

CERTIFICATE OF CALIBRATION
OM2021-2
FOR LARSON DAVIS
PRECISION INTEGRATING SOUND LEVEL METER

Model **831**

Serial No. **0002649**

With Microphone **377B02**
 With Preamplifier **PRM831**

ID No. **N/A**
 Serial No. **112827**
 Serial No. **015303**

Customer: **Odin Metrology, Inc.**
Thousand Oaks, CA 91320

P.O. No. **N/A**

was tested and met Larson Davis specifications at the points tested and as outlined in ANSI S1.4-1983 (R2006) Type 1; IEC 61672-2002 Class1; IEC 60651-2001 Type 1

on **12 MAR 2021**

BY HAROLD LYNCH
Service Manager

As received and as left condition: Within Specification.
 Re-calibration due on: **12 MAR 2022**

Certified References*				
Mfg.	Type	Serial No.	Cal Date	Due Date
B&K	1051	1777523	28 SEP 2020	28 SEP 2021
B&K	2636	1423390	04 JAN 2021	04 JAN 2022
B&K	4226	3274134	30 NOV 2020	30 NOV 2021
B&K	4231	1770857	10 SEP 2020	10 SEP 2021
HP	34401A	MY45023668	28 JAN 2021	28 JAN 2022
HP	3458A	2823A07179	21 JUL 2020	21 JUL 2021

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
 and ISO 17025, ISO 9001:2015 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 LxT-831 Version 0.5.1. Rev.3/12/2014**

Temperature	Relative Humidity	Barometric Pressure
23°C	33 %	993.87 hPa

Note: This calibration report shall not be reproduced, except in full, without written consent by Odin Metrology, Inc.

Signed: 

ODIN METROLOGY, INC.
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Calibration data for
Larson Davis Precision Integrating Sound Level Meter
Type 831# 0002649, ID# N/A
 With Microphone 377B02# 112827 and Preamplifier PRM831# 015303
 Performed on March 12, 2021
 for
 Odin Metrology, Inc.

PO#: N/A
 Certificate#: OM2021-2
 Calibration performed by: HL

Environmental Conditions
 Relative humidity: 33%
 Ambient temperature: 23°C
 Ambient pressure: 993.87 hPa

The following calibration was performed per ACCT Procedure LxT-831 version 0.5.1.
 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)			
3	Internal Clock	Reference Only	See Data
3	Sensitivity Verification with Acoustic Calibrator	3 § 9	See Data
3	Acoustic Frequency Response with Microphone	3 § 11	Pass
3	Self-Generated Noise	3 § 10	See Data
4	Output Impedance with Shorted Output	2 § 9.18	Pass
4	AC Full Scale Output Voltage	Reference Only	See Data
4	DC Full Scale Output Voltage	Reference Only	See Data
4	Reset	2 § 9.17	Pass
4	Overload Indication	3 § 18	Pass
5	DC Linearity	Reference Only	See Data
5	Peak-C Sound Level	3 § 17	Pass
5	Decay Time Constants for Time Weightings Fast and Slow	2 § 9.11	Pass
6	Difference in Indication	3 § 13	Pass
6	Frequency Response	3 § 12	Pass
6	A-Weighted		Pass
7	C-Weighted		Pass
8	Z-Weighted		Pass
8	Single Toneburst Response - Fast Time Weighting	3 § 16	Pass
8	A-Weighted		Pass
9	C-Weighted		Pass
9	Z-Weighted		Pass
9	Single Toneburst Response - Slow Time Weighting	3 § 16	Pass
9	A-Weighted		Pass
10	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	Pass
13	1/1 Octave		Pass
13	1/3 Octave		Pass
	Filter Check	Reference Only	Pass
14	1/1 Octave		Pass
14	1/3 Octave		Pass
15	Relative Attenuation (1/1 Octave)	§ 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
03/12/2021	08:14:42 AM	Alaska	-9:00	No	07/10/2015	03:09:06 PM	03/12/2021	07:14:44 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

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

Performed with microphone 377B02# 112827, preamplifier PRM831# 015303, and calibrator 4231# 1770857.

Calibrator Frequency (Hz)	Calibrator SPL (dB)	SLM SPL Before (dB)	SLM SPL After (dB)	Uncertainty (dB)
1,000.0	114.0	114.01	114.01	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 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 377B02# 112827, preamplifier PRM831# 015303, and calibrator 4226# 3274134.

