

Appendix 13B

Noise Survey Details & Calibration Certs

Appendix 13B - Noise Survey Details and Calibration Certs

Summary of Noise Instrumentation Used:

Location	Equipment	Model	Serial Number
NML 1	Sound Level Meter	Type 2250L	3024283
	Outdoor Microphone Kit	EH2152_90	2788792
NML 2	Sound Level Meter	Type 2250L	2654662
	Outdoor Microphone Kit	1404	2737145
NML 3	Sound Level Meter	Type 2250L	3001350
	Outdoor Microphone Kit	1404	2745850
NML 4	Sound Level Meter	Type 2250L	3001456
	Outdoor Microphone Kit	1404	2585952
NML 5	Sound Level Meter	Type 2250	3010911
	Outdoor Microphone Kit	1404	2415424
NML 6	Sound Level Meter	Type 2250	2567756
	Outdoor Microphone Kit	EH2152_90	3037375
All	Acoustic Calibrator	Type 4231	

Personnel:

David Courtney, BEng, MIOA (Acoustic Consultant) graduated with a BEng. in Mechatronic Engineering from DCU in 2017 and qualified with IOA Diploma in Acoustics and Noise Control (2019) & Certificate in Environmental Noise Measurements (2017). David undertakes all types of noise and vibration surveys in relation to wind turbines planning and compliance, IPPC & IE compliance, BS4142, BS5228 and BS8233 assessments, traffic noise, construction, building acoustics and occupational assessments. He also manages a team of survey engineers and provides technical support to consultants. He has considerable expertise in the assessment of wind turbine noise and conducted many similar impact assessments for EIARs.

Aishaani Sharma, (Junior Consultant) graduated with an MSc in Environmental Science from Trinity College in 2024 and holds a BSc (Hons.) in Biotechnology and qualified with IOA Certificate in Environmental Noise Measurements (2024). Since starting with Enfonc in May 2024 she has undertaken many noise surveys including baseline surveys in relation to wind farms. She provides expertise in relation to impacts on biodiversity and has

Calibration Certificates:

Brüel & Kjær 

The Calibration Laboratory
Næstvedvej 367, DK-2650 Næstved, Denmark

 **DANAK**
UK Reg. No. 201

 **DANAK**
UK Reg. No. 201

CERTIFICATE OF CALIBRATION

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250-1-jht
Microphone: Brüel & Kjær Type 4950
Preamplifier: Brüel & Kjær Type ZC-0032
Supplied Calibrator: None
Software version: BZ7130 Version 4.7.4
Instruction manual: BE1712-22

No: CDK2208984

Id: -
No: 3005134
No: N/A

Pattern Approval: PTB1.63-40478500 / 1.63-4078502

Page 1 of 12

CUSTOMER

Enfonc Limited
Unit 9B, Swords Enterprise Park
Swords
Co. Dublin
Ireland
KT67 YX37

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C
Environment conditions: See actual values in *Environmental conditions* sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC 61672-1:2013 class 1. Procedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC 61672:2013)

RESULTS

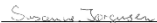
Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2024-03-21


Mikal Önder
Calibration Technician

Date of issue: 2024-03-21


Susanne Jørgensen
Approved Signatory

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

Brüel & Kjær 

The Calibration Laboratory
Næstvedvej 367, DK-2650 Næstved, Denmark

 **DANAK**
UK Reg. No. 201

 **DANAK**
UK Reg. No. 201

CERTIFICATE OF CALIBRATION

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 Light
Microphone: Brüel & Kjær Type 4950
Preamplifier: Brüel & Kjær Type ZC-0032
Supplied Calibrator: None
Software version: BZ7222 Version 4.7.5
Instruction manual: BE1712-22

No: CDK2408942

Id: - 2654662
No: 3005134
No: 6822

Pattern Approval: PTB1.63-40478500 / 1.63-4078502

Page 1 of 12

CUSTOMER

Enfonc Ltd
Unit B9, Swords Enterprise Park
Felltrim Road
Co. Dublin
K97 YX07
Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C
Environment conditions: See actual values in *Environmental conditions* sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC 61672-1:2013 class 1. Procedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC 61672:2013)

RESULTS

Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2024-02-22


Morten Høeghild Hansen
Calibration Technician

Date of issue: 2024-02-22


Susanne Jørgensen
Approved Signatory

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

CERTIFICATE OF CALIBRATION

No: CDK2306566

Page 1 of 12

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 Light No: 3001350 Id: -
Microphone: Brüel & Kjær Type 4189 No: 3022867
Preamplifier: Brüel & Kjær Type ZC-0032 No: 23775
Supplied Calibrator: None
Software version: BZ7222 Version 4.7.5 Pattern Approval: PTB1.63-40478500 / 1.63-4078502
Instruction manual: BE1712-22

CUSTOMER

Enfonic Ltd
Unit 2A, Century Business Park
Dublin
D11 TOHV
Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C
Environment conditions: See actual values in *Environmental conditions* sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Procedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

RESULTS

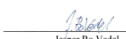
Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-402 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2023-08-22

Date of issue: 2023-08-22


Morten Høngdal Hansen
Calibration Technician


Jesper Bo Vedel
Approved Signatory

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

CERTIFICATE OF CALIBRATION

No: CDK2300322

Page 1 of 12

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 Light No: 3001456 Id: -
Microphone: Brüel & Kjær Type 4950 No: 278950
Supplied Calibrator: None
Software version: BZ7222 Version 4.7.5 Pattern Approval: PTB1.63-40478500 / 1.63-4078502
Instruction manual: BE1712-22

CUSTOMER

Enfonic Ltd
Unit 2A, Century Business Park
Dublin
D11 TOHV
Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C
Environment conditions: See actual values in *Environmental conditions* sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Procedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

RESULTS

Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-402 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2023-01-24

Date of issue: 2023-01-24


Morten Høngdal Hansen
Calibration Technician


Jesper Bo Vedel
Approved Signatory

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

CERTIFICATE OF CALIBRATION

No: CDK2207546

Page 1 of 12

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 No: 3010911 Id: -
Microphone: Brüel & Kjær Type 4189 No: 2846376
Preamplifier: Brüel & Kjær Type ZC-0032 No: 6822
Supplied Calibrator: None
Software version: BZ7222 Version 4.5.2 Pattern Approval: PTB1.63-40478500 / 1.63-4078502
Instruction manual: BE1712-22

CUSTOMER

Enfonic Limited
Unit 9B, Swords Enterprise Park
Swords
Co. Dublin
Ireland
KT67 YX37

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C
Environment conditions: See actual values in *Environmental conditions* sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Procedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

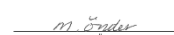
RESULTS

Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-402 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2024-05-18

Date of issue: 2024-05-18


Mikail Oslar
Calibration Technician


Susanne Jørgensen
Approved Signatory

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

CERTIFICATE OF CALIBRATION

No: CDK2206458

Page 1 of 12

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 No: 2587756 Id: -
Microphone: Brüel & Kjær Type 4189 No: 2170482
Preamplifier: Brüel & Kjær Type ZC-0032 No: 3418
Supplied Calibrator: None
Software version: BZ7222 Version 4.5.2 Pattern Approval: PTB1.63-40478500 / 1.63-4078502
Instruction manual: BE1712-22

CUSTOMER

Enfonic Limited
Unit 9B, Swords Enterprise Park
Swords
Co. Dublin
Ireland
KT67 YX37

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C
Environment conditions: See actual values in *Environmental conditions* sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Procedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

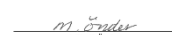
RESULTS

Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-402 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2024-03-29

Date of issue: 2024-03-29


Mikail Oslar
Calibration Technician


Susanne Jørgensen
Approved Signatory

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

Certificate of Calibration Issued by University of Salford (Acoustic Calibration Laboratory) UKAS ACCREDITED CALIBRATION LABORATORY NO. 0801		
Page 1 of 2		
APPROVED SIGNATORIES Claire Lomax [] Sean Furlong [] Harry Bulger [x] Daniel Wong-McSweeney []		 University of Salford MANCHESTER
acoustic calibration laboratory The University of Salford, Salford, Greater Manchester, M6 4WT, UK http://www.acoustic.salford.ac.uk t: 0161 295 3030/0161 295 3319 f: 0161 295 4456 e: clomax1@salford.ac.uk		

Certificate Number: 06447/1 Date of Issue: 19 October 2023

CALIBRATION OF A SOUND CALIBRATOR

FOR: Enfonic Ltd
Unit 2A
Century Business Park
Dublin
D11 T0HV

FOR THE ATTENTION OF: Ivan Ryan

DESCRIPTION: Calibrator with housing for one-inch microphones and adaptor type UC 0210 for half-inch microphones.

MANUFACTURER: B&K

TYPE: 4231

SERIAL NUMBER: 2343370

DATE RECEIVED: 13 October 2023

DATE OF CALIBRATION: 18 October 2023

LOCATION OF CALIBRATION: Acoustic Calibration Laboratory,
Newton G31, University of Salford.

TEST PROCEDURE: CTP06 (Laboratory Manual)

Test Engineer (initial): GP Name: Gary Phillips

Results in this certificate relate only to instruments tested.

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 the 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.

Noise Survey Photos:

NML 1
 A photograph showing a noise measurement setup at NML 1. A black fence runs across the middle ground. To the left of the fence, on a gravel path, there is a small black sound level meter on a tripod and a blue equipment case. The background features a line of trees and a blue sky with scattered white clouds.
NML 2
 A photograph showing a noise measurement setup at NML 2. A black fence runs across the middle ground. In the foreground, on a gravel path, there is a solar panel connected to a small black sound level meter on a tripod. The background shows a grassy field, trees, and a blue sky with clouds.

NML 3



NML 4



NML 5



NML 6

