

CERTIFICATE OF CALIBRATION

N/A

FOR BRÜEL & KJÆR HANDHELD ANALYZER

Model **2250** Serial No. **XXX**
ID No. **N/A**
With Microphone **4189** Serial No. **XXX**
With Preamplifier **ZC0032** ID No. **N/A**
Customer: **Odin Metrology, Inc.** P.O. No. **N/A**
Thousand Oaks, CA 91320

was tested and met factory specifications at the points tested.

Complies to:

IEC 61672:2002 Class 1

on **19 JAN 2012**

BY **HAROLD LYNCH**
Service Manager

As received condition: Within Specification.

Re-calibration due on: **19 JAN 2013**

Certified References*

<u>Mfg.</u>	<u>Type</u>	<u>Serial No.</u>	<u>Cal Date</u>	<u>Due Date</u>
B&K	1049	1288946	07 NOV 2011	07 NOV 2012
B&K	2636	1601487	23 MAY 2012	23 MAY 2013
B&K	4226	1774068	15 MAR 2012	15 MAR 2013
B&K	4231	2094472	28 FEB 2012	28 FEB 2013
HP	34401A	MY41031678	30 DEC 2011	30 DEC 2012
HP	3458A	2823A17713	17 JUL 2012	17 JUL 2013

Performed in Compliance with ANSI, NCSL Z-540-1, 1994 and ISO 17025,
ISO 9001:2008 Certification NQA No. 11252

*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.

The data represent both "as found" and "as left" conditions.

Reference Test Procedure: **ACCT Procedure 2250-Light-2270 Ver. 2.3.2**

Temperature 23°C	Relative Humidity 28%	Barometric Pressure 993.57 hPa
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Note: This calibration report shall not be reproduced, except in full, without written consent by Odin Metrology, Inc..

Signed:

ODIN METROLOGY, INC.

CALIBRATION OF BRÜEL & KJÆR INSTRUMENTS
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Calibration data for
Brüel & Kjær Handheld Analyzer
Type 2250# XXX, ID# N/A
With Preamplifier ZC0032# XXX and Microphone 4189# XXX
Performed on January 19, 2012
for
Odin Metrology, Inc.

PO#: N/A
Certificate#: N/A
Calibration performed by: HL.

Environmental Conditions
Relative humidity: 28%
Ambient temperature: 23°C
Ambient pressure: 993.57 hPa

The following calibration was performed per ACCT Procedure 2250-Light-2270 Version 2.3.2.
The data represent both the "As Found" and the "As Left" conditions.

Page No.	Test	IEC Section	Result
Sound Level Meter (IEC 61672 Class 1)			
2	Internal Clock	Reference Only	See Data
2	Sensitivity Verification with Acoustic Calibrator	3 § 9	See Data
2	Acoustic Frequency Response with Microphone	3 § 11	Pass
2	Self-Generated Noise	3 § 10	See Data
3	Output Impedance with Shorted Output	2 § 9.18	Pass
3	AC Full Scale Output Voltage	Reference Only	See Data
3	DC Full Scale Output Voltage	Reference Only	See Data
3	Reset	2 § 9.17	Pass
3	Overload Indication	3 § 18	Pass
4	DC Linearity	Reference Only	See Data
4	Peak-C Sound Level	3 § 17	Pass
4	Decay Time Constants for Time Weightings Fast and Slow	2 § 9.11	Pass
5	Difference in Indication	3 § 13	Pass
	Frequency Response	3 § 12	
5	A-Weighted		Pass
6	C-Weighted		Pass
7	Z-Weighted		Pass
	Single Toneburst Response - Fast Time Weighting	3 § 16	
8	A-Weighted		Pass
8	C-Weighted		Pass
9	Z-Weighted		Pass
	Single Toneburst Response - Slow Time Weighting	3 § 16	
9	A-Weighted		Pass
9	C-Weighted		Pass
10	Z-Weighted		Pass
10	SEL Response to Repeated Tonebursts	1 § 5.9	Pass
11	Level Linearity	3 § 14, 1 § 5.5.6	Pass
RTA Octave Filter (IEC 61260 Class 0)			
	Level Verification of Filter+SLM	Reference Only	
13	1/1 Octave		Pass
13	1/3 Octave		Pass
	Filter Check	Reference Only	
14	1/1 Octave		Pass
14	1/3 Octave		Pass
15	Relative Attenuation	61260 § 5.3	Pass

The expanded uncertainties stated in this document are the maximum expanded uncertainties permitted by IEC 61672-1. Odin Metrology's actual expanded uncertainties are less than or equal to the values stated herein.

Internal Clock

Date and time are transferred from SLM, then the SLM date and time are set according to Odin Metrology's clock and the date and time are transferred from the SLM a second time. Time zones (with minor simplifications) and DST are obeyed.

Local Date/Time: Date and time according to Odin Metrology's clock (Pacific Standard Time) at the time of the clock setting

Location: US state or other location for which the SLM clock is set (some time zone simplifications are made)

UTC Offset: UTC offset for the given location

Daylight Saving Time: whether DST is currently observed for the given location

SLM Clock Before Set: readouts of the SLM's system date and time before any changes are made

SLM Clock After Set: readouts of the SLM's system date and time after setting

Local (Pacific Standard Time)		Location	UTC Offset (Hr:Min)	Daylight Saving Time	SLM Clock Before Set		SLM Clock After Set	
Date	Time				Date	Time	Date	Time
1/18/2012	10:55:44 AM	California	-8:00	No	1/18/2012	10:55:32 AM	1/18/2012	10:55:48 AM

Sensitivity Verification with Acoustic Calibrator (IEC 61672-3 § 9)

A sound level calibrator is mounted on the sound level meter and the internal calibration is started. The SLM indication is recorded before and after calibration.

Calibrator Frequency: the frequency of the signal generated by the sound level calibrator

Calibrator SPL: the SPL of the signal generated by the sound level calibrator

SLM SPL Before: SLM indication before internal calibration sequence

SLM SPL After: SLM indication after internal calibration sequence (note: ideal value is 93.85 dB due to free-field correction of 0.15 dB)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Performed with microphone 4189# XXX, preamplifier ZC0032# XXX, and calibrator 4231# 2094472.

Calibrator Frequency (Hz)	Calibrator SPL (dB)	SLM SPL Before (dB)	SLM SPL After (dB)	Uncertainty (dB)
1,000.0	94.0	93.85	93.85	0.40

Acoustic Frequency Response with Microphone (61672-3 § 11)

The acoustical frequency response is tested using a multifunction acoustical calibrator type 4226 in C frequency weighting. If a windscreen is used, these data are to be corrected.

Frequency: the frequency of the signal to the sound level meter (frequency of 4226 multifunction acoustic calibrator)

Data Found: the value the sound level meter actually indicates (this is a pressure measurement)

FF Corr: free-field correction (plus microphone's pressure response) for microphone to be added to displayed SLM (pressure) value

Corrected Response: SLM's reading plus the correction indicated

Nominal Value: what the sound level meter should indicate according to IEC 61672

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate according to IEC 61672

Uncertainty: maximum expanded uncertainty of measurement according to IEC with approximately 95% confidence level (coverage factor

Deviation: the difference between the nominal value and the data found

Performed with microphone 4189# XXX, preamplifier ZC0032# XXX, and calibrator 4226# 2141942.