Frequency (Hz)	Data Found (dB C)	FF Corr. (dB)	Corrected Response (dB)	Nominal Value (dB C)	Tolerance (dB)		Uncertainty (dB)	Deviation (dB)	Pass/Fail
					Minimum	Maximum			
31.5	111.21	0.00	111.21	110.99	109.49	112.49		0.22	Pass
63.0	113.37	0.00	113.37	113.18	112.18	114.18	0.50	0.19	Pass
125.0	114.00	0.00	114.00	113.83	112.83	114.83		0.17	Pass
250.0	114.14	0.00	114.14	114.00	113.00	115.00		0.14	Pass
500.0	114.15	0.04	114.19	114.03	113.03	115.03	0.40	0.16	Pass
1,000.0	Reference								
2,000.0	113.82	0.31	114.13	113.83	112.83	114.83		0.30	Pass
4,000.0	112.80	1.00	113.80	113.18	112.18	114.18	0.60	0.61	Pass
8,000.0	108.57	3.39	111.96	110.99	108.49	112.49		0.97	Pass
12,500.0	101.98	6.77	108.75	107.76	102.76	109.76	1.00	0.99	Pass
16,000.0	98.70	8.35	107.05	105.47	89.47	107.97		1.58	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	17.00	15.46	
C	12.00	12.22	0.003
Z	19.00	20.93	

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

When the output on the meter is shorted, the SPL may not change by more than the specified tolerance. This test is not performed at 114.0 dB due to a characteristic of the 831 to turn off with the output shorted (see page A-8 in the 831 reference manual).

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

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 (± dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
1.0	90.0	90.0	0.1	89.96	0.10	-0.04	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)
140.04	2,343.45	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)
140.04	1,193.16	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
120.13	38.64	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

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 (≤ dB)	Uncertainty (dB)	Pass/Fail
137.91	137.94	0.03	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	1,393.68		
-10.0	1,294.28		
-20.0	1,194.68		
-30.0	1,094.26		
-40.0	994.95	0.40	9.95
-50.0	896.63		
-60.0	797.18		
-70.0	696.74		
-80.0	597.31		
-90.0	497.93		
-100.0	398.56		
-110.0	302.21	0.05	
-120.0	225.42		

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

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 for what the sound level meter should indicate according to IEC 61672

L_{Cpeak} 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

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; extended: extended by the expanded uncertainty of measurement

Input Level (dB C)	Cycles in Test Signal	Frequency (Hz)	Nominal Value (dB)	Tolerance (± dB)	L_{Cpeak} Found (dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
132.00	One	8,000.00	3.40	2.00	134.71	2.71		-0.69	Pass
	Positive ½	500.00	2.40	1.00	134.21	2.21	0.40	-0.19	Pass
	Negative ½				134.13	2.13		-0.27	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 uncertainty, 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)	Minimum	Maximum	Measured Rate (dB/s)	Uncertainty (dB/s)	Deviation (dB/s)	Pass/Fail
Fast	N/A	27.00	N/A	38.33	2.00	N/A	Pass
Slow	4.35	3.80	4.90	4.49	0.40	0.14	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

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 (\pm dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail	
Fast	A	114.0	114.0	Reference		0.1	0.01	Pass	
	C			0.2	114.01				
	Z				114.00	0.00	Pass		
Slow	A						114.01	0.01	Pass
	C			0.1	114.01	0.1	0.01	Pass	
	Z				114.00		0.00	Pass	

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

The SLM's frequency response is recorded by varying the frequency as specified. The reference level is FSD-45 dB at 1.0 kHz. IEC 61672 defines this test from 63 Hz to 16 kHz; "N/A" is reported instead of "Fail" for frequencies outside of this range.

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	-68.18		2.25	Pass
12.6	-63.4	N/A	-60.9	-62.93		0.44	Pass
15.8	-56.7	-60.7	-54.7	-56.60		0.09	Pass
20.0	-50.5	-52.5	-48.5	-50.43		0.02	Pass
25.1	-44.7	-46.2	-42.7	-44.70		0.00	Pass
31.6	-39.4	-40.9	-37.9	-39.45		-0.01	Pass
39.8	-34.6	-35.6	-33.6	-34.64	0.50	-0.01	Pass
50.1	-30.2	-31.2	-29.2	-30.30		-0.07	Pass
63.1	-26.2	-27.2	-25.2	-26.22		-0.02	Pass
79.4	-22.5	-23.5	-21.5	-22.53		-0.03	Pass
100.0	-19.1	-20.1	-18.1	-19.18		-0.04	Pass
125.9	-16.1	-17.1	-15.1	-16.13		-0.03	Pass
158.5	-13.4	-14.4	-12.4	-13.39		-0.04	Pass
199.5	-10.9	-11.9	-9.9	-10.90		-0.03	Pass
251.2	-8.6	-9.6	-7.6	-8.67		-0.04	Pass
316.2	-6.6	-7.6	-5.6	-6.65		-0.04	Pass
398.1	-4.8	-5.8	-3.8	-4.85	0.40	-0.04	Pass
501.2	-3.2	-4.2	-2.2	-3.27		-0.04	Pass
631.0	-1.9	-2.9	-0.9	-1.94		-0.04	Pass
794.3	-0.8	-1.8	0.2	-0.86		-0.04	Pass
1,000.0	0.0				Reference		
1,258.9	0.6	-0.4	1.6	0.56	0.40	-0.03	Pass
1,584.9	1.0	0.0	2.0	0.96		-0.02	Pass
1,995.3	1.2	0.2	2.2	1.18		-0.02	Pass
2,511.9	1.3	0.3	2.3	1.26		-0.01	Pass
3,162.3	1.2	0.2	2.2	1.20		0.00	Pass
3,981.1	1.0	0.0	2.0	0.97	0.60	0.00	Pass
5,011.9	0.5	-1.0	2.0	0.56		0.01	Pass
6,309.6	-0.1	-2.1	1.4	-0.11		0.01	Pass
7,943.3	-1.1	-3.6	0.4	-1.13		-0.02	Pass
10,000.0	-2.5	-5.5	-0.5	-2.53		-0.04	Pass
12,589.3	-4.3	-9.3	-2.3	-4.32		0.00	Pass
15,848.9	-6.6	-22.6	-4.1	-6.54	1.00	0.06	Pass
19,952.6	-9.3	N/A	-6.3	-9.73		-0.42	Pass

