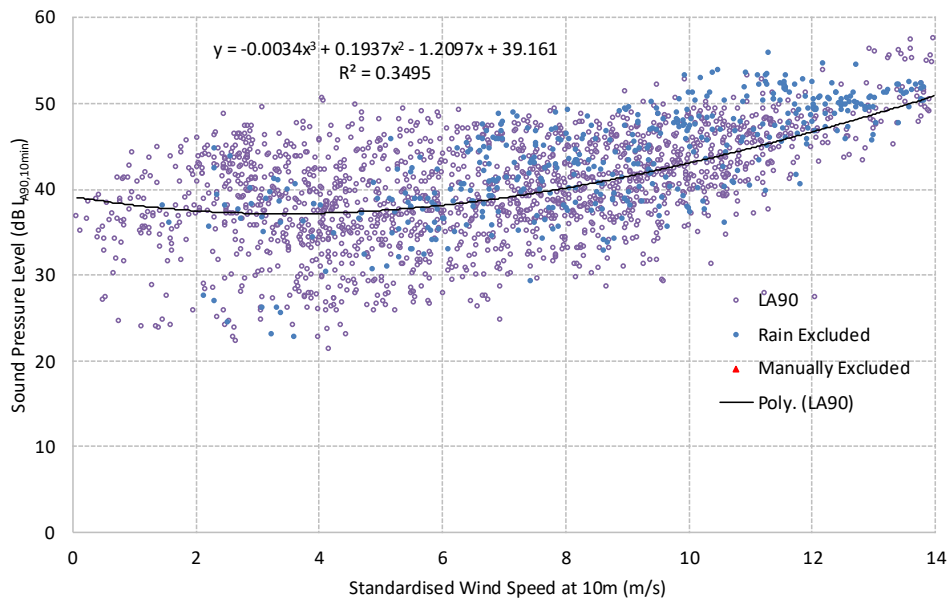
Appendix Figure C-8. Location NML 4 Night-time noise levels

Slievegrine - NML4



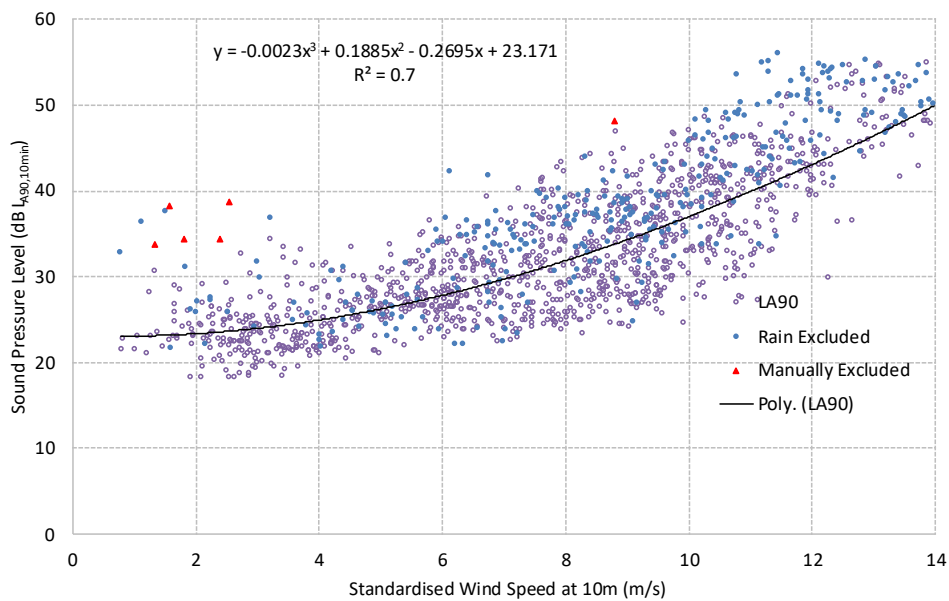
Appendix Figure C-9. Location NML 5 Daytime noise levels