Frequency (Hz)	Data	FF Corr. (dB)	Corrected Response (dB)	Nominal Value (dB C)	Tolerance (dB)		Uncertainty (dB)	Deviation (dB)	Pass/Fail
	Found (dB C)				Minimum	Maximum			
31.5	91.09	0.00	91.09	90.99	89.49	92.49	0.50	0.10	Pass
63.0	93.17	0.00	93.17	93.18	92.18	94.18		-0.01	Pass
125.0	93.77	0.00	93.77	93.83	92.83	94.83		-0.06	Pass
250.0	93.94	0.00	93.94	94.00	93.00	95.00	0.40	-0.06	Pass
500.0	93.95	0.00	93.95	94.03	93.03	95.03		-0.08	Pass
1,000.0	Reference								
2,000.0	93.62	0.36	93.98	93.83	92.83	94.83	0.60	0.15	Pass
4,000.0	92.44	1.21	93.65	93.18	92.18	94.18		0.47	Pass
8,000.0	88.18	3.62	91.80	90.99	88.49	92.49	1.00	0.81	Pass
12,500.0	82.01	6.51	88.52	87.76	82.76	89.76		0.76	Pass
16,000.0	78.25	7.59	85.84	85.47	69.47	87.97		0.37	Pass

Self-Generated Noise (61672-3 § 10)

For A-weighting, the noise is measured with the microphone installed and an acoustic chamber on the microphone which eliminates ambient noise. For C- and Z-weighting, the input is terminated with a shorted dummy microphone of equal capacitance.

Frequency Weighting: the frequency weighting setting on the sound level meter

Typical Noise: the typical self-generated noise level according to the manufacturer

Data Found: the 30-second Leq value the sound level meter indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Frequency Weighting	Typical Noise (dB)	Data Found (dB)	Uncertainty (dB)
A	16.60	12.90	0.003
C	12.90	14.04	
Z	25.50	19.18	

Output Impedance with Shorted Output (61672-2 § 9.18)

A reference signal is applied to the sound level meter and the outputs are shorted. The indicated level may not be affected by more than the specified tolerance.

Frequency: the frequency of the signal to the sound level meter

Input Level: the level (amplitude) of the signal to the sound level meter

Nominal Value: the value the sound level meter should indicate

Tolerance: the acceptable difference from nominal, including the stated uncertainty, for what the sound level meter should indicate according

Data Found: the value the sound level meter actually indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Frequency (kHz)	Input Level (dB)	Nominal Value (dB)	Tolerance (\pm dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
1.0	94.0	94.0	0.10	94.00	0.10	0.00	Pass

AC Full Scale Output Voltage

The sound level meter is set up to indicate full-scale on the display and the AC output is measured. Input frequency is 1,000 Hz.

SPL Reading: the input to the sound level meter is adjusted so that it indicates this full-scale value

Data Found: the value the sound level meter actually indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

SPL Reading (dB)	Data Found (mV)	Uncertainty (mV)
139.99	4260.13	0.10

DC Full Scale Output Voltage

The sound level meter is set up to indicate full-scale on the display and the DC output is measured. Input frequency is 1,000 Hz.

SPL Reading: the input to the sound level meter is adjusted so that it indicates this full-scale value

Data Found: the value the sound level meter actually indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

SPL Reading (dB)	Data Found (mV)	Uncertainty (mV)
140.02	2818.36	0.10

Reset (IEC 61672-2 § 9.17)

It is verified that the display resets after pressing the reset button on the SLM. The initial input level is FSD.

Before: displayed value before pressing the reset key

After: displayed value after pressing the reset key

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Before (dB)	After (dB)	Tolerance (< dB)	Uncertainty (dB)	Pass/Fail
119.66	13.66	50.0	0.003	Pass

Overload Indication (IEC 61672-3 § 18)

The first Leq indication of overload at a level higher than FSD-1 dB is recorded for both positive- and negative-one-half-cycle signals at 4.0 kHz. The difference between the two levels may not exceed the specified tolerance.

Overload Level: input signal level (amplitude) at which the meter was found to overload for the specified input signal type

Difference: difference between the overload levels for the positive and negative half-cycle signal inputs

Tolerance: the acceptable difference, including the stated uncertainty, between positive and negative overload levels according to IEC 61672

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Overload Level (dB) Positive	Overload Level (dB) Negative	Difference (dB)	Tolerance (\leq dB)	Uncertainty (dB)	Pass/Fail
139.34	139.49	0.15	1.5	0.3	Pass

DC Linearity

The sound level meter is set up to indicate full-scale on the display and the DC-output voltage is recorded in decreasing 10-dB steps.

Rel. Input Level: the level (amplitude) of the signal to the sound level meter relative to the reference of full-scale

Data Found: the measured DC-output from the SLM

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Sensitivity: the calculated sensitivity based on the DC-outputs at the highest and lowest levels indicated

Rel. Input Level (dB)	Data Found (mV)	Uncertainty (mV)	Sensitivity (mV/dB)
0.0	2818.59		19.97
-10.0	2617.46		
-20.0	2416.98		
-30.0	2215.60		
-40.0	2014.72	0.40	
-50.0	1813.58		
-60.0	1611.45		
-70.0	1411.21		
-80.0	1210.29		
-90.0	1008.72		
-100.0	807.99		
-110.0	609.47	0.05	
-120.0	421.88		

Peak-C Sound Level (IEC 61672-3 §17)

The sound level meter's peak-C response to single one-cycle and positive- and negative-going half-cycle sinusoidal signals is measured.

Input Level: the steady-state level (amplitude) of the signal to the sound level meter from which the one- and half-cycle signals are extracted

Cycles in Test Signal: the type of burst used (one period, positive half period, or negative half period)

Frequency: the frequency of the signal to the sound level meter

Nominal Value: what the sound level meter should indicate according to IEC 61672

Tolerance: the acceptable difference from nominal, including the stated uncertainty, for what the sound level meter should indicate according

LCpeak Found: the peak-C sound level value indicated on the sound level meter

Data Found: the difference between the peak-C sound level and the steady-state C-weighted sound level as indicated by the sound level meter (LCpeak-LC)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Input Level (dB C)	Cycles in Test Signal	Frequency (Hz)	Nominal Value (dB)	Tolerance (± dB)	LCpeak Found (dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
132.00	One	8,000.00	3.40	2.00	135.36	3.36		-0.04	Pass
	Positive ½	500.00	2.40	1.00	134.11	2.11	0.40	-0.29	Pass
	Negative ½				134.02	2.02		-0.38	Pass

Decay Time Constants for Time Weightings Fast and Slow (IEC 61672-2 § 9.11)

The decay rate of the display value on the sound level meter is measured after a steady 4.0 kHz signal is removed.

