



Awel y Môr Offshore Wind Farm

Category 6: Environmental Statement

Volume 5, Annex 10.1: Calibration Certificates.

Date: April 2022

Revision: A

Application Reference: 6.5.10.1

Pursuant to: APFP Regulation 5(2)(a)



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www.awelymor.cymru

RWE Renewables UK
Swindon Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.rwe.com

Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon

AWEL Y MÔR OFFSHORE WIND FARM PROJECT

**Annex 10.1 of Volume 5, Chapter 10 – Sound Level
Meter Calibration Certificates**

Prepared for: RWE

Client Ref: 05356

SLR Ref: 406.05356.00009
Version No: 1
March 2022



BASIS OF REPORT

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Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

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1.0 Sound Level Meter and Calibrator Calibration Certificates

Presented below are the cover sheets for the calibration certificates for all the sound level meters and acoustic calibrators used throughout the project, all of which are traceable to national standards. Full certificates are available on request.

1.1 Cirrus CR:171B G079816 and CR:515 81268

CERTIFICATE OF CALIBRATION		  10148
ISSUED BY	Cirrus Research plc	
DATE OF ISSUE	07/01/21	CERTIFICATE NUMBER 151030

 Cirrus Research plc Acoustic House Bridlington Road Hunmanby North Yorkshire YO14 0PH United Kingdom	Page 1 of 15 Approved signatory T. Goodrich Electronically signed: 
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Sound level meter : IEC 61672-3:2013**Customer information**

Name: SLR Consulting Ltd	Address: Aspect House Aspect Business Park Bennerley Road Nottingham	Postcode: NG6 8WR Country: United Kingdom
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Instrument information

Manufacturer: Cirrus Research plc	Notes:
Model: CR:171B	
Serial number: G079816	
Class: 1	
Firmware version: V3.2.3046	

Test summary

Date of receipt: 07/01/21	Date of calibration: 07/01/21
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Periodic tests were performed in accordance with procedures from IEC 61672-3:2013.

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to determine that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Notes

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.

CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**DATE OF ISSUE **23/03/20**CERTIFICATE NUMBER **140471**

10148



Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 2

Approved signatory

T. Goodrich

Electronically signed:

Sound Calibrator : IEC 60942:2003

Customer information

Name: SLR Consulting Ltd

Address: Aspect House
Aspect Business Park
Bennerley Road
Nottingham

Postcode: NG6 8WR

Country: United Kingdom

Instrument information

Manufacturer: Cirrus Research plc

Notes:

Model: CR:515

Serial number: 81268

Class: 1

Pattern approval: Yes

Source of pattern approval: PTB-1.61-4028829

Test summary

Date of receipt: 18/03/20

Date of calibration: 23/03/20

As public evidence was available, from a testing organization 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.

Notes

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.

1.2 Cirrus CR:171B G080288 and CR:515 83349

CERTIFICATE OF CALIBRATION		 
ISSUED BY	Cirrus Research plc	
DATE OF ISSUE	22/06/20	CERTIFICATE NUMBER 142643

	Cirrus Research plc Acoustic House Bridlington Road Hunmanby North Yorkshire YO14 0PH United Kingdom	Page 1 of 15 Approved signatory C.Scott Electronically signed: 
---	---	--

Sound level meter : IEC 61672-3:2013**Customer information**

Name: SLR Consulting Ltd	Address: Aspect House Aspect Business Park Bennerley Road Nottingham	Postcode: NG6 8WR
		Country: United Kingdom

Instrument information

Manufacturer:	Cirrus Research plc	Notes:
Model:	CR:171B	
Serial number:	G080288	
Class:	1	
Firmware version:	V3.2.2690	

Test summary

Date of receipt:	22/06/20	Date of calibration:	22/06/20
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Periodic tests were performed in accordance with procedures from IEC 61672-3:2013.

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to determine that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Notes

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.

CERTIFICATE OF CALIBRATIONISSUED BY **Cirrus Research plc**DATE OF ISSUE **22/06/20**CERTIFICATE NUMBER **142631**

10148

**Cirrus Research plc**
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 2

Approved signatory

C.Scott

Electronically signed:

Sound Calibrator : IEC 60942:2003**Customer information**

Name: SLR Consulting Ltd

Address: Aspect House
Aspect Business Park
Bennerley Road
Nottingham

Postcode: NG6 8WR

Country: United Kingdom

Instrument information

Manufacturer: Cirrus Research plc

Notes:

Model: CR:515

Serial number: 83349

Class: 1

Pattern approval: Yes

Source of pattern approval: PTB-1.61-4028829

Test summary

Date of receipt: 22/06/20

Date of calibration: 22/06/20

As public evidence was available, from a testing organization 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.