Slievegrine - NML5



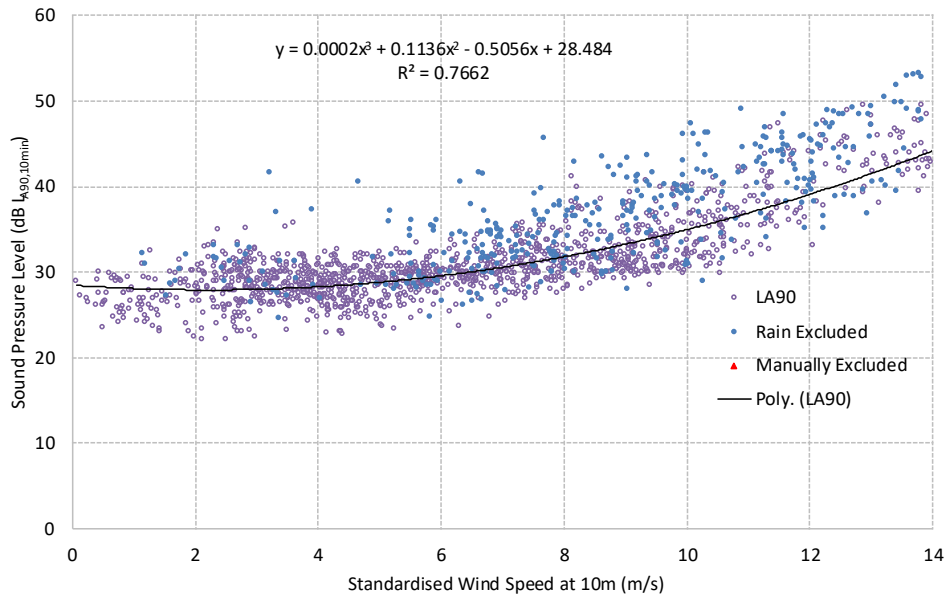
Appendix Figure C-10. Location NML 5 Night-time noise levels

Slievegrine - NML5



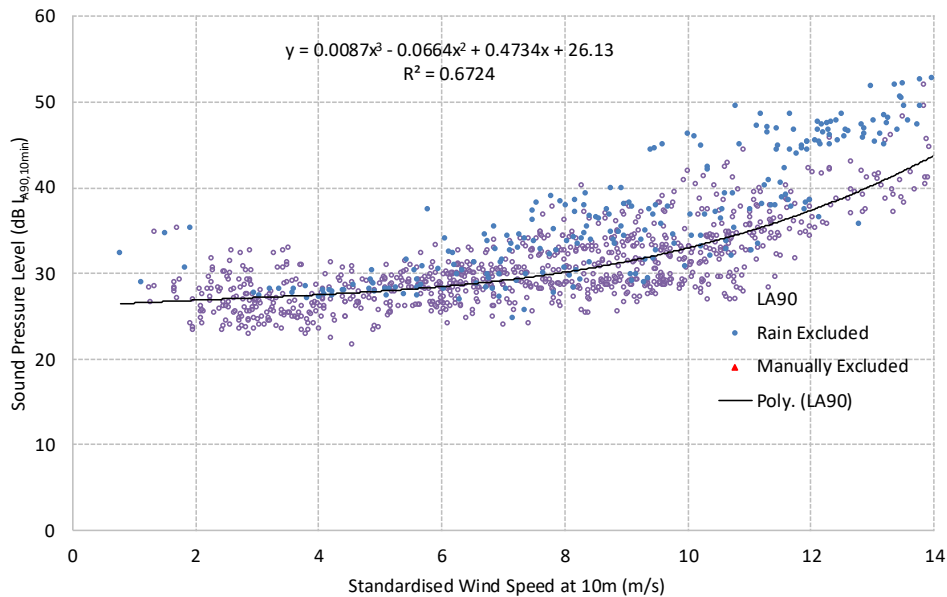
Appendix Figure C-11. Location NML 6 Daytime noise levels