Time Weighting: the time weighting setting on the sound level meter

Nominal Rate: the decay rate the sound level meter should exhibit according to IEC 61672

Tolerance: the acceptable range, including the stated tolerance, for what the sound level meter should indicate according to IEC 61672

Measured Rate: the actual decay rate measured on the sound level meter

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Time Weighting	Nominal Rate (dB/s)	Tolerance (dB/s)		Measured Rate (dB/s)	Uncertainty (dB/s)	Deviation (dB/S)	Pass/Fail
		Minimum	Maximum				
Fast	N/A	27.00	N/A	36.81	2.00	N/A	Pass
Slow	4.35	3.80	4.90	4.39	0.40	0.04	Pass

Difference in Indication (IEC 61672-3 § 13)

With reference to fast time weighting and A frequency weighting at the SLM reference level indicated, the measurements of all other frequency weighting parameters and all other time weighting parameters may not differ by more than the specified tolerance.

Time Weighting: time weighting setting on the SLM

Frequency Weighting: frequency weighting setting on the SLM

Input Level: the level (amplitude) of the signal to the sound level meter

Nominal Value: the value the sound level meter should indicate according to IEC 61672

Tolerance: the acceptable difference from nominal, including the stated uncertainty, for what the sound level meter should indicate according

Data Found: the value the sound level meter actually indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Time Weighting	Frequency Weighting	Input Level (dB)	Nominal Value (dB)	Tolerance (± dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
Fast	A	94.0	94.0	Reference		0.1	0.00	Pass
	C			94.00				
	Z			94.00				
Slow	A	94.0	94.0	0.1	94.00	0.1	0.00	Pass
	C				94.00		0.00	Pass
	Z				94.00		0.00	Pass

A-Frequency-Weighted Frequency Response (61672-3 § 12)

The sound level meter's frequency response is recorded by varying the frequency as specified. The reference level is 45 dB less than full scale at 1.0 kHz.

Frequency: the frequency of the signal to the sound level meter

Nominal Value: the value the sound level meter should indicate according to IEC 61672 (this is relative to the reference value at 1.0 kHz)

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Frequency (Hz)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
10.0	-70.4	N/A	-67.4	-70.44		-0.01	Pass
12.6	-63.4	N/A	-60.9	-63.32		0.05	Pass
15.8	-56.7	-60.7	-54.7	-56.64		0.05	Pass
20.0	-50.5	-52.5	-48.5	-50.55		-0.10	Pass
25.1	-44.7	-46.2	-42.7	-44.73		-0.03	Pass
31.6	-39.4	-40.9	-37.9	-39.46		-0.02	Pass
39.8	-34.6	-35.6	-33.6	-34.68	0.50	-0.05	Pass
50.1	-30.2	-31.2	-29.2	-30.38		-0.15	Pass
63.1	-26.2	-27.2	-25.2	-26.30		-0.11	Pass
79.4	-22.5	-23.5	-21.5	-22.63		-0.13	Pass
100.0	-19.1	-20.1	-18.1	-19.20		-0.06	Pass
125.9	-16.1	-17.1	-15.1	-16.17		-0.07	Pass
158.5	-13.4	-14.4	-12.4	-13.47		-0.12	Pass
199.5	-10.9	-11.9	-9.9	-10.93		-0.06	Pass
251.2	-8.6	-9.6	-7.6	-8.74		-0.11	Pass
316.2	-6.6	-7.6	-5.6	-6.68		-0.07	Pass
398.1	-4.8	-5.8	-3.8	-4.86	0.40	-0.05	Pass
501.2	-3.2	-4.2	-2.2	-3.28		-0.05	Pass
631.0	-1.9	-2.9	-0.9	-1.94		-0.04	Pass
794.3	-0.8	-1.8	0.2	-0.89		-0.07	Pass
1,000.0	0.0	Reference					
1,258.9	0.6	-0.4	1.6	0.53	0.40	-0.06	Pass
1,584.9	1.0	0.0	2.0	0.92		-0.06	Pass
1,995.3	1.2	0.2	2.2	1.15		-0.05	Pass
2,511.9	1.3	0.3	2.3	1.22		-0.05	Pass
3,162.3	1.2	0.2	2.2	1.15		-0.05	Pass
3,981.1	1.0	0.0	2.0	0.93	0.60	-0.04	Pass
5,011.9	0.5	-1.0	2.0	0.52		-0.03	Pass
6,309.6	-0.1	-2.1	1.4	-0.15		-0.03	Pass
7,943.3	-1.1	-3.6	0.4	-1.17		-0.06	Pass
10,000.0	-2.5	-5.5	-0.5	-2.66		-0.17	Pass
12,589.3	-4.3	-9.3	-2.3	-4.82		-0.50	Pass
15,848.9	-6.6	-22.6	-4.1	-7.56	1.00	-0.96	Pass
19,952.6	-9.3	N/A	-6.3	-8.98		0.34	Pass

C-Frequency-Weighted Frequency Response (61672-3 § 12)

The sound level meter's frequency response is recorded by varying the frequency as specified. The reference level is 45 dB less than full scale at 1.0 kHz.

Frequency: the frequency of the signal to the sound level meter

Nominal Value: the value the sound level meter should indicate according to IEC 61672 (this is relative to the reference value at 1.0 kHz)

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Frequency (Hz)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
10.0	-14.3	N/A	-11.3	-14.80		-0.47	Pass
12.6	-11.2	N/A	-8.7	-11.25		0.00	Pass
15.8	-8.5	-12.5	-6.5	-8.54		-0.01	Pass
20.0	-6.2	-8.2	-4.2	-6.40		-0.16	Pass
25.1	-4.4	-5.9	-2.4	-4.47		-0.06	Pass
31.6	-3.0	-4.5	-1.5	-3.18		-0.17	Pass
39.8	-2.0	-3.0	-1.0	-2.09	0.50	-0.09	Pass
50.1	-1.3	-2.3	-0.3	-1.40		-0.10	Pass
63.1	-0.8	-1.8	0.2	-0.93		-0.12	Pass
79.4	-0.5	-1.5	0.5	-0.60		-0.10	Pass
100.0	-0.3	-1.3	0.7	-0.39		-0.09	Pass
125.9	-0.2	-1.2	0.8	-0.25		-0.08	Pass
158.5	-0.1	-1.1	0.9	-0.19		-0.10	Pass
199.5	0.0	-1.0	1.0	-0.12		-0.09	Pass
251.2	0.0	-1.0	1.0	-0.12		-0.12	Pass
316.2	0.0	-1.0	1.0	-0.05		-0.07	Pass
398.1	0.0	-1.0	1.0	-0.04	0.40	-0.07	Pass
501.2	0.0	-1.0	1.0	-0.02		-0.05	Pass
631.0	0.0	-1.0	1.0	-0.02		-0.05	Pass
794.3	0.0	-1.0	1.0	-0.05		-0.07	Pass
1,000.0	0.0				Reference		
1,258.9	0.0	-1.0	1.0	-0.10	0.40	-0.07	Pass
1,584.9	-0.1	-1.1	0.9	-0.15		-0.06	Pass
1,995.3	-0.2	-1.2	0.8	-0.23		-0.06	Pass
2,511.9	-0.3	-1.3	0.7	-0.35		-0.05	Pass
3,162.3	-0.5	-1.5	0.5	-0.55		-0.05	Pass
3,981.1	-0.8	-1.8	0.2	-0.86	0.60	-0.04	Pass
5,011.9	-1.3	-2.8	0.2	-1.33		-0.04	Pass
6,309.6	-2.0	-4.0	-0.5	-2.03		-0.03	Pass
7,943.3	-3.0	-5.5	-1.5	-3.07		-0.06	Pass
10,000.0	-4.4	-7.4	-2.4	-4.57		-0.16	Pass
12,589.3	-6.2	-11.2	-4.2	-6.75		-0.51	Pass
15,848.9	-8.5	-24.5	-6.0	-9.49	1.00	-0.96	Pass
19,952.6	-11.2	N/A	-8.2	-10.91		0.34	Pass