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

The SLM's frequency response is recorded by varying the frequency as specified. The reference level is FSD-45 dB at 1.0 kHz. IEC 61672 defines this test from 63 Hz to 16 kHz; "N/A" is reported instead of "Fail" for frequencies outside of this range.

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	-14.38		-0.05	Pass
12.6	-11.2	N/A	-8.7	-11.29		-0.04	Pass
15.8	-8.5	-12.5	-6.5	-8.55		-0.01	Pass
20.0	-6.2	-8.2	-4.2	-6.24		0.00	Pass
25.1	-4.4	-5.9	-2.4	-4.41		0.00	Pass
31.6	-3.0	-4.5	-1.5	-3.02		-0.01	Pass
39.8	-2.0	-3.0	-1.0	-2.01	0.50	-0.01	Pass
50.1	-1.3	-2.3	-0.3	-1.26		0.03	Pass
63.1	-0.8	-1.8	0.2	-0.84		-0.02	Pass
79.4	-0.5	-1.5	0.5	-0.53		-0.03	Pass
100.0	-0.3	-1.3	0.7	-0.30		0.00	Pass
125.9	-0.2	-1.2	0.8	-0.20		-0.03	Pass
158.5	-0.1	-1.1	0.9	-0.12		-0.04	Pass
199.5	0.0	-1.0	1.0	-0.07		-0.04	Pass
251.2	0.0	-1.0	1.0	-0.04		-0.04	Pass
316.2	0.0	-1.0	1.0	-0.02		-0.04	Pass
398.1	0.0	-1.0	1.0	-0.01	0.40	-0.04	Pass
501.2	0.0	-1.0	1.0	0.00		-0.04	Pass
631.0	0.0	-1.0	1.0	-0.01		-0.04	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	-0.06	0.40	-0.03	Pass
1,584.9	-0.1	-1.1	0.9	-0.11		-0.02	Pass
1,995.3	-0.2	-1.2	0.8	-0.18		-0.01	Pass
2,511.9	-0.3	-1.3	0.7	-0.31		-0.01	Pass
3,162.3	-0.5	-1.5	0.5	-0.50		0.00	Pass
3,981.1	-0.8	-1.8	0.2	-0.81	0.60	0.01	Pass
5,011.9	-1.3	-2.8	0.2	-1.28		0.01	Pass
6,309.6	-2.0	-4.0	-0.5	-1.99		0.01	Pass
7,943.3	-3.0	-5.5	-1.5	-3.06		-0.05	Pass
10,000.0	-4.4	-7.4	-2.4	-4.48		-0.08	Pass
12,589.3	-6.2	-11.2	-4.2	-6.24	1.00	0.00	Pass
15,848.9	-8.5	-24.5	-6.0	-8.47		0.06	Pass
19,952.6	-11.2	N/A	-8.2	-11.66		-0.41	Pass

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

The SLM's frequency response is recorded by varying the frequency as specified. The reference level is FSD-45 dB at 1.0 kHz. IEC 61672 defines this test from 63 Hz to 16 kHz; "N/A" is reported instead of "Fail" for frequencies outside of this range.

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	-0.21		-0.21	Pass
12.6		N/A	2.5	-0.14		-0.14	Pass
15.8		-4.0	2.0	-0.12		-0.12	Pass
20.0		-2.0	2.0	-0.08		-0.08	Pass
25.1		-1.5	2.0	-0.07		-0.07	Pass
31.6		-1.5	1.5	-0.05		-0.05	Pass
39.8		-1.0	1.0	-0.05	0.50	-0.05	Pass
50.1		-1.0	1.0	-0.02		-0.02	Pass
63.1		-1.0	1.0	-0.04		-0.04	Pass
79.4		-1.0	1.0	-0.04		-0.04	Pass
100.0		-1.0	1.0	-0.07		-0.07	Pass
125.9		-1.0	1.0	-0.04		-0.04	Pass
158.5		-1.0	1.0	-0.04		-0.04	Pass
199.5		-1.0	1.0	-0.04		-0.04	Pass
251.2		-1.0	1.0	-0.04		-0.04	Pass
316.2		-1.0	1.0	-0.05		-0.05	Pass
398.1	0.0	-1.0	1.0	-0.05	0.40	-0.05	Pass
501.2		-1.0	1.0	-0.04		-0.04	Pass
631.0		-1.0	1.0	-0.04		-0.04	Pass
794.3		-1.0	1.0	-0.08		-0.08	Pass
1,000.0		Reference					
1,258.9		-1.0	1.0	-0.04	0.40	-0.04	Pass
1,584.9		-1.0	1.0	-0.03		-0.03	Pass
1,995.3		-1.0	1.0	-0.03		-0.03	Pass
2,511.9		-1.0	1.0	-0.02		-0.02	Pass
3,162.3		-1.0	1.0	-0.02		-0.02	Pass
3,981.1		-1.0	1.0	-0.02	0.60	-0.02	Pass
5,011.9		-1.5	1.5	-0.01		-0.01	Pass
6,309.6		-2.0	1.5	0.00		0.00	Pass
7,943.3		-2.5	1.5	-0.03		-0.03	Pass
10,000.0		-3.0	2.0	-0.03		-0.03	Pass
12,589.3		-5.0	2.0	0.00		0.00	Pass
15,848.9		-16.0	2.5	-0.09	1.00	-0.09	Pass
19,952.6		N/A	3.0	-0.33		-0.33	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 uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to $L_{AFmax}(toneburst) - L_{AF}(steady-state)$

