PRO AUDIO SOLUTIONS
Knowledge Service Experience Integrity

Subwoofer Comparison

August 26th, 2009

Price Revision 020311

By Scott Oliver- Director of Contracting

EAW SB1000zP - Installation Version with Fly Points

Same as SB1000 Tour Version, but at a higher cost.

$3381 Each

PERFORMANCE
Operating Range 28 Hz to 156 Hz
Axial Sensitivity *(SPL)*
LF1/LF2 *(whole space)* 96 dB 28 Hz to 156 Hz
(half space) 102 dB 28 Hz to 156 Hz
Calculated Axial Output Limit *(SPL) Average Peak*
LF1/LF2 (*whole space)* 127 dB 133 dB
Input Power Ratings….700 W continuous, 1400 W program
Input Impedance……..4 Ohms
Recommended Processing =>25 Hz, 12 dB/octave Butterworth
Drivers……**2) 1 x 18**
Weight……162 lbs
Warranty…… 6 years.

Colors and Availability:
Black……In Stock
White……8 Weeks Lead Time

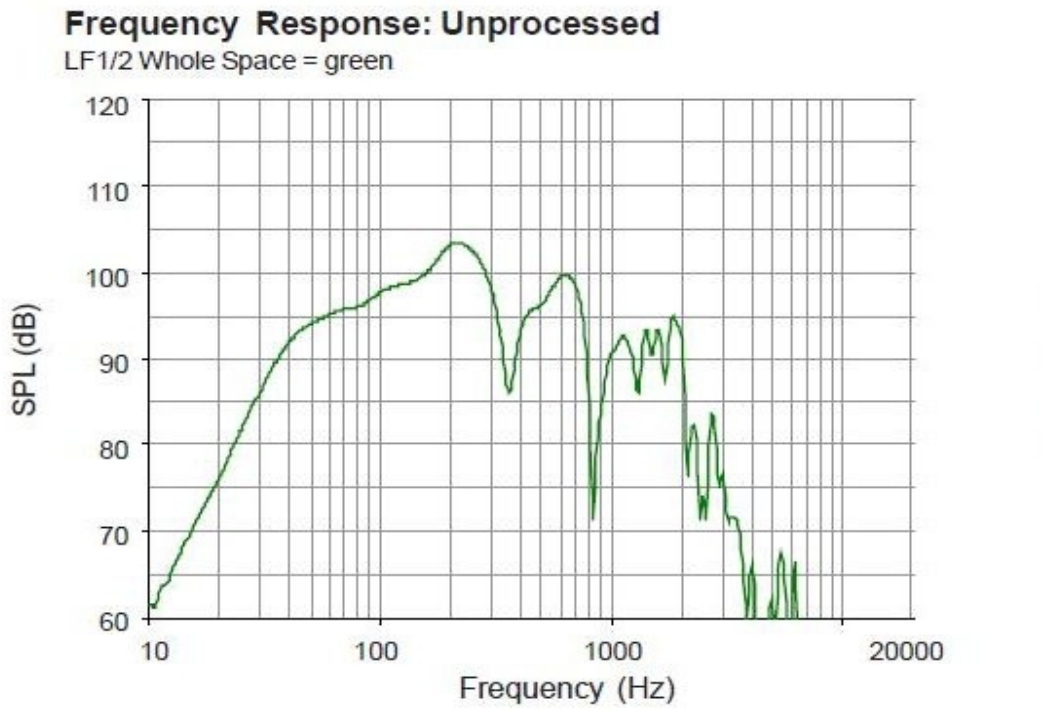
Danley Sound Labs TH115 Subwoofer

$2422 Each

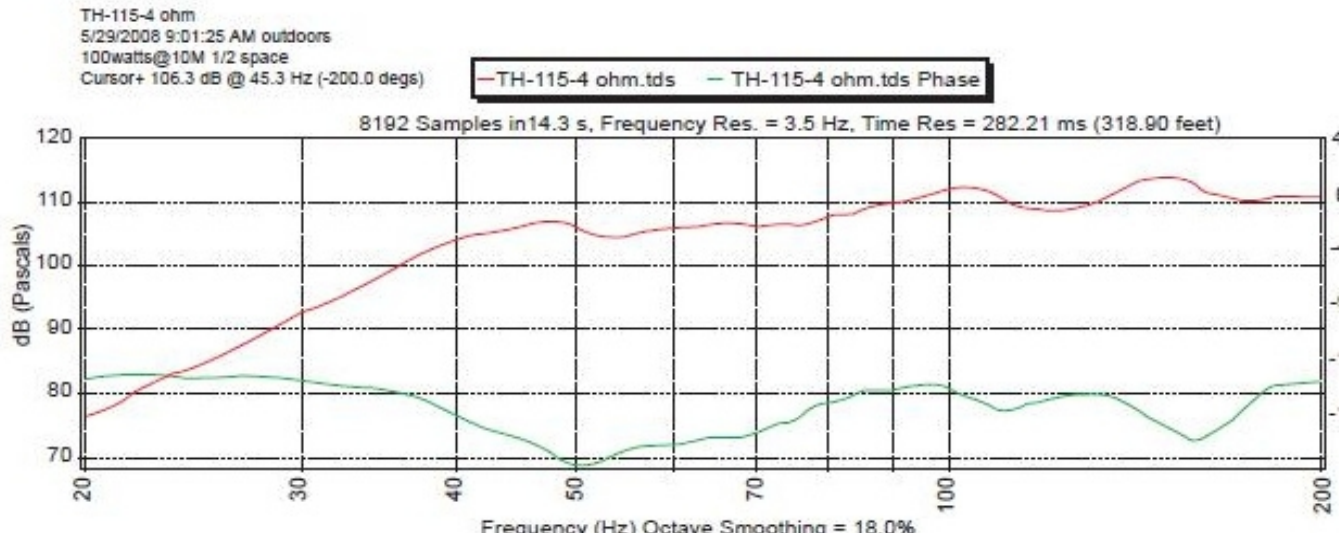
Specifications
Operating Frequency Range ..... 38 Hz -200 Hz - 3 dB
..... 33 Hz – 280 Hz -10dB
Sensitivity @ 1M.....106 dBSPL
…….. 112 dBSPL @ 100 Hz max
Maximum Output .....133dBSPL/136 dBSPL Peak
.....139 dBSPL/142 dBSPL Peak @ 100 Hz
Input Power Ratings ...1000 W continuous, 2000 W program
Nominal Impedance ..... 4 ohms
Recommended Processing ..25 Hz HP @ 24 dB/Butterworth
Drivers……**1) LF 1 x 15" Long excursion**
Weight……152 lbs.
Warranty…… 5 years.

Colors and Availability:
Black……In Stock
White……4 Days Lead Time
Color-Matching available at an additional cost.

EAW SB1000 Frequency Response



Danley Sound Labs TH115 Frequency Response



Frequency Response and why it matters:

Frequency response is a speaker's ability to accurately reproduce the frequencies being fed into it. In other words, if you input apples and oranges *(various frequencies)*, you should get apples and oranges out of it, only at a louder level.

<u>Accurate Frequency Response looks something like this:</u>

<u>Poor Frequency Response looks something like this:</u>

Conclusions

