

CERTIFICATE OF CALIBRATION
N/A
FOR LARSON DAVIS
PRECISION INTEGRATING AND LOGGING
SOUND LEVEL METER

Model 820	Serial No. XXX
	ID No. N/A
With Microphone Model 2560	Serial No. XXX
With Preamplifier Model PRM828	Serial No. XXX
	P.O. No. N/A

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

was tested and met factory specifications at the points tested.

Complies to: ANSI S1.4-1983 Type 1;

IEC 651-1979 Type 1

on **21 DEC 2011**

BY HAROLD LYNCH
Service Manager

As received condition: Within Specification.

Re-calibration due on: **21 DEC 2012**

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" condition.

Reference Test Procedure: **ACCT Procedure 812-820 Ver 3.5.0**

Temperature 23°C	Relative Humidity 30%	Barometric Pressure 989.83 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 SOUND & VIBRATION INSTRUMENTATION
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Calibration data for

Larson Davis Precision Integrating and Logging Sound Level Meter

Type 820# XXX, ID# N/A

with Preamplifier 828# XXX and Microphone 2560# XXX

Performed on December 21, 2011

for

Odin Metrology, Inc.

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

Environmental Conditions
 Relative humidity: 30%
 Ambient temperature: 23°C
 Ambient pressure: 989.83 hPa

The following calibration was performed per ACCT Procedure 812-820 Version 3.5.0.
 The data represent both the "As Found" and the "As Left" conditions.

Page No.	Test	Standard Section (Type 1)		Result
		ANSI S1.4	IEC 651	
2	Internal Clock	Reference Only		Pass
2	Sensitivity Verification with Acoustic Calibrator	Reference Only		See Data
2	Acoustic Frequency Response with Microphone	5.1, 5.2	6.1, 6.2	Pass
2	Self-Generated Noise	5.6		Pass
3	Output Impedance	9.2	10.2	Pass
3	AC Full Scale Output Voltage	Reference Only		See Data
3	DC Full Scale Output Voltage	Reference Only		See Data
3	DC Linearity	Reference Only		See Data
4	Overload Indication	8.3.1	9.3.1	Pass
4	Peak Characteristic	6.5	7.5	Pass
4	Decay Time Constants	6.2, 6.3	7.2, 7.3	Pass
5	Steady-State Response	6.4	7.4	Pass
5	Frequency Response	5.1, 5.2	6.1, 6.2	Pass
5	A-Weighted			Pass
6	C-Weighted			Pass
	Toneburst Response			Pass
7	Fast time weighting	6.2	7.2	Pass
7	Slow time weighting	6.2	7.2	Pass
7	Impulse time weighting (single)	6.3	7.3	Pass
7	Impulse time weighting (continuous)	6.3	7.3	Pass
	Differential Level Linearity	6.9, 6.10	7.9, 7.10	Pass
8	A-Weighted			Pass
8	C-Weighted			Pass

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 Date/Time	Location	UTC Offset (Hr:Min)	Daylight Saving Time	SLM Clock Before Set	SLM Clock After Set
Wed 21Dec2011 07:23:45	California	-8:00	No	Wed 21Dec2011 07:23:07	Wed 21Dec2011 07:23:48

Sensitivity Verification with Acoustic Calibrator

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 Freq.: 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 2560# XXX, preamplifier 828# XXX, and calibrator 4231# 1770857.

Calibrator Freq. (Hz)	Calibrator SPL (dB)	SLM SPL Before (dB)	SLM SPL After (dB)	Uncertainty (dB)
1,000.0	114.0	114.21	114.00	0.40

Acoustic Frequency Response with Microphone (S1.4 § 5.1, 5.2, 651 § 6.1, 6.2)

The acoustic 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)

RI Corr.: random incidence correction for microphone to be added to displayed SLM (pressure) value

Corrected Resp.: SLM's reading plus the correction indicated

Nominal Value: what the sound level meter should indicate according to ANSI S1.4 and IEC 651

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate according to ANSI S1.4 and IEC 651

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

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

Performed with microphone 2560# XXX, preamplifier 828# XXX, and calibrator 4226# 2141942.