Z-Frequency-Weighted Frequency Response (61672-3 § 12)

The sound level meter's frequency response is recorded by varying the frequency as specified. The reference level is 45 dB less than full scale at 1.0 kHz.

Frequency: the frequency of the signal to the sound level meter

Nominal Value: the value the sound level meter should indicate according to IEC 61672 (this is relative to the reference value at 1.0 kHz)

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Frequency (Hz)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
10.0		N/A	3.0	-0.04		-0.04	Pass
12.6		N/A	2.5	-0.05		-0.05	Pass
15.8		-4.0	2.0	-0.19		-0.19	Pass
20.0		-2.0	2.0	-0.20		-0.20	Pass
25.1		-1.5	2.0	-0.20		-0.20	Pass
31.6		-1.5	1.5	-0.02		-0.02	Pass
39.8		-1.0	1.0	-0.16	0.50	-0.16	Pass
50.1		-1.0	1.0	-0.09		-0.09	Pass
63.1		-1.0	1.0	-0.14		-0.14	Pass
79.4		-1.0	1.0	-0.10		-0.10	Pass
100.0		-1.0	1.0	-0.11		-0.11	Pass
125.9		-1.0	1.0	-0.10		-0.10	Pass
158.5		-1.0	1.0	-0.13		-0.13	Pass
199.5		-1.0	1.0	-0.07		-0.07	Pass
251.2		-1.0	1.0	-0.11		-0.11	Pass
316.2		-1.0	1.0	-0.07		-0.07	Pass
398.1	0.0	-1.0	1.0	-0.07	0.40	-0.07	Pass
501.2		-1.0	1.0	-0.05		-0.05	Pass
631.0		-1.0	1.0	-0.04		-0.04	Pass
794.3		-1.0	1.0	-0.07		-0.07	Pass
1,000.0		Reference					
1,258.9		-1.0	1.0	-0.06	0.40	-0.06	Pass
1,584.9		-1.0	1.0	-0.06		-0.06	Pass
1,995.3		-1.0	1.0	-0.06		-0.06	Pass
2,511.9		-1.0	1.0	-0.05		-0.05	Pass
3,162.3		-1.0	1.0	-0.05		-0.05	Pass
3,981.1		-1.0	1.0	-0.04	0.60	-0.04	Pass
5,011.9		-1.5	1.5	-0.03		-0.03	Pass
6,309.6		-2.0	1.5	-0.04		-0.04	Pass
7,943.3		-2.5	1.5	-0.07		-0.07	Pass
10,000.0		-3.0	2.0	-0.18		-0.18	Pass
12,589.3		-5.0	2.0	-0.51	1.00	-0.51	Pass
15,848.9		-16.0	2.5	-0.94		-0.94	Pass
19,952.6		N/A	3.0	0.18		0.18	Pass

Single Toneburst Response (Fast Time Weighting, A Frequency Weighting) (61672-3 § 16)

The sound level meter's response to single tonebursts at 4.0 kHz is measured. The baseline input level is 3 dB less than full scale.

Toneburst Duration: the length of time each burst lasts

Nominal Value: the value sound level meter should indicate according to IEC 61672

Tolerance: the acceptable range, including the stated tolerance, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to LAFmax(toneburst)-LAF(steady-state)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Toneburst Duration (ms)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
1,000.00	0.0	-0.5	0.5	-0.04		-0.04	Pass
500.00	-0.1	-0.6	0.4	-0.13		-0.03	Pass
200.00	-1.0	-1.5	-0.5	-1.04		-0.04	Pass
100.00	-2.6	-3.6	-1.6	-2.66		-0.06	Pass
50.00	-4.8	-5.8	-3.8	-4.90		-0.10	Pass
20.00	-8.3	-9.3	-7.3	-8.37	0.20	-0.07	Pass
10.00	-11.1	-12.1	-10.1	-11.21		-0.11	Pass
5.00	-14.1	-15.1	-13.1	-14.15		-0.05	Pass
2.00	-18.0	-19.5	-17.0	-18.10		-0.10	Pass
1.00	-21.0	-23.0	-20.0	-21.12		-0.12	Pass
0.50	-24.0	-26.5	-23.0	-24.17		-0.17	Pass
0.25	-27.0	-30.0	-26.0	-27.17		-0.17	Pass

Single Toneburst Response (Fast Time Weighting, C Frequency Weighting) (61672-3 § 16)

The sound level meter's response to single tonebursts at 4.0 kHz is measured. The baseline input level is 3 dB less than full scale.

Toneburst Duration: the length of time each burst lasts

Nominal Value: the value sound level meter should indicate according to IEC 61672

Tolerance: the acceptable range, including the stated tolerance, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to LAFmax(toneburst)-LAF(steady-state)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Toneburst Duration (ms)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
1,000.00	0.0	-0.5	0.5	-0.04		-0.04	Pass
500.00	-0.1	-0.6	0.4	-0.13		-0.03	Pass
200.00	-1.0	-1.5	-0.5	-1.04		-0.04	Pass
100.00	-2.6	-3.6	-1.6	-2.67		-0.07	Pass
50.00	-4.8	-5.8	-3.8	-4.90		-0.10	Pass
20.00	-8.3	-9.3	-7.3	-8.38	0.20	-0.08	Pass
10.00	-11.1	-12.1	-10.1	-11.22		-0.12	Pass
5.00	-14.1	-15.1	-13.1	-14.15		-0.05	Pass
2.00	-18.0	-19.5	-17.0	-18.06		-0.06	Pass
1.00	-21.0	-23.0	-20.0	-21.06		-0.06	Pass
0.50	-24.0	-26.5	-23.0	-24.01		-0.01	Pass
0.25	-27.0	-30.0	-26.0	-26.97		0.03	Pass

Single Toneburst Response (Fast Time Weighting, Z Frequency Weighting) (61672-3 § 16)

The sound level meter's response to single tonebursts at 4.0 kHz is measured. The baseline input level is 3 dB less than full scale.

