# TECHNICAL APPENDIX 13.2: BASELINE NOISE SURVEY DETAILS

Kirkton Energy Park Prepared for: Kirkton Wind Farm Ltd

SLR Ref: 428.11143.00001 Version No: 1 November 2022



# MP1 – Ar Dachaidh

Sound level meter position: 288999, 961695

#### **Equipment used at measurement location**

Equipment	Description	Serial Number	Calibrated
Sound level meter	Rion NL-52	00710359	05/10/2021
Pre-amplifier	Rion NH-25	10901	05/10/2021
Microphone	Rion UC-59	19633	05/10/2021
Calibrator	Rion NC-75	34713324	05/10/2021
Field calibration value	ue at the start	of survey: 93.9 d	dB @ 1kHz
Field calibration value	ue at the end o	of survey: 93.8 d	B @ 1kHz
Drift in field calibrat	ion = 0.1 dB		



#### **Description of measurement location**

Situated to the north of the proposed development and considered representative of Kirkton Farm. Rural location with the dominant noise noted to be birdsong and agricultural animal noises with contributions from very distant road traffic noise and other natural sources.

The sound level meter was installed on the south west side of the property in the garden area, which is in the general direction of the proposed development. The position was selected to be away from any observed localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden.

A rain gauge was installed at this location. This instrument uses tipping bucket with magnetic switch technology and measures a minimum rain volume of 0.20mm.

Photographs of the sound level meter at this location are provided in **Plate 13-1** to **Plate 13-4**.

- any data measured during, or within 60 minutes of rainfall; and
- data showing a temporary increase in noise clearly not related to wind speed.



Plate 13-1: Location 1 sound level meter looking east



Plate 13-2: Location 1 sound level meter looking south





Plate 13-3: Location 1 sound level meter looking west



Plate 13-4: Location 1 sound level meter looking north



### Plate 13-5: MP1 Equipment Calibration Certification

ANV Measurement Sur	ate issued by:	Certific	ate Number: U	ICRT21/2223
save measurement dys	stems		Page 1	of 2 Pages
Beaufort Court 17 Roebuck Way Miton Keynes MKS 8- Telephone 01908 6426 E-Mail: Info@noise-and Web: www.noise-and-v Acastis Viseand/Viselor J	HL 346 Fax 01906 6426 d-vibration.co.uk vibration.co.uk di acing e AN Massuer	Approved 114 B. Giles	Signatory	
Customer	SLR Consulting 2nd and 3rd Fi 15 Middle Pave Nottingham NG1 7DX	g Limited cors ament		
Order No.	422-17278			
Order No. Description	422-17278 Sound Level M	eter / Pre-amp / Microph	one / Associated	d Calibrator
Order No. Description Identification	422-17278 Sound Level V Manufacturer	leter / Pre-amp / Microph Insinument	one / Associated Type	d Calibrator Serial No. / Version
Order No. Description Identification	422-17278 Sound Level V Manufacturer Rion	leter / Pre-amp / Microph Insimment Sound Level Meter	ione / Associated Type NL-52	d Calibrator Serial No. / Version 00710359
Order No. Description Identification	422-17278 Sound Level V Manufacturer Rion Rion	leter / Pre-amp / Micropr Insimment Sound Level Meter Firmware	ione / Associated Type NL-52	d Calibrator Serial No. / Version 00710359 2.0
Order No. Description Identification	422-17278 Sound Level V Manufacturer Rion Rion Rion	ieter / Pre-amp / Micropr <i>Insimment</i> Sound Level Meter Firmware Pre Amplifier	oone / Associated Type NL-52 NH-25	d Calibrator Serial No. / Version 00710359 2.0 10901
Order No. Description Identification	422-17278 Sound Level V Manufacturer Rion Rion Rion Rion	leter / Pre-amp / Micropr <i>Insimment</i> Sound Level Meter Firmware Pre Amplifier Microphone	none / Associated Type NL-52 NH-25 UC-59	d Calibrator Serial No. / Version 00710359 2.0 10901 19633
Order No. Description Identification	422-17278 Sound Level V Manufacturer Rion Rion Rion Rion Rion	leter / Pre-amp / Micropr Insimment Sound Level Meter Firmware Pre Amplifier Microphone Celibrator	none / Associated Type NL-52 NH-25 UC-59 NC-75	d Calibrator Serial No. / Version 00710359 2.0 10901 19633 34713324
Order No. Description Identification	422-17278 Sound Level V Manufacturer Rion Rion Rion Rion	leter / Pre-amp / Micropr Insimment Sound Level Meter Firmware Pre Amplifier Microphone Celibrator Celibrator adaptor typ	none / Associated Type NL-52 NH-25 UC-59 NC-75 pe if applicable	d Calibrator Serial No. / Version 00710359 2.0 10901 19633 34713324 NC-75-022
Order No. Description Identification Performance Class	422-17278 Sound Level V Menufacturer Rion Rion Rion Rion Rion	leter / Pre-amp / Micropr Insimment Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor typ	none / Associated Type NL-52 NH-25 UC-59 NC-75 pe if applicable	d Calibrator Serial No. / Version 00710359 2.0 10901 19633 34713324 NC-75-022
Order No. Description Identification Performance Class Test Procedure	422-17278 Sound Level V Menufacturer Rion Rion Rion Rion 1 TP 10. SLM 6 Procedures from	leter / Pre-amp / Micropr Insinument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator Calibrator adaptor typ 1672-3:2013	tone / Associated Type NL-52 NH-25 UC-59 NC-75 De if applicable	d Calibrator Serial No. / Version 00710359 2.0 10901 19633 34713324 NC-75-022
Order No. Description Identification Performance Class Test Procedure Type Approved to IE	422-17278 Sound Level V Manufacturer Rion Rion Rion Rion 1 TP 10. SLM 6 Procedures from C 61672-1:2013	leter / Pre-amp / Micropr Insinument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator Calibrator adaptor typ 1672-3:2013 FICC 61672-3:2013 were a Yes	tone / Associated Type NL-52 NH-25 UC-59 NC-75 De if applicable	d Calibrator Serial No. / Version 00710359 2.0 10901 19633 34713324 NC-75-022 e periodic tests
Order No. Description Identification Performance Class Test Procedure Type Approved to IE	422-17278 Sound Level V Manufacturer Rion Rion Rion 1 TP 10. SLM 6 Procedures from C 61672-1:2013 If YES above the applicable patter	leter / Pre-amp / Microph Insinument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator Calibrator adaptor typ 1672-3:2013 FIEC 61672-3:2013 were 1 Yes we is public evidence that t mevaluation tests of IEC 6	none / Associated Type NL-52 NH-25 UC-59 NC-75 be if applicable used to perform the he SLM has succe 1872-2.2013	d Calibrator Serial No. / Version 00710359 2.0 10901 19633 34713324 NC-75-022 e periodic tests ssafully completed the
Order No. Description Identification Performance Class Test Procedure Type Approved to IE Date Received	422-17278 Sound Level M Manufacturer Rion Rion Rion Rion 1 TP 10. SLM 6 Procedures from C 61672-1:2013 If YES above the applicable patter 05 October 202	leter / Pre-amp / Microph Insimment Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator Calibrator adaptor typ 1672-3:2013 (IEC 61672-3:2013 were ) Yes are is public evidence that t in evaluation tests of IEC 6 21 AN	none / Associated Type NL-52 NH-25 UC-59 NC-75 be if applicable used to perform the the SLM has succe 1672-2:2013 V Job No. U	d Calibrator Serial No. / Version 00710359 2.0 10901 19633 34713324 NC-75-022 e periodic tests issifully completed the KAS21/10853

