

Engineering Test and Performance Specification

Purpose:

To define and establish a reference for the JBL Engineering approved performance characteristics of the stated model. To define the type of testing, and minimum conditions for testing, of production units of the stated model. To insure that the JBL design and performance intent is met. The performance data contained in this document is taken from the JBL Engineering Reference Standard unit that is held in the Harman Northridge facility.

This document is a JBL Engineering specification only and does not attempt to establish AQL or Visual acceptance levels or other criteria that are set forth and enforced by the Customer Purchasing, Incoming Inspection, and Quality Assurance groups.

Contents:

1) Physical and Mechanical Specifications

2) Engineering Test Specification (ETS)

Defines minimum testing for production units and response variation tolerance

3) Performance Specification

T/S Parameters

Frequency Response

Harmonic Distortion

Impedance

Physical and Mechanical Characteristics

Model # 1200Fe-8 **NMG Part #** 339200-002
Description: 12 inch, Ferrite, High Power woofer with very low Distortion

Frame Type: Heavy Cast Aluminum **Frame Finish:** Powder Coat, Charcoal
Outer Dia. 12.25 inches **Mounting Depth:** 6.050 inches
Mounting Dia: 10.9 inches **Overall Height:** 6.700 inch

Trim Ring: **Type:** NBR Rubber one-piece **Color:** Black
Surround: **Type:** EPDM Foamed Rubber **Color:** Black
Cone: **Type:** Kevlar Pulp w/Aquaplas **Color:** Black
Dome: **Type:** Compressed Paper **Color:** Black

Front Gasket: **Type:** None **Color:** n/a
Rear Gasket: **Type:** None **Color:** n/a
Tinsel Lead **Type:** SilverPlateCadCopper-twisted **Attachment:** Soldered to Cone Eyelets
Terminal: **Type:** Dual 5-way Binding posts **Lug Size:** n/a
Polarity: EIA STND - Positive applied to RED terminal moves cone away from magnet

Voice Coil: **Diameter:** 3 inch **Wire:** Aluminum Ribbon 0.90 x.15mm, Edge wnd.
Layers: 1 **Former:** Hightemp .13mm (FQG) Fiberglass
Turns: 152 **Wrapper:** High temp .13mm NEC - 2 layers
Winding Length : 1.00 inch

Top Plate: **Thickness:** 0.50 inches
Primary Magnet: **Type:** Ceramic 5 **OD:** 7.50 inch **Thickness:** 0.75 inch
Bucking Magnet: **Type:** n/a **OD:** n/a **Thickness:** n/a
Shield Can: **Yes or No** n/a **OD:** n/a **Thickness:** n/a

Notes: Design is "overhung" type with long coil and short gap height. Incorporates JBL Flux Stabilization ring capability at base of the T-pole. Dual, mirror image spiders are also used to reduce distortion.

Model 1200Fe-8	Engineering Test Specification	Document Number	Rev A
--------------------------	--------------------------------	-----------------	-----------------

1. Model Description: 12 inch, Ferrite, High Power woofer with very low Distortion

Model Part # 339200-002 Design Engineer: Jerry Moro
 (Part # listed is S/M level for systems and M/I level for transducers)
 Shipping Weight: approx 22 IBS Packaging Test Method:

2. Dynamic Test: (100% test) Input Voltage (@ lowest sweep range): 18vrms sweep
 Sweep Range: 20 - 600hz Sweep Duration: 4 seconds

3. Power Test-Production Audit of 6 pcs @ each run: (Must EPR Qualify at 100 hours@same spec)

Input Signal: Pink Noise Filter: 50-500hz
 Crest Factor: 6 dB Duration (hours): 2 hrs Input Voltage: 45.0 Vrms

4. Impedance: (Ref only) D.C. Resistance: 5.6 ohms
 Rated Impedance: 8.0 ohms Min. Impedance: 7.5 ohms Motional Impedance:
 Thiele-Small; See: Impedance Curve; See:

5. Polarity: (Automatically checked 100% during Canetics test): EIA STANDARD

EIA = + volt. to + term. gives forward cone movement, phase detector green; JBL = + volt. to + term. gives reverse movement, phase detector red.
 For System only (this section not applicable to transducers alone):

Description: Polarity:
 Driver 1:
 Driver 2:
 Driver 3:

6. Frequency Response Test: (100% test)

Mic Position (inches): X: Y: Z: X=vert., Y=Horiz., Z = Dist from baffle. 0,0,0 = lower left corner facing spiral front

Crossover Frequencies (System Ref):

Canetics File Name Test Voltage

Stimulus File Gate Length Pregate Length

Number of Stacks Mic Distance Max Noise

Channel 1	Frequency		Bins Per Octave	Rolloff dB/Octave	Tolerance	
	Start	Stop			Upper	Lower
Group 1	60 Hz	718 Hz	6	36	1.0 dB	1.0 dB
Group 2	761 Hz	905 Hz	6	36	1.5 dB	1.5 dB
Group 3	959 Hz	1280 Hz	6	36	2.0 dB	2.0 dB
Group 4	1356 Hz	2560 Hz	3	36	3.0 dB	3.0 dB
Group 5						
Group 6						
Group 7						
Group 8						

Note: Group ranges listed per OF1004, rev B. Frequencies shown are effective ranges of group(s).

7. Other:

Signatures

Marketing: _____ Date _____ Proc. Eng: _____ Date: _____
 Mfg Engr.: _____ Date _____ Dev. Engr.: _____ Date: _____
 QA Lab: _____ Date _____

Revision History

Rev	Release Action	Date	Rev Initials
A	Production Release	6/11/2003	Jerry Moro



T/S Parameters

Model # 1200Fe-8 **NMG Part #** 339200-002
Description: 12 inch, Ferrite, High Power woofer with very low Distortion

Fundamental Resonant Frequency:	Fs	<u>27</u>	+/-	<u>10%</u>
Transducer Direct Current Resistance:	DCR	<u>5.6</u>	+/-	<u>5%</u>
Total Driver Q at Fs, Considering all driver Resistance:	Qts	<u>0.26</u>		
Moving Mass:	Mms	<u>97</u>	+/-	<u>10%</u>
Motor Strength:	Bl	<u>19</u>	+/-	<u>5%</u>
Voltage Sensitivity(2.83V@1 meter)	SPL	<u>91</u>	+/-	<u>1.0 dB</u>

Magnetic Flux information: (For Engineering Reference ONLY)

Total Flux lines intercepted by Coil Windings [Maxwell turns]: 377,500
Conversion to Flux Density [Tesla]: 0.614

Flux lines throughout Gap thickness [Maxwell turns]: 264,900
Conversion to Flux Density [Tesla]: 0.862

Method; MLSSA added MASS

Notes; Flux measured with a 3.030 inch diameter, single turn Search coil

MLSSA SPO 4WI #010227-3479-3488 for Harman Consumer Group
 Measured Parameters QC Limits

Line	Parameter	Value	Units
1	RMSE-free	0.70	Ohms
2	Fs	27.80	Hz
3	Re	5.60	Ohms
4	Res	331.54	Ohms
5	Qms	15.57	
6	Qes	0.26	
7	Qts	0.26	
8	L1	0.35	mH
9	L2	3.28	mH
10	R2	3.33	Ohms
11	RMSE-load	0.48	Ohms
12	Vas(Sd)	125.13	liters
13	Mms	97.46	grams
14	Cms	336	μ M/Newton
15	B1	19.04	Tesla-M
16	SPLref(Sd)	91.9	dB/Rel
17	Rub-index	0.00	

*421kms @ 0.75"
Rme = 64.7*

Method: Mass-loaded (201.000 grams)
 DCR mode: Fixed (6.12 : 0.52 ohms)

Area (Sd): 514.72 sq cm
 QC file: CLOSED

Analysis successful. Shift in Fs = -43.6% (-20% to -50% is recommended).