Notes

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.

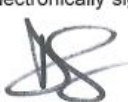
1.3 Cirrus CR:171B G300561 and CR:515 87922

CERTIFICATE OF CALIBRATION		
ISSUED BY	Cirrus Research plc	
DATE OF ISSUE	08/05/19	CERTIFICATE NUMBER 128673



Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 2

Test engineer:
D.Swalwell
Electronically signed:


Microphone

Microphone capsule

Manufacturer: Cirrus Research plc

Model: MK:224

Serial Number: 211655D

Calibration procedure

Date of calibration: 06 March 2019

Open circuit: 45.6 mV/Pa

Sensitivity at 1 kHz: -26.8 dB rel 1 V/Pa

The microphone capsule detailed above has been calibrated to the published data as described in the operating manual of the associated sound level meter (where applicable).

The frequency response was measured using an electrostatic actuator in accordance with BS EN 61094-6:2005 with the free-field response derived via standard correction data traceable to a National Measurement Institute.

The absolute sensitivity at 1 kHz was measured using an acoustic calibrator conforming to IEC 60942:2003 Class 1.

Environmental conditions

Pressure: 97.80 kPa

Temperature: 21.0 °C

Humidity: 41.0 %

CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**DATE OF ISSUE **20/07/20**CERTIFICATE NUMBER **143803**

10148



Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 2

Approved signatory

T. Goodrich

Electronically signed:

Sound Calibrator : IEC 60942:2003

Customer information

Name: SLR Consulting Ltd

Address: Aspect House
Aspect Business Park
Bennerley Road
Nottingham

Postcode: NG6 8WR

Country: United Kingdom

Instrument information

Manufacturer: Cirrus Research plc

Notes:

Model: CR:515

Serial number: 87922

Class: 1

Pattern approval: Yes

Source of pattern approval: PTB-1.61-4028829

Test summary

Date of receipt: 20/07/20

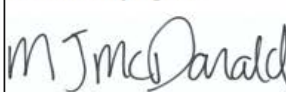
Date of calibration: 20/07/20

As public evidence was available, from a testing organization 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.

Notes

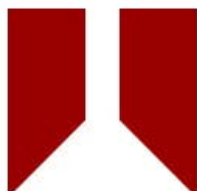
This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.

1.4 Cirrus CR:171B G301839 and CR:515 93674

CERTIFICATE OF CALIBRATION		
ISSUED BY	Cirrus Research plc	
DATE OF ISSUE	09 November 2020	CERTIFICATE NUMBER 148650
Cirrus Research plc Acoustic House Bridlington Road Hunmanby North Yorkshire YO14 0PH United Kingdom		
		Page 1 of 2
		Approved signatory M.McDonald Electronically signed: 
Sound Level Meter : IEC 61672-3:2013		
Instrument information		
Manufacturer:	Cirrus Research plc	
Model:	CR:171B	
Serial number:	G301839	
Class:	1	
Firmware version:	5.5.3021	
Test summary		
The calibration was performed respecting the requirements of ISO/IEC 17025:2017. Periodic tests were performed in accordance with procedures from IEC 61672-3:2013.		
The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to determine that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.		
Notes		

This certificate 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. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**DATE OF ISSUE **09 November 2020** CERTIFICATE NUMBER **148649****Cirrus Research plc**
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 2

Approved signatory

M.Berezovskis

Electronically signed:

Sound Calibrator : IEC 60942:2003

Instrument information

Manufacturer: Cirrus Research plc **Notes:****Model:** CR:515**Serial number:** 93674**Class:** 1

Test summary

The sound calibrator detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC 60942:2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK:224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer's data.

The manufacturer's product information indicates that this model of sound calibrator has been formally pattern approved to IEC 60942:2003 Annex A to Class 1. This has been confirmed with the Physikalisch-Technische Bundesanstalt (PTB).

As public evidence was available, from a testing organisation 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.

Notes:

This certificate 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. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

1.5 Cirrus CR:171B G302667 and CR:515 94806

CERTIFICATE OF CALIBRATION	
ISSUED BY	Cirrus Research plc
DATE OF ISSUE	09/03/21
CERTIFICATE NUMBER	153990





Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 15

Approved signatory
C.Scott

Electronically signed:


Sound level meter : IEC 61672-3:2013

Customer information

Name:	SLR Consulting Ltd	Address:	Aspect House Aspect Business Park Bennerley Road Nottingham	Postcode:	NG6 8WR
		Country:	United Kingdom		

Instrument information

Manufacturer:	Cirrus Research plc	Notes:	
Model:	CR:171B		
Serial number:	G302667		
Class:	1		
Firmware version:	V3.2.3046		

Test summary

Date of receipt: 09/03/21 Date of calibration: 09/03/21

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013.

