



FEATURES

- Companion subwoofer arrayable with MK Series loudspeakers
- Direct Radiating Design
- Vented Enclosure
- Durability

APPLICATIONS

Houses of Worship, Auditoriums/Theatres, Live Entertainment, Night Clubs, Arenas

DESCRIPTION

SBK subwoofers are designed to provide the high output required by many installation applications. Intended as companion subwoofers to the MK line of full range installation loudspeakers, the SBK line is equally capable utilized as standalone subwoofers in any installed system.

Reliable and durable, the SBK250 features a top quality driver that provides the highest output and sonic performance possible.

The design and dimensions of the SBK250 is calculated to match the MK2300 and MK5300 loudspeakers presenting an attractive appearance when arrayed together. An optional flybar allows two full range MK loudspeakers to be hung on either side of an SBK250 using preconfigured and optimized splay angles.

The SBK250 subwoofer employs optimal venting, utilizing the resonance of the enclosure to maximize low frequency response. The direct radiating design provides the performance expected of EAW's SB line of subwoofers.

The optional flybar provides single or double pick points with pull back for a total array package. An optional stinger provides selectable tilt to an array from a single pick point.

Each cabinet is equipped with multiple 3/8" mounting points for additional installation flexibility. Overall construction of the SBK Series matches the high standard long applied to all EAW products. Enclosures are protected by a tough, heavy-duty latex paint finish.

6 year warranty.

DUAL 15-INCH SUBWOOFER

See *NOTES TABULAR DATA* for details

CONFIGURATION

Subsystem:

<i>Transducer</i>	<i>Loading</i>
SUB 2x 15 in cone	Vented

Operating Mode:

<i>Amplifier Channels</i>	<i>External Signal Processing</i>
Single-amp LF1 / LF2	DSP w/1-way filter
Dual-amp LF1, LF2	DSP w/1-way filter

PERFORMANCE

Operating Range: 32 Hz to 160 Hz

Nominal Beamwidth:

Horz 360°
Vert 360°

Axial Sensitivity (SPL):

LF1/LF2 (<i>whole space</i>) 98 dB	32 Hz to 160 Hz
(<i>half space</i>) 104 dB	32 Hz to 160 Hz

Input Impedance (ohms):

<i>Nominal</i>	<i>Minimum</i>
LF1/LF2 4	3.7 @ 45 Hz
LF1,LF2 8 (each)	7.4 @ 45 Hz (each)

High Pass Filter: High Pass=>35 Hz, 24 dB/octave Butterworth

Accelerated Life Test

System LF1/LF2 82.5 V	1700W @ 4 ohm
LF1,LF2 82.5 V (each)	850 W @ 8 ohm (each)

Calculated Axial Output Limit (*whole space SPL*):

<i>Average</i>	<i>Peak</i>
LF/LF2 (<i>whole space</i>) 130 dB	136 dB
(<i>half space</i>) 136 dB	142 dB

ORDERING DATA

<i>Description</i>	<i>Part Number</i>
EAW SBK250 Dual 15-inch Subwoofer Black	2037365
EAW SBK250 Dual 15-inch Subwoofer White	2037922

