



**DESCRIPTION**

The AX122 is the companion subwoofer for the AX Series of full-range loudspeakers. Designed to extend the low frequency response of AX arrays to below 35 Hz, this compact subwoofer features advanced, high power, 12 in drivers, producing an exceptional amount of output for its size.

The AX122's drivers are mounted in a "clam shell" driver arrangement. This provides tighter driver coupling to increase output and improve impact. A massive port radiates the considerable energy needed at the enclosure's tuning frequency to complement the AX3 full-range loudspeakers.

The dual trapezoid enclosure is identical in size and shape to that of other AX Series loudspeakers. In addition it has the same 3/8-16 threaded mounting points. This means the AX122 is easily incorporated into AX arrays, both physically and aesthetically.

The barrier strip input connector for the AX122 has a second set of "loop thru" terminals for connecting an additional AX122.

Six year warranty.

**DUAL 12-INCH SUBWOOFER**

See *NOTES TABULAR DATA* for details

**CONFIGURATION**

Subsystem		
	<i>Transducer</i>	<i>Loading</i>
Sub	2x 12 in cone	Vented

Operating Mode		
	<i>Amplifier Channels</i>	<i>External Signal Processing</i>
Single-amp	Sub	DSP w/1-way filter

**PERFORMANCE <sup>1</sup>**

<b>Operating Range</b>	34 Hz to 128 Hz	
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Nominal Beamwidth		
Horz	360°	
Vert	360°	

Axial Sensitivity ( <i>whole space SPL</i> )		
Sub	96 dB	34 Hz to 128 Hz

Input Impedance ( <i>ohms</i> )		
	<i>Nominal</i>	<i>Minimum</i>
Sub	4	4.8 @ 128 Hz

High Pass Filter		
High Pass	=>31.5 Hz, 24 dB/octave Butterworth	

Accelerated Life Test <sup>2</sup>		
Sub	75 V	1400 W @ 4 ohm

Calculated Axial Output Limit ( <i>whole space SPL</i> )		
	<i>Average</i>	<i>Peak</i>
Sub	127 dB	133 dB

**ORDERING DATA**

<i>Description</i>	<i>Part Number</i>
AX122 Subwoofer Black	0011342
AX122 Subwoofer White	0011583
AX122 Subwoofer Black WP	0011581

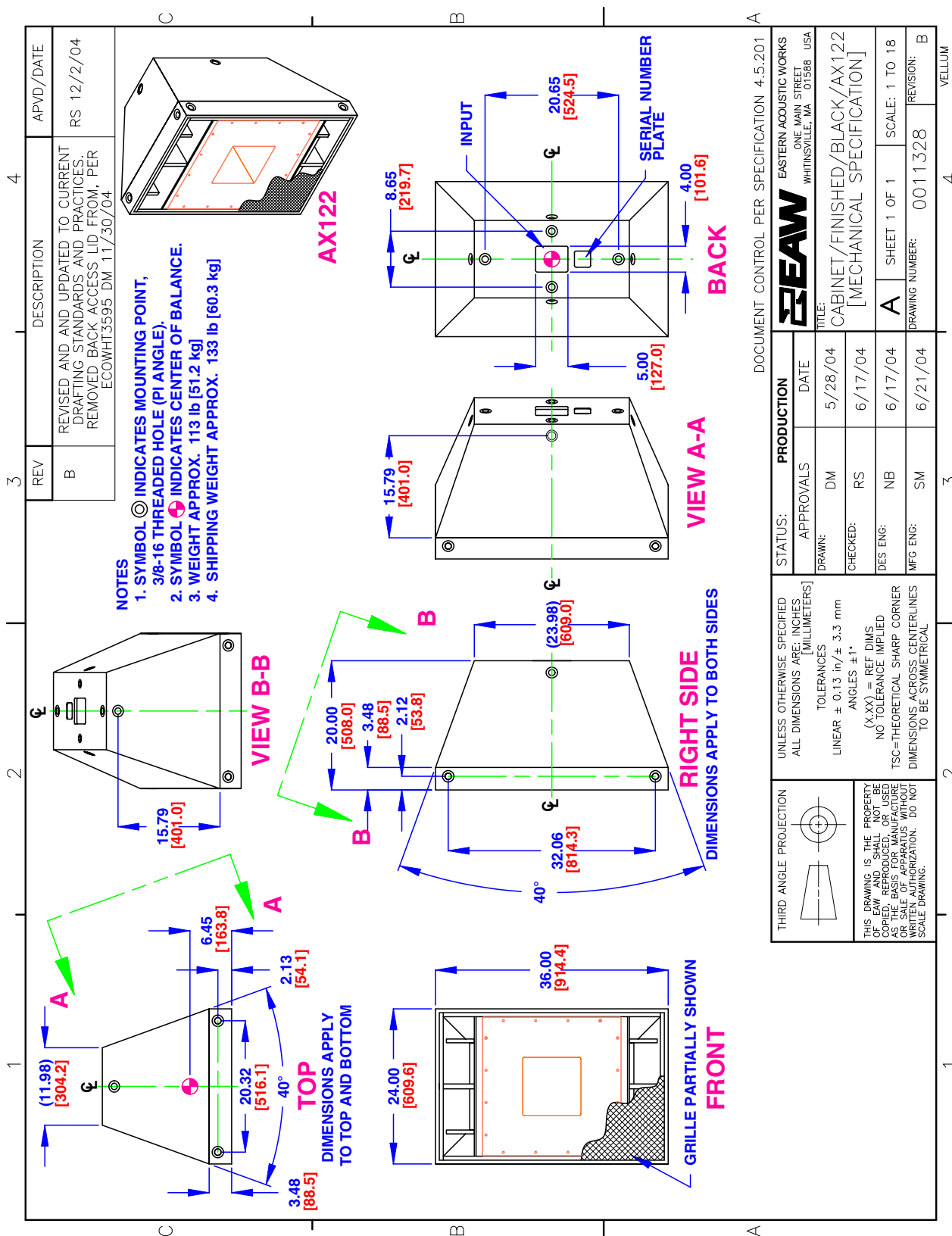
<i>Optional Accessories</i>	
Eyebolt/Forged Shoulder (3/8-16 x 1.25 in)	104001