Toneburst Duration: the length of time each burst lasts

Nominal Value: the value sound level meter should indicate according to IEC 61672

Tolerance: the acceptable range, including the stated tolerance, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to LAFmax(toneburst)-LAF(steady-state)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Toneburst Duration (ms)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
1,000.00	0.0	-0.5	0.5	-0.01	0.20	-0.01	Pass
500.00	-0.1	-0.6	0.4	-0.10		0.00	Pass
200.00	-1.0	-1.5	-0.5	-1.01		-0.01	Pass
100.00	-2.6	-3.6	-1.6	-2.64		-0.04	Pass
50.00	-4.8	-5.8	-3.8	-4.86		-0.06	Pass
20.00	-8.3	-9.3	-7.3	-8.36		-0.06	Pass
10.00	-11.1	-12.1	-10.1	-11.18		-0.08	Pass
5.00	-14.1	-15.1	-13.1	-14.12		-0.02	Pass
2.00	-18.0	-19.5	-17.0	-18.07		-0.07	Pass
1.00	-21.0	-23.0	-20.0	-21.04		-0.04	Pass
0.50	-24.0	-26.5	-23.0	-24.05	-0.05	Pass	
0.25	-27.0	-30.0	-26.0	-27.06	-0.06	Pass	

Single Toneburst Response (Slow Time Weighting, A Frequency Weighting) (61672-3 § 16)

The sound level meter's response to single tonebursts at 4.0 kHz is measured. The baseline input level is 3 dB less than full scale.

Toneburst Duration: the length of time each burst lasts

Nominal Value: the value sound level meter should indicate according to IEC 61672

Tolerance: the acceptable range, including the stated tolerance, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to LAFmax(toneburst)-LAF(steady-state)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Toneburst Duration (ms)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
1,000.0	-2.0	-2.5	-1.5	-1.98	0.20	0.02	Pass
500.0	-4.1	-4.6	-3.6	-4.02		0.08	Pass
200.0	-7.4	-7.9	-6.9	-7.42		-0.02	Pass
100.0	-10.2	-10.7	-9.7	-10.25		-0.05	Pass
50.0	-13.1	-13.6	-12.6	-13.18		-0.08	Pass
20.0	-17.0	-17.5	-16.5	-17.00		0.00	Pass
10.0	-20.0	-20.5	-19.5	-20.07		-0.07	Pass
5.0	-23.0	-23.5	-22.5	-23.10		-0.10	Pass
2.0	-27.0	-27.5	-26.5	-27.09		-0.09	Pass

Single Toneburst Response (Slow Time Weighting, C Frequency Weighting) (61672-3 § 16)

The sound level meter's response to single tonebursts at 4.0 kHz is measured. The baseline input level is 3 dB less than full scale.

Toneburst Duration: the length of time each burst lasts

Nominal Value: the value sound level meter should indicate according to IEC 61672

Tolerance: the acceptable range, including the stated tolerance, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to LAFmax(toneburst)-LAF(steady-state)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Toneburst Duration (ms)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
1,000.0	-2.0	-2.5	-1.5	-1.91	0.20	0.09	Pass
500.0	-4.1	-4.6	-3.6	-4.00		0.10	Pass
200.0	-7.4	-7.9	-6.9	-7.36		0.04	Pass
100.0	-10.2	-10.7	-9.7	-10.16		0.04	Pass
50.0	-13.1	-13.6	-12.6	-13.07		0.03	Pass
20.0	-17.0	-17.5	-16.5	-16.85		0.15	Pass
10.0	-20.0	-20.5	-19.5	-19.94		0.06	Pass
5.0	-23.0	-23.5	-22.5	-23.03		-0.03	Pass
2.0	-27.0	-27.5	-26.5	-27.05		-0.05	Pass

Single Toneburst Response (Slow Time Weighting, Z Frequency Weighting) (61672-3 § 16)

The sound level meter's response to single tonebursts at 4.0 kHz is measured. The baseline input level is 3 dB less than full scale.

Toneburst Duration: the length of time each burst lasts

Nominal Value: the value sound level meter should indicate according to IEC 61672

Tolerance: the acceptable range, including the stated tolerance, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to LAFmax(toneburst)-LAF(steady-state)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Toneburst Duration (ms)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
1,000.0	-2.0	-2.5	-1.5	-1.86		0.14	Pass
500.0	-4.1	-4.6	-3.6	-4.00		0.10	Pass
200.0	-7.4	-7.9	-6.9	-7.35		0.05	Pass
100.0	-10.2	-10.7	-9.7	-10.13		0.07	Pass
50.0	-13.1	-13.6	-12.6	-13.05	0.20	0.05	Pass
20.0	-17.0	-17.5	-16.5	-16.95		0.05	Pass
10.0	-20.0	-20.5	-19.5	-19.93		0.07	Pass
5.0	-23.0	-23.5	-22.5	-22.98		0.02	Pass
2.0	-27.0	-27.5	-26.5	-27.04		-0.04	Pass

SEL Response to Repeated Tonebursts (61672-1 § 5.9)

The sound level meter's SEL response to repeated tonebursts at 4.0 kHz is measured. The baseline input level is 3 dB less than full scale and the toneburst repetition rate is three times the toneburst duration.

Toneburst Duration: the length of time each burst lasts

Nominal Value: the value the sound level meter should indicate according to IEC 61672

Tolerance: the acceptable range, including the stated tolerance, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to LAFmax(toneburst)-LAF(steady-state)

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found

Toneburst Duration (ms)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
		Minimum	Maximum				
1000.0	0.0	-0.5	0.5	-0.05		-0.05	Pass
500.0	-3.0	-3.5	-2.5	-3.08		-0.08	Pass
200.0	-7.0	-7.5	-6.5	-7.06		-0.06	Pass
100.0	-10.0	-11.0	-9.0	-10.08		-0.08	Pass
50.0	-13.0	-14.0	-12.0	-13.09		-0.09	Pass
20.0	-17.0	-18.0	-16.0	-17.07		-0.07	Pass
10.0	-20.0	-21.0	-19.0	-20.09	0.20	-0.09	Pass
5.0	-23.0	-24.0	-22.0	-23.10		-0.10	Pass
2.0	-27.0	-28.5	-26.0	-27.09		-0.09	Pass
1.0	-30.0	-32.0	-29.0	-30.13		-0.13	Pass
0.5	-33.0	-35.5	-32.0	-33.17		-0.17	Pass
0.25	-36.0	-39.0	-35.0	-36.20		-0.20	Pass

Level Linearity (IEC 61672-3 § 14, IEC 61672-1 § 5.5.6)

Level linearity is tested at in A-weighting at 8.0 kHz. Increasing input levels continue up to the first indication of overload. The test is continued with decreasing input levels down to the lower limit or the first indication of underrange.

