

Engineering Design Specification

Model Name: 476Be
Part Number: 362733-001
Description: 4" Beryllium Compression driver with 1.5" exit
Divison: JBL
Where Used: Everest II

Approved Supplier: JBL Manufacturing

Design Engineer: Jerry Moro

Revision:

C

3/31/2008



Physical and Mechanical Characteristics

Model # 476Be HCG Part # 362733-001
 Description: 4" Beryllium Compression driver with 1.5" exit

Cover Type: Cast Aluminum Cover Finish: Wrinkle PowderCoat Grey
 Outer Dia. 6.6 inches Mounting Depth: N/A
 Mounting Dia: 3.00 inch Bolt Circle Dia., 1/4 x 20 thread Overall Height: 3.4 inches

Trim Ring: Type: None Color: _____
 Surround: Type: Integral Diamond pattern Color: _____
 Cone: Type: n/a Color: _____
 Dome: Type: .002" Pure Beryllium foil Color: Natural

Front Gasket: Type: Chipboard Color: n/a
 Rear Gasket: Type: None Color: n/a
 Tinsel Lead Type: .002" thk. Beryllium-Copper Attachment: Solder direct to terminals
 Terminal: Type: 5-way Binding Posts Lug Size: n/a
 Polarity: Red Terminal = JBL Standard (negative throat pressure for positive voltage)

Voice Coil: Diameter: 3.904 inch Wire: Aluminum Ribbon .014 x .0041 in.
 Layers: 1 Former: .005 in. Nomex
 Turns: 30.5 +/- 1 (9.52M) Wrapper: None
 Winding Length: 0.128 DCR: 8 Ohms

Top Plate: Thickness: .385 inch (.125 at gap)
 Primary Magnet: Type: 42SH OD: 8 arc segments Thickness: 0.300 inch
 Bucking Magnet: Type: n/a OD: n/a Thickness: n/a
 Shield Can: Yes or No No OD: n/a Thickness: n/a

Notes: _____



T/S Parameters

Model # 476Be HCG Part # 362733-001
Description: 4" Beryllium Compression driver with 1.5" exit

Fundamental Resonant Frequency:	Fs	<u>900 Hz</u>	+/-	<u>10%</u>
Transducer Direct Current Resistance:	DCR	<u>8 Ohms</u>	+/-	<u>2%</u>
Excursion:	Xmax	<u>.5mm</u>		
Moving Mass:	Mms	<u>2.1</u>	+/-	<u>3%</u>
Motor Strength:	Bl	<u>16.95 TM</u>	+/-	<u>3%</u>
Transducer Minimum Impedance:	Zmin	<u>12 Ohms</u>	+/-	<u>2%</u>
Surface Area of Diaphragm:	Sd:	<u>78.54 sq. cm²</u>		

Magnetic Flux information: (For Engineering Reference ONLY)

Total Flux lines intercepted by Coil Windings [Maxwell turns]: 176,509
Conversion to Flux Density [Tesla]: 1.78

Flux lines throughout Gap thickness [Maxwell turns]: 176,509
Conversion to Flux Density [Tesla]: 1.78