<sup>1</sup> To achieve specified performance, the listed external signal processing with EAW-provided settings is required.

<sup>2</sup> For recommendations to select power amplifier size refer to : "HOW MUCH AMPLIFIER POWER DO I NEED?" on the EAW web site.

## ENCLOSURE

Material	Baltic birch plywood
Finish	Wear resistant textured black paint
Grille	Powder-coated perforated steel



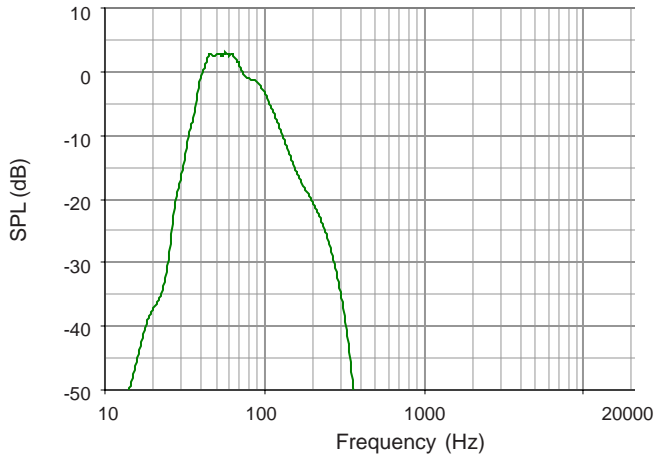
**NOTES:** This drawing has been reduced. Do not scale.  
For WP version, add 0.25 in / 6.4 mm to the outside dimensions = 0.125 in / 3.2 mm all around.