Previous Certificate	Dated Initial Calibration	Certificale No.	Laboratory
This certificate is issue	d in accordance with th	<ul> <li>laboratory accreditation</li></ul>	<ul> <li>requirements of the United Kingdom</li></ul>
Accreditation Service. It	provides traceability of ma	asurement to the SI system	n of units and/or to units of measurement
realised at the National F	Physical Laboratory or oth	or recognised national mation	rology institutes. This certificate may not
be reproduced other than	i in full, except with the pri	or written approval of the is	sung laboratory.

CERTIFICATE OF CALIBRATION			Certi	Certificate Number UCRT21/2223				
UKAS Accredited Cali	bration Laboratory	No. 0653		Page	2	at	2	Pages
Sound Level Meter Ins	struction manual an	d data used to a	adiust th	e sound leve	ls inc	licated		
SLM instruction manual	title NL-52/NL-42	2 Description for I	EC 6167:	2-1	io inte	l'oure a		
SLM instruction manual	ref / issue	No. 56034 2	1-03	Source	Rion			
Date provided or internel	t download date	19 March 2	021					
15.605 Prost Carolina Contractor	Case Corrections	Wind Shield Co	rrections	Mic Press	sure to	o Free	Field C	orrection
Uncertainties provided	Yes	Yes		Yes				
Total expanded uncertail	nties within the requir	ements of IEC 61	672-1:20	13 YES				
Specified or equivalent (	Calibrator	Specifie	d					
Customer or Lab Calibra	tor	Customers Ca	librator					
Calibrator adaptor type in	fapplicable	NC-75-02	22					
Calibrator cal. date		05 October :	2021					
Calibrator cert. number		UCRT21/2	215					
Calibrator cal cert issued	l by Lab	0653						
Calibrator SPL @ STP	55	93,95	dB	Calibration re	feren	ice sou	nd pres	ssure lev
Calibrator frequency		1000.00	Hz	Calibration d	heck	frequer	CV.	
Reference level range		Single	dB					
Accessories used or com	rected for during calib	pration - Ext	ension C	able & Wind S	Shield	WS-15	5	
Note - The Extension Ca	ible was used betwee	in the SLM and th	ie pre-am	np for this calib	ration	1.		
Environmental conditions	s during tests	Start		End				
	Temperature	23.40	-	23.20	±	0.30	°C	1
	Humidity	39.4		38.3	±	3.00	%RH	1
	Ambient Pressure	99.21		99.24	±	0.03	kPa	
Indication at the Calibrat	ion Check Frequency	0						
Initial indicated leve	94.0	CB A	djusted in	ndicated level		94.0	_	dB
Uncertainty of calibrator	used for Indication at	the Calibration C	heck Fre	quency ±		0.10		dB
Self Generated Noise			0.0000000000	100000 alim 20		200.000		A 1.000 - 000
Microphone installed -	Less Than 17	7.0 dB A.W	eighting	l		-		
Microphone replaced wit	h electrical input devi	ce - UR	= Under	Range indical	ted	1		
Weighting	A	C			7		1	
A Marine Street		45.0 40	1.10	00.0	alD	LUD	1	