Input Level: the level (amplitude) of the signal to the sound level meter

Nominal Value: the value the sound level meter should indicate according to IEC 61672

Tolerance: the acceptable difference from nominal, including the stated uncertainty, according to IEC 61672

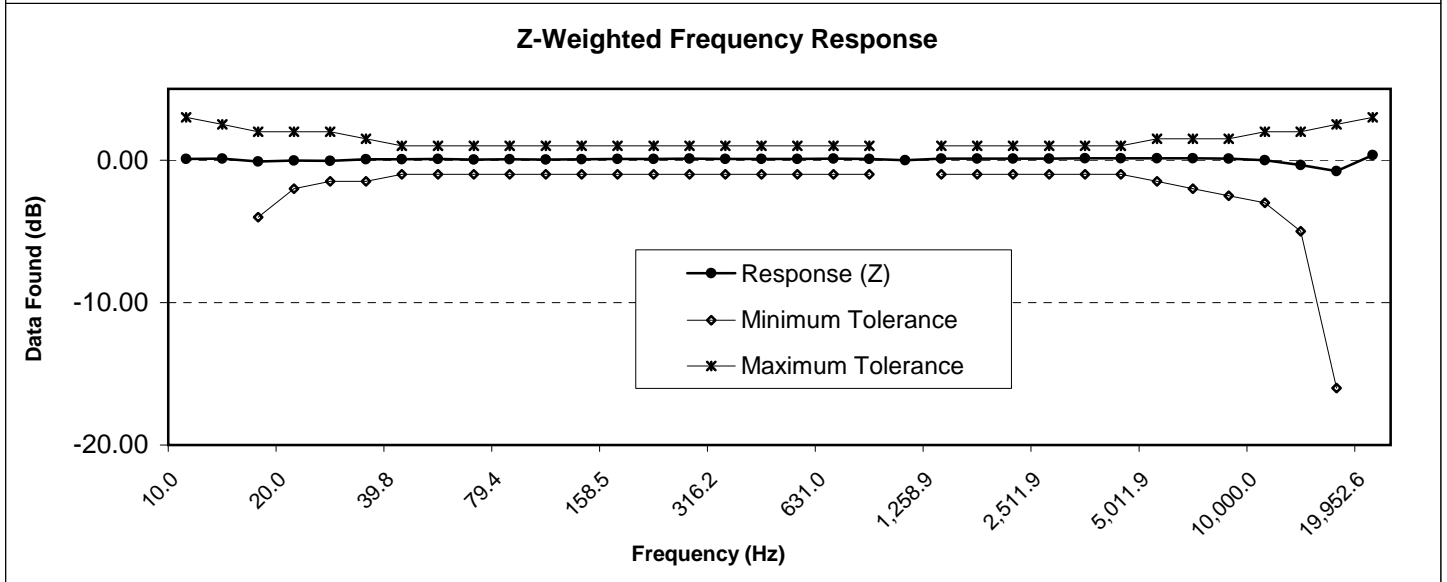
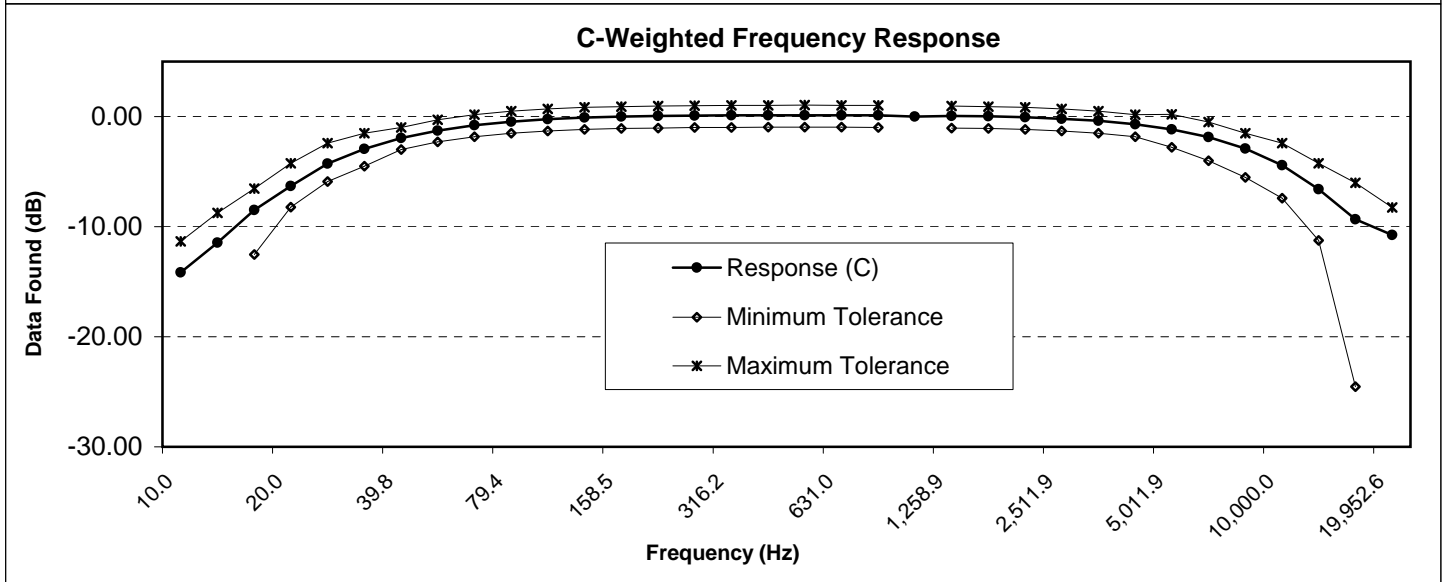
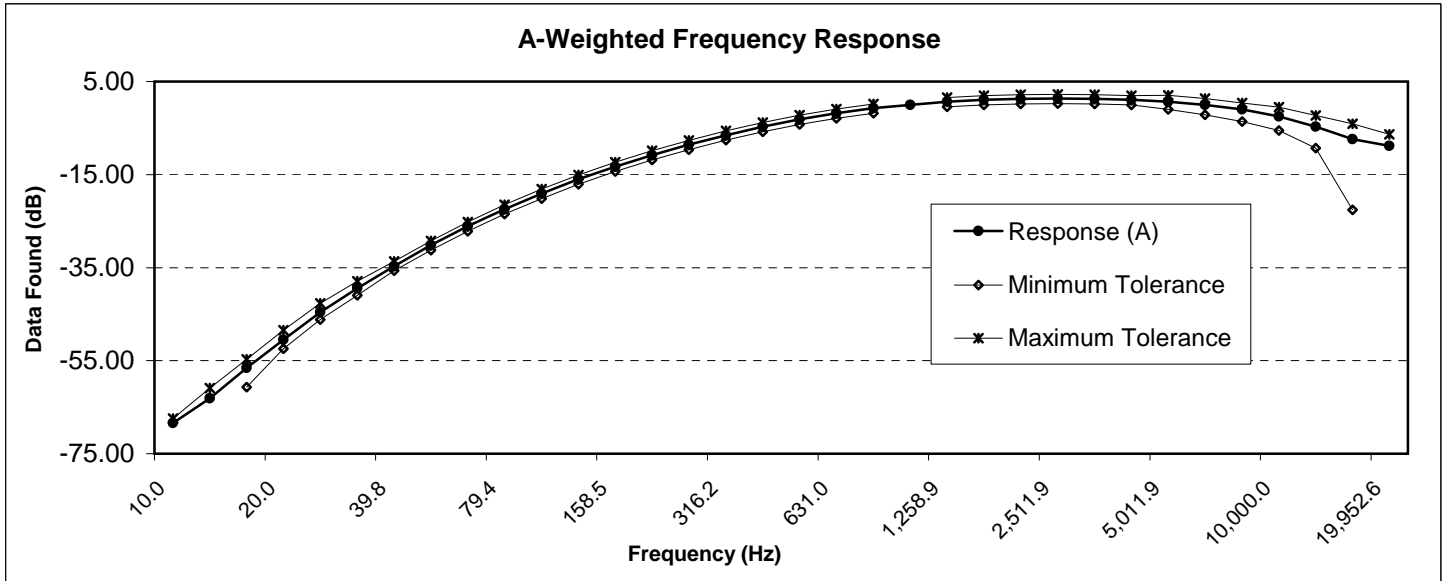
Data Found: the value the sound level meter actually indicates