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	-0.03		-0.03	Pass
500.00	-0.1	-0.6	0.4	-0.12		-0.02	Pass
200.00	-1.0	-1.5	-0.5	-1.06		-0.06	Pass
100.00	-2.6	-3.6	-1.6	-2.80		-0.20	Pass
50.00	-4.8	-5.8	-3.8	-4.93		-0.13	Pass
20.00	-8.3	-9.3	-7.3	-8.53	0.20	-0.23	Pass
10.00	-11.1	-12.1	-10.1	-11.49		-0.39	Pass
5.00	-14.1	-15.1	-13.1	-14.33		-0.23	Pass
2.00	-18.0	-19.5	-17.0	-18.33		-0.33	Pass
1.00	-21.0	-23.0	-20.0	-21.33		-0.33	Pass
0.50	-24.0	-26.5	-23.0	-24.37		-0.37	Pass
0.25	-27.0	-30.0	-26.0	-27.41		-0.41	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 uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to $L_{CFmax}(toneburst) - L_{CF}(steady-state)$

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	0.18		0.18	Pass
500.00	-0.1	-0.6	0.4	0.09		0.19	Pass
200.00	-1.0	-1.5	-0.5	-0.89		0.11	Pass
100.00	-2.6	-3.6	-1.6	-2.50		0.10	Pass
50.00	-4.8	-5.8	-3.8	-4.84		-0.04	Pass
20.00	-8.3	-9.3	-7.3	-8.20	0.20	0.10	Pass
10.00	-11.1	-12.1	-10.1	-11.03		0.07	Pass
5.00	-14.1	-15.1	-13.1	-13.99		0.11	Pass
2.00	-18.0	-19.5	-17.0	-18.04		-0.04	Pass
1.00	-21.0	-23.0	-20.0	-20.87		0.13	Pass
0.50	-24.0	-26.5	-23.0	-24.11		-0.11	Pass
0.25	-27.0	-30.0	-26.0	-26.99		0.01	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 uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to $L_{ZFmax}(toneburst) - L_{ZF}(steady-state)$

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	-0.02		-0.02	Pass
500.00	-0.1	-0.6	0.4	-0.11		-0.01	Pass
200.00	-1.0	-1.5	-0.5	-1.07		-0.07	Pass
100.00	-2.6	-3.6	-1.6	-2.69		-0.09	Pass
50.00	-4.8	-5.8	-3.8	-5.12		-0.32	Pass
20.00	-8.3	-9.3	-7.3	-8.53	0.20	-0.23	Pass
10.00	-11.1	-12.1	-10.1	-11.22		-0.12	Pass
5.00	-14.1	-15.1	-13.1	-14.38		-0.28	Pass
2.00	-18.0	-19.5	-17.0	-18.37		-0.37	Pass
1.00	-21.0	-23.0	-20.0	-21.41		-0.41	Pass
0.50	-24.0	-26.5	-23.0	-24.19		-0.19	Pass
0.25	-27.0	-30.0	-26.0	-27.29		-0.29	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 uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to $L_{AFmax}(toneburst) - L_{AF}(steady-state)$

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	-2.09		-0.09	Pass
500.0	-4.1	-4.6	-3.6	-4.16		-0.06	Pass
200.0	-7.4	-7.9	-6.9	-7.56		-0.16	Pass
100.0	-10.2	-11.2	-9.2	-10.36		-0.16	Pass
50.0	-13.1	-14.1	-12.1	-13.27	0.20	-0.17	Pass
20.0	-17.0	-18.5	-16.0	-17.19		-0.19	Pass
10.0	-20.0	-22.0	-19.0	-20.17		-0.17	Pass
5.0	-23.0	-25.5	-22.0	-23.17		-0.17	Pass
2.0	-27.0	-30.0	-26.0	-27.15		-0.15	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 uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to $L_{CFmax(toneburst)} - L_{CF(steady-state)}$