 Self Generated Noise reported for information only and not used to assess conformance to a requirement.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Additional Comments The results on this certificate only relate to the items calibrated as identified above

None

		END	
Calibrated by:	B. Bogdan		R 2



# MP2 – Tigh Na Breac

Sound level meter position: 289965, 960767

#### **Equipment used at measurement location**

Equipment	Description	Serial Number	Calibrated
Sound level meter	Rion NL-52	00710361	05/10/2021
Pre-amplifier	Rion NH-25	10903	05/10/2021
Microphone	Rion UC-59	19635	05/10/2021
Calibrator	Rion NC-75	34713324	05/10/2021
Field calibration val	ue at the start	of survey: 93.8 d	dB @ 1kHz
Field calibration val	ue at the end o	of survey: 93.7 d	B @ 1kHz
Drift in field calibrat	ion = 0.1 dB		



#### **Description of measurement location**

Situated to the north east of the proposed development and considered representative of dwellings further north situated on the A897 road, such as Golval and Ackron. Rural location with the dominant noise noted to be wind disturbed vegetation with contributions from other natural sources, such as bird song.

The sound level meter was installed on the south east side of the property following advice from resident of this being more sheltered from wind. An air-to-water heat pump was noted on the north west side of the property that operates intermittently. The heat pump was observed to be approximately 45 dB(A) at 1m during its operation and situated the other side of the dwelling; therefore, not considered to influence the results of the background survey. The position was selected to be away from any observed other localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden.

Photographs of the sound level meter at this location are provided in Plate 13-6 to Plate 13-9.

- any data measured during, or within 60 minutes of rainfall; and
- data showing a temporary increase in noise clearly not related to wind speed.