Uncertainty: maximum expanded uncertainty of measurement with approximately 95% confidence level (coverage factor k=2)

Deviation: the difference between the nominal value and the data found; differential: current and previous measurement is not allowed to exceed 0.5 dB according to IEC 61672-1 § 5.5.6

Part 1: Increasing Input Levels							
Input Level (dB)	Nominal Value (dB)	Tolerance (± dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)		Pass/Fail
					Measured	Differential	
94.0							
Reference 1							
99.0	99.0		99.00		0.00	N/A	Pass
104.0	104.0		103.99		-0.01	-0.01	Pass
109.0	109.0		109.00		0.00	0.01	Pass
114.0	114.0		114.00		0.00	0.00	Pass
119.0	119.0		119.00		0.00	0.00	Pass
124.0	124.0		123.99		-0.01	-0.01	Pass
129.0	129.0		129.00		0.00	0.01	Pass
134.0	134.0		134.00		0.00	0.00	Pass
135.0	135.0		135.00		0.00	0.00	Pass
136.0	136.0		136.00		0.00	0.00	Pass
137.0	137.0		137.00		0.00	0.00	Pass
138.0	138.0		138.00		0.00	0.00	Pass
139.0	139.0		138.99		-0.01	-0.01	Pass
140.0	140.0	0.8	139.99	0.3	-0.01	0.00	Pass
141.0	141.0		Overload		N/A	N/A	N/A
142.0	142.0						
143.0	143.0						
144.0	144.0						
145.0	145.0						
146.0	146.0						
147.0	147.0						
148.0	148.0						
149.0	149.0						
150.0	150.0						
151.0	151.0						
152.0	152.0						
153.0	153.0						

Part 2: Decreasing Input Levels							
Input Level (dB)	Nominal Value (dB)	Tolerance (± dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)		Pass/Fail
					Measured	Differential	
Reference 2							
140.0							
135.0	135.0		135.01		0.01	N/A	Pass
130.0	130.0		130.00		0.00	-0.01	Pass
125.0	125.0		125.01		0.01	0.01	Pass
120.0	120.0		120.01		0.01	0.00	Pass
115.0	115.0		115.00		0.00	-0.01	Pass
110.0	110.0		110.01		0.01	0.01	Pass
105.0	105.0		105.01		0.01	0.00	Pass
100.0	100.0		100.00		0.00	-0.01	Pass
95.0	95.0		95.01		0.01	0.01	Pass
90.0	90.0		89.98		-0.02	-0.03	Pass
85.0	85.0		84.98		-0.02	0.00	Pass
80.0	80.0		79.98		-0.02	0.00	Pass
75.0	75.0		74.99		-0.01	0.01	Pass
70.0	70.0	0.8	70.00	0.3	0.00	0.01	Pass
65.0	65.0		65.00		0.00	0.00	Pass
60.0	60.0		60.00		0.00	0.00	Pass
55.0	55.0		55.00		0.00	0.00	Pass
50.0	50.0		49.99		-0.01	-0.01	Pass
45.0	45.0		44.99		-0.01	0.00	Pass
40.0	40.0		40.00		0.00	0.01	Pass
35.0	35.0		35.00		0.00	0.00	Pass
30.0	30.0		30.07		0.07	0.07	Pass
29.0	29.0		29.08		0.08	0.01	Pass
28.0	28.0		28.16		0.16	0.08	Pass
27.0	27.0		27.19		0.19	0.03	Pass
26.0	26.0		26.21		0.21	0.02	Pass



Level Verification of Filter+SLM (1/1 Octave)

For each 1/1 octave filter center frequency, it is verified that the meter indicates within the tolerance shown if the input frequency matches the center frequency.

Filter Center Frequency: center frequency setting on the filter

Input Frequency: frequency of the input signal to the filter

Tolerance: the acceptable range for what the filter should indicate according to Odin Metrology, Inc.

Data Found: the level the sound level meter indicates

Filter Center Freq. (Hz)	Input Freq. (Hz)	Tolerance (± dB)	Data Found (dB)	Result
15.8	15.8		-0.13	Pass
31.6	31.6		-0.08	Pass
63.1	63.1		-0.01	Pass
125.9	125.9		-0.02	Pass
251.2	251.2	0.5	0.00	Pass
501.2	501.2		-0.01	Pass
1,000.0	1,000.0		-0.01	Pass
1,995.3	1,995.3		-0.01	Pass
3,981.1	3,981.1		-0.01	Pass
7,943.3	7,943.3		0.01	Pass
15,848.9	15,848.9		0.01	Pass

Level Verification of Filter+SLM (1/3 Octave)

For each 1/3 octave filter center frequency, it is verified that the meter indicates within the tolerance shown if the input frequency matches the center frequency.

Filter Center Frequency: center frequency setting on the filter

Input Frequency: frequency of the input signal to the filter

Tolerance: the acceptable range for what the filter should indicate according to Odin Metrology, Inc.

Data Found: the level the sound level meter indicates

Filter Center Freq. (Hz)	Input Freq. (Hz)	Tolerance (± dB)	Data Found (dB)	Result
12.6	12.6		0.20	Pass
15.8	15.8		0.18	Pass
20.0	20.0		-0.07	Pass
25.1	25.1		-0.10	Pass
31.6	31.6		0.08	Pass
39.8	39.8		0.03	Pass
50.1	50.1		-0.01	Pass
63.1	63.1		-0.05	Pass
79.4	79.4		-0.03	Pass
100.0	100.0		-0.01	Pass
125.9	125.9		-0.01	Pass
158.5	158.5		0.01	Pass
199.5	199.5		-0.02	Pass
251.2	251.2		0.00	Pass
316.2	316.2		0.00	Pass
398.1	398.1	0.5	-0.01	Pass
501.2	501.2		-0.01	Pass
631.0	631.0		-0.01	Pass
794.3	794.3		-0.01	Pass
1,000.0	1,000.0		-0.01	Pass
1,258.9	1,258.9		-0.01	Pass
1,584.9	1,584.9		0.00	Pass
1,995.3	1,995.3		-0.01	Pass
2,511.9	2,511.9		0.00	Pass
3,162.3	3,162.3		-0.01	Pass
3,981.1	3,981.1		-0.01	Pass
5,011.9	5,011.9		0.01	Pass
6,309.6	6,309.6		0.01	Pass
7,943.3	7,943.3		0.01	Pass
10,000.0	10,000.0		0.02	Pass
12,589.3	12,589.3		0.01	Pass
15,848.9	15,848.9		0.00	Pass
19,952.6	19,952.6		0.00	Pass

Filter Check (1/1 Octave)

At each center frequency in 1/1 octave step size mode, frequencies equaling the center frequency plus and minus one half octave shall cause the filter to respond with attenuation within the limits stated below.