Frequency (Hz)	Data Found (dB)	RI Corr. (dB)	Corrected Resp. (dB)	Nominal Value (dB)	Tolerance (dB)		Uncertainty (dB)	Deviation (dB)	Pass/Fail
					Minimum	Maximum			
31.5	110.95	0.00	110.95	110.99	109.64	112.34	0.15	-0.04	Pass
63.0	113.12	0.00	113.12	113.18	112.33	114.03		-0.06	Pass
125.0	113.75	0.00	113.75	113.83	112.98	114.68		-0.08	Pass
250.0	114.00	0.00	114.00	114.00	113.15	114.85		0.00	Pass
500.0	114.00	0.00	114.00	114.03	113.18	114.88		-0.03	Pass
1,000.0	Reference								
2,000.0	113.75	0.05	113.80	113.83	112.98	114.68	0.15	-0.03	Pass
4,000.0	113.00	0.25	113.25	113.18	112.33	114.03	0.25	0.07	Pass
8,000.0	109.52	0.60	110.12	110.99	108.24	112.24	0.50	-0.87	Pass
12,500.0	100.88	1.40	102.28	107.76	102.26	110.26	0.50	-5.48	Pass

Self-Generated Noise (S1.4 § 5.6, 651 § 6.6)

To measure inherent noise, the input to the SLM is terminated with a shorted dummy microphone of equal capacitance.

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

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate according to ANSI S1.4 and IEC 651

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	Tolerance (< dB)	Data Found (dB)	Uncertainty (dB)	Pass/Fail
A	30.00	13.30	0.003	Pass
C		12.83		Pass

Output Impedance (S1.4 § 9.2, 651 § 10.2)

A reference signal is applied to the sound level meter and the output is 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 to ANSI S1.4 and IEC 651

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	114.0	114.0	0.10	114.09	0.10	0.09	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 Rdg.: 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 Rdg. (dB)	Data Found (mV)	Uncertainty (mV)
129.91	2610.16	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 Rdg.: 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 Rdg. (dB)	Data Found (mV)	Uncertainty (mV)
129.85	11.99	0.10

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

Sensitivity: the calculated sensitivity based on the DC-outputs at the levels of FSD and FSD-80 dB.

Rel. Input Level (dB)	Data Found (mV)	Uncertainty (mV)	Sensitivity (mV/dB)
0.0	2,418.06	0.40	18.85
-10.0	2,344.65		
-20.0	2,145.61		
-30.0	1,940.93		
-40.0	1,743.21		
-50.0	1,541.55		
-60.0	1,336.92	0.05	
-70.0	1,136.83		
-80.0	936.77		
-90.0	730.83		
-100.0	532.62		

Overload Indication (S1.4 § 8.3.1, 651 § 9.3.1)

SLM overload is expected when the display value exceeds the tolerance of the inverse A-weighted test (an overload indication when overload is not expected is not a failure condition). This test will not continue past 63.1 Hz as a precautionary measure.

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

Rel. Input Level: input level to SLM relative to reference level (FSD-5 dB) at 1,000 Hz; equal to the A-weighted frequency curve

Tolerance: tolerance of the A-weighted test at the stated frequency, according to ANSI S1.4 and IEC 651

Data Found: the value the SLM indicates at the stated frequency and input level

Overload Expected: yes or no depending on if the SLM indication has exceeded the stated tolerance

Overload Occurred: whether or not the SLM indicated an overload condition

Frequency (Hz)	Rel. Input Level (dB)	Tolerance (dB)		Data Found (dB)	Overload		Pass/Fail	
		Minimum	Maximum		Expected	Occurred		
1,000.0		Reference						
794.3	0.8	124.0	126.0	124.97	No	Yes	N/A	
631.0	1.9	124.0	126.0	124.72	No	Yes	N/A	
501.2	3.2	124.0	126.0	124.34	No	Yes	N/A	
398.1	4.8	124.0	126.0	123.96	Yes	Yes	Pass	
316.2	6.6	124.0	126.0					
251.2	8.6	124.0	126.0					
199.5	10.9	124.0	126.0					
158.5	13.4	124.0	126.0					
125.9	16.1	124.0	126.0					
100.0	19.1	124.0	126.0					
79.4	22.5	124.0	126.0					
63.1	26.2	124.0	126.0					
50.1	30.2	124.0	126.0					
39.8	34.6	123.5	126.5					
31.6	39.4	123.5	126.5					
25.1	44.7	123.0	127.0					
20.0	50.5	122.5	127.5					

Peak Characteristic (S1.4 § 6.5, 651 § 7.5)

The rise time of the peak detector must be such that the response of a short duration (100 µs) rectangular pulse is similar to that of a reference pulse of 10 ms.

