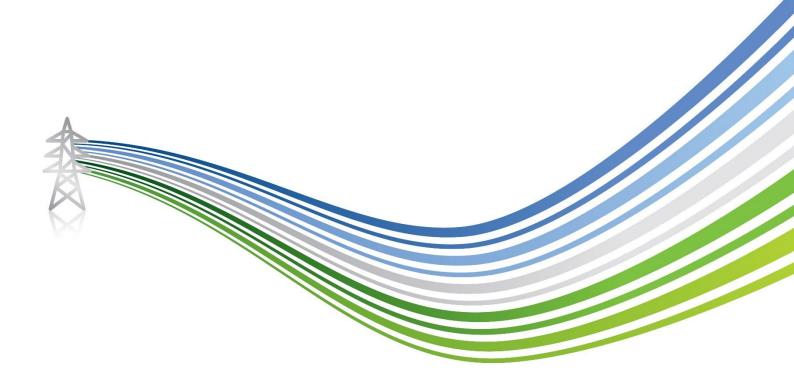
Environmental Impact Assessment (EIA) Report

LT384 Tealing to Westfield Overhead Line (OHL) 400 kV Upgrade

November 2024





VOLUME 4 - APPENDIX 14.2: CALIBRATION CERTIFICATES

1.	CALIBRATION CERTIFICATE NL52 00175536	- 1
2.	CALIBRATION CERTIFICATE NC74 34178103	. 3



1. CALIBRATION CERTIFICATE NL52 00175536



CERTIFICATE OF CALIBRATION





Certificate Number: UCRT22/1695

Date of Issue: 25 May 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

Page	1	of	2	Pages	
Approved Signatory			1		1
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Customer Wood Group

St. Vincent Plaza (Floor 2) 319 St. Vincent Street

Glasgow G2 5LP

Order No. 26010406

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

Identification Manufacturer Instrument Type Serial No. / Version

Rion Sound Level Meter NL-52 00175536 Rion Firmware 2.0 Rion Pre Amplifier NH-25 65638 Rion Microphone UC-59 13128 Rion Calibrator NC-74 34178103 Calibrator adaptor type if applicable NC-74-002

Performance Class

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 23 May 2022 ANV Job No. UKAS22/05346

Date Calibrated 25 May 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 26 May 2020 UCRT20/1449 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.



UKAS Accredited Calibration Laboratory No. 0653 Page Sound Level Meter Instruction manual and data used to adjust the sound levels SLM instruction manual title NL-52/NL-42 Description for IEC 61672-1 SLM instruction manual ref / issue No. 56034 21-03 Source R Date provided or internet download date 19 March 2021	erence soueck frequence deck frequence soueck frequence deck frequ	d. Field Cs sund preency 15 0 °C 0 %RH 3 kPa 0	Corrections essure level
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Weighting A C Z 13.1 dB UR 16.9 dB UR 23.1 dB	B UR	uiremen	nt
13.1 dB UR 16.9 dB UR 23.1 di		uiremen	nt
Self Generated Noise reported for information only and not used to assess conformance	e to a requ	uiremen	nt
The reported expanded uncertainty is based on a standard uncertainty multiplied by a co a coverage probability of approximately 95%. The uncertainty evaluation has been carri UKAS requirements. Additional Comments The results on this certificate only relate to the items calibrate	ied out in a	accorda	ance with
None			
END			Kale herendek
Calibrated by: B. Bogdan			R
,g			



CALIBRATION CERTIFICATE NC74 34178103 2.



CERTIFICATE OF CALIBRATION





Date of Issue: 24 May 2022

Calibrated at & Certificate issued by: ANV Measurement Systems

Beaufort Court 17 Roebuck Way

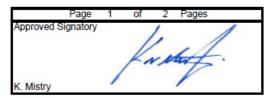
Milton Keynes MK5 8HL

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 Measurem

Certificate Number: UCRT22/1682



Customer Wood Group

St. Vincent Plaza (Floor 2) 319 St. Vincent Street

Glasgow G2 5LP

Order No. 26010406

Test Procedure Procedure TP 1 Calibration of Sound Calibrators

Description Acoustic Calibrator

Identification Manufacturer Serial No. Instrument Model

Calibrator NC-74 34178103 Rion

The calibrator has been tested as specified in Annex B of IEC 60942:2003. As public evidence was available from a testing organisation (PTB) responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, the sound calibrator tested is considered to conform to all the class 1 requirements of IEC 60942:2003.

ANV Job No. UKAS22/05346

Date Received 23 May 2022

Date Calibrated 24 May 2022

22 May 2020 Previous Certificate Dated

Certificate No. UCRT20/1440

0653 Laboratory

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CERTIFICATE OF CALIBRATION

Certificate Number UCRT22/1682

UKAS Accredited Calibration Laboratory No. 0653

age 2 of 2 Pages

Measurements

The sound pressure level generated by the calibrator in its WS2 configuration was measured five times by the Insert Voltage Method using a microphone as detailed below. The mean of the results obtained is shown below. It is corrected to the standard atmospheric pressure of 101.3 kPa (1013 mBar) using original manufacturers information.

Test Microphone Manufacturer Type

Brüel & Kjær 4134

Results

The level of the calibrator output under the conditions outlined above was

94.02 ± 0.10 dB rel 20 µPa

Functional Tests and Observations

The frequency of the sound produced was $1001.97 \pm 0.12 \text{ Hz}$

The total distortion was 1.61 ± 0.11 % Distortion

During the measurements environmental conditions were

 Temperature
 23
 to
 24
 °C

 Relative Humidity
 44
 to
 51
 %

 Barometric Pressure
 99.4
 to
 99.5
 kPa

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.

The uncertainties refer to the measured values only with no account being taken of the ability of the instrument to maintain its calibration.

A small correction factor may need to be applied to the sound pressure level quoted above if the device is used to calibrate a sound level meter which is fitted with a free-field response microphone. See manufacturers handbook for details.

______END

Note:

Calibrator adjusted prior to calibration? NO

Initial Level N/A dB

Initial Frequency N/A Hz

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

None

Calibrated by: B. Bogdan R 2