

JEM™ Glaciator™ Dynamic

Acoustic Test Report



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Document Revision: A

Title:

JEM Glaciator Dynamic Acoustic Test Report

Test conditions:

Test is done according to: ISO 3744:2010(E)

Measurement object:

Make: Martin
Model: JEM Glaciator Dynamic
Serial #: 14507555401
Software ver.: 1.0.0

Results:

An image of the test setup can be found on page 5 and results are listed in Table 1 and Table 2 on page 5 and 6.

Harman Professional Inc., R&D QA is responsible for the test results in this report.

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Environment:

Temperature: 22.0°C TA

Humidity: 36.8 %RH

Mains: 208 V, 60 Hz

Ready time: Minimum 10-minutes with no low-fog output.

Fixture placement Fixture is placed at least one meter from walls and ceiling, as described in the Standard ISO 3744:2010(E)

Remarks:

Test results apply only to the tested specimen.

Rev: (last five)	Made by:	Description:	Approved by:	Date approved:
A	Geoff Christopherson	JEM Glaciator Dynamic Acoustic Test	Justin Cicerone	2018-04-01

Setup:

The machine was measured indoors in an anechoic half-space at HARMAN Professional USA, in Northridge, CA (see Figure 1). The ceiling and walls are all acoustic soft 0.8 m fiberglass wedges, and the floor is reflective. Main internal dimensions of the room are 4.68 m x 4.92 m x 4.88 m (L x W x H). The machine was allowed a minimum of 10-minutes of ready time before measurements were performed to allow optimal heating and cooling of the systems.



Figure 1: Test setup

Measurement method:

Measurements were carried out using a setup with one microphone placed at 90° to the machines side panels for each measurement. The microphone was in turn moved to all measurement positions described below.

Measurement setup:

- 5 microphone positions in total
- Measurement surface area: 6.286 m²

Instrumentation:

Please refer to Page 7, for a full instrumentation list.

Results:

The JEM Glaciator Dynamic was measured in two different scenarios. Sound Pressure Levels can be seen in Table 1 below. Results of Sound Power Level measurements can be seen in Table 2 on Page 6.

1. Machine in standby, no low-fog output.
2. Machine producing low-fog, 100% output, 15-second interval.

Sound Pressure Levels		
Distance from machine	Machine in Standby [dB(A)]	Machine producing low-fog, 100% output [dB(A)]
LpA at 0 m	56.5	62.8
LpA at 1 m	48.5	54.8
LpA at 4 m	36.5	42.8
LpA at 7 m	31.6	37.9

Table 1 Sound Pressure Levels

Sound Pressure Levels have been converted from the Sound Power Levels using formula: $LpA = (LwA - \text{reduction}_{\text{distance}})$

Reductions used: +8 dB(A) @ 0 m, 0 dB(A) @ 1 m, -12 dB(A) @ 4 m, -16.9 dB(A) @ 7 m

The measurement results corrected for background noise are stated in the table below for 1/1-octave band and A-weighted values. Results marked with an (*) does not meet the 6 dB criterion in clause 4.2.1.1 in ISO 3744:2010(E) for the difference between the measured sound power level and the background noise.

1/1 Octave bands and A-weighted sound power levels

Measured Sound Power Levels		
1/1 Octave band, Hz	Standby [Lw, dB re.1pW]	Machine producing low-fog, 100% output [Lw, dB re.1pW]
63 Hz	1.12*	26.52
125 Hz	12.64*	48.54
250 Hz	28.32	56.64
500 Hz	26.52	52.52
1000 Hz	28.02	55.84
2000 Hz	39.44	57.08
4000 Hz	26.72	53.80
8000 Hz	20.04	46.28
A-weighted (LwA, dB re.1pW)	40.47	62.76

Table 2 Measured Sound Power Levels

These results are corrected for background noise with a maximum of 1.3 dB only.

Results marked with a () does not meet the 6 dB criterion in clause 4.2.1.1 in ISO 3744:2010(E) for the difference between the measured sound pressure level and the background noise.*

Instrumentation:

No.	Equipment	Make	Type
3285	Microphone (Factory Calibrated)	NTI Audio	M2215
A2A-08603-E0	SPL Meter	NTI Audio	XL2

Table 3 Used instruments

For recording and analysis NTI Audio XL2 SPL Meter with Acoustics Package was used and NTi XL2 Data Explorer version 1.7 were used. All instruments and programs are calibrated regularly in accordance with manufacturer guidelines.