Polarity: indicates the bursts are the half-period above (positive) or below (negative) the zero level of the rectangular pulse

Input Level: the maximum peak indication on the SLM after a single reference burst is triggered

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate according to ANSI S1.4 and IEC 651

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

Polarity	Input Level (dB)	Tolerance (≥ dB)	Data Found (dB)	Uncertainty (dB)	Pass/Fail
Positive	129.00	127.40	129.85	0.4	Pass
	109.00	107.40	109.72		Pass
Negative	129.00	127.40	129.98		Pass
	109.00	107.40	109.98		Pass

Decay Time Constants for Time Weightings Fast and Slow (S1.4 § 6.2, 6.3, 651 § 7.2, 7.3)

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 ANSI S1.4 and IEC 651

Tolerance: the acceptable range, including the stated uncertainty, for the decay rate for this time weighting

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)

Time Weighting	Tolerance (dB/s)		Measured Rate (dB/s)	Uncertainty (dB/s)	Pass/Fail
	Minimum	Maximum			
Fast	22.0	N/A	34.30	2.00	Pass
Slow	3.7	N/A	4.01	0.40	Pass
Impulse	2.4	3.4	2.75	N/A	Pass

Steady-State Response (S1.4 § 6.4, 651 § 7.4)

With reference to LAF at the SLM reference level indicated, the measurements of the other time weighting parameters may not differ by more than the specified tolerance. Test frequency is 1.0 kHz.

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 ANSI S1.4 and IEC 651

Tolerance: the acceptable difference from nominal, including the stated uncertainty, for what the sound level meter should indicate according to ANSI S1.4 and IEC 651

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	Input Level (dB)	Nominal Value (dB)	Tolerance (± dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
Fast		Reference				Reference	
Slow	114.0	114.0	0.1	113.99	0.003	-0.01	Pass
Impulse				114.00		0.00	Pass

A-Frequency-Weighted Frequency Response (S1.4 § 5.1, 5.2, 651 § 6.1, 6.2)

The sound level meter's frequency response relative to the meter's reference level at 1,000 Hz is recorded by varying the frequency as specified.

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

Nominal Value: the value the sound level meter should indicate according to ANSI S1.4 and IEC 651 (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 ANSI S1.4 and IEC 651