7 - REV.B .1200FE-8. 2-24-03 EPR STD

MLSSA: Parameters

Frequency Response, 2.83Vrms @ 1Meter

X:20.535Hz *Y:78.26dB* ZA:Live Curve SSR Fund.



25-FEB-2003 02:12:19 PM

Mode: SSR EPR STD

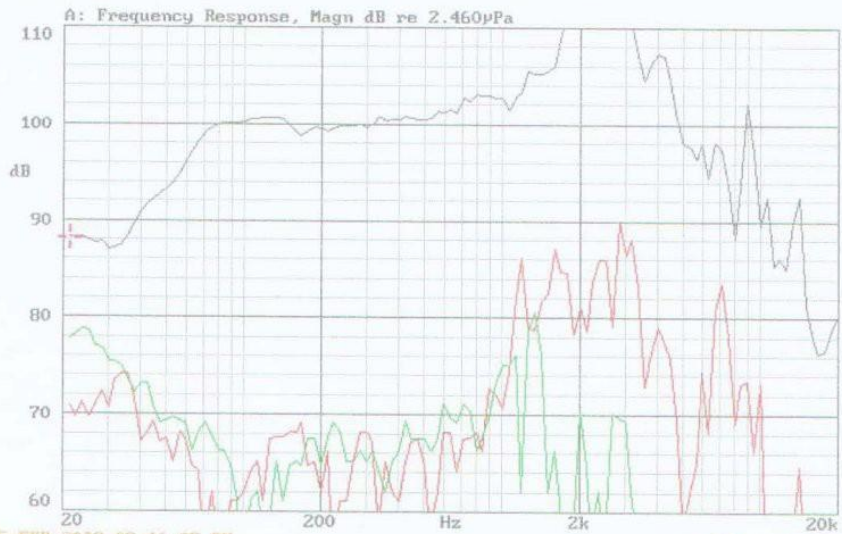
7- 1200FE-8- REUB.



2nd and 3rd Harmonic distortion raised 20dB relative to Fundamental

8.1 volt at 1 Meter for 100dB midband output

X:21.135Hz +Y:88.21dB* ZA:1.0000 SSR fund.



25-FEB-2003 02:16:05 PM

Node: 283 HARM EPR STND



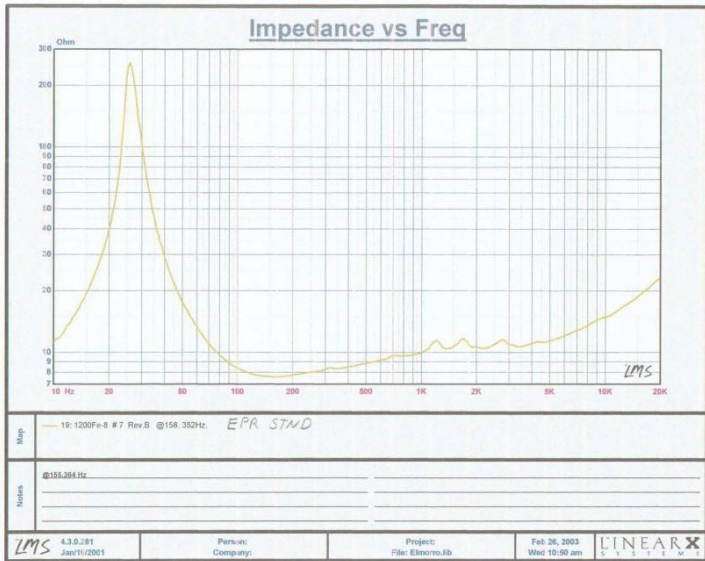
7- 1200FE-8-Rev B. @ 8.10 V

2nd and 3rd Harmonic distortion raised 20dB relative to Fundamental

16.1 volt at 1 Meter for 106dB midband output



Insert LMS impedance curve



Approved Assembly