Plate 13-6: Location 2 sound level meter looking south east



Plate 13-7: Location 2 sound level meter looking south west





Plate 13-8: Location 2 sound level meter looking north east



Plate 13-9: Location 2 view from sound level meter looking north west



### Plate 13-10: MP2 Equipment Calibration Certification

Calibrated at & Certifics	OCLODEL 2021	Certific	ate Number: UC	RT21/2224
	ate issued by:		Page 4 a	f 2 Pages
Alty measurement ays Beaufort Court 17 Roabuck Way Miton Keynes MKS 8- Telephone 01908 6426 E-Mail: info@noise-and-v Web: www.noise-and-v Acasia vibeand V before 1	IL IA Fax 01906 642 I-vibration.co.uk ribration.co.uk	Approved 814 B. Giles	rage i C I Signatory	
Customer	SLR Consultin 2nd and 3rd F 15 Middle Pay Nottingham NG1 7DX	ig Limited loors rament		
Order No.	402 17278			
	422-17210			
Description	Sound Level 1	Aeter / Pre-amp / Microp	hone / Associated	Calibrator
Description Identification	Sound Level 1 Manufacturer	Aeter / Pre-amp / Microp Insinument	hone / Associated Type	Calibrator Serial No. / Version
Description dentification	Sound Level Manufacturer Rion	Aeter / Pre-amp / Microp Insimment Sound Level Mater	hone / Associated Type NL-52	Calibrator Serial No. / Version 00710381 2.0
Description Identification	Sound Level 1 Manufacturer Rion Rion	/leter / Pre-amp / Microp Insinument Sound Level Meter Firmware Pre Amplifier	hone / Associated Type NL-52 NH-25	Calibrator Serial No. / Version 00710381 2.0 10903
Description Identification	Sound Level 1 Manufacturer Rion Rion Rion Rion	/leter / Pre-amp / Microp Insinument Sound Level Meter Pirmware Pre Amplifier Microphone	hone / Associated Type NL-52 NH-25 UC-59	Calibrator Serial No. / Version 00710361 2.0 10903 19635
Description Identification	Sound Level 1 Manufacturer Rion Rion Rion Rion Rion	Aeter / Pre-amp / Microp Instrument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator	hone / Associated Type NL-52 NH-25 UC-59 NC-75	Calibrator Serial No. / Version 00710361 2.0 10903 19635 34713324
Description dentification	Sound Level I Manufacturer Rion Rion Rion Rion Rion	Aeter / Pre-amp / Microp Insimment Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor ty	hone / Associated Type NL-52 NH-25 UC-59 NC-75 rpe if applicable	Calibrator Serial No. / Version 00710361 2.0 10903 19635 34713324 NC-75-022
Description Identification	Sound Level 1 Manufacturer Rion Rion Rion Rion Rion Rion	Neter / Pre-amp / Microp Instrument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor ty	none / Associated Type NL-52 NH-25 UC-59 NC-75 rpe if applicable	Calibrator Serial No. / Version 00710361 2.0 10903 19635 34713324 NC-75-022
Description Identification Performance Class Test Procedure	Sound Level 1 Manufacturer Rion Rion Rion Rion Rion 1 TP 10, SLM 6 Pracedures frai	Neter / Pre-amp / Microp Instrument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator Calibrator adaptor ty (1672-3:2013) m IEC 61672-3:2013 were	none / Associated Type NL-52 NH-25 UC-59 NC-75 rpe if applicable used to perform the	Calibrator Serial No. / Version 00710381 2.0 10903 19635 34713324 NC-75-022 periodic tests
Description Identification Performance Class Test Procedure Type Approved to IE	Alexand Level N Manufacturer Rion Rion Rion Rion 1 TP 10. SLM 6 Pracedures frar C 61672-1:2013	Neter / Pre-amp / Microp Instrument Sound Level Meter Pirmware Pre Amplifier Microphone Calibrator Calibrator adaptor ty Calibrator adaptor ty (1672-3:2013) n. IEC 61672-3:2013 were Yes	none / Associated Type NL-52 NH-25 UC-59 NC-75 rpe if applicable used to perform the	Calibrator Serial No. / Version 00710361 2.0 10903 19635 34713324 NC-75-022 periodic tests
Description dentification Performance Class Test Procedure Type Approved to IE	Sound Level M Manufacturer Rion Rion Rion Rion 1 TP 10. SLM 6 Procedures fror C 61672-1:2013 /f YES above th applicable path	Neter / Pre-amp / Microp Instrument Sound Level Mater Firmware Pre Amplifier Microphone Calibrator Calibrator Calibrator adaptor ty (1672-3:2013 m. IEC 61672-3:2013 ware Yes ere is public evidence that in evaluation tests of IEC 6	none / Associated Type NL-52 NH-25 UC-59 NC-75 rpe if applicable used to perform the the SLM has succes \$1672-2.2013	Calibrator Serial No. / Version 00710361 2.0 10903 19635 34713324 NC-75-022 periodic tests sfully completed the
Description dentification Performance Class Fest Procedure Type Approved to IE Date Received	Sound Level 1 Manufacturer Rion Rion Rion Rion 1 TP 10, SLM 6 Pracedures frat C 61672-1:2013 If YES above th applicable patte 05 October 20	Neter / Pre-amp / Microp Instrument Sound Level Mater Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor by Calibrator adaptor by (1672-3:2013) m IEC 61672-3:2013 ware Yes ere is public evidence that in evaluation tests of IEC 6 21 AN	none / Associated Type NL-52 NH-25 UC-59 NC-75 rpe if applicable used to perform the the SLM has succes \$1872-2:2013 NV Job No. UK	Calibrator Serial No. / Version 00710361 2.0 10903 19635 34713324 NC-75-022 periodic tests sfully completed the CAS21/10853

Previous Certificate	Dated Initial Calibration	Certificale No.	Laboralory
This certificate is issue Accreditation Service. It prealised at the National P be reproduced other than	d in accordance with the provides traceability of mea Physical Laboratory or othe In full, except with the prio	<ul> <li>laboratory accreditation surament to the SI system recognised national mate r written approval of the is</li> </ul>	requirements of the United Kingdom of units and/or to units of measurement ology institutes. This certificate may not sung laboratory.