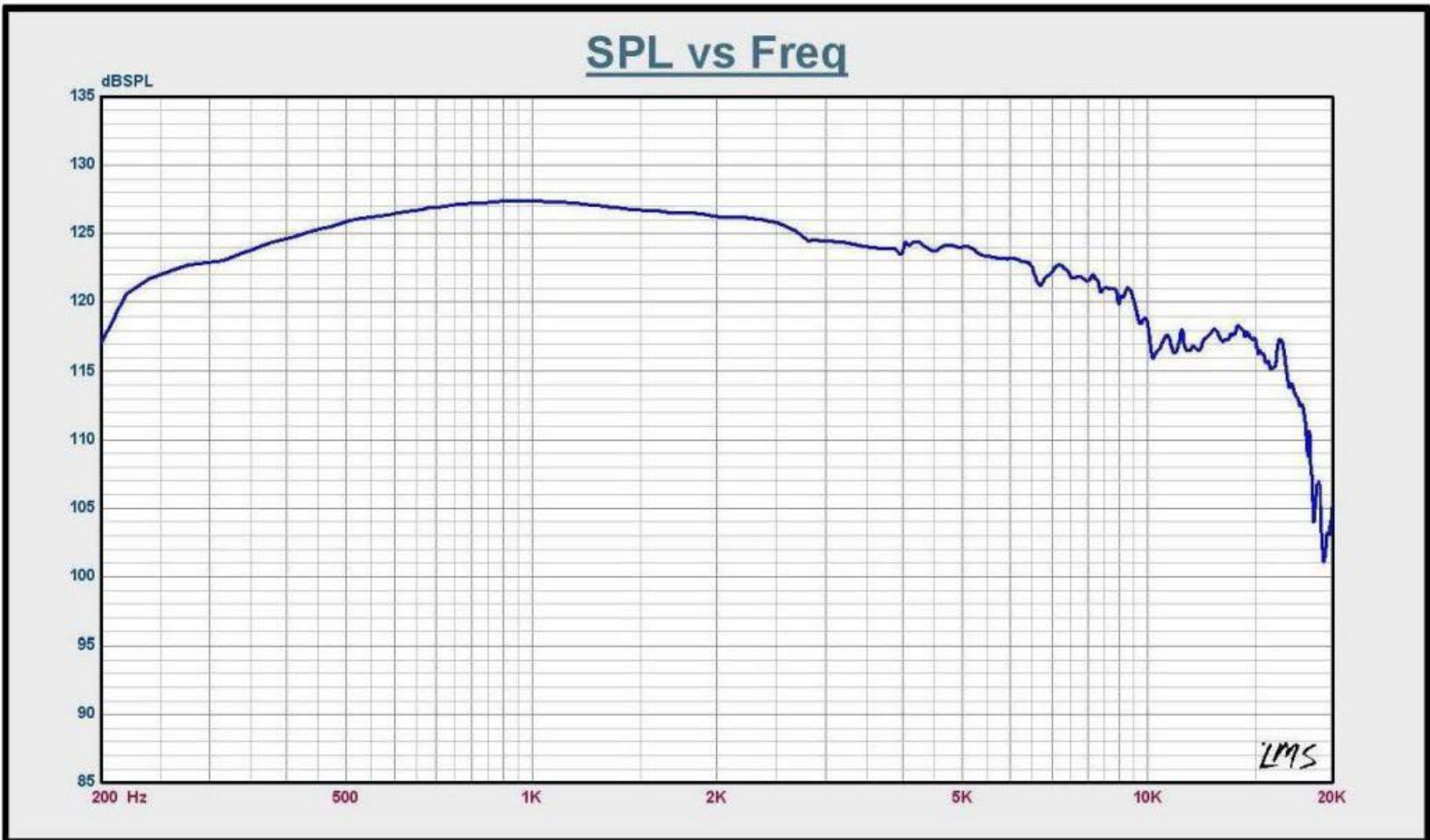
Method: Search coil

Notes: _____

Model 476Be	Engineering Test Specification	Document Number 363639	Rev B		
1. Model Description: 4" Beryllium Compression driver with 1.5" exit					
Model Part #	362733-001	Design Engineer:	Jerry Moro		
<i>(Part # listed is S/M level for systems and M/L level for transducers)</i>		Packaging Test Method:			
Shipping Weight:	approx 10.7 LBS				
2. Dynamic Test: (100% test)					
Input Voltage (@ lowest sweep range):			1.2 Vrms		
Sweep Range:	100Hz - 1,000Hz	Sweep Duration:	4 seconds		
3. Power Test-Production Audt of 6 pcs @ each run: (Must EPR Qualify at 100 hours@same spec)					
Input Signal:	Pink Noise	Filter:	600Hz - 6KHz		
Crest Factor:	6 dB	Duration (hours):	2 hrs		
		Input Voltage:	12.0 Vrms		
4. Impedance: (Ref only)					
D.C. Resistance:			8.0 ohms		
Rated Impedance:	12.0 ohms	Min. Impedance:	12.0 ohms		
		Motional Impedance:	18.0 ohms		
Thiele-Small; See:	Impedance Curve; See:				
5. Polarity: (Automatically checked 100% during Canetics test): JBL 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	2.0vrms		
Stimulus File	1/24 Oct	Gate Length	Pregate Length		
Number of Stacks	Mic Distance	Max Noise			
	Frequency	Bins Per	Rolloff	Tolerance	
Channel 1	Start Stop	Octave	dB Octave	Upper	Lower
Group 1	508 Hz 640 Hz	1/3 OCT		1.0 dB	1.3 dB
Group 2	640 Hz 3225 Hz	1/3 OCT		0.8 dB	0.8 dB
Group 3	3225 Hz 5120 Hz	1/3 OCT		1.0 dB	1.0 dB
Group 4	5120 Hz 10240 Hz	1/3 OCT		2.0 dB	2.0 dB
Group 5	10240 Hz 20000 Hz	1/3 OCT		3.0 dB	3.0 dB
Group 6					
Group 7					
Group 8					
Note: Group ranges listed per QF1004, rev B. Frequencies shown are effective ranges of groups.					
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	RELEASE FOR PRODUCTION PER ECO 32681	9/11/2006	JM		
B	Correction of Polarity from EIA to JBL Standard	3/31/2005	JM		