Slievegrine - NML6



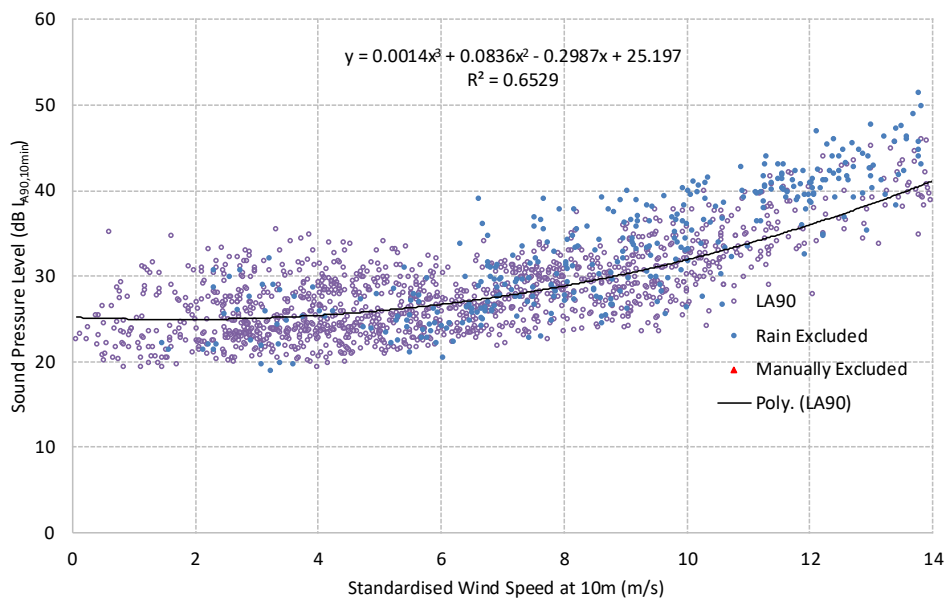
Appendix Figure C-12. Location NML 6 Night-time noise levels

Slievegrine - NML6



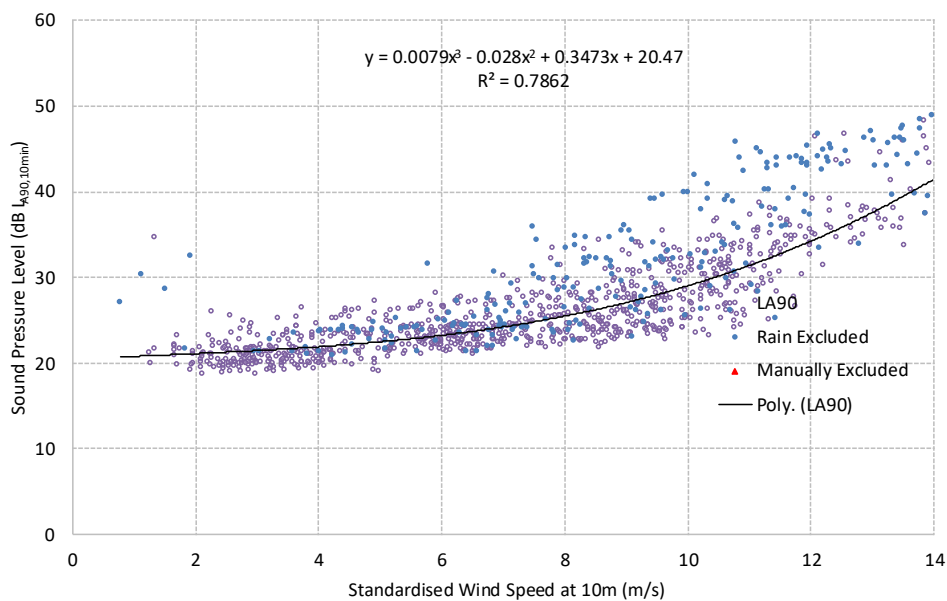
Appendix Figure C-13. Location NML 7 Daytime noise levels