CERTIFICATE OF CALIBRATION			Certi	Certificate Number UCRT21/2224					
UKAS Accredited Calil	oration Laboratory	No. 0653		Page	2	01	2	Pages	į
						02017-000			
Sound Level Meter Ins	truction manual an	d data used to a	adjust th	e sound leve	ls ind	licated			
SLM instruction manual t	itle NL-52/NL-42	2 Description for II	EC 6167:	2-1					
SLM instruction manual r	ef/issue	No. 56034 2	21-03	Source	Rion				
Date provided or internet	download date	19 March 2	021	а;					
	Case Corrections	Wind Shield Co	rrections	Mic Pressure to Free Field Corrections				ins	
Uncertainties provided	Yes	Yes			444246	Yes	11100-00-0		
Total expanded uncertain	nties within the requir	ements of IEC 61	672-1:20	13 YES					
Specified or equivalent C	alibrator	Specifie	d						
Customer or Lab Calibrat	lar	Customers Ca	librator						
Calibrator adaptor type if	applicable	NC-75-02	22						
Calibrator cal. date		05 October :	2021						
Calibrator cert. number		UCRT21/2	215						
Calibrator cal cert issued	by Lab	0653							
Calibrator SPL @ STP		93,95	dB	Calibration re	eferen	ice sou	nd pres	ssure le	vel
Calibrator frequency		1000.00	Hz	Calibration d	heck t	requer	icy		
Reference level range	000203 SA 70 850	Single	dB						
Accessories used or com	ected for during calib	oration - Ext	ension C	able & Wind S	Shield	WS-15	5		
Note - The Extension Ca	ble was used betwee	in the SLM and th	e pre-am	np for this calib	ration	ι.			
Environmental conditions	s during tests	Start		End		1025015	storem in	a	
	Temperature	23.00		22.90	±	0.30	°C	1	
	Humidity	38.5	3	37.6	±	3.00	%RH		
	Ambient Pressure	99.25		99.33	±	0.03	kPa		
Indication at the Calibrati	on Check Frequency	9					server corr.		
Initial indicated leve	93.9	cB A	djusted in	ndicated level		94.0		dB	
Uncertainty of calibrator (	used for Indication at	the Calibration C	heck Fre	quency ±		0.10	_	dB	
Self Generated Noise						200.000		10000 00	
Microphone installed -	Less Than 13	7.6 dB A.W	eighting			-			
Microphone replaced with	n electrical input devi	ce - UR	= Under	Range indicat	ted		211		
Weighting	A	Ċ		2	2	0.1	1		
	A A LAD LUD	45.0 40	LID	00.0	alD	110			

 Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Additional Comments The results on this certificate only relate to the items calibrated as identified above.

None

Calibrated by:	C. Hirlav	

END .....

R 3



# MP3 – Calgary Beg

Sound level meter position: 289917, 959029

#### **Equipment used at measurement location**

Equipment	Description	Serial Number	Calibrated
Sound level meter	Rion NL-52	00710362	05/10/2021
Pre-amplifier	Rion NH-25	10904	05/10/2021
Microphone	Rion UC-59	19636	05/10/2021
Calibrator	Rion NC-75	34713324	05/10/2021
Field calibration value	ue at the start	of survey: 93.8 d	dB @ 1 kHz
Field calibration value	ue at the end c	of survey: 93.8 d	B @ 1 kHz

Drift in field calibration = 0.0 dB



#### **Description of measurement location**

Situated to the east of the proposed development and considered representative of dwellings south of this location on the A897 road, such as Achiemore and Culifearne Croft. Rural location with the dominant noise noted to be wind disturbed vegetation with contribution from natural sources such as birdsong.

The sound level meter was installed set back from the A897 and the dwelling due to a large number of mature trees immediately around the dwelling and garden. The sound level meter was approximately 20m from the dwelling. The location was away from any observed localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden with reduced noise from wind-disturbed vegetation.

Photographs of the sound level meter at this location are provided in **Plate 13-11** to **Plate 13-14**.

- any data measured during, or within 120 minutes of rainfall; and
- data showing a temporary increase in noise clearly not related to wind speed.





Plate 13-11: Location 3 sound level meter looking west



Plate 13-12: Location 3 sound level meter looking north west



Plate 13-13: Location 3 sound level meter looking south



Plate 13-14: Location 3 sound level meter looking south east



#### Plate 13-15: MP3 Equipment Calibration Certification

Date of 13540. To	October 2021	Certifio	ate Numbe	r: UCRT21/2220
Calibrated at & Certific ANV Measurement Sys Beaufort Court 17 Roebuck Way Milton Keynes MK5 8H Telephone 01908 6428 E-Mail: Info@noise-and- Web: www.noise-and- waters Note and Warder D	ate Issued by: dems IL 46 Fax 01908 8426 S-vibration.co. uk ibration.co. uk toration.co. uk	Approved 114 B. Giles	Page 1 Signatory	of 2 Pages
Customer	SLR Consultin 2nd and 3rd Fl 15 Middle Pave Nottingham NG1 7DX	g Limited cors ement		
Order No.	422-17278	later (Des sous (Massach		and Calibration
dentification	Manufacturez	Instrument	Type	Serial No. / Version
a sector of the cards	Rion	Sound Level Meter	NL-52	00710362
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	10904
	Rion	Microphone	UC-59	19636
	Rion	Calibrator	NC-75	34713324
	20 <b>4</b> 10	Calibrator adaptor typ	be if applicab	NG-75-022
enormance Class	TD (0. PIMA	4670 2:2042		
est Procedure	Procedures from	107 2-3.2013 1 JEC 61672-3 2013 were i	ised to perform	m live periodic tests
	0 61672-1:2013	Yes		and the second second
ype Approved to IE		are is public evidence that t	he SLM has s	uccessfully completed the
ype Approved to IE	If YES above the applicable patter	n evaluation tests of IEC 6	1672-2:2013	

