

Test Report No.:11845

Manufacturer: Rion
Instrument type: NA27
Serial no: 00431992

Customer: Scantek Inc
Department:
Address: 7060 Oakland Mills Road, Suite L
City: Columbia, MD 21046

Customer Order No:
Contact Person:
Phone/Mail: 410-290-7726

Environmental conditions:
Pressure: $100.5 \pm 0.001 \text{ kPa}$
Temperature: $23.4 \pm 1^\circ \text{C}$
Relative humidity: $44.5 \pm 2\% \text{ RH}$

Date: 2/9/2004
Engineer Mariana Buzduga

Measurement Results:

Input Amplifier Test: Gain Test / Attenuator setting - According to ANSI S1.4-1983 #5.3

The level range control is tested in 10 dB steps. The SLM is set to the reference range and the signal generator is adjusted to give a reading equal to the reference level (Normally 94 dB.) The SLM range control is then set to the least sensitive range, and the generator level is set to 10 dB below full scale. The level range control is then decreased in 10 dB steps until the most sensitive range is reached. The generator level is adjusted accordingly.

Full Scale (dB)	Ref. Value (dB)	Meas. Value (dB)	Tol. norm (dB)	Error Value (dB)
Measured at 1000 Hz				
140	115.0	115.0	0.5	0.0
130	105.0	105.1	0.5	0.1
120	95.0	94.9	0.5	0.1
110	85.0	85.0	0.5	0.0
100	75.0	74.9	0.5	0.1
90	65.0	65.0	0.5	0.0
80	55.0	55.0	0.5	0.0

Test Passed

Level Linearity Test - According to ANSI S1.4-1983, #6.9 & 6.10

The SLM is set to the reference range and the signal generator is adjusted to give a reading equal to the reference level (Normally 94dB.) The test signal is increased to give a reading equal to FSD. The generator is lowered in 1 dB step until the lower limit of the reference range is reached. The Fast SPL value is measured. The error is measured relative to 94 dB, in the last one dB step and the max error in a floating 10 dB window.

Nom. Value (dB)	Meas. Value (dB)	Tolerance limits (dB)	Error in the last 1dB (dB)	Max Error in the last 10dB (dB)	Error Rel. to ref. level (dB)
Measured at 31.5 Hz					
85.0	85.0	0.2/0.4/0.7	0.0	0.0	0.0
90.0	90.0	0.2/0.4/0.7	0.0	0.0	0.0
95.0	95.0	0.2/0.4/0.7	0.0	0.0	0.0
100.0	100.0	0.2/0.4/0.7	0.0	0.0	0.0
105.0	105.0	0.3/1.0/1.0	0.0	0.0	0.0
110.0	110.0	0.3/1.0/1.0	0.0	0.0	0.0
114.0	114.0	0.3/1.0/1.0	0.0	0.0	0.0
115.0	115.0	0.3/1.0/1.0	0.0	0.0	0.0
116.0	116.0	0.3/1.0/1.0	0.0	0.0	0.0
117.0	117.0	0.3/1.0/1.0	0.0	0.0	0.0
85.0	85.0	0.2/0.4/0.7	0.0	0.0	0.0
80.0	80.0	0.2/0.4/0.7	0.0	0.0	0.0
75.0	75.0	0.2/0.4/0.7	0.0	0.0	0.0
70.0	70.0	0.2/0.4/0.7	0.0	0.0	0.0
65.0	65.0	0.2/0.4/0.7	0.0	0.0	0.0
62.0	62.0	0.2/0.4/0.7	0.0	0.0	0.0

Level Linearity Test - According to ANSI S1.4-1983, #6.9 & 6.10

Nom. Value (dB)	Meas. Value (dB)	Tolerance limits (dB)	Error in the last 1dB (dB)	Max Error in the last 10dB (dB)	Error Rel. to ref. level (dB)
61.0	61.0	0.3/1.0/1.0	0.0	0.0	0.0
60.0	60.0	0.3/1.0/1.0	0.0	0.0	0.0
59.0	59.0	0.3/1.0/1.0	0.0	0.0	0.0
Measured at 1000 Hz					
85.0	85.0	0.2/0.4/0.7	0.0	0.0	0.0
90.0	90.0	0.2/0.4/0.7	0.0	0.0	0.0
95.0	95.0	0.2/0.4/0.7	0.0	0.0	0.0
100.0	100.0	0.2/0.4/0.7	0.0	0.0	0.0
105.0	105.0	0.3/1.0/1.0	0.0	0.0	0.0
110.0	110.0	0.3/1.0/1.0	0.0	0.0	0.0
114.0	114.0	0.3/1.0/1.0	0.0	0.0	0.0
115.0	115.0	0.3/1.0/1.0	0.0	0.0	0.0
116.0	116.0	0.3/1.0/1.0	0.0	0.0	0.0
117.0	117.0	0.3/1.0/1.0	0.0	0.0	0.0
85.0	85.0	0.2/0.4/0.7	0.0	0.0	0.0
80.0	80.0	0.2/0.4/0.7	0.0	0.0	0.0
75.0	75.0	0.2/0.4/0.7	0.0	0.0	0.0
70.0	70.0	0.2/0.4/0.7	0.0	0.0	0.0
65.0	65.0	0.2/0.4/0.7	0.0	0.0	0.0
62.0	62.0	0.2/0.4/0.7	0.0	0.0	0.0
61.0	61.0	0.3/1.0/1.0	0.0	0.0	0.0
60.0	60.0	0.3/1.0/1.0	0.0	0.0	0.0
59.0	59.0	0.3/1.0/1.0	0.0	0.0	0.0
Measured at 8000 Hz					
85.0	85.0	0.2/0.4/0.7	0.0	0.0	0.0
90.0	90.0	0.2/0.4/0.7	0.0	0.0	0.0
95.0	95.0	0.2/0.4/0.7	0.0	0.0	0.0
100.0	100.0	0.2/0.4/0.7	0.0	0.0	0.0
105.0	105.0	0.3/1.0/1.0	0.0	0.0	0.0
110.0	110.0	0.3/1.0/1.0	0.0	0.0	0.0
114.0	114.0	0.3/1.0/1.0	0.0	0.0	0.0
115.0	115.0	0.3/1.0/1.0	0.0	0.0	0.0
116.0	116.0	0.3/1.0/1.0	0.0	0.0	0.0
117.0	117.0	0.3/1.0/1.0	0.0	0.0	0.0
85.0	85.0	0.2/0.4/0.7	0.0	0.0	0.0
80.0	80.0	0.2/0.4/0.7	0.0	0.0	0.0
75.0	75.0	0.2/0.4/0.7	0.0	0.0	0.0
70.0	70.0	0.2/0.4/0.7	0.0	0.0	0.0
65.0	64.9	0.2/0.4/0.7	-0.1	0.1	-0.1
62.0	61.9	0.2/0.4/0.7	0.0	0.1	-0.1
61.0	60.9	0.3/1.0/1.0	0.0	0.1	-0.1
60.0	59.9	0.3/1.0/1.0	0.0	0.1	-0.1
59.0	58.9	0.3/1.0/1.0	0.0	0.1	-0.1

Test Passed

Weighting Network Test : A Network - ANSI S1.4-1983 #8.2.1

The frequency weighting networks test is performed with the SLM set to reference range. Reference frequency is 1000 Hz. The test signal is adjusted to give a full scale indication at 1000 Hz. The frequency of the test signal is increased in 1/3 octave steps from 10 Hz to 20 kHz. All applicable networks can be tested (I.E. A, B and C).