Slievegrine - NML7

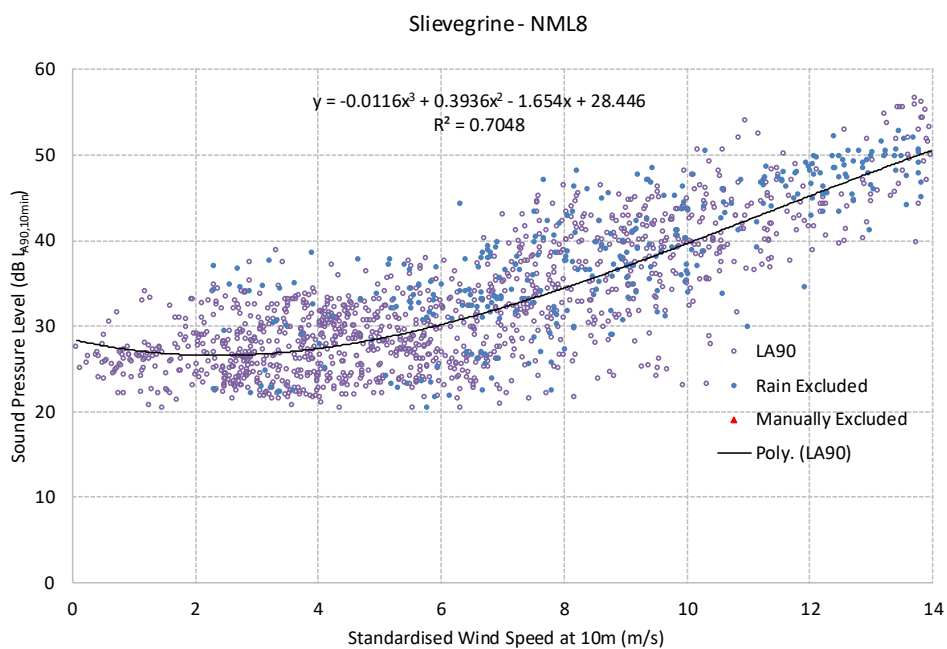


Appendix Figure C-14. Location NML 7 Night time noise levels

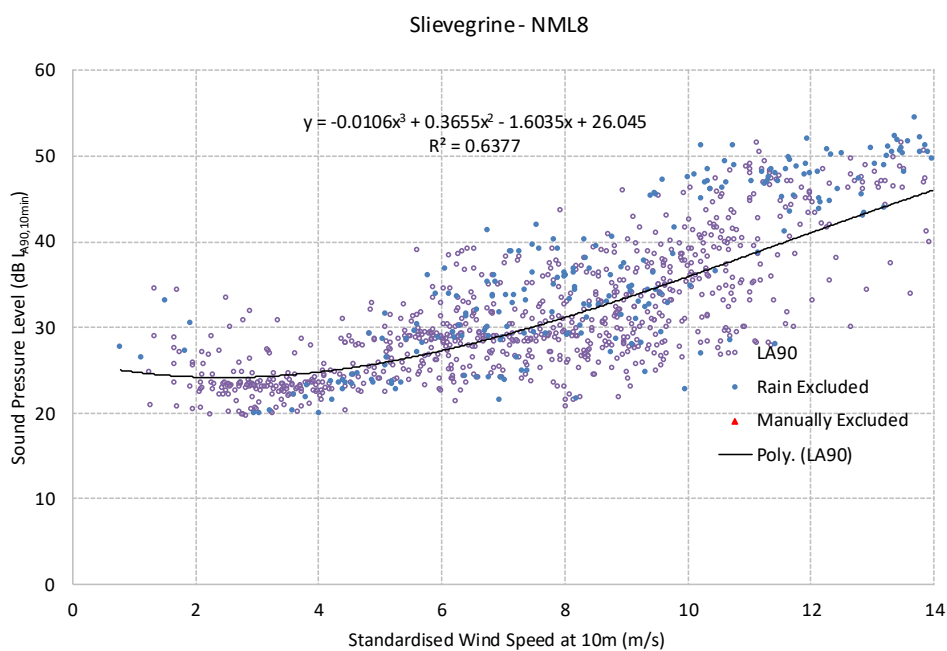
Slievegrine - NML7



Appendix Figure C-15. Location NML 8 Daytime noise levels



Appendix Figure C-16. Location NML 8 Night-time noise levels



APPENDIX D. CALIBRATION CERTIFICATES

Location NML 1 (H023)



