DESCRIPTION

The SB products are EAW’s premium subwoofers designed for the most demanding professional applications. A broad range of capabilities and sizes provide the designer with selections that can be specifically matched to their application. Top quality drivers, engineered by EAW, provide the highest output and best sonic performance possible for a given form factor. All SB models are direct radiating, with optimally tuned, vented enclosures. SB subwoofers are the choice where the best sonic performance, highest reliability, and most robust physical construction are required.

The SB180zR is a high output, mid-size subwoofer system. This versatile, all-purpose subwoofer is designed for portable use where the fatter-sounding output of an 18 inch driver is desired. The SB180zR works well with most full-range loudspeakers in a variety of applications including: band/club PA, small houses of worship, small auditoriums/theaters, A/V systems, hotel ballrooms, meeting rooms, classrooms, exhibit areas, f/x reinforcement, cruise ships, small dance clubs, DJ monitoring, and drum-fill monitoring.

The SB180zR is designed to be used with today’s sophisticated digital signal processing to optimize the LF response. EAW’s MX Series processors are recommended for the required crossover and equalization.

Six Year Warranty.

18 INCH SUBWOOFER

See NOTES TABULAR DATA for details, half space = floor-mounted

CONFIGURATION

<table>
<thead>
<tr>
<th>Subsystem</th>
<th>Transducer</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUB</td>
<td>1x 18 in cone</td>
<td>Vented</td>
</tr>
</tbody>
</table>

Operating Mode

<table>
<thead>
<tr>
<th>Single-amp</th>
<th>Amplifier Channels</th>
<th>External Signal Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>DSP w/1-way filter</td>
<td></td>
</tr>
</tbody>
</table>

PERFORMANCE

<table>
<thead>
<tr>
<th>Operating Range</th>
<th>29 Hz to 150 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Beamwidth</td>
<td></td>
</tr>
<tr>
<td>Horz</td>
<td>360°</td>
</tr>
<tr>
<td>Vert</td>
<td>360°</td>
</tr>
<tr>
<td>Axial Sensitivity (SPL)</td>
<td></td>
</tr>
<tr>
<td>LF (whole space)</td>
<td>94 dB, 29 Hz to 150 Hz</td>
</tr>
<tr>
<td>(half space)</td>
<td>100 dB, 29 Hz to 150 Hz</td>
</tr>
</tbody>
</table>

Input Impedance

<table>
<thead>
<tr>
<th>Nominal</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF1</td>
<td>8</td>
</tr>
<tr>
<td>High Pass</td>
<td>=&gt;25 Hz, 12 dB/octave Butterworth</td>
</tr>
</tbody>
</table>

Accelerated Life Test

<table>
<thead>
<tr>
<th>System</th>
<th>LF</th>
<th>75 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transducer (AES)</td>
<td>1000 W</td>
<td></td>
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</tbody>
</table>

Calculated Axial Output Limit (SPL)

<table>
<thead>
<tr>
<th>Average</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF (whole space)</td>
<td>122 dB</td>
</tr>
<tr>
<td>(half space)</td>
<td>128 dB</td>
</tr>
</tbody>
</table>

ORDERING DATA

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB180zR 18 inch Subwoofer Black</td>
<td>0008823</td>
</tr>
</tbody>
</table>

Optional Accessories

None

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

2 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

NOTE:
1. SYMBOL INDICATES CENTER OF BALANCE.
2. WEIGHT APPROX.: 94 lb [42.6 kg].
3. SHIPPING WEIGHT APPROX.: 105 lb [47.6 kg].

NOTE: This drawing has been reduced. Do not scale.
PERFORMANCE DATA
See NOTES GRAPHIC DATA for details

Frequency Response: Processed
LF Whole Space = green

Frequency Response: Unprocessed
LF Whole Space = green

Frequency Response: Digital Signal Processor
LF = green

Impedance Magnitude
LF = green
**INPUT PANEL**

- SB180zR
- Whitinsville, MA USA
- S/N

**NOTES**

**TABULAR DATA**

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, 10 Hz to 20 kHz, resolution 0.05 dB; Frequency: accuracy +/-1 %, precision +/-0.1 Hz, resolution of 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.
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. High Pass Filter: This helps protect the loudspeaker from excessive input signal levels at frequencies below the Operating Range.
18. 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.

**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. 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 8 above).