Freq (Hz)	Ref.	Measured value	Tolerance norm		Error Value	Error Code
			HiLim	LoLim		
(Hz)	(dB)	(dB)	(dB)	(dB)	(dB)	
31.6	68.6	68.5	1.5	-1.5	0.0	
63.1	81.8	81.8	1.5	-1.5	0.0	
125.9	91.9	91.8	1.0	-1.0	-0.1	
251.2	99.4	99.3	1.0	-1.0	-0.1	
501.2	104.8	104.7	1.0	-1.0	0.0	
1000.0	108.0	108.0	1.0	-1.0	0.0	
1995.3	109.2	109.3	1.0	-1.0	0.1	
3981.1	109.0	109.0	1.0	-1.0	0.1	
7943.3	106.9	107.0	1.5	-3.0	0.1	
12589.3	103.7	103.7	3.0	-6.0	0.0	

Test Passed

Weighting Network Test: C Network - According to ANSI S1.4-1983 #8.2.1

The frequency weighting networks test is performed with the SLM set to reference range. Reference frequency is 1000 Hz. The test signal is adjusted to give a full scale indication at 1000 Hz. The frequency of the test signal is increased in 1/3 octave steps from 10 Hz to 20 kHz. All applicable networks can be tested (I.E. A, B and C).

Freq (Hz)	Ref.	Measured value	Tolerance norm		Error Value	Error Code
			HiLim	LoLim		
(Hz)	(dB)	(dB)	(dB)	(dB)	(dB)	
31.6	105.0	105.1	1.5	-1.5	0.1	
63.1	107.2	107.2	1.5	-1.5	0.1	
125.9	107.8	107.9	1.0	-1.0	0.0	
251.2	108.0	108.0	1.0	-1.0	0.0	
501.2	108.0	108.1	1.0	-1.0	0.0	
1000.0	108.0	108.1	1.0	-1.0	0.1	
1995.3	107.8	107.9	1.0	-1.0	0.0	
3981.1	107.2	107.2	1.0	-1.0	0.0	
7943.3	105.0	105.0	1.5	-3.0	0.0	
12589.3	101.8	101.7	3.0	-6.0	0.0	

Test Passed

Weighting Network Test: Linear Network - According to ANSI S1.4-1983 #8.2.1

The frequency weighting networks test is performed with the SLM set to reference range. Reference frequency is 1000 Hz. The test signal is adjusted to give a full scale indication at 1000 Hz. The frequency of the test signal is increased in 1/3 octave steps from 10 Hz to 20 kHz. All applicable networks can be tested (I.E. A, B and C).

Freq (Hz)	Ref. (dB)	Measured value (dB)	Tolerance norm		Error Value (dB)	Error Code
			HiLim	LoLim		
31.6	108.0	108.0	1.5	-1.5	0.0	
63.1	108.0	108.0	1.5	-1.5	0.0	
125.9	108.0	108.0	1.0	-1.0	0.0	
251.2	108.0	108.0	1.0	-1.0	0.0	
501.2	108.0	108.1	1.0	-1.0	0.1	
1000.0	108.0	108.1	1.0	-1.0	0.1	
1995.3	108.0	108.1	1.0	-1.0	0.1	
3981.1	108.0	108.1	1.0	-1.0	0.1	
7943.3	108.0	108.1	1.5	-3.0	0.1	
12589.3	108.0	108.0	3.0	-6.0	0.0	

Test Passed

Overload Detector Test: A-Network - ANSI S1.4-1983 #8.3.1

The SLM is set to A-weighted and the least sensitive range setting. A sine wave of 1000 Hz is applied to the SLM with an amplitude that gives a reading 5 dB less than the maximum level the SLM is designed to measure. The test signal is lowered in 1/3 octave frequency steps until 20 Hz is reached. The amplitude of the test signal is simultaneously increased corresponding to the inverse of the A-weighting curve. The overload indication shall be turned on before the measured Slow SPL value is deviating more than one dB from the initial value measured at 1000 Hz.

Freq. (Hz)	Level Increase (dB)	Meas. Value (dB)	Tol. (dB)		Error Value (dB)	Error Code
			HiLim	LoLim		
1000.0	0.0	126.0	-1.0	1.0	0.0	No overload
794.3	0.8	126.1	-1.0	1.0	0.1	No overload
631.0	1.9	125.9	-1.0	1.0	-0.1	No overload
501.2	3.2	126.0	-1.0	1.0	0.0	No overload
398.1	4.8	125.9	-1.0	1.0	-0.1	No overload
316.2	6.6	126.0	-1.0	1.0	0.0	No overload
251.2	8.6	126.0	-1.0	1.0	0.0	No overload
199.5	10.9	126.0	-1.0	1.0	0.0	No overload
158.5	13.4	126.0	-1.0	1.0	0.0	Overload

Test Passed

F/S//Peak Test: Steady State Response - According to ANSI S1.4 1983 #6.4

A continuous sine wave is applied and adjusted to give an indication of 94.0 dB with time constant F(ast). The instrument is set to S(low) and I(mpulse), if applicable. The indication shall not differ more than 0.1 dB for type 0,1,2 instruments and 0.2 for type 3 instruments.

Time Const.	Norm Value (dB)	Measured Value (dB)	Tol. limit (dB)	Error Value (dB)
Fast	85.0	85.0	0.1	0.0
Slow	85.0	85.0	0.1	0.0
Imp.	85.0	85.0	0.1	0.0

Test Passed

Fast-Slow Test: Overshoot test - According to ANSI S1.4 1983 #8.4.1

The overshoot is tested by applying a sine wave that step (sudden increase) in amplitude by 20 dB. The steady end response shall give a signal 4 dB below the upper limit of primary indicator range. The difference between the maximum value and the end value tells the overshoot. Both F(ast) and S(low) time constants are tested.

