

# **Fanellan Hub 400 kV Substation and Converter Station**

## **Environmental Impact Assessment Report**

### **Volume 4 | Technical Appendices**


#### **Appendix 14.5 – Calibration Certificate NL52 01265412**

**February 2025**





## TECHNICAL APPENDIX 14: NOISE IMPACT ASSESSMENT

### 14.5 Calibration Certificate NI52 01265412



# CERTIFICATE OF CALIBRATION

0653

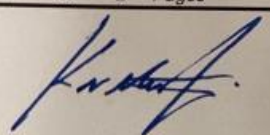
**Date of Issue:** 21 April 2022  
**Calibrated at & Certificate issued by:**  
 ANV Measurement Systems  
 Beaufort Court  
 17 Roebuck Way  
 Milton Keynes MK5 8HL  
 Telephone 01908 642846 Fax 01908 642814  
 E-Mail: info@noise-and-vibration.co.uk  
 Web: www.noise-and-vibration.co.uk  
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

**Certificate Number:** UCRT22/1552

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Approved Signatory

K. Mistry



<b>Customer</b>	Wood Group UK Ltd St Vincent Plaza St Vincent Street Glasgow G2 5LD																												
<b>Order No.</b>	26010406																												
<b>Description</b>	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator																												
<b>Identification</b>	<table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Manufacturer</th> <th style="text-align: left;">Instrument</th> <th style="text-align: left;">Type</th> <th style="text-align: left;">Serial No. / Version</th> </tr> </thead> <tbody> <tr> <td>Rion</td> <td>Sound Level Meter</td> <td>NL-52</td> <td>01265412</td> </tr> <tr> <td>Rion</td> <td>Firmware</td> <td></td> <td>2.0</td> </tr> <tr> <td>Rion</td> <td>Pre Amplifier</td> <td>NH-25</td> <td>65414</td> </tr> <tr> <td>Rion</td> <td>Microphone</td> <td>UC-59</td> <td>10633</td> </tr> <tr> <td>Brüel &amp; Kjær</td> <td>Calibrator</td> <td>4231</td> <td>2052327</td> </tr> <tr> <td></td> <td>Calibrator adaptor type if applicable</td> <td></td> <td>UC 0210</td> </tr> </tbody> </table>	Manufacturer	Instrument	Type	Serial No. / Version	Rion	Sound Level Meter	NL-52	01265412	Rion	Firmware		2.0	Rion	Pre Amplifier	NH-25	65414	Rion	Microphone	UC-59	10633	Brüel & Kjær	Calibrator	4231	2052327		Calibrator adaptor type if applicable		UC 0210
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<b>Performance Class</b>	1																												
<b>Test Procedure</b>	TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i>																												
<b>Type Approved to IEC 61672-1:2013</b>	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>																												
<b>Date Received</b>	19 April 2022																												
<b>Date Calibrated</b>	21 April 2022																												
	ANV Job No. UKAS22/04276																												

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.

<b>Previous Certificate</b>	<i>Dated</i> 22 May 2020	<i>Certificate No.</i> UCRT20/1446	<i>Laboratory</i> 0653
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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

UKAS Accredited Calibration Laboratory No. 0653

Certificate Number

UCRT22/1552

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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	24.50	24.30	± 0.30 °C
Humidity	40.6	42.2	± 3.00 %RH
Ambient Pressure	100.24	100.20	± 0.03 kPa

Indication at the Calibration Check Frequency

Initial indicated level	94.2	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
	11.7	15.5	20.8
	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

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Calibrated by: B. Giles

END .....

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