Optional Accessories

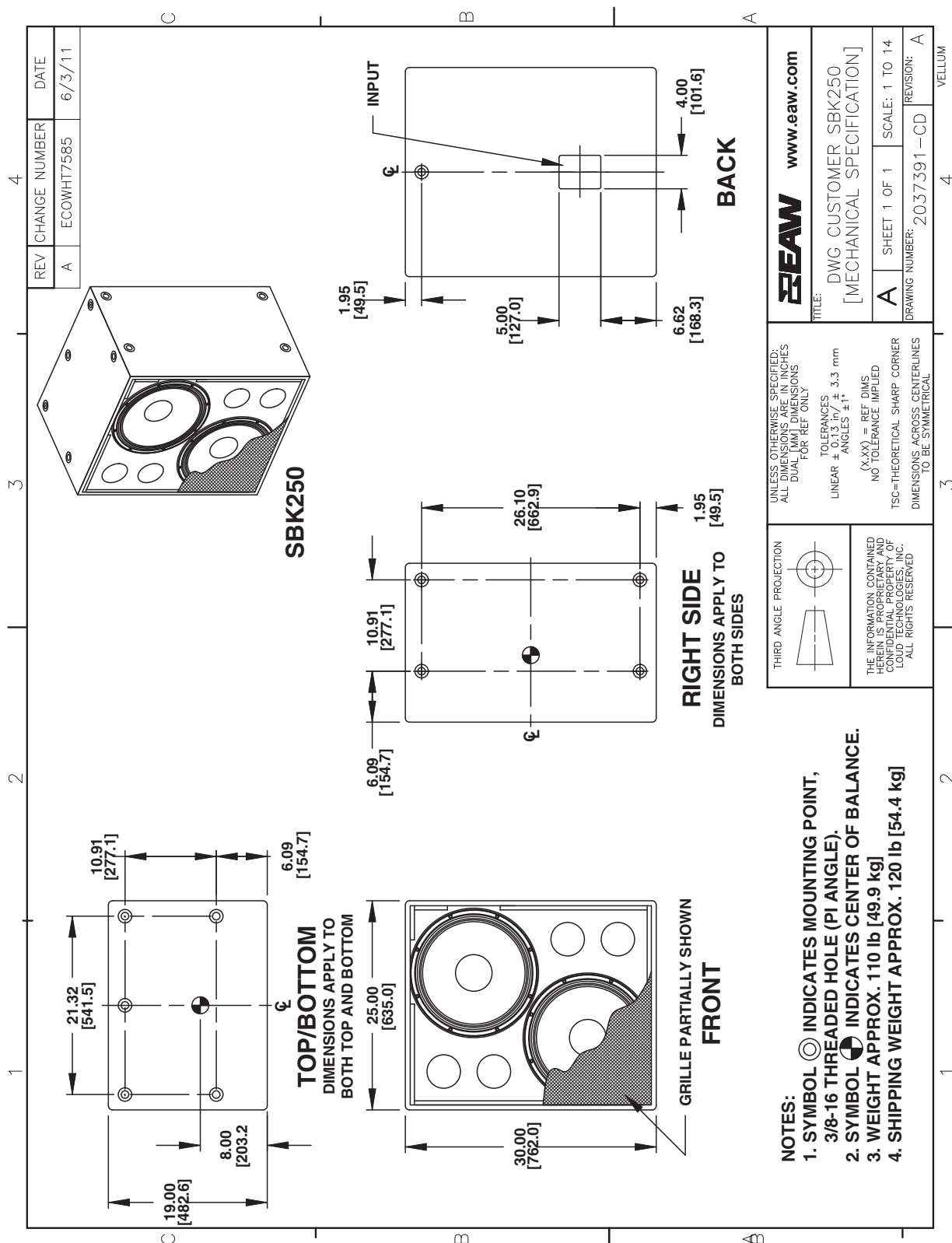
EAW Flybar SBK-MK53 VFS-VFR159 Black [FB5VSK]	2038320
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ENCLOSURE

Material Exterior-grade Baltic birch plywood

Finish Wear resistant textured black paint

Grille Powder-coated perforated steel



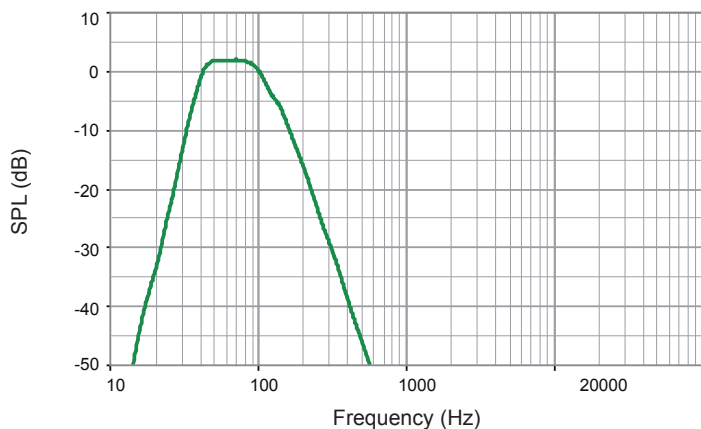
NOTE: This drawing has been reduced. Do not scale.