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	-1.87	0.20	0.13	Pass
500.0	-4.1	-4.6	-3.6	-3.96		0.14	Pass
200.0	-7.4	-7.9	-6.9	-7.35		0.05	Pass
100.0	-10.2	-11.2	-9.2	-10.12		0.08	Pass
50.0	-13.1	-14.1	-12.1	-13.06		0.04	Pass
20.0	-17.0	-18.5	-16.0	-16.99		0.01	Pass
10.0	-20.0	-22.0	-19.0	-19.94		0.06	Pass
5.0	-23.0	-25.5	-22.0	-22.95		0.05	Pass
2.0	-27.0	-30.0	-26.0	-26.90		0.10	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 uncertainty, for what the sound level meter should indicate according to IEC 61672

Data Found: the value the sound level meter actually indicates; equal to $L_{ZFmax(toneburst)} - L_{ZF(steady-state)}$

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	-2.08	0.20	-0.08	Pass
500.0	-4.1	-4.6	-3.6	-4.17		-0.07	Pass
200.0	-7.4	-7.9	-6.9	-7.53		-0.13	Pass
100.0	-10.2	-11.2	-9.2	-10.34		-0.14	Pass
50.0	-13.1	-14.1	-12.1	-13.27		-0.17	Pass
20.0	-17.0	-18.5	-16.0	-17.15		-0.15	Pass
10.0	-20.0	-22.0	-19.0	-20.14		-0.14	Pass
5.0	-23.0	-25.5	-22.0	-23.14		-0.14	Pass
2.0	-27.0	-30.0	-26.0	-27.13		-0.13	Pass

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

The sound level meter's sound exposure level (SEL) response to repeated 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 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

Data Found: the value the sound level meter actually indicates; equal to $L_{AE(toneburst)} - L_{AF(steady-state)}$

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	-0.03	0.20	-0.03	Pass
500.0	-3.0	-3.5	-2.5	-3.13		-0.13	Pass
200.0	-7.0	-7.5	-6.5	-7.11		-0.11	Pass
100.0	-10.0	-11.0	-9.0	-10.12		-0.12	Pass
50.0	-13.0	-14.0	-12.0	-12.42		0.58	Pass
20.0	-17.0	-18.0	-16.0	-16.44		0.56	Pass
10.0	-20.0	-21.0	-19.0	-19.33		0.67	Pass
5.0	-23.0	-24.0	-22.0	-22.35		0.65	Pass
2.0	-27.0	-28.5	-26.0	-26.43		0.57	Pass
1.0	-30.0	-32.0	-29.0	-30.17		-0.17	Pass
0.5	-33.0	-35.5	-32.0	-32.51		0.49	Pass
0.25	-36.0	-39.0	-35.0	-35.54		0.46	Pass