Time Const.	Ref.- Value (dB)	Measured Value (dB)	Tolerance norm (dB)	Overshoot (dB)	Error
Fast	97.0	97.0	1.1	0.0	
Slow	97.0	97.0	1.6	0.0	
Fast	77.0	77.0	1.1	0.0	
Slow	77.0	77.0	1.6	0.0	
Fast	57.0	57.1	1.1	0.1	
Slow	57.0	57.1	1.6	0.1	

Test Passed

Fast-Slow Test: Single Sine Wave Burst - ANSI S1.4 1983 #8.4.1 & 8.4.3

A continuous sine wave is applied to the SLM and adjusted to give an indication 4 dB below upper limit of the primary indicator range. Then onset transient characteristics are tested using a single sine wave burst with an amplitude equal to the continuous signal and a duration of T(msec). The test is repeated at a level 24 dB below the upper limit of the primary indicator range.

Time Constant	Burst Duration (ms)	Ref. Value (dB)	Measured Value (dB)	Tolerance Value (dB)	Error Value (dB)
Fast	200.0	96.0	96.0	1.0	0.0
Slow	500.0	92.9	92.9	1.0	0.0
Fast	200.0	76.0	76.0	1.0	0.0
Slow	500.0	72.9	72.9	1.0	0.0
Fast	200.0	56.0	55.9	1.0	0.1
Slow	500.0	52.9	52.9	1.0	0.0

Test Passed

Impulse Test: Continuous Sine Wave Burst - According to ANSI S1.4 1983 #8.4.3

A continuous sine wave signal is adjusted to give a FSD indication at the reference range. A continuous sine wave burst with the same amplitude as the continuous signal is used as a test signal. The repetition rate of the burst is 100 Hz, 20 Hz, and 2 Hz. The I(mpulse) indication is measured at various repetition rates of the burst signal (100 Hz, 20 Hz, and 2 Hz). At a repetition rate of 2 Hz the signal amplitude is increased by 5dB. The indication shall increase respectively with a tolerance of ± 1.0 dB. The test is repeated 20 dB below FSD. The flattest weighting network available is used for this test.

Repetition Frequency (Hz)	Ref. Value (dB)	Measured Value (dB)	Tolerance norm (dB)	Error Value (dB)
100	98.3	98.3	1.0	0.0
20	93.4	93.4	2.0	0.0
2	92.2	92.2	2.0	0.0
2 +5dB	97.2	97.2	1.0	0.0
100	78.3	78.2	1.0	0.1
20	73.4	73.4	2.0	0.0
2	72.2	72.2	2.0	0.0
2 +5dB	77.2	77.2	1.0	0.0

Test Passed

Impulse Test: Single Sine Wave Burst - According to ANSI S1.4 1983 #8.4.1 & 8.4.3

Burst Duration (ms)	Ref. Value (dB)	Measured Value (dB)	Tolerance norm (dB)	Error Value (dB)
20.0	97.4	97.3	1.5	0.1
5.0	92.2	92.2	2.0	0.0
2.0	88.4	88.4	2.0	0.0
2.0 +10dB	98.4	98.4	1.0	0.0
20.0	77.4	77.5	1.5	0.1
5.0	72.2	72.3	2.0	0.1
2.0	68.4	68.5	2.0	0.1
2.0 +10dB	78.5	78.5	1.0	0.0

Test Passed

Peak Detector Test, single square wave burst - According to ANSI S1.4 1983 #8.4.4

Pulse Duration	Pulse Polarity	Ref. Value (dB)	Measured Value (dB)	Tolerance Value (dB)	Error (dB)
10ms	+	130.0	131.1	2.0	1.1
0.1ms	+	130.0	129.9	2.0	0.1
10ms	-	130.0	131.1	2.0	1.1
0.1ms	-	130.0	129.8	2.0	0.2

Test Passed

RMS Detector Test: Crest Factor Test - According to ANSI S1.4-1983 #8.4.2

The SLM is set to reference range. A continuous square wave with CF=1 is applied and adjusted to give an indication 2 dB below upper limit of primary indicator range. The duration of the square wave pulses is kept constant at 200 μ s and rise time less than 10 μ s. The RMS value of the signal is kept constant while the crest factor (CF) is increased from 1 to 10. The test is performed both for positive and negative going test signals.

Crest Factor	Ref. Value (dB)	Meas. Value (dB)	Tol. norm (dB)	Error Value (dB)
Positive Pulses				
3.0	99.0	98.8	0.5	0.2
5.0	99.0	98.8	1.0	0.2
10.0	99.0	98.8	1.5	0.2
Negative Pulses				
3.0	99.0	98.8	0.5	0.2
5.0	99.0	98.8	1.0	0.2
10.0	99.0	98.8	1.5	0.2
Positive Pulses				
3.0	79.0	78.8	0.5	0.2
5.0	79.0	78.8	1.0	0.2
10.0	79.0	78.8	1.5	0.2

RMS Detector Test: Crest Factor Test - According to ANSI S1.4-1983 #8.4.2

Crest Factor	Ref. Value (dB)	Meas. Value (dB)	Tol. norm (dB)	Error Value (dB)
Negative Pulses				
3.0	79.0	78.8	0.5	0.2
5.0	79.0	78.8	1.0	0.2
10.0	79.0	78.8	1.5	0.2
Positive Pulses				
3.0	59.0	58.8	0.5	0.2
5.0	59.0	58.8	1.0	0.2
10.0	59.0	58.8	1.5	0.2
Negative Pulses				
3.0	59.0	58.8	0.5	0.2
5.0	59.0	58.8	1.0	0.2
10.0	59.0	58.8	1.5	0.2

Test Passed

RMS Detector Test: Continuous Sine Wave Burst - According to ANSI S1.4-1983 #8.4.2

The instrument is set to time constant Slow. A continuous sine wave (2kHz) is applied to the SLM and adjusted to give an indication 2 dB below upper limit of the primary indicator range. The signal is replaced by a sequence of tone bursts with a repetition rate of 40Hz. The RMS level of the signal is kept constant while the crest factor is increased from 1 to 10.

Test signal: Continuous sine wave burst with repetition rate of 40Hz

Crest Factor	Ref. Value (dB)	Meas. Value (dB)	Tolerance norm (dB)	Error Value (dB)
3	99.0	99.0	0.5	0.0
5	99.0	99.0	1.0	0.0
10	99.0	99.0	1.5	0.0
3	79.0	78.9	0.5	0.1
5	79.0	78.9	1.0	0.1
10	79.0	79.0	1.5	0.0
3	59.0	59.0	0.5	0.0
5	59.0	59.0	1.0	0.0
10	59.0	59.0	1.5	0.0

Test Passed

Time Averaging Test: Averaging Functions - ANSI S1.43 #8.3.2

The SLM is set to the reference range. The signal generator is adjusted to give a 4 kHz sine wave with an rms level equal to 20dB above the bottom end of the Linearity range. The sine wave is replaced by a sequence of tone burst with the same frequency. The burst duty factor (the distance between each burst) is increased, while the amplitude is increased to keep the same equivalent rms level. The measurement time is 100 sec for type 0 (and manually controlled) instruments and 10 sec for all other instruments.