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 21 July 2025

Calibrated at & Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

E-Mail: info@noise-and-vibration.co.uk

Web: www.noise-and-vibration.co.uk

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Certificate Number: UCRT25/2076

Page 1 of 2 Pages
Approved Signatory
K. Mistry

Customer
AWN Consulting Limited
The Tecpro Building
17
Clonshaugh Business & Technology Park
Dublin

Order No. 2528
Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator
Identification

Manufacturer	Instrument	Type	Serial No. / Version
Rion	Sound Level Meter	NL-52	00186667
Rion	Firmware		2.1
Rion	Pre Amplifier	NH-25	76817
Rion	Microphone	UC-59	21140
Rion	Calibrator	NC-75	34334830
	Calibrator adaptor type if applicable		NC-75-022

Performance Class 1

Test Procedure TP 10. SLM 61672-3:2013

Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2013 Yes

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received 18 July 2025

ANV Job No. UKAS25/07554

Date Calibrated 21 July 2025

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	13 June 2023	UCRT23/1773	0653

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Location NML 2 (H060)



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 20 February 2024

Certificate Number: UCRT24/1279

Calibrated at & Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

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Telephone 01908 642846 Fax 01908 642814

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Web: www.noise-and-vibration.co.uk

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages

Approved Signatory

K. Mistry

Customer	AWN Consulting Limited The Tecpro Building IDA Business and Technology Park Clonshaugh Dublin D17 XD90 Ireland			
Order No.	2358			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00998410
	Rion	Firmware		2.1
	Rion	Pre Amplifier	NH-25	98627
	Rion	Microphone	UC-59	15920
	Brüel & Kjær	Calibrator	4231	2263026
		Calibrator adaptor type if applicable		UC 0210
Performance Class	1			
Test Procedure	TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i>			
Type Approved to IEC 61672-1:2013	Yes <i>If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013</i>			
Date Received	19 February 2024	ANV Job No.	UKAS24/02147	
Date Calibrated	20 February 2024			

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	<i>Dated</i>	<i>Certificate No.</i>	<i>Laboratory</i>
	17 March 2022	UCRT22/1389	0653

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Location NML 3 (H124)



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 12 September 2025

Certificate Number: UCRT25/2318

Calibrated at & Certificate issued by:

ANV Measurement Systems

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Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages
Approved Signatory

K. Mistry

Customer AWN Consulting Limited
 The Tecpro Building
 IDA Business & Technology Park
 Dublin 17
 Ireland

Order No. 2536

Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator

Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00764925
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	65051
	Rion	Microphone	UC-59	09853
	Rion	Calibrator	NC-75	34724227
		Calibrator adaptor type if applicable		NC-75-022

Performance Class 1

Test Procedure TP 10. SLM 61672-3:2013

Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Pattern Approved to IEC 61672-1:2013 Yes

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received 10 September 2025

ANV Job No. UKAS25/09682

Date Calibrated 12 September 2025

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	29 September 2023	UCRT23/2264	0653

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Location NML 4 (H073)



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 26 June 2025

Certificate Number: UCRT25/1935

Calibrated at & Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

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Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages
Approved Signatory

B. Bogdan

Customer AWN Consulting Limited
The Tecpro Building
17
Clonshaugh Business & Technology Park
Dublin

Order No. 2526
Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator
Identification

Manufacturer	Instrument	Type	Serial No. / Version
Rion	Sound Level Meter	NL-52	00186668
Rion	Firmware		2.1
Rion	Pre Amplifier	NH-25	76701
Rion	Microphone	UC-59	12813
Rion	Calibrator	NC-75	34334830
	Calibrator adaptor type if applicable		NC-75-022