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

Level linearity is tested 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

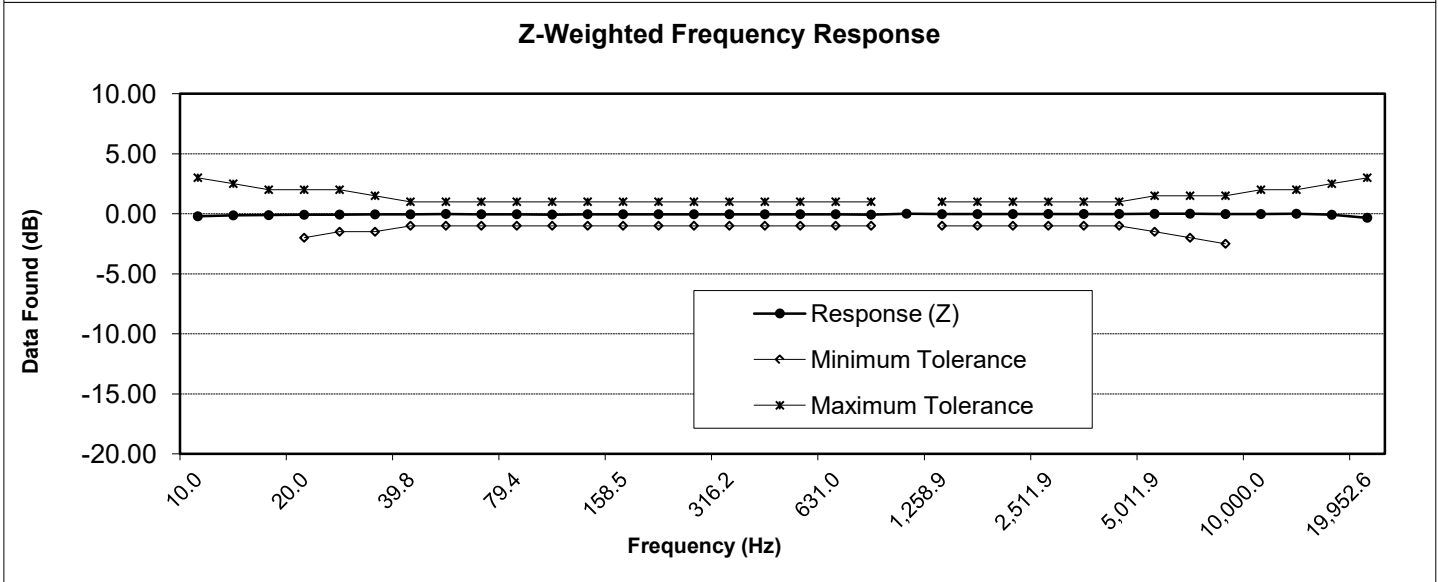
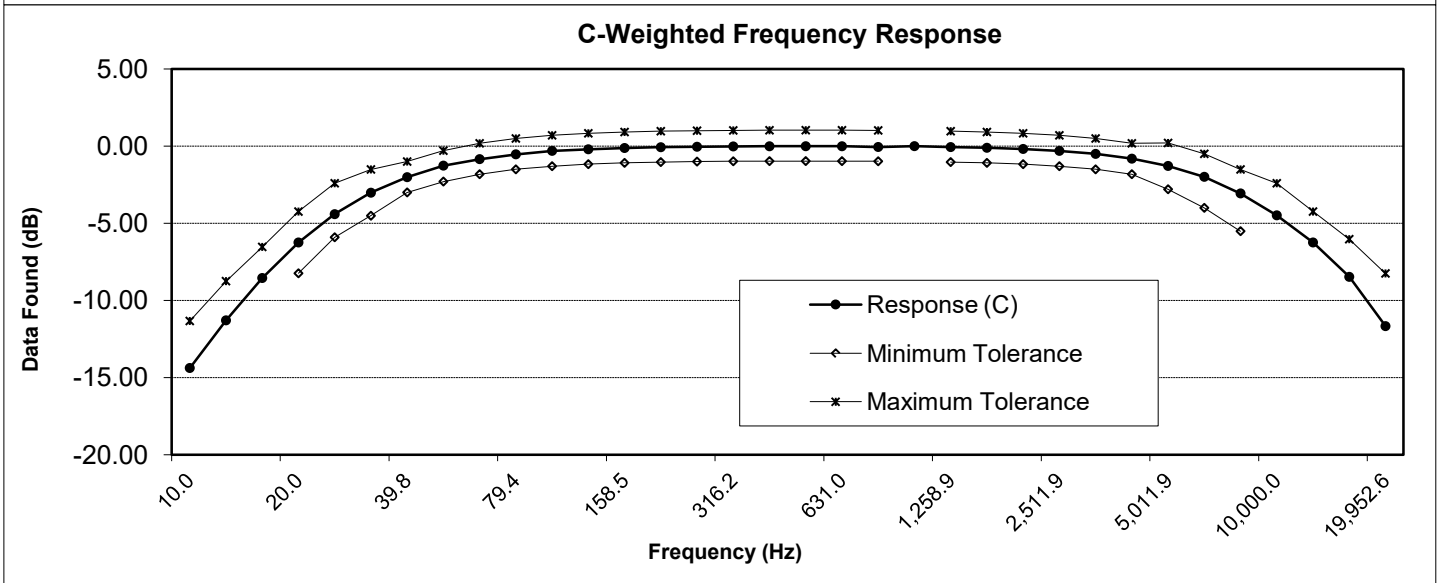
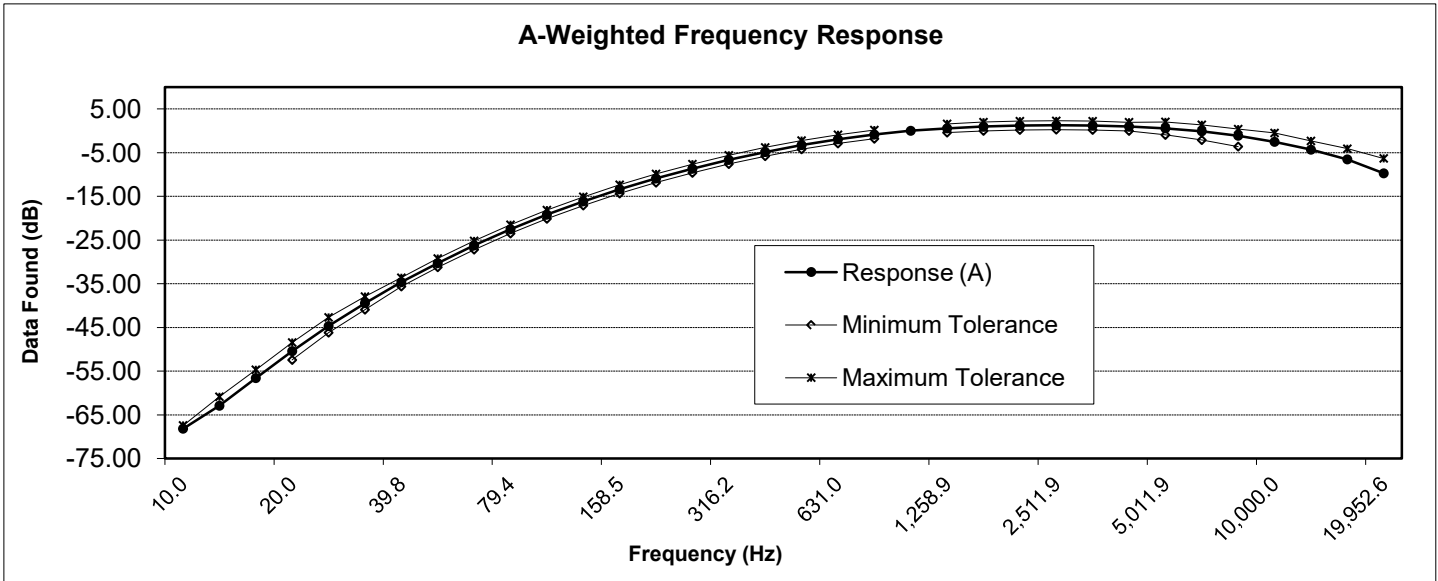
Tolerance: the acceptable difference, including the stated uncertainty, from nominal according to IEC 61672