Burst	Ref. Value	Tolerance norm	Value (LeqA)	Error Value	Value (SEL)	Error Value
Duration (ms)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)
1000.0	70.0	0.5	70.1	0.1	80.0	0.0
100.0	70.0	0.5	70.3	0.3	80.0	0.0
10.0	70.0	1.0	70.4	0.4	80.0	0.0
1.0	70.0	1.0	70.2	0.2	79.9	0.1

Test Passed

Linearity Test - ANSI S1.43 #8.3.3

Int. Time (sec.)	Ref. Value (dB)	Meas. Value (dB)	Tolerance norm (dB)	Error Value (dB)
10	85.0	85.1	0.1	0.1
10	110.0	110.1	0.7	0.1
10	50.0	49.8	0.7	0.2

Test Passed

Filter Test 1/1octave: Anti Alias Filter - IEC 61260, #4.8 & #5.7

Test 1/1 octave filter class 1

Nominal f[Hz]	SignalFreq f[Hz]	Measured L[dB]	Limit L[dB]	Result [P/F]
15.849	47984.2	20.0	38.0	
31.623	47968.4	20.0	38.0	
63.096	47936.9	20.0	38.0	
125.893	47874.1	20.0	38.0	
251.189	47748.8	20.0	38.0	
501.187	47498.8	20.0	38.0	
1000.00	47000.0	20.0	38.0	
1995.26	46004.7	20.0	38.0	
3981.07	44018.9	20.0	38.0	
7943.28	40056.7	27.7	38.0	

Test Passed

Filter Test 1/octave: Relative attenuation - IEC 61260, #4.4 & #5.3

Test 1/1 octave filter X=-6 fexact=15.849Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
1.000	27.7	0.0	38.0	
1.995	20.0	0.0	47.0	
3.981	27.7	0.0	66.0	
7.943	68.7	0.0	90.5	
11.220	105.5	103.0	106.0	
12.232	107.7	106.7	108.3	
13.335	107.8	107.4	108.3	
14.538	107.8	107.6	108.3	
15.849	107.9	107.7	108.3	
17.278	107.9	107.6	108.3	
18.836	107.9	107.4	108.3	
20.535	107.7	106.7	108.3	
22.387	103.5	103.0	106.0	
31.623	66.4	0.0	90.5	
63.096	20.0	0.0	66.0	
125.893	20.0	0.0	47.0	
251.189	20.0	0.0	38.0	

Test 1/1 octave filter X=-5 fexact=31.623Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
1.995	20.0	0.0	38.0	
3.981	20.0	0.0	47.0	
7.943	20.0	0.0	66.0	
15.849	69.2	0.0	90.5	
22.387	105.6	103.0	106.0	
24.406	107.9	106.7	108.3	
26.607	108.0	107.4	108.3	
29.007	108.0	107.6	108.3	
31.623	108.0	107.7	108.3	
34.475	108.0	107.6	108.3	
37.584	108.0	107.4	108.3	
40.973	108.0	106.7	108.3	
44.668	103.8	103.0	106.0	
63.096	66.3	0.0	90.5	
125.893	20.0	0.0	66.0	
251.189	20.0	0.0	47.0	
501.187	20.0	0.0	38.0	

Test 1/1 octave filter X=-4 fexact=63.096Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
3.981	20.0	0.0	38.0	
7.943	20.0	0.0	47.0	
15.849	20.0	0.0	66.0	
31.623	69.0	0.0	90.5	
44.668	105.5	103.0	106.0	
48.697	107.9	106.7	108.3	
53.088	108.0	107.4	108.3	
57.876	108.0	107.6	108.3	
63.096	108.0	107.7	108.3	
68.786	108.0	107.6	108.3	

Filter Test 1/octave: Relative attenuation - IEC 61260, #4.4 & #5.3

74.989	108.0	107.4	108.3
81.752	107.9	106.7	108.3
89.125	104.0	103.0	106.0
125.893	66.7	0.0	90.5
251.189	20.0	0.0	66.0
501.187	20.0	0.0	47.0
1000.00	20.0	0.0	38.0

Test 1/1 octave filter X=-3 fexact=125.893Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
7.943	27.7	0.0	38.0	
15.849	27.7	0.0	47.0	
31.623	27.7	0.0	66.0	
63.096	68.9	0.0	90.5	
89.125	105.4	103.0	106.0	
97.163	107.9	106.7	108.3	
105.925	108.0	107.4	108.3	
115.478	108.0	107.6	108.3	
125.893	108.0	107.7	108.3	
137.246	108.0	107.6	108.3	
149.624	108.0	107.4	108.3	
163.117	107.8	106.7	108.3	
177.828	104.2	103.0	106.0	
251.189	66.9	0.0	90.5	
501.187	20.0	0.0	66.0	
1000.00	20.0	0.0	47.0	
1995.26	20.0	0.0	38.0	

Test 1/1 octave filter X=-2 fexact=251.189Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
15.849	20.0	0.0	38.0	
31.623	27.7	0.0	47.0	
63.096	20.0	0.0	66.0	
125.893	68.7	0.0	90.5	
177.828	105.2	103.0	106.0	
193.865	107.9	106.7	108.3	
211.349	108.0	107.4	108.3	
230.409	108.0	107.6	108.3	
251.189	108.0	107.7	108.3	
273.842	108.0	107.6	108.3	
298.538	107.9	107.4	108.3	
325.462	107.8	106.7	108.3	
354.813	104.4	103.0	106.0	
501.187	67.2	0.0	90.5	
1000.00	20.0	0.0	66.0	
1995.26	20.0	0.0	47.0	
3981.07	20.0	0.0	38.0	

Test 1/1 octave filter X=-1 fexact=501.187Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
31.623	20.0	0.0	38.0	
63.096	20.0	0.0	47.0	
125.893	20.0	0.0	66.0	
251.189	68.4	0.0	90.5	
354.813	105.0	103.0	106.0	
386.812	107.9	106.7	108.3	
421.697	108.0	107.4	108.3	
459.727	108.0	107.6	108.3	
501.187	108.0	107.7	108.3	
546.387	108.0	107.6	108.3	
595.662	108.0	107.4	108.3	
649.382	107.8	106.7	108.3	