## PERFORMANCE DATA

See **NOTES GRAPHIC DATA** for details

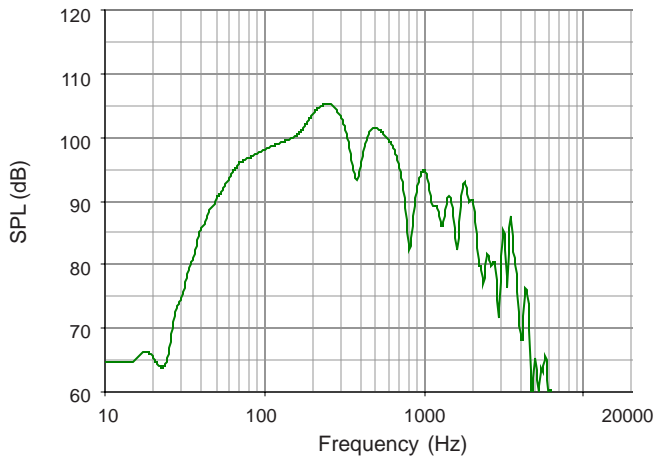
### Frequency Response: Processed

LF = green



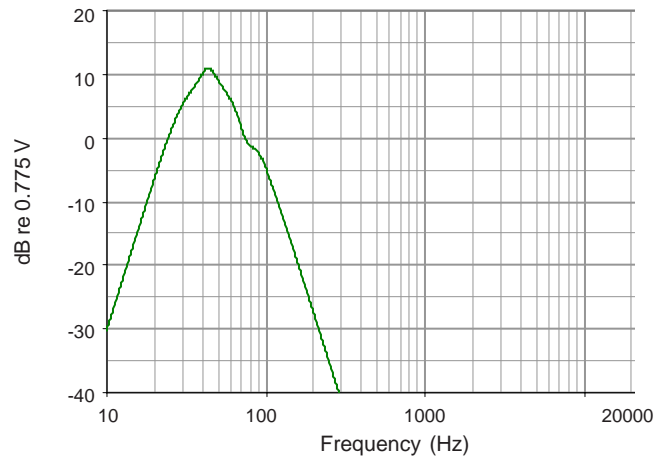
### Frequency Response: Unprocessed

LF = green, MF/HF= black, Single-amp = blue



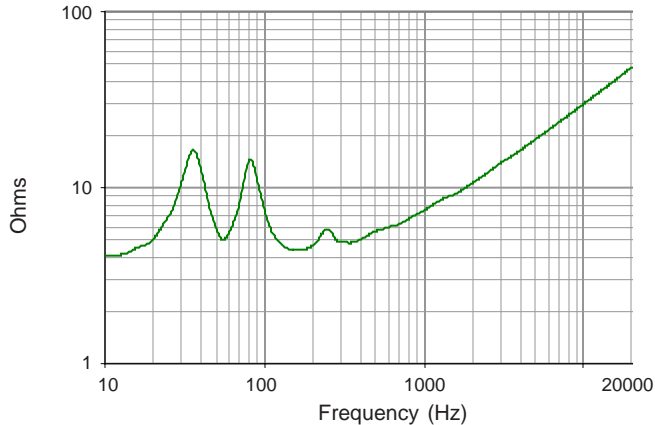
### Frequency Response: Digital Signal Processor

LF = green, MF/HF= black, Single-amp = blue

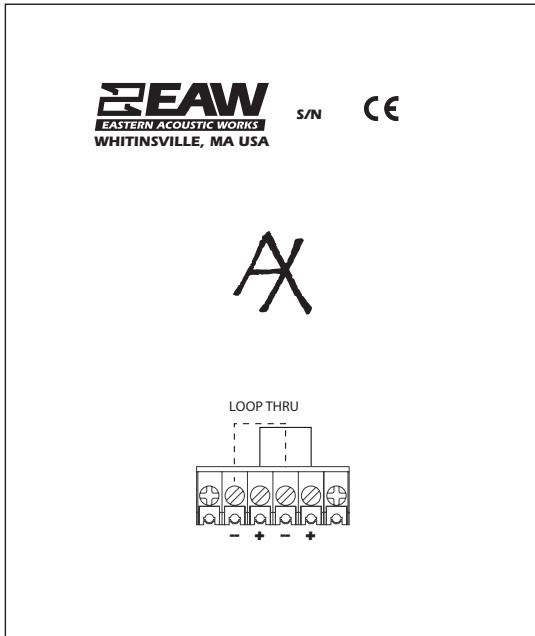


### Impedance Magnitude

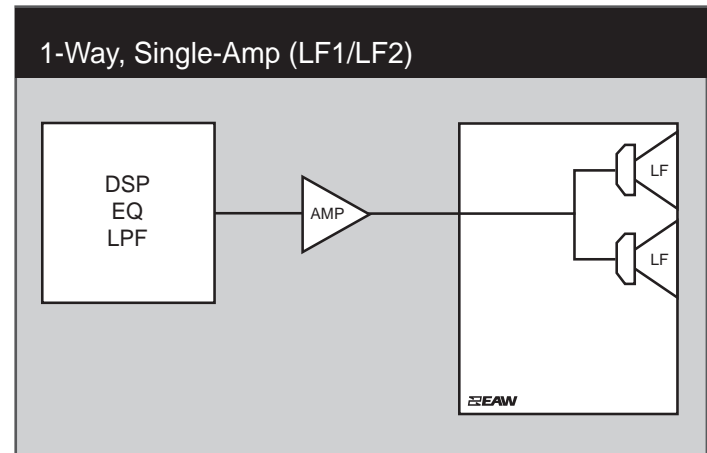
LF = green, MF/HF= black, Single-amp = blue



## INPUT PANEL



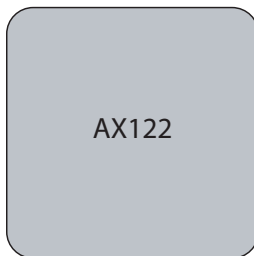
## SIGNAL DIAGRAM



## LEGEND

- DSP:** User-supplied Digital Signal Processor.
- HPF:** High Pass Filter for crossover or Recommended High Pass Filter.
- LPF:** Low Pass Filter for crossover.
- LF/MF/HF:** Low Frequency / Mid Frequency / High Frequency.
- AMP:** User-supplied Power Amplifier.
- XVR:** Passive LPFs, HPFs, and EQ integral to the loudspeaker.