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		
114.0			Reference 1					
119.0	119.0		119.05		0.05	N/A	Pass	
124.0	124.0		124.05		0.05	0.00	Pass	
129.0	129.0		129.05		0.05	0.00	Pass	
134.0	134.0		134.05		0.05	0.00	Pass	
139.0	139.0		139.03		0.03	-0.02	Pass	
140.0	140.0		Overload		N/A	N/A	N/A	
141.0	141.0							
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	1.1		0.3				
149.0	149.0							
150.0	150.0							
151.0	151.0							
152.0	152.0							
153.0	153.0							
154.0	154.0							
155.0	155.0							
156.0	156.0							
157.0	157.0							
158.0	158.0							
159.0	159.0							
160.0	160.0							
161.0	161.0							
Part 2: Decreasing Input Levels								
Input Level (dB)	Nominal Value (dB)	Tolerance (± dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)		Pass/Fail	
					Measured	Differential		
139.0			Reference 2					
134.0	134.0		134.06		0.06	N/A	Pass	
129.0	129.0		129.06		0.06	0.00	Pass	
124.0	124.0		124.06		0.06	0.00	Pass	
119.0	119.0		119.05		0.05	0.00	Pass	
114.0	114.0		114.05		0.05	0.00	Pass	
109.0	109.0		108.96		-0.04	-0.10	Pass	
104.0	104.0		103.96		-0.04	0.00	Pass	
99.0	99.0		98.92		-0.08	-0.04	Pass	
94.0	94.0		93.94		-0.06	0.01	Pass	
89.0	89.0		89.03		0.03	0.09	Pass	
84.0	84.0		84.03		0.03	0.00	Pass	
79.0	79.0		79.03		0.03	0.00	Pass	
74.0	74.0		74.03		0.03	0.00	Pass	
69.0	69.0	1.1	68.93	0.3	-0.07	-0.10	Pass	
64.0	64.0		63.93		-0.07	0.00	Pass	
59.0	59.0		58.93		-0.07	-0.01	Pass	
54.0	54.0		53.94		-0.06	0.02	Pass	
49.0	49.0		48.94		-0.06	-0.01	Pass	
44.0	44.0		43.96		-0.04	0.02	Pass	
39.0	39.0		38.99		-0.01	0.03	Pass	
34.0	34.0		34.11		0.11	0.13	Pass	
29.0	29.0		29.33		0.33	0.22	Pass	
28.0	28.0		28.37		0.37	0.04	Pass	
27.0	27.0		27.50		0.50	0.12	Pass	
26.0	26.0		26.68		0.68	0.19	Pass	



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

Relative to 94 dB at 1,000 Hz, it is verified that for each filter center frequency, if the input frequency matches that of the center frequency, the meter should indicate within the tolerance shown.

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
7.8	7.8		0.30	Pass
15.6	15.6		0.14	Pass
31.3	31.3		0.07	Pass
62.5	62.5		0.04	Pass
125.0	125.0		0.04	Pass
250.0	250.0	0.5	0.04	Pass
500.0	500.0		0.03	Pass
1,000.0	1,000.0		0.02	Pass
2,000.0	2,000.0		0.02	Pass
4,000.0	4,000.0		0.01	Pass
8,000.0	8,000.0		-0.02	Pass
16,000.0	16,000.0		0.08	Pass

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

Relative to 94 dB at 1,000 Hz, it is verified that for each filter center frequency, if the input frequency matches that of the center frequency, the meter should indicate within the tolerance shown.