Filter Test 1/octave: Relative attenuation - IEC 61260, #4.4 & #5.3

707.946	104.5	103.0	106.0	
1000.00	67.4	0.0	90.5	
1995.26	20.0	0.0	66.0	
3981.07	20.0	0.0	47.0	
7943.28	20.0	0.0	38.0	
Test 1/1 octave filter X= 0 fexact=1000.000Hz class 1				
Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
63.096	20.0	0.0	38.0	
125.893	20.0	0.0	47.0	
251.189	20.0	0.0	66.0	
501.187	68.3	0.0	90.5	
707.946	104.8	103.0	106.0	
771.792	107.9	106.7	108.3	
841.395	108.3	107.4	108.3	
917.276	108.0	107.6	108.3	
1000.00	108.0	107.7	108.3	
1090.18	108.0	107.6	108.3	
1188.50	108.0	107.4	108.3	
1295.69	107.9	106.7	108.3	
1412.54	104.8	103.0	106.0	
1995.26	67.5	0.0	90.5	
3981.07	20.0	0.0	66.0	
7943.28	20.0	0.0	47.0	
15848.9	20.0	0.0	38.0	
Test 1/1 octave filter X= 1 fexact=1995.262Hz class 1				
Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
125.893	20.0	0.0	38.0	
251.189	20.0	0.0	47.0	
501.187	20.0	0.0	66.0	
1000.00	68.1	0.0	90.5	
1412.54	104.7	103.0	106.0	
1539.93	107.8	106.7	108.3	
1678.80	108.0	107.4	108.3	
1830.21	108.0	107.6	108.3	
1995.26	108.0	107.7	108.3	
2175.20	108.0	107.6	108.3	
2371.37	108.0	107.4	108.3	
2585.24	107.8	106.7	108.3	
2818.38	104.9	103.0	106.0	
3981.07	67.8	0.0	90.5	
7943.28	20.0	0.0	66.0	
15848.9	20.0	0.0	47.0	
31622.8	20.0	0.0	38.0	
Test 1/1 octave filter X= 2 fexact=3981.072Hz class 1				
Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
251.189	20.0	0.0	38.0	
501.187	20.0	0.0	47.0	
1000.00	27.7	0.0	66.0	
1995.26	67.8	0.0	90.5	
2818.38	104.4	103.0	106.0	
3072.56	107.8	106.7	108.3	
3349.65	108.0	107.4	108.3	
3651.74	108.0	107.6	108.3	
3981.07	108.0	107.7	108.3	
4340.10	108.0	107.6	108.3	
4731.51	108.0	107.4	108.3	
5158.22	107.9	106.7	108.3	
5623.41	105.2	103.0	106.0	
7943.28	68.0	0.0	90.5	

Filter Test 1/octave: Relative attenuation - IEC 61260, #4.4 & #5.3

Nominal f[Hz]	Measured L[dB]	LoLim [dB]	HiLim [dB]	Result [P/F]
15848.9	20.0	0.0	66.0	
31622.8	20.0	0.0	47.0	
63095.7	20.0	0.0	38.0	
Test 1/1 octave filter X= 3 fexact=7943.282Hz class 1				
501.187	27.7	0.0	38.0	
1000.00	27.7	0.0	47.0	
1995.26	27.7	0.0	66.0	
3981.07	67.6	0.0	90.5	
5623.41	104.2	103.0	106.0	
6130.56	107.9	106.7	108.3	
6683.44	108.0	107.4	108.3	
7286.18	108.0	107.6	108.3	
7943.28	108.0	107.7	108.3	
8659.64	108.0	107.6	108.3	
9440.61	108.0	107.4	108.3	
10292.0	107.9	106.7	108.3	
11220.2	105.3	103.0	106.0	
15848.9	68.0	0.0	90.5	
31622.8	27.7	0.0	66.0	
63095.7	27.7	0.0	47.0	
125893	27.7	0.0	38.0	

Test Passed

Filter Test 1/3octave: Anti Alias Filter - IEC 61260, #4.8 & #5.7

Nominal f[Hz]	SignalFreq f[Hz]	Measured L[dB]	Limit L[dB]	Result [P/F]
12.589	47987.4	27.7	38.0	
15.849	47984.2	27.7	38.0	
19.953	47980.0	27.7	38.0	
25.119	47974.9	27.7	38.0	
31.623	47968.4	27.7	38.0	
39.811	47960.2	27.7	38.0	
50.119	47949.9	27.7	38.0	
63.096	47936.9	27.7	38.0	
79.433	47920.6	27.7	38.0	
100.000	47900.0	27.7	38.0	
125.893	47874.1	27.7	38.0	
158.489	47841.5	27.7	38.0	
199.526	47800.5	27.7	38.0	
251.189	47748.8	27.7	38.0	
316.228	47683.8	27.7	38.0	
398.107	47601.9	27.7	38.0	
501.187	47498.8	27.7	38.0	
630.957	47369.0	27.7	38.0	
794.328	47205.7	27.7	38.0	
1000.00	47000.0	27.7	38.0	
1258.93	46741.1	27.7	38.0	
1584.89	46415.1	27.7	38.0	
1995.26	46004.7	27.7	38.0	

Filter Test 1/3octave: Anti Alias Filter - IEC 61260, #4.8 & #5.7

2511.89	45488.1	27.7	38.0
3162.28	44837.7	27.7	38.0
3981.07	44018.9	27.7	38.0
5011.87	42988.1	27.7	38.0
6309.57	41690.4	27.7	38.0
7943.28	40056.7	27.7	38.0
10000.0	38000.0	27.7	38.0
12589.3	35410.7	27.7	38.0

Test Passed

Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

Test 1/3 octave filter X=-14 fexact=39.811Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
7.383	27.7	0.0	38.0	
13.037	42.6	0.0	47.0	
21.156	61.2	0.0	66.0	
30.757	86.7	0.0	90.5	
35.481	105.7	103.0	106.0	
36.609	107.8	106.7	108.3	
37.708	108.1	107.4	108.3	
38.776	108.1	107.6	108.3	
39.811	108.1	107.7	108.3	
40.873	108.0	107.6	108.3	
42.030	107.7	107.4	108.3	
43.292	106.7	106.7	108.3	
44.668	103.0	103.0	106.0	
51.530	84.6	0.0	90.5	
74.913	59.4	0.0	66.0	
121.568	20.0	0.0	47.0	
214.657	27.7	0.0	38.0	

Test 1/3 octave filter X=-13 fexact=50.119Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
9.295	27.7	0.0	38.0	
16.413	42.6	0.0	47.0	
26.634	61.1	0.0	66.0	
38.720	86.6	0.0	90.5	
44.668	105.7	103.0	106.0	
46.088	107.7	106.7	108.3	
47.472	108.0	107.4	108.3	
48.817	108.1	107.6	108.3	
50.119	108.0	107.7	108.3	
51.456	108.1	107.6	108.3	
52.913	107.9	107.4	108.3	
54.502	106.7	106.7	108.3	
56.234	103.1	103.0	106.0	
64.872	84.6	0.0	90.5	
94.310	33.7	0.0	66.0	
153.045	27.7	0.0	47.0	
270.238	27.7	0.0	38.0	