Performance Class 1

Test Procedure TP 10. SLM 61672-3:2013

Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2013 Yes

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received 24 June 2025

ANV Job No. UKAS25/06485

Date Calibrated 26 June 2025

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	13 June 2023	UCRT23/1774	0653

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Location NML 5 (H027)



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 19 September 2024

Certificate Number: UCRT24/2249

Calibrated at & Certificate issued by:

ANV Measurement Systems

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Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages
Approved Signatory
K. Mistry

Customer AWN Consulting Limited
The Tecpro Building
17, Clonsaugh Business & Technology Park
Dublin

Order No. 2423
Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator
Identification

Manufacturer	Instrument	Type	Serial No. / Version
Rion	Sound Level Meter	NL-52	00976162
Rion	Firmware		2.1
Rion	Pre Amplifier	NH-25	87063
Rion	Microphone	UC-59	13407
Rion	Calibrator	NC-75	34724227
	Calibrator adaptor type if applicable		NC-75-022

Performance Class 1

Test Procedure TP 10. SLM 61672-3:2013

Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2013 Yes

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received 06 September 2024 ANV Job No. UKAS24/09634

Date Calibrated 19 September 2024

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	02 September 2022	UCRT22/2053	0653

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Location NML 6 (H053)



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 12 September 2025

Certificate Number: UCRT25/2315

Calibrated at & Certificate issued by:

ANV Measurement Systems

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Approved Signatory

K. Mistry

Customer
AWN Consulting Limited
The Tecpro Building
IDA Business & Technology Park
Dublin 17
Ireland
Dublin

Order No. 2536

Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator

Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00575785
	Rion	Firmware		2.1
	Rion	Pre Amplifier	NH-25	65812
	Rion	Microphone	UC-59	11406
	Rion	Calibrator	NC-75	34724227
		Calibrator adaptor type if applicable		NC-75-022

Performance Class 1

Test Procedure TP 10. SLM 61672-3:2013

Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Pattern Approved to IEC 61672-1:2013 Yes

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received 10 September 2025

ANV Job No. UKAS25/09682

Date Calibrated 12 September 2025

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	29 September 2023	UCRT23/2261	0653

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Location NML 7 (H031)



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 20 February 2024

Certificate Number: UCRT24/1283

Calibrated at & Certificate issued by:

ANV Measurement Systems

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Page 1 of 2 Pages
Approved Signatory

K. Mistry

Customer	AWN Consulting Limited The Tecpro Building IDA Business and Technology Park Clonshaugh Dublin D17 XD90 Ireland			
Order No.	2358			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00998409
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	98623
	Rion	Microphone	UC-59	15915
	Brüel & Kjær	Calibrator	4231	2263026
		Calibrator adaptor type if applicable		UC 0210
Performance Class	1			
Test Procedure	TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i>			
Type Approved to IEC 61672-1:2013	Yes <i>If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013</i>			
Date Received	19 February 2024	ANV Job No.	UKAS24/02147	
Date Calibrated	20 February 2024			

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	<i>Dated</i>	<i>Certificate No.</i>	<i>Laboratory</i>
	01 February 2022	UCRT22/1142	0653

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Location NML 8 (H106)



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 21 March 2024

Certificate Number: UCRT24/1471

Calibrated at & Certificate issued by:

ANV Measurement Systems

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Approved Signatory

K. Mistry

Customer	AWN Consulting The Tecpro Building IDA Business and Technology Park Clonshaugh Dublin 17 D17 XD90 Ireland			
Order No.	2365			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00164426
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	54559
	Rion	Microphone	UC-59	09207
	Brüel & Kjær	Calibrator	4231	2022651
		Calibrator adaptor type if applicable		UC 0210
Performance Class	1			
Test Procedure	TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i>			
Type Approved to IEC 61672-1:2013	Yes			
	<i>If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013</i>			
Date Received	20 March 2024	ANV Job No.	UKAS24/03253	
Date Calibrated	21 March 2024			

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	<i>Dated</i>	<i>Certificate No.</i>	<i>Laboratory</i>
	04 November 2021	UCRT21/2362	0653

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