The sound level meter submitted for testing successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to determine that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

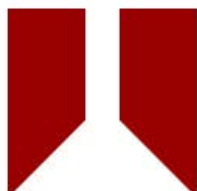
Notes

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.

CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**DATE OF ISSUE **09/03/21**CERTIFICATE NUMBER **153988**

10148



Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 2

Approved signatory

C.Scott

Electronically signed:

Sound Calibrator : IEC 60942:2003

Customer information

Name: SLR Consulting Ltd Address: Aspect House
Aspect Business Park
Bennerley Road
Nottingham

Postcode: NG6 8WR

Country: United Kingdom

Instrument information

Manufacturer: Cirrus Research plc

Notes:

Model: CR:515

Serial number: 94806

Class: 1

Pattern approval: Yes

Source of pattern approval: PTB-1.61-4028829

Test summary

Date of receipt: 09/03/21

Date of calibration: 09/03/21

As public evidence was available, from a testing organisation 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.

Notes

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.

1.6 Cirrus CR:171C G061698 and CR515 59336

CERTIFICATE OF CALIBRATION			
ISSUED BY	Cirrus Research plc		
DATE OF ISSUE	14/02/19	CERTIFICATE NUMBER	126191
		Cirrus Research plc Acoustic House Bridlington Road Hunmanby North Yorkshire YO14 0PH United Kingdom	
		Page 1 of 15	
		Approved signatory C.Scott Electronically signed: 	
Sound level meter : IEC 61672-3:2013			
Customer information			
Name:	SLR Consulting Ltd	Address:	Aspect House Aspect Business Park Bennerley Road Nottingham
Postcode:	NG6 8WR		
Country:	United Kingdom		
Instrument information			
Manufacturer:	Cirrus Research plc	Notes:	
Model:	CR:171C		
Serial number:	G061698		
Class:	1		
Firmware version:	292385		
Test summary			
Date of receipt:	14/02/19	Date of calibration:	14/02/19
Periodic tests were performed in accordance with procedures from IEC 61672-3:2013.			
The sound level meter submitted for testing successfully completed the class 1 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 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications in IEC 61672-1:2013			
Notes			
This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.			

CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**DATE OF ISSUE **21/12/20**CERTIFICATE NUMBER **150519**

10148



Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 2

Approved signatory

C.Scott

Electronically signed:

Sound Calibrator : IEC 60942:2003

Customer information

Name: SLR Consulting Ltd

Address: Aspect House
Aspect Business Park
Bennerley Road
Nottingham

Postcode: NG6 8WR

Country: United Kingdom

Instrument information

Manufacturer: Cirrus Research plc

Notes:

Model: CR:515

Serial number: 59336

Class: 1

Pattern approval: Yes

Source of pattern approval: PTB-1.61-4028829

Test summary

Date of receipt: 21/12/20

Date of calibration: 21/12/20

As public evidence was available, from a testing organization 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.

Notes

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. UKAS is one of the signatories to the Multilateral Agreement of the European co-operation for Accreditation (EA) for the mutual recognition of calibration certificates issued by accredited laboratories. The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates. 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. The results within this certificate relate only to the items calibrated. 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.

1.7 Rion NL-52 00331823 and NC-74 34336013



CERTIFICATE OF CALIBRATION



Date of Issue: 04 February 2021

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: UCRT21/1177

Page 1 of 2 Pages
Approved Signatory
K. Mistry

Customer SLR Consulting Limited
15 Middle Pavement
Nottingham
NG1 7DX

Order No. 403-12242

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

Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00331823
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	21774
	Rion	Microphone	UC-59	18250
	Rion	Calibrator	NC-74	34536109
		Calibrator adaptor type if applicable		NC-74-002

Performance Class 1

Test Procedure TP 2.SLM 61672-3 TPS-49

Procedures from IEC 61672-3:2006 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003

Date Received 03 February 2021

ANV Job No. UKAS21/02076

Date Calibrated 04 February 2021

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate	Dated	Certificate No.	Laboratory
	08 October 2020	UCRT20/1979	0653