## ID LABEL



## NOTES

### TABULAR DATA

1. **Measurement/Data Processing Systems:** Primary - FChart: proprietary EAW software; Secondary - Brüel & Kjær 2012.
2. **Microphone Systems:** Earthworks M30; Brüel & Kjær 4133
3. **Measurements:** Dual channel FFT; length: 32 768 samples; sample rate: 48 kHz; logarithmic sine wave sweep.
4. **Measurement System Qualification** (includes all uncertainties): SPL: accuracy +/-0.2 dB @ 1 kHz, precision +/-0.5 dB 20 Hz to 20 kHz, resolution 0.05 dB; Frequency: accuracy +/-1 %, precision +/-0.1 Hz, resolution the larger of 1.5 Hz or 1/48 octave; Time: accuracy +/-10.4 µs, precision +/-0.5 µs, resolution 10.4 µs; Angular: accuracy +/-1°, precision +/-0.5°, resolution 0.5°.
5. **Environment:** Measurements time-widowed and processed to eliminate room effects, approximating an anechoic environment. Data processed as anechoic or fractional space, as noted.
6. **Measurement Distance:** 7.46 m. Acoustic responses represent complex summation of the subsystems at 20 m. SPL is referenced to other distances using the Inverse Square Law.
7. **Volts:** Measured rms value of the test signal.
8. **Watts:** Per audio industry practice, "loudspeaker watts" are calculated as voltage squared divided by rated nominal impedance. Thus, these are not True Watt units of energy as defined by International Standard.
9. **SPL:** (Sound Pressure Level) Equivalent to the average level of a signal referenced to 0 dB SPL = 20 microPascals.
10. **Subsystem:** This lists the transducer(s) and their acoustic loading for each passband. Sub = Subwoofer, LF = Low Frequency, MF = Mid Frequency, HF = High Frequency.
11. **Operating Mode:** User selectable configurations. Between system elements, a comma (,) = separate amplifier channels; a slash (/) = single amplifier channel. DSP = Digital Signal Processor. IMPORTANT: To achieve the specified performance, the listed external signal processing must be used with EAW-provided settings.
12. **Operating Range:** Range where the processed Frequency Response stays within -10 dB SPL of the power averaged SPL within this range; measured on the geometric axis. Narrow band dips are excepted.
13. **Nominal Beamwidth:** Design angle for the -6 dB SPL points, referenced to 0 dB SPL as the highest level.
14. **Axial Sensitivity:** Power averaged SPL over the Operating Range with an input voltage that would produce 1 W at the nominal impedance; measured with no external processing on the geometric axis, referenced to 1 m.
15. **Nominal Impedance:** Selected 4, 8, or 16 ohm resistance such that the minimum impedance point is no more than 20% below this resistance over the Operating Range.
16. **Accelerated Life Test:** Maximum test input voltage applied with an EIA-426B defined spectrum; measured with recommended signal processing and Recommended Protection Filter.
17. **Calculated Axial Output Limit:** Highest average and peak SPLs possible during the Accelerated Life Test. The Peak SPL represents the 2:1 (6 dB) crest factor of the Life Test signal.
18. **High Pass Filter:** This helps protect the loudspeaker from excessive input signal levels at frequencies below the Operating Range.

### GRAPHIC DATA

1. **Resolution:** To remove insignificant fine details, 1/12 octave cepstral smoothing was applied to acoustic frequency responses and 1/3 octave cepstral smoothing was applied to the beamwidth and impedance data. Other graphs are plotted using raw data.
2. **Frequency Responses:** Variation in acoustic output level with frequency for a constant input signal. Processed: normalized to 0 dB SPL. Unprocessed inputs: 2 V (4 ohm nominal impedance), 2.83 V (8 ohm nominal impedance), or 4 V (16 ohm nominal impedance) referenced to a distance of 1 m.
3. **Processor Response:** The variation in output level with frequency for a constant input signal of 0.775 V = 0 dB reference.
4. **Beamwidth:** Average angle for each 1/3 octave frequency band where, starting from the rear of the loudspeaker, the output first reaches -6 dB SPL referenced to 0 dB SPL as the highest level. This method means the output may drop below -6 dB SPL within the beamwidth angle.
5. **Impedance:** Variation in impedance magnitude, in ohms, with frequency without regard to voltage/current phase. This means the impedance values may not be used to calculate True Watts (see 9 above).
6. **Polar Data:** Horizontal and vertical polar responses for each 1/3 octave frequency band 100 Hz to 16 kHz or Operating Range.

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