

Fanellan Hub 400 kV Substation and Converter Station

Environmental Impact Assessment Report

Volume 4 | Technical Appendices


Appendix 14.4 – Calibration Certificate NL52 01265434

February 2025




TECHNICAL APPENDIX 14: NOISE IMPACT ASSESSMENT

14.4 Calibration Certificate NI52 01265434



**CERTIFICATE
OF
CALIBRATION**



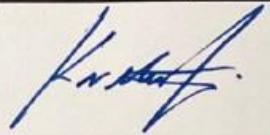
0653

Date of Issue: 21 April 2022
 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: UCRT22/1548

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Approved Signatory



K. Mistry

Customer	Wood Group UK Ltd St Vincent Plaza St Vincent Street Glasgow G2 5LD		
Order No.	26010406		
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator		
Identification	Manufacturer	Instrument	Type
	Rion	Sound Level Meter	NL-52
	Rion	Firmware	2.0
	Rion	Pre Amplifier	NH-25
	Rion	Microphone	UC-59
	Brüel & Kjær	Calibrator	4231
		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 April 2022	ANV Job No.	UKAS22/04276
Date Calibrated	21 April 2022		

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
	27 May 2020	UCRT20/1451	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.

CERTIFICATE OF CALIBRATION

Certificate Number

UCRT22/1548

UKAS Accredited Calibration Laboratory No. 0653

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Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	NL-52/NL-42 Description for IEC 61672-1		
SLM instruction manual ref / issue	No. 56034 21-03	Source	Rion
Date provided or internet download date	19 March 2021		
	Case Corrections	Wind Shield Corrections	Mic Pressure to Free Field Corrections
Uncertainties provided	Yes	Yes	Yes
Total expanded uncertainties within the requirements of IEC 61672-1:2013			YES
Specified or equivalent Calibrator	Equivalent		
Customer or Lab Calibrator	Customers Calibrator		
Calibrator adaptor type if applicable	UC 0210		
Calibrator cal. date	20 April 2022		
Calibrator cert. number	UCRT22/1540		
Calibrator cal cert issued by Lab	0653		
Calibrator SPL @ STP	94.11	dB	Calibration reference sound pressure level
Calibrator frequency	999.79	Hz	Calibration check frequency
Reference level range	Single	dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15

Note - The Extension Cable was used between the SLM and the pre-amp for this calibration.

Environmental conditions during tests	Start	End	
Temperature	23.68	24.32	± 0.30 °C
Humidity	41.1	39.9	± 3.00 %RH
Ambient Pressure	100.33	100.28	± 0.03 kPa

Indication at the Calibration Check Frequency			
Initial indicated level	94.1	dB	Adjusted indicated level 94.1 dB
Uncertainty of calibrator used for Indication at the Calibration Check Frequency ±			0.10 dB
Self Generated Noise			
Microphone installed -	Less Than	17.9	dB A Weighting
Microphone replaced with electrical input device -			UR = Under Range indicated
Weighting	A	C	Z
	13.1	17.4	22.8
	dB	dB	dB
	UR	UR	UR

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. Giles

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