Test 1/3 octave filter X=-12 fexact=63.096Hz class 1

Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

Nominal f[Hz]	Measured L[dB]	LoLim [dB]	HiLim [dB]	Result [P/F]
11.702	32.5	0.0	38.0	
20.662	42.7	0.0	47.0	
33.531	61.5	0.0	66.0	
48.746	86.7	0.0	90.5	
56.234	105.6	103.0	106.0	
58.021	107.7	106.7	108.3	
59.764	108.0	107.4	108.3	
61.456	108.1	107.6	108.3	
63.096	108.1	107.7	108.3	
64.779	108.1	107.6	108.3	
66.614	107.9	107.4	108.3	
68.614	106.7	106.7	108.3	
70.795	103.1	103.0	106.0	
81.669	84.7	0.0	90.5	
118.729	60.2	0.0	66.0	
192.672	20.0	0.0	47.0	
340.209	20.0	0.0	38.0	

Test 1/3 octave filter X=-11 fexact=79.433Hz class 1

Nominal f[Hz]	Measured L[dB]	LoLim [dB]	HiLim [dB]	Result [P/F]
14.732	27.7	0.0	38.0	
26.012	42.7	0.0	47.0	
42.213	61.1	0.0	66.0	
61.368	86.6	0.0	90.5	
70.795	105.5	103.0	106.0	
73.045	107.8	106.7	108.3	
75.238	108.1	107.4	108.3	
77.369	108.1	107.6	108.3	
79.433	108.1	107.7	108.3	
81.552	108.1	107.6	108.3	
83.862	108.0	107.4	108.3	
86.380	106.8	106.7	108.3	
89.125	103.2	103.0	106.0	
102.816	84.8	0.0	90.5	
149.471	59.5	0.0	66.0	
242.560	20.0	0.0	47.0	
428.298	20.0	0.0	38.0	

Test 1/3 octave filter X=-10 fexact=100.000Hz class 1

Nominal f[Hz]	Measured L[dB]	LoLim [dB]	HiLim [dB]	Result [P/F]
18.546	27.7	0.0	38.0	
32.748	42.6	0.0	47.0	
53.143	61.0	0.0	66.0	
77.257	86.4	0.0	90.5	
89.125	105.4	103.0	106.0	
91.958	107.7	106.7	108.3	
94.719	108.0	107.4	108.3	
97.402	108.1	107.6	108.3	
100.000	108.1	107.7	108.3	
102.667	108.1	107.6	108.3	
105.575	108.0	107.4	108.3	
108.746	106.8	106.7	108.3	
112.202	103.4	103.0	106.0	
129.437	84.9	0.0	90.5	
188.173	34.7	0.0	66.0	
305.365	27.7	0.0	47.0	
539.195	27.7	0.0	38.0	

Test 1/3 octave filter X=-9 fexact=125.893Hz class 1

Nominal f[Hz]	Measured L[dB]	LoLim [dB]	HiLim [dB]	Result [P/F]
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Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

23.348	27.7	0.0	38.0
41.227	42.7	0.0	47.0
66.903	61.2	0.0	66.0
97.261	86.4	0.0	90.5
112.202	105.3	103.0	106.0
115.768	107.6	106.7	108.3
119.244	108.0	107.4	108.3
122.622	108.1	107.6	108.3
125.893	108.1	107.7	108.3
129.251	108.1	107.6	108.3
132.912	108.0	107.4	108.3
136.903	106.9	106.7	108.3
141.254	103.5	103.0	106.0
162.952	85.0	0.0	90.5
236.895	60.4	0.0	66.0
384.432	20.0	0.0	47.0
678.806	27.7	0.0	38.0

Test 1/3 octave filter X=-8 fexact=158.489Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
29.394	27.7	0.0	38.0	
51.902	42.6	0.0	47.0	
84.225	61.0	0.0	66.0	
122.445	86.3	0.0	90.5	
141.254	105.3	103.0	106.0	
145.743	107.6	106.7	108.3	
150.120	108.0	107.4	108.3	
154.372	108.0	107.6	108.3	
158.489	108.1	107.7	108.3	
162.717	108.1	107.6	108.3	
167.326	108.0	107.4	108.3	
172.350	107.0	106.7	108.3	
177.828	103.6	103.0	106.0	
205.144	85.0	0.0	90.5	
298.234	59.5	0.0	66.0	
483.971	20.0	0.0	47.0	
854.566	27.7	0.0	38.0	

Test 1/3 octave filter X=-7 fexact=199.526Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
37.004	27.7	0.0	38.0	
65.340	42.3	0.0	47.0	
106.034	60.8	0.0	66.0	
154.149	86.1	0.0	90.5	
177.828	105.1	103.0	106.0	
183.480	107.5	106.7	108.3	
188.989	108.0	107.4	108.3	
194.342	108.0	107.6	108.3	
199.526	108.0	107.7	108.3	
204.848	108.1	107.6	108.3	
210.651	108.0	107.4	108.3	
216.976	107.0	106.7	108.3	
223.872	103.7	103.0	106.0	
258.262	85.1	0.0	90.5	
375.454	35.5	0.0	66.0	
609.284	27.7	0.0	47.0	
1075.84	27.7	0.0	38.0	

Test 1/3 octave filter X=-6 fexact=251.189Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
46.586	27.7	0.0	38.0	
82.258	42.7	0.0	47.0	

Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

133.488	61.1	0.0	66.0
194.062	86.1	0.0	90.5
223.872	105.1	103.0	106.0
230.987	107.5	106.7	108.3
237.923	108.0	107.4	108.3
244.662	108.0	107.6	108.3
251.189	108.0	107.7	108.3
257.889	108.0	107.6	108.3
265.193	107.9	107.4	108.3
273.157	107.0	106.7	108.3
281.838	103.8	103.0	106.0
325.132	85.2	0.0	90.5
472.669	60.4	0.0	66.0
767.043	20.0	0.0	47.0
1354.40	27.7	0.0	38.0

Test 1/3 octave filter X=-5 fexact=316.228Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
58.648	27.7	0.0	38.0	
103.557	42.6	0.0	47.0	
168.052	61.0	0.0	66.0	
244.309	86.0	0.0	90.5	
281.838	104.9	103.0	106.0	
290.796	107.5	106.7	108.3	
299.528	108.0	107.4	108.3	
308.012	108.0	107.6	108.3	
316.228	108.1	107.7	108.3	
324.663	108.1	107.6	108.3	
333.859	108.0	107.4	108.3	
343.884	107.1	106.7	108.3	
354.813	103.9	103.0	106.0	
409.317	85.2	0.0	90.5	
595.055	59.7	0.0	66.0	
965.650	20.0	0.0	47.0	
1705.08	27.7	0.0	38.0	