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				
20.0	-50.5	-52.5	-48.5	-50.66		-0.20	Pass
25.1	-44.7	-46.2	-43.2	-44.69		0.01	Pass
31.6	-39.4	-40.4	-38.4	-39.68		-0.24	Pass
39.8	-34.6	-35.6	-33.6	-34.82		-0.19	Pass
50.1	-30.2	-30.7	-29.7	-30.31		-0.08	Pass
63.1	-26.2	-26.7	-25.7	-26.42	0.50	-0.23	Pass
79.4	-22.5	-23.0	-22.0	-22.77		-0.27	Pass
100.0	-19.1	-19.6	-18.6	-19.19		-0.05	Pass
125.9	-16.1	-16.6	-15.6	-16.03		0.07	Pass
158.5	-13.4	-13.9	-12.9	-13.36		-0.01	Pass
199.5	-10.9	-11.4	-10.4	-11.03		-0.16	Pass
251.2	-8.6	-9.2	-8.0	-8.78		-0.15	Pass
316.2	-6.6	-7.2	-6.0	-6.65		-0.04	Pass
398.1	-4.8	-5.4	-4.2	-4.78	0.40	0.03	Pass
501.2	-3.2	-3.8	-2.6	-3.16		0.07	Pass
631.0	-1.9	-2.5	-1.3	-1.78		0.12	Pass
794.3	-0.8	-1.4	-0.2	-0.79		0.03	Pass
1,000.0	0.0	Reference					
1,258.9	0.6	0.0	1.2	0.47	0.40	-0.12	Pass
1,584.9	1.0	0.6	1.4	0.85		-0.13	Pass
1,995.3	1.2	0.8	1.6	1.10		-0.10	Pass
2,511.9	1.3	0.9	1.7	1.09		-0.18	Pass
3,162.3	1.2	0.8	1.6	1.10		-0.10	Pass
3,981.1	1.0	0.6	1.4	0.85	0.60	-0.12	Pass
5,011.9	0.5	-0.4	1.4	0.43		-0.12	Pass
6,309.6	-0.1	-1.5	0.8	-0.28		-0.16	Pass
7,943.3	-1.1	-3.5	-0.2	-1.15		-0.04	Pass
10,000.0	-2.5	-5.9	-1.1	-2.61		-0.12	Pass
12,589.3	-4.3	-9.3	-2.3	-4.53		-0.21	Pass
15,848.9	-6.6	N/A	-4.6	-6.90	1.00	-0.30	Pass
19,952.6	-9.3	N/A	-7.3	-9.79		-0.47	Pass

C-Frequency-Weighted Frequency Response (S1.4 § 5.1, 5.2, 651 § 6.1, 6.2)

The sound level meter's frequency response relative to the meter's reference level at 1,000 Hz is recorded by varying the frequency as specified.

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

Nominal Value: the value the sound level meter should indicate according to ANSI S1.4 and IEC 651 (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 ANSI S1.4 and IEC 651

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				
20.0	-6.2	-8.2	-4.2	-6.60		-0.36	Pass
25.1	-4.4	-5.9	-2.9	-4.68		-0.27	Pass
31.6	-3.0	-4.0	-2.0	-3.29		-0.28	Pass
39.8	-2.0	-3.0	-1.0	-2.24		-0.24	Pass
50.1	-1.3	-1.8	-0.8	-1.52		-0.23	Pass
63.1	-0.8	-1.3	-0.3	-1.09	0.50	-0.27	Pass
79.4	-0.5	-1.0	0.0	-0.64		-0.14	Pass
100.0	-0.3	-0.8	0.2	-0.49		-0.19	Pass
125.9	-0.2	-0.7	0.3	-0.27		-0.10	Pass
158.5	-0.1	-0.6	0.4	-0.14		-0.05	Pass
199.5	0.0	-0.5	0.5	-0.12		-0.09	Pass
251.2	0.0	-0.6	0.6	-0.11		-0.11	Pass
316.2	0.0	-0.6	0.6	0.00		-0.02	Pass
398.1	0.0	-0.6	0.6	0.00	0.40	-0.03	Pass
501.2	0.0	-0.6	0.6	0.01		-0.02	Pass
631.0	0.0	-0.6	0.6	0.01		-0.02	Pass
794.3	0.0	-0.6	0.6	0.01		-0.01	Pass
1,000.0	0.0	Reference					
1,258.9	0.0	-0.6	0.6	-0.11	0.40	-0.08	Pass
1,584.9	-0.1	-0.5	0.3	-0.11		-0.02	Pass
1,995.3	-0.2	-0.6	0.2	-0.24		-0.07	Pass
2,511.9	-0.3	-0.7	0.1	-0.36		-0.07	Pass
3,162.3	-0.5	-0.9	-0.1	-0.56		-0.06	Pass
3,981.1	-0.8	-1.2	-0.4	-0.86	0.60	-0.04	Pass
5,011.9	-1.3	-2.2	-0.4	-1.36		-0.07	Pass
6,309.6	-2.0	-3.4	-1.1	-1.99		0.01	Pass
7,943.3	-3.0	-5.4	-2.1	-2.99		0.02	Pass
10,000.0	-4.4	-7.8	-3.0	-4.36		0.05	Pass
12,589.3	-6.2	-11.2	-4.2	-6.26		-0.02	Pass
15,848.9	-8.5	N/A	-6.5	-8.74	1.00	-0.21	Pass
19,952.6	-11.2	N/A	-9.2	-11.61		-0.36	Pass

Toneburst Response (S1.4 § 6.2, 6.3, 651 § 7.2, 7.3)

The sound level meter's A-weighted response to tonebursts at 2.0 kHz is measured.