The EAW SB1000 Frequency Response is very erratic, spiky, and consequently not very smooth nor accurate. This really equates to a less than stellar speaker design. Its useable frequency range is extremely narrow as illustrated in the above response curve published by EAW. It has its peak at around 200hz which is acceptable, but it rolls off dramatically into the 40Hz range by approximately 12db. (As a point of reference, 10db is perceived by the human ear as being twice the amount of level). In the real world, this means with all things being equal, the SB1000 will produce most of its energy at the 200hz range, which is not really where subwoofers are supposed to operate. Additionally, if this subwoofer is set at a crossover frequency of 100hz, then it would take a 10db boost of gain or double the power to bring the curve up to the same level as it would be if set at 200hz. Another item in the spec sheet "numbers game" would be that the rated low freq response of the SB1000 is 28Hz. If you look at their response chart you will find that 28Hz is actually 13dB down from the rated sensitivity. EAW does not state that in the spec sheet-but their numbers show that. This is a bit of a deception on their part.

The Danley Sound Labs TH115 subwoofer is a marvel in engineering and design. When looking at the response curve it is easy to see that its response is very flat and very smooth and virtually flat down to 40hz. Conversely, it retains much more energy as you venture lower into the audible frequency range than the EAW SB1000. Danley also has a reputation of high accuracy when publishing specifications. What you read in their specs is what you get in the real world. The TH115 unabashedly outperforms EAW's SB1000 sonically, and it costs $763 less per unit. You gain double the performance, while reducing costs.

***Due to its superior Tapped Horn Design, Danley's efficiency is such that it would take 2 ½ EAW SB1000 cabinets to equal 1 Danley TH115.**

***10 db is perceived as being twice as loud. 1 db is unnoticeable.**

SB1000 Max Output: 133 db Max

TH115 Max Output: 142 db Max.

A 9 DB difference. Remember again, 1 db is unnoticeable.

TH115 has double the capable audible output of the SB1000

Danley's TH115 easily wins on performance, price, and accuracy of published information.