Previous Certificate	Dated Initial Calibration	Certificate No.	Laboratory			
This certificate is issue	ed in accordance with the	he laboratory accreditati	an requirements of the United Kingdom			
Accreditation Service, it	provides traceability of me	easurement to the SI syst	em of units and/or to units of measurement			
realised at the National	Physical Laboratory or oth	her recognised national m	retrology institutes. This certificate may not			
be reproduced other that	n in full, except with the pr	for written approval of the	issuing laboratory.			

CERTIFICATE OF CALIBRATION				Certi	rtificate Number UCRT21/2220				
UKAS Accredited Cali	bration Laboratory I	No. 0653		Page	2	of	2	Pages	
Sound Level Meter Ins	struction manual an	d data used to :	adjust th	e sound leve	ls ind	icated			
SLM instruction manual f	iitle NL-52/NL-42	Description for I	EC 6167	2-1	22.531 144				
SLM instruction manual i	ref / issue	No. 56034 :	21-03	Source	Rion				
Date provided or internet download date		19 March 3	15 No.16 - 50	20 00 00000 000000000 00 00 00 00 00 00					
	Case Corrections		Wind Shield Corrections Mic I			5 Free	Field (	Correctio	
Uncertainties provided	Yes	Yes			_	Yes	1		
Total expanded uncertain	nties within the requir	ements of IEC 61	1672-1:20	13 YES					
Specified or equivalent C	Calibrator	Specifie	d						
Customer or Lab Calibra	tor	Customers Calibrator							
Calibrator adaptor type if	applicable	NC-75-022							
Calibrator cal date		05 October 2021							
Calibrator cert. number		UCRT21/2215							
Calibrator cal cert issued	l by Lab	0653							
Calibrator SPL @ STP		93.95	dB	Calibration re	Calibration reference sound pressure leve				
Calibrator frequency		1000.00	Hz	Calibration check frequency					
Reference level range		Single	dB						
Accessories used or corr Note - The Extension Ca	rected for during calib ble was used betwee	ration - Ex n the SLM and th	tension C he pre-am	able & Wind S ip for this calib	Shield	WS-15	5		
Environmental conditions	s during tests	Start		End					
	Temperature	23.30	8	23.60	1	0.30	C	1	
	Humidity	40.3		38.7	±	3.00	%RH		
	Ambient Pressure	99.02		99.11	±	0.03	kPa		
Indication at the Calibrat	on Check Frequency							· 1	
Initial indicated level 93.9		dB Adjusted indicate		ndicated level		94.0	{	dB	
Uncertainty of calibrator used for Indication at		the Calibration Check Frequency ±			0.10		dB		
Self Generated Noise								0.010	
Microphone installed -	Less Than 17	1 dB AW	eighting	1					
Microphone replaced with	h electrical input devi	ce - UF	R = Under	Range indica	ted				
Weighting	A	G	20100		7		1		
- And Burning	a lue lue	100 100	100	00.4	100	Duro.	•		

Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Additional Comments The results on this certificate only relate to the items calibrated as identified above.

None

Calibrated by: B. Bogdan

END .....

R 2



# MP4 – 25 Upper Bighouse

Sound level meter position: 288886, 957167

#### **Equipment used at measurement location**

Equipment	Description	Serial Number	Calibrated				
Sound level meter	Rion NL-52	00710358	05/10/2021				
Pre-amplifier	Rion NH-25	10900	05/10/2021				
Microphone	Rion UC-59	19632	05/10/2021				
Calibrator	Rion NC-75	34713324	05/10/2021				
Field calibration value at the start of survey: 93.9 dB @ 1 kHz							
Field calibration value	ue at the end c	of survey: 93.8 d	B @ 1 kHz				
Drift in field calibrat	ion = 0.1 dB						



#### **Description of measurement location**

Situated to the south of the proposed development and considered representative of dwellings in Upper Bighouse. Rural location with the dominant noise noted to be wind disturbed vegetation with contributions from occasional cars travelling on the A897 the other side of the river and other natural sources, such as bird song and cattle.

The sound level meter was installed on the north side of the property, in the general direction of the proposed development. The position was selected to be away from any observed localised sources of noise such as boiler flues, pumps or fan outlets and considered to be acoustically representative of the amenity space in the private garden.

Photographs of the sound level meter at this location are provided in **Plate 13-16** to **Plate 13-19**.