Burst Dur.: the duration of the toneburst

Burst Rep.: repeat rate of the toneburst (continuous tests only)

Input Level: the level of the steady-state sinusoidal signal as indicated on the SLM display

Nominal Value: the value sound level meter should indicate according to ANSI S1.4 and IEC 651

Tolerance: the acceptable range, including the stated uncertainty, for what the sound level meter should indicate according to ANSI S1.4 and IEC 651

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

Fast time weighting, single toneburst									
Burst Dur. (ms)	Input Level (dB)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail	
			Minimum	Maximum					
200	126.0	125.0	124.2	125.8	124.38	0.2	-0.6	Pass	
	116.0	115.0	114.2	115.8	114.49		-0.5	Pass	
	106.0	105.0	104.2	105.8	104.63		-0.4	Pass	
	96.0	95.0	94.2	95.8	94.44		-0.6	Pass	
	86.0	85.0	84.2	85.8	84.63		-0.4	Pass	
	56.0	55.0	54.2	55.8	54.75		-0.3	Pass	
Slow time weighting, single toneburst									
Burst Dur. (ms)	Input Level (dB)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail	
			Minimum	Maximum					
500	126.0	121.9	121.1	122.7	121.69	0.2	-0.3	Pass	
	116.0	111.9	111.1	112.7	111.62		-0.3	Pass	
	106.0	101.9	101.1	102.7	101.68		-0.3	Pass	
	96.0	91.9	91.1	92.7	91.62		-0.3	Pass	
	86.0	81.9	81.1	82.7	81.74		-0.2	Pass	
	56.0	51.9	51.1	52.7	51.87		-0.1	Pass	
Impulse time weighting, single toneburst									
Burst Dur. (ms)	Input Level (dB)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail	
			Minimum	Maximum					
2	126.0	113.4	111.65	115.2	114.25	0.2	0.8	Pass	
	116.0	103.4	101.65	105.2	103.62		0.2	Pass	
	106.0	93.4	91.65	95.2	92.19		-1.3	Pass	
	96.0	83.4	81.65	85.2	82.37		-1.1	Pass	
	86.0	73.4	71.65	75.2	72.36		-1.1	Pass	
	56.0	43.4	41.65	45.2	43.18		-0.3	Pass	
5	126.0	117.2	115.4	119.0	115.94	0.2	-1.3	Pass	
	116.0	107.2	105.4	109.0	106.01		-1.2	Pass	
	106.0	97.2	95.4	99.0	96.07		-1.2	Pass	
	96.0	87.2	85.4	89.0	86.18		-1.1	Pass	
	86.0	77.2	75.4	79.0	76.24		-1.0	Pass	
	56.0	47.2	45.4	49.0	46.74		-0.5	Pass	
20	126.0	122.4	121.1	123.7	121.49	0.2	-0.9	Pass	
	116.0	112.4	111.1	113.7	111.63		-0.8	Pass	
	106.0	102.4	101.1	103.7	101.57		-0.8	Pass	
	96.0	92.4	91.1	93.7	91.64		-0.7	Pass	
	86.0	82.4	81.1	83.7	81.68		-0.7	Pass	
	56.0	52.4	51.1	53.7	52.00		-0.4	Pass	
Impulse time weighting, continuous tonebursts									
Burst Dur. (ms)	Burst Rep. (Hz)	Input Level (dB)	Nominal Value (dB)	Tolerance (dB)		Data Found (dB)	Uncertainty (dB)	Deviation (dB)	Pass/Fail
				Minimum	Maximum				
5	2	126.0	117.2	115.4	119.0	116.11	0.2	-1.1	Pass
		116.0	107.2	105.4	109.0	106.25		-1.0	Pass
		106.0	97.2	95.4	99.0	96.18		-1.1	Pass
		96.0	87.2	85.4	89.0	86.25		-1.0	Pass
		86.0	77.2	75.4	79.0	76.23		-1.0	Pass
		56.0	47.2	45.4	49.0	46.36		-0.9	Pass
	20	126.0	118.4	116.6	120.2	119.75		1.3	Pass
		116.0	108.4	106.6	110.2	109.62		1.2	Pass
		106.0	98.4	96.6	100.2	99.62		1.2	Pass
		96.0	88.4	86.6	90.2	89.69		1.3	Pass
		86.0	78.4	76.6	80.2	79.76		1.3	Pass
		56.0	48.4	46.6	50.2	49.75		1.3	Pass
	100	126.0	123.3	122.5	124.1	123.31		0.0	Pass
		116.0	113.3	112.5	114.1	113.24		0.0	Pass
		106.0	103.3	102.5	104.1	103.25		0.0	Pass
		96.0	93.3	92.5	94.1	93.26		0.0	Pass
		86.0	83.3	82.5	84.1	83.25		0.0	Pass
		56.0	53.3	52.5	54.1	53.25		0.0	Pass