PERFORMANCE DATA

See *NOTES GRAPHIC DATA* for details

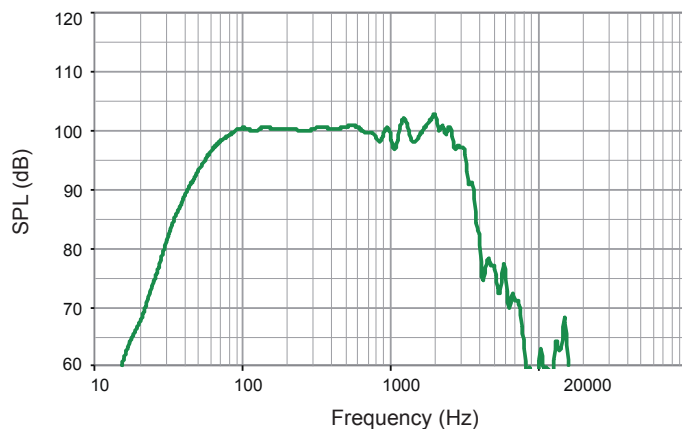
Frequency Response: Processed

LF1/LF2 Whole Space = green



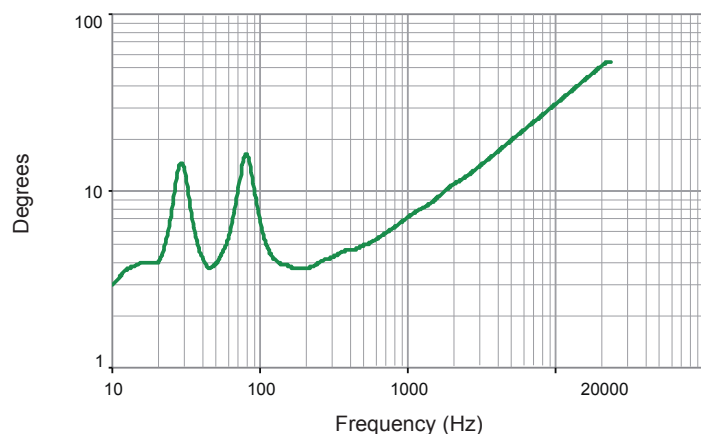
Frequency Response: Unprocessed

LF1/LF2 Whole Space = green



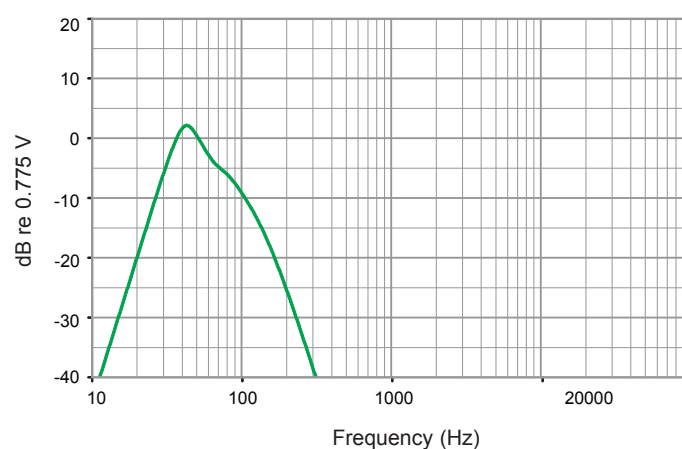
Impedance

LF1/LF2 = green

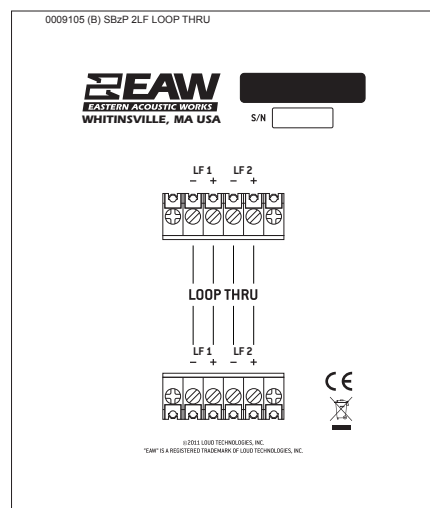


Frequency Response: Digital Signal Processor

LF1/LF2 = green



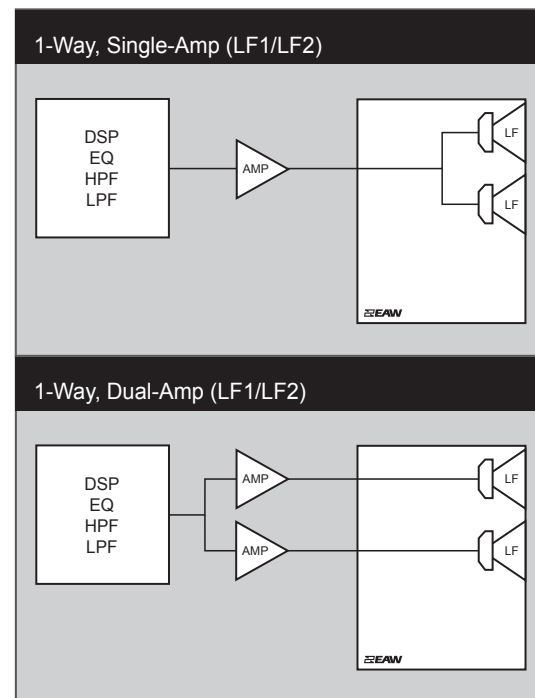
INPUT PANEL



LEGEND

- DSP:** EAW UX8800 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 –or– Integral Amplifier for NT products.
XVR: Passive LPFs, HPFs, and EQ integral to the loudspeaker.
EAW Focusing: Digital Signal Processor capable of implementing EAW Focusing.

SIGNAL DIAGRAM



NOTES

TABULAR DATA

- Measurement/Data Processing Systems:** Primary - FChart: proprietary EAW software; Secondary - Brüel & Kjær 2012.
- Microphone Systems:** Earthworks M30; Brüel & Kjær 4133
- Measurements:** Dual channel FFT; length: 32 768 samples; sample rate: 48 kHz; logarithmic sine wave sweep.
- 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 $\pm 1\%$, precision ± 0.1 Hz, resolution the larger of 1.5 Hz or 1/48 octave; Time: accuracy ± 10.4 μ s, precision ± 0.5 μ s, resolution 10.4 μ s; Angular: accuracy $\pm 1^\circ$, precision $\pm 0.5^\circ$, resolution 0.5° .
- Environment:** Measurements time-windowed and processed to eliminate room effects, approximating an anechoic environment. Data processed as anechoic or fractional space, as noted.
- 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.
- Enclosure Orientation:** For beamwidth and polar specifications, as shown in Mechanical Specification drawing.
- Volts:** Measured rms value of the test signal.
- 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.
- SPL:** (Sound Pressure Level) Equivalent to the average level of a signal referenced to 0 dB SPL = 20 microPascals.
- Subsystem:** This lists the transducer(s) and their acoustic loading for each passband. Sub = Subwoofer, LF = Low Frequency, MF = Mid Frequency, HF = High Frequency.
- 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.
- 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.
- Nominal Beamwidth:** Design angle for the -6 dB SPL points, referenced to 0 dB SPL as the highest level.
- 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.
- 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.
- Accelerated Life Test:** Maximum test input voltage applied with an EIA-426B defined spectrum; measured with recommended signal processing and Recommended Protection Filter.
- 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.
- High Pass Filter:** This helps protect the loudspeaker from excessive input signal levels at frequencies below the Operating Range.

GRAPHIC DATA

- 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.
- 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.
- Processor Response:** The variation in output level with frequency for a constant input signal of 0.775 V = 0 dB reference.
- 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.
- 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).
- Polar Data:** Horizontal and vertical polar responses for each 1/3 octave frequency band 100 Hz to 16 kHz or Operating Range.