Filter Center Frequency: center frequency setting on the filter

Input Frequency: the input frequency to the filter calculated as plus and minus one half octave from the center

Tolerance: the acceptable range for what the filter should indicate according to Odin Metrology, Inc.

Data Found: the level the sound level meter indicates

Filter Center Freq. (Hz)	Input Frequency (Hz)		Tolerance (dB)		Data Found (dB)		Result
	-1/2 Octave	+1/2 Octave	Minimum	Maximum	-1/2 Octave	+1/2 Octave	
15.8	11.2	22.4			-2.99	-4.17	Pass
31.6	22.4	44.7			-3.08	-4.13	Pass
63.1	44.7	89.1			-3.20	-4.02	Pass
125.9	89.1	177.8			-3.28	-3.91	Pass
251.2	177.8	354.8			-3.40	-3.80	Pass
501.2	354.8	707.9			-3.49	-3.69	Pass
1,000.0	707.9	1,412.5	-5.7	-1.2	-3.59	-3.57	Pass
1,995.3	1,412.5	2,818.4			-3.71	-3.48	Pass
3,981.1	2,818.4	5,623.4			-3.83	-3.37	Pass
7,943.3	5,623.4	11,220.2			-3.89	-3.53	Pass
15,848.9	11,220.2	22,387.2			N/A	N/A	N/A

Filter Check (1/3 Octave)

At each center frequency in 1/3 octave bandwidth, frequencies equaling the center frequency plus and minus one sixth octave shall cause the filter to respond with attenuation within the limits stated below.

Filter Center Frequency: center frequency setting on the filter

Input Frequency: the input frequency to the filter calculated as plus and minus one sixth octave from the center

Tolerance: the acceptable range for what the filter should indicate according to Odin Metrology, Inc.

Data Found: the level the sound level meter indicates

Filter Center Freq. (Hz)	Input Frequency (Hz)		Tolerance (dB)		Data Found (dB)		Result
	-1/6 Octave	+1/6 Octave	Minimum	Maximum	-1/6 Octave	+1/6 Octave	
12.6	11.2	14.1			N/A	N/A	N/A
15.8	14.1	17.8			N/A	N/A	N/A
20.0	17.8	22.4			N/A	N/A	N/A
25.1	22.4	28.2			-2.1	-5.6	Pass
31.6	28.2	35.5			-2.1	-5.4	Pass
39.8	35.5	44.7			-2.2	-5.3	Pass
50.1	44.7	56.2			-2.3	-5.2	Pass
63.1	56.2	70.8			-2.4	-5.1	Pass
79.4	70.8	89.1			-2.5	-4.9	Pass
100.0	89.1	112.2			-2.6	-4.8	Pass
125.9	112.2	141.3			-2.7	-4.7	Pass
158.5	141.3	177.8			-2.8	-4.6	Pass
199.5	177.8	223.9			-2.9	-4.5	Pass
251.2	223.9	281.8			-3.0	-4.3	Pass
316.2	281.8	354.8			-3.1	-4.2	Pass
398.1	354.8	446.7			-3.2	-4.1	Pass
501.2	446.7	562.3	-5.7	-1.2	-3.3	-4.0	Pass
631.0	562.3	707.9			-3.4	-3.9	Pass
794.3	707.9	891.3			-3.5	-3.8	Pass
1,000.0	891.3	1,122.0			-3.6	-3.7	Pass
1,258.9	1,122.0	1,412.5			-3.7	-3.5	Pass
1,584.9	1,412.5	1,778.3			-3.9	-3.4	Pass
1,995.3	1,778.3	2,238.7			-4.0	-3.3	Pass
2,511.9	2,238.7	2,818.4			-4.1	-3.2	Pass
3,162.3	2,818.4	3,548.1			-4.2	-3.1	Pass
3,981.1	3,548.1	4,466.8			-4.3	-3.0	Pass
5,011.9	4,466.8	5,623.4			-4.5	-2.9	Pass
6,309.6	5,623.4	7,079.5			-4.6	-2.8	Pass
7,943.3	7,079.5	8,912.5			-4.7	-2.8	Pass
10,000.0	8,912.5	11,220.2			-4.7	-2.8	Pass
12,589.3	11,220.2	14,125.4			-4.7	-2.8	Pass
15,848.9	14,125.4	17,782.8			-4.9	-2.2	Pass
19,952.6	17,782.8	22,387.2			N/A	N/A	N/A

Relative Attenuation at 1,000 Hz (1/1 Octave) (IEC 61260 § 5.3)

The attenuation of the filter at the given frequencies shall be within the stated tolerance. The frequencies are calculated as octaves from the center frequency. The factors defined by IEC 61260 (Table 1) are: ± 4 , ± 3 , ± 2 , ± 1 , $\pm 1/2$, $\pm 3/8$, $\pm 1/4$, $\pm 1/8$ and 0.

Octaves from Center Frequency: the difference, in octaves, between the selected center frequency (1,000 Hz) and the current input frequency

Input Frequency: the input frequency to the filter

Tolerance: the acceptable range for what the filter should indicate according to IEC 61260

Data Found: the level the sound level meter indicates

Octaves from Center Freq.	Input Freq. (Hz)	Tolerance (dB)		Data Found (dB)	Result
		Minimum	Maximum		
-4	63.1	N/A	-70.0	-82.17	Pass
-3	125.9	N/A	-61.0	-63.86	Pass
-2	251.2	N/A	-42.0	-44.58	Pass
-1	501.2	N/A	-17.5	-20.76	Pass
- 1/2	707.9	-5.0	-2.0	-3.64	Pass
- 3/8	771.8	-1.3	0.3	-0.88	Pass
- 1/4	841.4	-0.6	0.3	-0.11	Pass
- 1/8	917.3	-0.4	0.3	-0.02	Pass
0	1,000.0	-0.3	0.3	0.00	Pass
1/8	1,090.2	-0.4	0.3	-0.03	Pass
1/4	1,188.5	-0.6	0.3	-0.10	Pass
3/8	1,295.7	-1.3	0.3	-0.87	Pass
1/2	1,412.5	-5.0	-2.0	-3.62	Pass
1	1,995.3	N/A	-17.5	-20.86	Pass
2	3,981.1	N/A	-42.0	-55.80	Pass
3	7,943.3	N/A	-61.0	-91.12	Pass
4	15,848.9	N/A	-70.0	-109.64	Pass