Test 1/3 octave filter X=-4 fexact=398.107Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
73.834	20.0	0.0	38.0	
130.371	42.3	0.0	47.0	
211.565	60.7	0.0	66.0	
307.567	85.8	0.0	90.5	
354.813	104.8	103.0	106.0	
366.090	107.5	106.7	108.3	
377.083	108.0	107.4	108.3	
387.764	108.0	107.6	108.3	
398.107	108.0	107.7	108.3	
408.726	108.0	107.6	108.3	
420.303	107.9	107.4	108.3	
432.924	107.1	106.7	108.3	
446.684	104.0	103.0	106.0	
515.300	85.3	0.0	90.5	
749.129	36.7	0.0	66.0	
1215.68	27.7	0.0	47.0	
2146.57	27.7	0.0	38.0	

Test 1/3 octave filter X=-3 fexact=501.187Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
92.951	27.7	0.0	38.0	
164.127	42.6	0.0	47.0	
266.344	61.0	0.0	66.0	
387.204	85.9	0.0	90.5	

Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

446.684	104.8	103.0	106.0
460.880	107.4	106.7	108.3
474.720	108.0	107.4	108.3
488.166	108.1	107.6	108.3
501.187	108.0	107.7	108.3
514.556	108.0	107.6	108.3
529.131	108.0	107.4	108.3
545.019	107.1	106.7	108.3
562.341	104.2	103.0	106.0
648.724	85.4	0.0	90.5
943.098	60.5	0.0	66.0
1530.45	20.0	0.0	47.0
2702.38	27.7	0.0	38.0

Test 1/3 octave filter X=-2 fexact=630.957Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
117.018	32.5	0.0	38.0	
206.624	42.6	0.0	47.0	
335.307	60.8	0.0	66.0	
487.461	85.8	0.0	90.5	
562.341	104.7	103.0	106.0	
580.214	107.4	106.7	108.3	
597.637	108.0	107.4	108.3	
614.564	108.1	107.6	108.3	
630.957	108.0	107.7	108.3	
647.788	108.1	107.6	108.3	
666.136	108.0	107.4	108.3	
686.139	107.2	106.7	108.3	
707.946	104.2	103.0	106.0	
816.695	85.5	0.0	90.5	
1187.29	59.8	0.0	66.0	
1926.72	20.0	0.0	47.0	
3402.09	27.7	0.0	38.0	

Test 1/3 octave filter X=-1 fexact=794.328Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
147.317	27.7	0.0	38.0	
260.124	42.2	0.0	47.0	
422.127	60.5	0.0	66.0	
613.677	85.6	0.0	90.5	
707.946	104.5	103.0	106.0	
730.446	107.3	106.7	108.3	
752.380	108.0	107.4	108.3	
773.691	108.0	107.6	108.3	
794.328	108.0	107.7	108.3	
815.516	108.0	107.6	108.3	
838.615	108.0	107.4	108.3	
863.798	107.2	106.7	108.3	
891.251	104.3	103.0	106.0	
1028.16	85.6	0.0	90.5	
1494.71	37.2	0.0	66.0	
2425.60	27.7	0.0	47.0	
4282.98	27.7	0.0	38.0	

Test 1/3 octave filter X= 0 fexact=1000.000Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
185.462	27.7	0.0	38.0	
327.477	42.6	0.0	47.0	
531.427	60.8	0.0	66.0	
772.574	85.6	0.0	90.5	
891.251	104.4	103.0	106.0	
919.577	107.3	106.7	108.3	

Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

947.190	108.0	107.4	108.3
974.019	108.0	107.6	108.3
1000.00	108.0	107.7	108.3
1026.67	108.1	107.6	108.3
1055.75	108.0	107.4	108.3
1087.46	107.3	106.7	108.3
1122.02	104.5	103.0	106.0
1294.37	85.7	0.0	90.5
1881.73	60.6	0.0	66.0
3053.65	20.0	0.0	47.0
5391.95	27.7	0.0	38.0

Test 1/3 octave filter X= 1 fexact=1258.925Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
233.482	27.7	0.0	38.0	
412.269	42.5	0.0	47.0	
669.026	60.7	0.0	66.0	
972.613	85.5	0.0	90.5	
1122.02	104.4	103.0	106.0	
1157.68	107.2	106.7	108.3	
1192.44	108.0	107.4	108.3	
1226.22	108.1	107.6	108.3	
1258.93	108.0	107.7	108.3	
1292.51	108.1	107.6	108.3	
1329.12	108.0	107.4	108.3	
1369.03	107.3	106.7	108.3	
1412.54	104.5	103.0	106.0	
1629.52	85.7	0.0	90.5	
2368.96	60.0	0.0	66.0	
3844.32	20.0	0.0	47.0	
6788.06	27.7	0.0	38.0	

Test 1/3 octave filter X= 2 fexact=1584.893Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
293.937	27.7	0.0	38.0	
519.016	42.0	0.0	47.0	
842.254	60.4	0.0	66.0	
1224.45	85.3	0.0	90.5	
1412.54	104.2	103.0	106.0	
1457.43	107.2	106.7	108.3	
1501.20	108.0	107.4	108.3	
1543.72	108.0	107.6	108.3	
1584.89	108.0	107.7	108.3	
1627.17	108.0	107.6	108.3	
1673.26	108.0	107.4	108.3	
1723.50	107.3	106.7	108.3	
1778.28	104.6	103.0	106.0	
2051.45	85.9	0.0	90.5	
2982.34	38.1	0.0	66.0	
4839.71	27.7	0.0	47.0	
8545.66	27.7	0.0	38.0	

Test 1/3 octave filter X= 3 fexact=1995.262Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
370.045	27.7	0.0	38.0	
653.402	42.5	0.0	47.0	
1060.34	60.7	0.0	66.0	
1541.49	85.4	0.0	90.5	
1778.28	104.1	103.0	106.0	
1834.80	107.1	106.7	108.3	
1889.89	108.0	107.4	108.3	
1943.42	108.0	107.6	108.3	

Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

1995.26	108.0	107.7	108.3
2048.49	108.1	107.6	108.3
2106.51	108.0	107.4	108.3
2169.76	107.4	106.7	108.3
2238.72	104.8	103.0	106.0
2582.62	85.9	0.0	90.5
3754.54	60.8	0.0	66.0
6092.84	20.0	0.0	47.0
10758.4	27.7	0.0	38.0