- any data measured during, or within 60 minutes of rainfall; and
- data showing a temporary increase in noise clearly not related to wind speed.





Plate 13-16: Location 4 sound level meter looking east



Plate 13-17: Location 4 sound level meter looking south



Plate 13-18: Location 4 sound level meter looking north



Plate 13-19: Location 4 sound level meter looking west



#### Plate 13-20: MP4 Equipment Calibration Certification

Calibrated at & Certific ANV Measurement Sy Beaufort Court	5 October 2021 ate issued by stems	Certifica	Certificate Number: UCRT21/2222 Page 1 of 2 Pages Approved Signatory 3. Giles	
17 Roebuok Way Milton Keynes MK5 8I Telephone 01908 642/ E-Mail: Info@noise-and- Web: www.noise-and- Assumes Noise and Viantian L	HL 546 Fax 01908 5425 c-vibration.co.uk vibration.co.uk % tedagos AVV Veasu on	114 B. Giles		
Customer	SLR Consultin 2nd and 3rd Fl 15 Middle Pav Nottingham NG1 7DX	g Limited oors ement		
Order No.	422-17278	NG 121 - 1925 11	115 M.	
	Sound Level M	leter / Pre-amb / Microph	one / Associate	ed Calibrator
Description	ham finderer	Inde mont	Tumo	Serial No. / Version
Identification	Manufacturer Rich	Instrument Spund Level Meter	Type NL-52	Serial No. / Version 00710958
Liescription Identification	<i>Manufacturer</i> Rion Rion	<i>instrument</i> Sound Level Meter Firmware	Туре NL-52	Serial No. / Version 00710358 2.0
Description Identification	<i>Manufacturer</i> Ricn Ricn Ricn	<i>Instrument</i> Sound Level Meter Firmware Pre Amplifier	Туре NL-52 NH-25	Senial No. / Version 00710358 2.0 10900
Description Identification	Manufacturer Ricn Ricn Ricn Ricn	<i>Instrument</i> Sound Level Meter Firmware Pre Amplifier Microphone	7ype NL-52 NH-25 UC-59	Serial No. / Version 00710358 2.0 10900 19632
Description Identification	<i>Mənufəcturər</i> Ricn Ricn Ricn Ricn Ricn	<i>Instrument</i> Sound Level Meter Firmware Pre Amplifier Microphone Calibrator	7ype NL-52 NH-25 UC-59 NC-75	Serial No. / Version 00710358 2.0 10900 19632 34713324
Description Identification	<i>Mənufəcturər</i> Ricn Ricn Ricn Ricn Ricn	<i>Instrument</i> Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor typ	Type NL-52 NH-25 UC-59 NC-75 pe if applicable	Serial No. / Version 00710358 2.0 10900 19632 34713324 NC-75-022
Description Identification Performance Class	<i>Manufacturer</i> Ricn Ricn Ricn Ricn Ricn	<i>Instrument</i> Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor typ	Type NL-52 NC-59 UC-59 NC-75 be if applicable	Serial No. / Version 00710358 2.0 10900 19632 34713324 NC-75-022
Description Identification Performance Class Test Procedure	Manufacturer Ricn Ricn Ricn Ricn I TP 10. SLM 6	Instrument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator Calibrator adaptor typ	Type NL-52 NC-59 UC-59 NC-75 be if applicable	Serial No. / Version 00710358 2.0 10900 19632 34713324 NC-75-022
Description Identification Performance Class Tast Procedure	Manufacturer Ricn Ricn Ricn Ricn Ricn 1 TP 10. SLM 6 Procedures from	Instrument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator Calibrator adaptor typ 1672-3:2013	Type NL-52 NH-25 UC-59 NC-75 te if applicable	Serial No. / Version 00710358 2.0 10900 19632 34713324 NC-75-022 he periodic tests.
Description Identification Performance Class Tast Procedure Type Approved to IE	Manufacturer Ricn Ricn Ricn Ricn Ricn 1 TP 10. SLM 6 Procedures from C 61672-1:2013	Instrument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor typ 1672-3:2013 (EC 61672-3:2013 were u Yes	Type NL-52 NL-25 UC-59 NC-75 re if applicable	Serial No. / Version 00710358 2.0 10900 19632 34713324 NC-75-022
Description Identification Performance Class Tast Procedure Type Approved to IE	Manufacturer Ricn Ricn Ricn Ricn Ricn 1 TP 10. SLM 6 Procedures from C 61672-1:2013 If YES above the products form	Instrument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor typ 1672-3:2013 (EC 61672-3:2013 were u Yes we is public evidence that the	Type NL-52 NH-25 UC-59 NC-75 te if applicable used to perform finte the SLM has such	Serial No. / Version 00710358 2.0 10900 19632 34713324 NC-75-022 he periodic tests.
Description Identification Performance Class Test Procedure Type Approved to IE Date Received	Manufacturer Rion Rion Rion Rion 1 TP 10. SLM 6 Procedures from C 61672-1:2013 If YES above the applicable patter 05 October 20	Instrument Sound Level Meter Firmware Pre Amplifier Microphone Calibrator Calibrator adaptor typ 1672-3:2013 / IEC 61672-3:2013 were u Yes we is public evidence that fi n evaluation tests of IEC 6 21 AN	Type NL-52 NH-25 UC-59 NC-75 te if applicable used to perform to the SLM has such the SLM has such the SLM has such	Serial No. / Version 00710358 2.0 10900 19632 34713324 NC-75-022 he periodic tests. cessfully completed the UKA521/10653