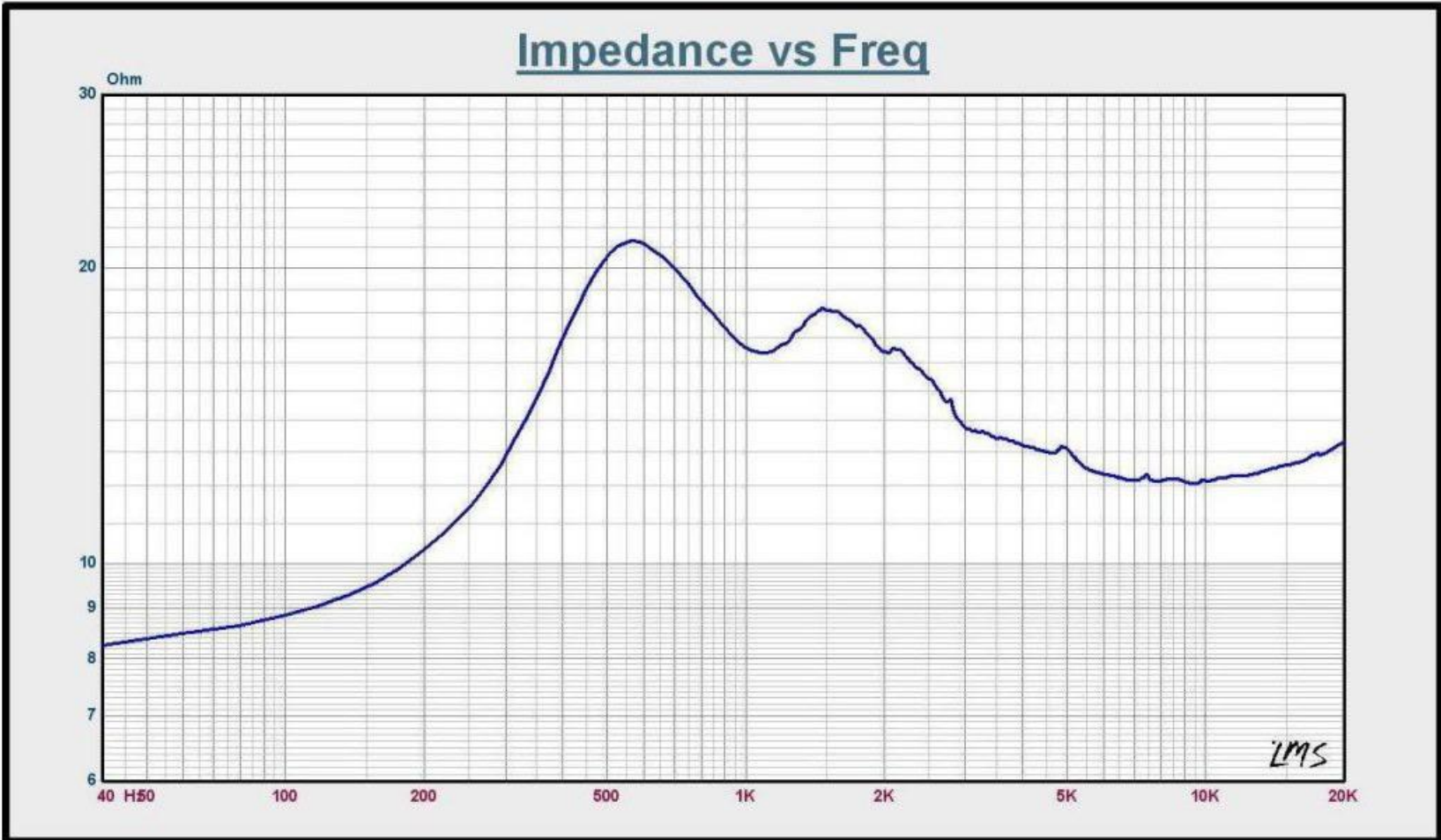
476Be Frequency Response at 0.566Vrms

Measured on 2 inch Plane Wave Tube, using 1.5 to 2 inch adaptor, .566 Vrms



476Be Impedance Curve

Measured on 2 inch Plane Wave Tube, using 1.5 to 2 inch adaptor



476Be Distortion

Measured on 2 inch Plane Wave Tube, using 1.5 to 2 inch adaptor, 7.5 Vrms

BLACK = Fundamental, RED = 2nd Harmonic, GREEN = 3rd Harmonic, PURPLE = 1/2 Harmonic
(Distortion not raised relative to Fundamental)