Test 1/3 octave filter X= 4 fexact=2511.886Hz class 1

Nominal f[Hz]	Measured L[dB]	LoLim [dB]	HiLim [dB]	Result [P/F]
465.859	27.7	0.0	38.0	
822.584	42.3	0.0	47.0	
1334.88	60.6	0.0	66.0	
1940.62	85.3	0.0	90.5	
2238.72	104.1	103.0	106.0	
2309.87	107.1	106.7	108.3	
2379.23	107.9	107.4	108.3	
2446.62	108.0	107.6	108.3	
2511.89	108.0	107.7	108.3	
2578.89	108.0	107.6	108.3	
2651.94	108.0	107.4	108.3	
2731.57	107.4	106.7	108.3	
2818.38	104.8	103.0	106.0	
3251.32	86.0	0.0	90.5	
4726.69	60.1	0.0	66.0	
7670.43	20.0	0.0	47.0	
13544.0	27.7	0.0	38.0	

Test 1/3 octave filter X= 5 fexact=3162.278Hz class 1

Nominal f[Hz]	Measured L[dB]	LoLim [dB]	HiLim [dB]	Result [P/F]
586.481	27.7	0.0	38.0	
1035.57	42.0	0.0	47.0	
1680.52	60.3	0.0	66.0	
2443.09	85.1	0.0	90.5	
2818.38	103.9	103.0	106.0	
2907.96	107.1	106.7	108.3	
2995.28	107.9	107.4	108.3	
3080.12	108.0	107.6	108.3	
3162.28	108.0	107.7	108.3	
3246.63	108.0	107.6	108.3	
3338.59	108.0	107.4	108.3	
3438.84	107.4	106.7	108.3	
3548.13	104.9	103.0	106.0	
4093.17	86.1	0.0	90.5	
5950.55	39.2	0.0	66.0	
9656.50	27.7	0.0	47.0	
17050.8	27.7	0.0	38.0	

Test 1/3 octave filter X= 6 fexact=3981.072Hz class 1

Nominal f[Hz]	Measured L[dB]	LoLim [dB]	HiLim [dB]	Result [P/F]
738.336	27.7	0.0	38.0	
1303.71	42.5	0.0	47.0	
2115.65	60.6	0.0	66.0	
3075.67	85.1	0.0	90.5	
3548.13	103.8	103.0	106.0	
3660.90	107.0	106.7	108.3	
3770.83	108.0	107.4	108.3	
3877.64	108.0	107.6	108.3	
3981.07	108.0	107.7	108.3	
4087.26	108.0	107.6	108.3	

Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

4203.03	108.0	107.4	108.3
4329.24	107.5	106.7	108.3
4466.84	105.1	103.0	106.0
5153.00	86.2	0.0	90.5
7491.29	60.9	0.0	66.0
12156.8	20.0	0.0	47.0
21465.7	27.7	0.0	38.0

Test 1/3 octave filter X= 7 fexact=5011.872Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
929.510	27.7	0.0	38.0	
1641.27	42.3	0.0	47.0	
2663.44	60.5	0.0	66.0	
3872.04	85.1	0.0	90.5	
4466.84	103.7	103.0	106.0	
4608.80	107.0	106.7	108.3	
4747.20	108.0	107.4	108.3	
4881.66	108.1	107.6	108.3	
5011.87	108.1	107.7	108.3	
5145.56	108.1	107.6	108.3	
5291.31	108.0	107.4	108.3	
5450.20	107.5	106.7	108.3	
5623.41	105.2	103.0	106.0	
6487.24	86.2	0.0	90.5	
9430.98	60.2	0.0	66.0	
15304.5	20.0	0.0	47.0	
27023.8	27.7	0.0	38.0	

Test 1/3 octave filter X= 8 fexact=6309.573Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
1170.18	27.7	0.0	38.0	
2066.24	42.0	0.0	47.0	
3353.08	60.2	0.0	66.0	
4874.61	84.9	0.0	90.5	
5623.41	103.6	103.0	106.0	
5802.14	107.0	106.7	108.3	
5976.37	108.0	107.4	108.3	
6145.64	108.1	107.6	108.3	
6309.57	108.1	107.7	108.3	
6477.88	108.1	107.6	108.3	
6661.36	108.0	107.4	108.3	
6861.39	107.6	106.7	108.3	
7079.46	105.2	103.0	106.0	
8166.95	86.3	0.0	90.5	
11872.9	39.7	0.0	66.0	
19267.2	27.7	0.0	47.0	
34020.9	27.7	0.0	38.0	

Test 1/3 octave filter X= 9 fexact=7943.282Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
1473.18	27.7	0.0	38.0	
2601.24	42.3	0.0	47.0	
4221.27	60.5	0.0	66.0	
6136.78	85.0	0.0	90.5	
7079.46	103.5	103.0	106.0	
7304.46	106.9	106.7	108.3	
7523.80	107.9	107.4	108.3	
7736.91	108.1	107.6	108.3	
7943.28	108.1	107.7	108.3	
8155.16	108.0	107.6	108.3	
8386.16	108.0	107.4	108.3	
8637.98	107.6	106.7	108.3	

Filter Test 1/3octave: Relative attenuation - IEC 61260, #4.4 & #5.3

8912.51	105.3	103.0	106.0
10281.6	86.4	0.0	90.5
14947.1	60.8	0.0	66.0
24256.0	27.7	0.0	47.0
42829.8	27.7	0.0	38.0

Test 1/3 octave filter X= 10 fexact=10000.000Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
1854.62	27.7	0.0	38.0	
3274.77	42.2	0.0	47.0	
5314.27	60.4	0.0	66.0	
7725.74	84.8	0.0	90.5	
8912.51	103.4	103.0	106.0	
9195.77	106.8	106.7	108.3	
9471.90	107.9	107.4	108.3	
9740.19	108.0	107.6	108.3	
10000.0	108.1	107.7	108.3	
10266.7	108.1	107.6	108.3	
10557.5	108.0	107.4	108.3	
10874.6	107.6	106.7	108.3	
11220.2	105.4	103.0	106.0	
12943.7	86.4	0.0	90.5	
18817.3	59.8	0.0	66.0	
30536.5	27.7	0.0	47.0	
53919.5	27.7	0.0	38.0	

Test 1/3 octave filter X= 11 fexact=12589.254Hz class 1

Nominal	Measured	LoLim	HiLim	Result
f[Hz]	L[dB]	[dB]	[dB]	[P/F]
2334.83	27.7	0.0	38.0	
4122.69	41.8	0.0	47.0	
6690.26	60.2	0.0	66.0	
9726.13	84.6	0.0	90.5	
11220.2	103.3	103.0	106.0	
11576.8	106.8	106.7	108.3	
11924.4	107.9	107.4	108.3	
12262.2	108.0	107.6	108.3	
12589.3	108.0	107.7	108.3	
12925.1	108.0	107.6	108.3	
13291.2	108.0	107.4	108.3	
13690.3	107.5	106.7	108.3	
14125.4	105.3	103.0	106.0	
16295.2	86.3	0.0	90.5	
23689.5	51.8	0.0	66.0	
38443.2	27.7	0.0	47.0	
67880.6	27.7	0.0	38.0	

Test Passed