Previous Certificate	Dated Initial Calibration	Certificate No.	Laboratory				
This certificate is issue Accreditation Service, it realised at the National I	d in accordance with the provides traceability of me Physical Laboratory or othe	te laboratory accreditation asurement to the SI system er recognised national me	n requirements of the United Kingdom n of units and/or to units of measurement trology institutes. This certificate may not				

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				ificat UCF	ïcate Number UCRT21/2222					
UKAS Accredited Calib	ration Laboratory I	No. 06	353		Page	2	of	2	Pages	
				0 - 5 K 1965 N 2 Arts						
Sound Level Meter Inst	ruction manual an	d data	used to a	djust the	e sound leve	els inc	licated			
SLM instruction manual til	le NL-52/NL-42	Desc	ription for IB	EC 61672	2-1	2010115				
SLM instruction manual re	f / issue	N	10. 56034 2	1-03	Source	Rion				
Date provided or internet download date			19 March 2021				NEOS - N		a 12	
	Case Corrections		Wind Shield Corrections Mic Pre			sure t	o Free	Field (	Correctio	
Uncertainties provided	Yes Yes					-	Yes	-		
Total expanded uncertain	ties within the require	ement	s of IEC 61	572-1:20	13   YES					
Specified or equivalent Ca	alibrator		Specified	1						
Customer or Lab Calibrate	pr	Customers Calibrator								
Calibrator adaptor type if a	spplicable	NC-75-022								
Calibrator cal date		05 October 2021								
Calibrator cert. number		UCRT21/2215								
Calibrator cal cert issued	by Lab		0653							
Calibrator SPL @ STP			93.95	dB	Calibration r	libration reference sound pressure leve				
Calibrator frequency			1000.00	Hz	Calibration of	alibration check frequency				
Reference level range			Single	dB		18.55%	and the sec	0.007		
Accessories used or corre Note - The Extension Cab	cted for during calib le was used betwee	ration n the \$	<ul> <li>Exti SLM and th</li> </ul>	ension C e pre-am	able & Wind <sup>:</sup> p for this calil	Shield bration	WS-15	5		
Environmental conditions	during tests		Start		End					
	Temperature		22.80	-	23.20	+	0.30	C	1	
	Humidity		40.4		39.5	±	3.00	%RH		
	Ambient Pressure		98.89		99.22	=	0.03	kPa		
Indication at the Calibratio	n Check Frequency	§								
Initial indicated level	94.0	dB Adjusted indica		ndicated level		94.0	8	dB		
Uncertainty of calibrator used for Indication at		the Calibration Check Frequency ±			0.10		dB			
Self Generated Noise						-			0.010	
Microphone installed -	Less Than 16	52	dB A We	ighting	1					
Microphone replaced with	electrical input devi	- 90	UR	= Under	Range indica	rted				
Weighting	Α		C	5,000		Z		1		
		4		LU2	20.3	LAB	111P	1		

Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Additional Comments The results on this certificate only relate to the items calibrated as identified above.

None

Calibrated by: C. Hirlay

END .....R3



### **EUROPEAN OFFICES**

### **United Kingdom**

LEEDS

LONDON

MAIDSTONE T: +44 (0)1622 609242

MANCHESTER

NOTTINGHAM

SHEFFIELD

SHREWSBURY

**STAFFORD** 

STIRLING

WORCESTER

T: +44 (0)113 258 0650

T: +44 (0)203 805 6418

T: +44 (0)161 872 7564

**NEWCASTLE UPON TYNE** 

T: +44 (0)191 261 1966

T: +44 (0)115 964 7280

T: +44 (0)114 245 5153

T: +44 (0)1743 23 9250

T: +44 (0)1785 241755

T: +44 (0)1786 239900

T: +44 (0)1905 751310

AYLESBURY T: +44 (0)1844 337380

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EDINBURGH T: +44 (0)131 335 6830

EXETER T: + 44 (0)1392 490152

GLASGOW T: +44 (0)141 353 5037

GUILDFORD T: +44 (0)1483 889800

#### Ireland

DUBLIN T: + 353 (0)1 296 4667

# France

GRENOBLE T: +33 (0)4 76 70 93 41

www.slrconsulting.com