Differential Level Linearity (S1.4 § 6.9, 6.10, 651 § 7.9, 7.10)

Level linearity is tested at 1.0 kHz. The input level is varied precisely and the indicated level on the display must correspond with the change of input level. Test is performed with 10 dB steps and 1 dB steps at A- and C-frequency weighting.

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 ANSI S1.4 and IEC 651

Tolerance: the acceptable difference from nominal, including the stated uncertainty, according to ANSI S1.4 and IEC 651

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: difference between the nominal value and the data found; differential: current and previous measurement is not allowed to exceed 0.4 dB according to ANSI S1.4 and IEC 651

A-weighted							
Input Level (dB)	Nominal Value (dB)	Tolerance (± dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)		Pass/Fail
					Measured	Differential	
114.0				Reference			
120.0	120.0	0.5	119.85	0.2	-0.2	N/A	Pass
125.0	125.0		125.10		0.1	0.25	Pass
120.0	120.0		119.85		-0.2	-0.25	Pass
115.0	115.0		114.97		0.0	0.12	Pass
110.0	110.0		109.85		-0.2	-0.12	Pass
105.0	105.0		104.60		-0.4	-0.25	Pass
100.0	100.0		99.85		-0.2	0.25	Pass
95.0	95.0		94.85		-0.2	0.00	Pass
90.0	90.0		89.72		-0.3	-0.13	Pass
85.0	85.0		84.97		0.0	0.25	Pass
80.0	80.0		79.85		-0.2	-0.12	Pass
75.0	75.0		74.72		-0.3	-0.13	Pass
70.0	70.0		69.85		-0.2	0.13	Pass
65.0	65.0		64.72		-0.3	-0.13	Pass
60.0	60.0		59.72		-0.3	0.00	Pass
55.0	55.0		54.85		-0.1	0.13	Pass

C-weighted							
Input Level (dB)	Nominal Value (dB)	Tolerance (± dB)	Data Found (dB)	Uncertainty (dB)	Deviation (dB)		Pass/Fail
					Measured	Differential	
114.0				Reference			
120.0	120.0	0.5	120.14	0.2	0.1	N/A	Pass
125.0	125.0		125.25		0.3	0.11	Pass
120.0	120.0		120.14		0.1	-0.11	Pass
115.0	115.0		115.01		0.0	-0.13	Pass
110.0	110.0		110.07		0.1	0.06	Pass
105.0	105.0		104.89		-0.1	-0.18	Pass
100.0	100.0		99.89		-0.1	0.00	Pass
95.0	95.0		95.01		0.0	0.12	Pass
90.0	90.0		89.95		0.0	-0.06	Pass
85.0	85.0		85.01		0.0	0.06	Pass
80.0	80.0		80.14		0.1	0.13	Pass
75.0	75.0		74.89		-0.1	-0.25	Pass
70.0	70.0		70.01		0.0	0.12	Pass
65.0	65.0		65.01		0.0	0.00	Pass
60.0	60.0		59.89		-0.1	-0.12	Pass
55.0	55.0		55.01		0.0	0.12	Pass