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CERTIFICATE OF CALIBRATION



Date of Issue: 20 August 2020

Certificate Number: UCRT20/1793

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
B. Giles

Customer SLR Consulting Limited
15 Middle Pavement
Nottingham
NG1 7DX

Order No. 403-12010

Test Procedure Procedure TP 1 Calibration of Sound Calibrators

Description Acoustic Calibrator

Identification	Manufacturer	Instrument	Model	Serial No.
	Rion	Calibrator	NC-74	34336013

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. UKAS20/08453

Date Received 19 August 2019

Date Calibrated 20 August 2020

Previous Certificate

Dated	30 July 2019
Certificate No.	UCRT19/1842
Laboratory	0653

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1.1 Rion NL-52 00710358, NL-52 00710359 and NC-74 34713324

RW1



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 05 October 2021 **Certificate Number: UCRT21/2222**

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
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Approved Signatory



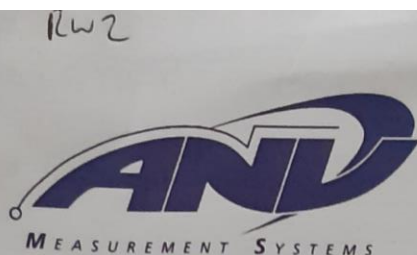
B. Giles

Customer	SLR Consulting Limited 2nd and 3rd Floors 15 Middle Pavement Nottingham NG1 7DX			
Order No.	422-17278			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	<i>Manufacturer</i>	<i>Instrument</i>	<i>Type</i>	<i>Serial No. / Version</i>
	Rion	Sound Level Meter	NL-52	00710358
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	10900
	Rion	Microphone	UC-59	19632
	Rion	Calibrator	NC-75	34713324
		Calibrator adaptor type if applicable		NC-75-022
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	05 October 2021	ANV Job No.	UKAS21/10653	
Date Calibrated	05 October 2021			

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>
	Initial Calibration		

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CERTIFICATE OF CALIBRATION



0653

Date of Issue: 05 October 2021**Certificate Number: UCRT21/2223**

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
B. Giles

Customer SLR Consulting Limited
2nd and 3rd Floors
15 Middle Pavement
Nottingham
NG1 7DX

Order No. 422-17278

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

Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00710359
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	10901
	Rion	Microphone	UC-59	19633
	Rion	Calibrator	NC-75	34713324
		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 05 October 2021

ANV Job No. UKAS21/10653

Date Calibrated 05 October 2021

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
	Initial Calibration		

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RW CAL



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 05 October 2021**Certificate Number: UCRT21/2215**

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
B. Bogdan

Customer SLR Consulting Limited
2nd and 3rd Floors
15 Middle Pavement
Nottingham
NG1 7DX

Order No. 422-17278

Test Procedure Procedure TP 14 Calibration of Sound Calibrators (60942:2017)

Description Acoustic Calibrator

Identification	Manufacturer	Instrument	Model	Serial No.
	Rion	Calibrator	NC-75	34713324
Public evidence of Type Approval	Yes	Approved by	PTB	

The calibrator has been tested as specified in Annex B of IEC 60942:2017. As public evidence was available, from a testing organisation 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 60942:2017, the sound calibrator tested is considered to conform to all the class 1 requirements of IEC 60942:2017.

ANV Job No. UKAS21/10653

Date Received 05 October 2021

Date Calibrated 05 October 2021

Previous Certificate Dated Initial Calibration
Certificate No.
Laboratory

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EUROPEAN OFFICES

United Kingdom

AYLESBURY

T: +44 (0)1844 337380

BELFAST

belfast@slrconsulting.com

BRADFORD-ON-AVON

T: +44 (0)1225 309400

BRISTOL

T: +44 (0)117 906 4280

CARDIFF

T: +44 (0)29 2049 1010

CHELMSFORD

T: +44 (0)1245 392170

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

LONDON

T: +44 (0)203 805 6418

MAIDSTONE

T: +44 (0)1622 609242

MANCHESTER (Denton)

T: +44 (0)161 549 8410

MANCHESTER (Media City)

T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE

T: +44 (0)191 261 1966

NOTTINGHAM

T: +44 (0)115 964 7280

SHEFFIELD

T: +44 (0)114 245 5153

SHREWSBURY

T: +44 (0)1743 23 9250

STIRLING

T: +44 (0)1786 239900

WORCESTER

T: +44 (0)1905 751310

Ireland

DUBLIN

T: + 353 (0)1 296 4667

France

GRENOBLE

T: +33 (0)6 23 37 14 14



RWE Renewables UK
Swindon Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.rwe.com

Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon