

**APPENDIX
A12.1**

**BACKGROUND
NOISE
MONITORING
EQUIPMENT**

Campbell Associates Ltd
 5b Chelmsford Road Industrial Estate
 GREAT DUNMOW, Essex, CM6 1HD
 www.campbell-associates.co.uk
 Phone 01371 871030 Facsimile 01371879106



Certificate of Calibration

Certificate number: U5681

CALIBRATION

0789

Test object : Sound Level Meter
 Manufacturer: Norsonic
 Type : 118
 Serial no: 31357



COPY

Customer: Campbell Associates Ltd
 Hire Fleet
 Sonitus House, 5b Chelmsford Road Industrial Estate,
 Great Dunmow, Essex CM6 1HD
 Contact name: Mr David Egan, Laboratory Manager
 Contact telephone: 01371 871 030

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures TP01 & 2 as appropriate

The following items have been tested according to IEC 60651

	Producer:	Type:	Serial No:	Certificate number
Microphone	GRAS	40AF	73340	5680
Calibrator*	Norsonic	1251	31824	U4592
Preamplifier	Norsonic	1208	30392	Included

Additional items that also have been submitted for verification

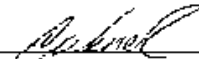
Wind shield Norsonic Nor1451 (ø 60mm)
 Attenuator None

These items have been taken into account wherever appropriate.

Environmental conditions:	Pressure :	Temperature :	Relative humidity :
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions :	100.271 kPa	24.1 °C	53 %RH

Date received : 24/08/2009
 Date of calibration: 24/08/2009
 Date of issue: 01/09/2009

Engineer


 Michael Tickner

Supervisor


 Darren Baften TechIOA

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* The calibrator was complete with any required coupler for the microphone specified

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Certificate of Calibration

Certificate number: U5653

CALIBRATION

0789

Test object : Sound Level Meter
Manufacturer: Norsonic
Type : 118
Serial no: 28858

 **COPY**

Customer: Campbell Associates Ltd
Hire Fleet
Sonitus House, 5b Chelmsford Road Industrial Estate,
Great Dunmow, Essex CM6 1HD
Contact name: Mr David Egan, Laboratory Manager
Contact telephone: 01371 871 035

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures TP01 & 2 as appropriate.

The following items have been tested according to IEC 60651

	Producer	Type	Serial No:	Certificate number
Microphone	Norsonic	1225	79709	5650
Calibrator*	Norsonic	1251	31824	U4592
Preamplifier	Norsonic	1206	28639	Included

Additional items that also have been submitted for verification

Wind shield Norsonic Nor1451
Attenuator None

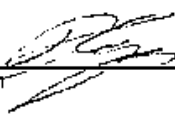
These items have been taken into account wherever appropriate.

Environmental conditions:	Pressure :	Temperature :	Relative humidity :
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions :	100.923 kPa	24.2 °C	52 %RH

Date received : 19/08/2009
Date of calibration: 19/08/2009
Date of issue: 24/08/2009
Engineer


Darren Ballen Tech IOA

Supervisor


David Egan

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* The calibrator was complete with any required coupler for the microphones specified

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Certificate of Calibration

Certificate number: U5112

CALIBRATION

0789

Test object : Sound Level Meter
Manufacturer: Norsonic
Type : 118
Serial no: 28955

 COPY

Customer: Campbell Associates Ltd
Hire Fleet
Sonitus House, 5b Chelmsford Road Industrial Estate
Great Dunmow, Essex, CM6 1HD
Mr David Egan - Laboratory Manager
Order no.: Schedule

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures TP01 & 2 as appropriate.

The following items have been tested according to BS 7580, Part 1, 1997

	Producer:	Type:	Serial No:	Certificate number
Microphone	Norsonic	1225	33192	5114
Calibrator*	Norsonic	1251	31824	U4592
Preamplifier	Included preamp			

Additional items that also have been submitted for verification

Wind shield	Norsonic	Nor1451
Attenuator	None	

Environmental conditions:	Pressure :	Temperature :	Relative humidity :
Reference conditions:	101,325 kPa	23,0 °C	50 %RH
Measurement conditions :	101,039 kPa	24,3 °C	36,4 %RH

Date received :	01/05/2009
Date of calibration:	05/05/2009
Date of issue:	06/05/2009

Engineer



Michael Tickner

Supervisor



Ian Campbell MSc MIOA

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* The calibrator was complete with any required coupler for the microphone specified

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Certificate of Calibration

Certificate number: U5494 CALIBRATION 0789

Test object: Sound Level Meter
 Manufacturer: Norsonic
 Type: 118
 Serial no: 28912



Customer: Campbell Associates Ltd
 Hire Fleet
 Sonitus House, 5b Chelmsford Road Industrial Estate,
 Great Dunmow, Essex CM6 1HD
 Contact person: David Egan, Laboratory Manager
 01371 871 030

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures TP01 & 2 as appropriate.

The following items have been tested according to BS 7580, Part 1, 1997

	Producer:	Type:	Serial No:	Certificate number
Microphone	GRAS	40AF	32975	5472
Calibrator*	Norsonic	1251	31824	U4592
Preamplifier	Norsonic	1206	28656	Included

Additional items that also have been submitted for verification

Wind shield	Norsonic	Nor1451 (ø 60mm)
Attenuator	None	

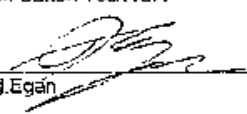
These items have been taken into account wherever appropriate.

Environmental conditions:	Pressure:	Temperature:	Relative humidity:
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions:	99.775 kPa	24.4 °C	52.7 %RH

Date received: 16/07/2009
 Date of calibration: 23/07/2009
 Date of issue: 27/07/2009
 Engineer


 Darren Batten Tech IOA

Supervisor:


 David Egan

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* The calibrator was complete with any required coupler for the microphone specified

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Certificate of Calibration

Certificate number: U5535 CALIBRATION 0789

Test object : Sound Level Meter
Manufacturer: Norsonic
Type : 118
Serial no: 31708

 **COPY**

Customer: Campbell Associates Ltd
Hire Fleet
Sonitus House, 5b Chelmsford Road Industrial Estate,
Great Dunmow, Essex CM6 1HD
Contact Person: Mr David Egan, Laboratory Manager

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures IP01 & 2 as appropriate.

The following items have been tested according to IEC 60551

	Producer:	Type:	Serial No:	Certificate number
Microphone	Norsonic	1225	68838	5534
Calibrator*	Norsonic	1251	31824	U4502
Preamplifier	Norsonic	1206	30752	Included


Additional items that also have been submitted for verification

Wind shield Norsonic No:1451 (ø 60mm)
Attenuator None

These items have been taken into account wherever appropriate.

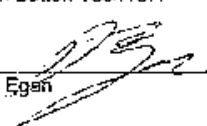
Environmental conditions:	Pressure :	Temperature :	Relative humidity :
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions :	101.562 kPa	23.7 °C	43 %RH

Date received : 30/07/2009
Date of calibration: 31/07/2009
Date of issue: 31/07/2009
Engineer



Darren Batten Tech IOA

Supervisor



David Egan

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* The calibrator was complete with any required coupler for the microphone specified.

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Certificate of Calibration

Certificate number: U5500 **CALIBRATION** 0789

Test object : Sound Level Meter
Manufacturer: Norsonic
Type : 118
Serial no: 30550

Customer: Campbell Associates Ltd
Hire Fleet
Sonitus House, 5b Chelmsford Road Industrial Estate,
Great Dunmow, Essex CM6 1HD
Contact Person: David Egan, Laboratory Manager
01371 871 030

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures TP01 & 2 as appropriate.

The following items have been tested according to BS 7580, Part 1, 1997

	Producer:	Type:	Serial No:	Certificate number
Microphone	GRAS	40AF	32977	5499
Calibrator*	Norsonic	1251	31824	U4592
Preamplifier	Norsonic	1206	30237	Included

Additional items that also have been submitted for verification


Wind shield	Norsonic	Nori451 (ø 60mm)
Attenuator	None	

These items have been taken into account wherever appropriate.


Environmental conditions:	Pressure :	Temperature :	Relative humidity :
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions :	100.452 kPa	23.4 °C	47.4 %RH

Date received : 23/07/2009
Date of calibration: 24/07/2009
Date of issue: 27/07/2009

Engineer


Darren Batten Tech IOA

Supervisor


David Egan

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* The calibrator was complete with any required coupler for the microphone specified

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Certificate of Calibration

Certificate number: U5506

CALIBRATION

0789

Test object : Sound Level Meter
Manufacturer: Norsonic
Type : 118
Serial no: 30537



COPY

Customer: Campbell Associates Ltd
Hire Fleet
Sonitus House, 5b Chelmsford Road Industrial Estate,
Great Dunmow, Essex CM6 1HD
Contact Person: David Egan, Laboratory Manager
01371 871 030

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures TP01 & 2 as appropriate.

The following items have been tested according to BS 7580, Part 1, 1997

	Producer:	Type	Serial No.	Certificate number
Microphone	Norsonic	1225	40868	5505
Calibrator*	Norsonic	1251	31824	U4592
Preamplifier	Norsonic	1205	30226	Included

Additional items that also have been submitted for verification

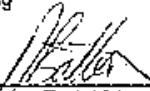
Wind shield Norsonic Nor1451 (ø 60mm)
Attenuator None

These items have been taken into account wherever appropriate.


Environmental conditions:	Pressure :	Temperature :	Relative humidity :
Reference conditions	101.325 kPa	23.0 °C	50 %RH
Measurement conditions :	100.452 kPa	23.4 °C	47.4 %RH

Date received : 24/07/2009
Date of calibration: 24/07/2009
Date of issue: 27/07/2009

Engineer


Darren Batten Tech IOA

Supervisor


David Egan

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* The calibrator was complete with any required coupler for the microphone specified

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Phone 01371 871030 Facsimile 01371879106



Certificate of Calibration

Certificate number: U5365 CALIBRATION 0789

Test object : Sound Level Meter
Manufacturer: Norsonic
Type : 118
Serial no: 28952
Customer: Campbell Associates Ltd
Hire Fleet
Sonitus House, 5b Chelmsford Road Industrial Estate,
Great Dunmow, Essex CM6 1HD
01371 871 030
Contact Person: Mr David Egan, Laboratory Manager

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures TP01 & 2 as appropriate.

	Producer:	Type:	Serial No:	Certificate number
Microphone	Norsonic	1225	29913	5364
Calibrator*	Norsonic	1251	31824	U4592
Preamplifier	Norsonic	1206	30575	Included


Additional items that also have been submitted for verification

Wind shield	Norsonic	Nor1451
Attenuator	None	


These items have been taken into account wherever appropriate.

Environmental conditions:	Pressure :	Temperature :	Relative humidity :
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions :	100.516 kPa	23.2 °C	55 %RH

Date received : 18/06/2009
Date of calibration: 26/06/2009
Date of issue: 08/07/2009
Engineer


Darren Batten Tech IOA

Supervisor


Mr David Egan

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* The calibrator was complete with any required coupler for the microphone specified

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Phone 01371 871030 Facsimile 01371879106



Certificate of Calibration

Certificate number: U4264

CALIBRATION

0789

Test object: Sound Level Meter
Manufacturer: Norsonic
Type: 118
Serial no: 31735

 **COPY**

Customer: Campbell Associates Ltd
Hire Fleet
Sonitus House, 5b Chelmsford Road Industrial Estate
Great Dunmow, Essex, CM6 1HD
Mr Darren Batten Tech/OA
Order no.: Schedule

Method of Calibration

Calibration has been performed as set out in the CA Technical procedures TP01 & 2 as appropriate.

The following items have been tested according to BS 7580, Part 1, 1997

	Producer:	Type:	Serial No:
Microphone	Norsonic	1225	62640
Calibrator*	Norsonic	1251	31824
Preamplifier	Norsonic	1206	30767

Additional items that also have been submitted for verification

Wind shield	Norsonic	Nor1451 (ø 60mm)
Attenuator	None	

Environmental conditions:	Pressure :	Temperature :	Relative humidity :
Reference conditions:	101,325 kPa	23,0 °C	50 %RH
Measurement conditions :	99,059 kPa	21,7 °C	56,7 %RH

Date received : 02/09/2008
Date of calibration: 04/09/2008
Date of issue: 31/10/2008
Engineer

Supervisor

David Egan

Ian Campbell MSc MIOA

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* The calibrator was complete with any required coupler for the microphone specified