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
6.2	6.2		0.44	Pass
7.8	7.8		0.32	Pass
9.8	9.8		0.23	Pass
12.4	12.4		0.20	Pass
15.6	15.6		0.13	Pass
19.7	19.7		0.09	Pass
24.8	24.8		0.07	Pass
31.3	31.3		0.07	Pass
39.4	39.4		0.04	Pass
49.6	49.6		-0.02	Pass
62.5	62.5		0.04	Pass
78.7	78.7		0.03	Pass
99.2	99.2		0.06	Pass
125.0	125.0		0.03	Pass
157.5	157.5		0.04	Pass
198.4	198.4		0.04	Pass
250.0	250.0		0.04	Pass
315.0	315.0	0.5	0.03	Pass
396.9	396.9		0.03	Pass
500.0	500.0		0.03	Pass
630.0	630.0		0.02	Pass
793.7	793.7		0.02	Pass
1,000.0	1,000.0		0.02	Pass
1,259.9	1,259.9		0.01	Pass
1,587.4	1,587.4		0.01	Pass
2,000.0	2,000.0		0.01	Pass
2,519.8	2,519.8		0.01	Pass
3,174.8	3,174.8		0.01	Pass
4,000.0	4,000.0		0.00	Pass
5,039.7	5,039.7		-0.01	Pass
6,349.6	6,349.6		-0.02	Pass
8,000.0	8,000.0		-0.03	Pass
10,079.4	10,079.4		-0.04	Pass
12,699.2	12,699.2		-0.03	Pass
16,000.0	16,000.0		0.05	Pass
20,158.7	20,158.7		0.28	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	
7.8	5.5	11.0			-4.37	-1.39	Pass
15.6	11.1	22.1			-4.19	-1.62	Pass
31.3	22.1	44.1			-3.97	-1.85	Pass
62.5	44.2	88.3			-3.79	-2.09	Pass
125.0	88.5	176.6			-3.62	-2.33	Pass
250.0	177.0	353.1	-5.7	-1.2	-3.42	-2.54	Pass
500.0	354.0	706.3			-3.27	-2.82	Pass
1,000.0	707.9	1,412.5			-3.12	-3.11	Pass
2,000.0	1,415.9	2,825.1			-2.98	-3.43	Pass
4,000.0	2,831.8	5,650.2			-2.84	-3.76	Pass
8,000.0	5,663.6	11,300.3			-2.71	-4.14	Pass
16,000.0	11,327.1	22,600.6			-2.47	-5.28	Pass

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

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	
6.2	5.5	7.0			N/A	N/A	N/A
7.8	7.0	8.8			N/A	N/A	N/A
9.8	8.8	11.0			N/A	N/A	N/A
12.4	11.1	13.9			N/A	N/A	N/A
15.6	13.9	17.5			N/A	N/A	N/A
19.7	17.5	22.1			N/A	N/A	N/A
24.8	22.1	27.8			-5.2	-1.2	Pass
31.3	27.9	35.1			-5.0	-1.3	Pass
39.4	35.1	44.2			-4.8	-1.4	Pass
49.6	44.2	55.7			-4.7	-1.5	Pass
62.5	55.7	70.1			-4.5	-1.6	Pass
78.7	70.2	88.4			-4.4	-1.7	Pass
99.2	88.4	111.3			-4.2	-1.8	Pass
125.0	111.4	140.3			-4.1	-1.9	Pass
157.5	140.4	176.7			-4.0	-2.0	Pass
198.4	176.8	222.6			-3.8	-2.1	Pass
250.0	222.8	280.5			-3.7	-2.2	Pass
315.0	280.7	353.4	-5.7	-1.2	-3.6	-2.3	Pass
396.9	353.7	445.3			-3.4	-2.4	Pass
500.0	445.6	561.0			-3.3	-2.5	Pass
630.0	561.5	706.8			-3.2	-2.7	Pass
793.7	707.4	890.5			-3.1	-2.8	Pass
1,000.0	891.3	1,122.0			-3.0	-2.9	Pass
1,259.9	1,122.9	1,413.7			-2.9	-3.1	Pass
1,587.4	1,414.8	1,781.1			-2.8	-3.2	Pass
2,000.0	1,782.5	2,244.0			-2.6	-3.4	Pass
2,519.8	2,245.8	2,827.3			-2.6	-3.6	Pass
3,174.8	2,829.5	3,562.2			-2.5	-3.7	Pass
4,000.0	3,565.0	4,488.1			-2.4	-3.9	Pass
5,039.7	4,491.6	5,654.6			-2.3	-4.0	Pass
6,349.6	5,659.1	7,124.4			-2.2	-4.2	Pass
8,000.0	7,130.0	8,976.1			-2.1	-4.4	Pass
10,079.4	8,983.2	11,309.2			-2.0	-4.6	Pass
12,699.2	11,318.2	14,248.7			-1.9	-4.8	Pass
16,000.0	14,260.0	17,952.3			-1.8	-5.1	Pass
20,158.7	17,966.5	22,618.5			-1.6	-5.4	Pass

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	-75.0	-95.99	Pass
-3	125.9	N/A	-62.0	-85.47	Pass
-2	251.2	N/A	-42.5	-74.42	Pass
-1	501.2	N/A	-18.0	-72.21	Pass
- 1/2	707.9	-4.5	-2.3	-3.10	Pass
- 3/8	771.8	-1.1	0.2	-0.17	Pass
- 1/4	841.4	-0.4	0.2	0.03	Pass
- 1/8	917.3	-0.2	0.2	0.04	Pass
0	1,000.0	-0.2	0.2	0.00	Pass
1/8	1,090.2	-0.2	0.2	0.02	Pass
1/4	1,188.5	-0.4	0.2	0.03	Pass
3/8	1,295.7	-1.1	0.2	0.01	Pass
1/2	1,412.5	-4.5	-2.3	-3.09	Pass
1	1,995.3	N/A	-18.0	-96.85	Pass
2	3,981.1	N/A	-42.5	-96.92	Pass
3	7,943.3	N/A	-62.0	-96.49	Pass
4	15,848.9	N/A	-75.0	-93.95	Pass

