



FEATURES

- High output sub bass system
- Dual 12-in cone transducers
- Optimally vented for increased response
- Extended pole mount cup creates stable base
- Long-lasting reliability

APPLICATIONS

Band PA, DJ System, Dance Club, Schools, Houses of Worship, Rental Systems, Mobile Churches, Auditoriums

DESCRIPTION

The VFS220 sub bass system includes dual, direct radiating 12-in LF cone transducers mounted in an optimally vented enclosure. Enclosure venting uses the enclosure's resonance to enhance LF response while limiting driver wear.

The VFS220 includes traditional portable features such as handles, pole cup, and parallel NL4 connectors as well as permanent installation features such as barrier strip inputs and threaded mounting points. The unique design integrates the handles into the enclosure, leaving the sides smooth and attractive. The pole cup creates a safe, stable base for pole mounted mains.

Optional rigging hardware speeds the installation of pre-configured arrays of VFR and VFS systems.

Six year warranty.

DOUBLE 12-INCH SUBWOOFER

See *NOTES TABULAR DATA* for details

CONFIGURATION

Subsystem:	Transducer	Loading
SUB	2x 12 in cone	Vented

Operating Mode:

	Amplifier Channels	External Signal Processing
Single-amp	LF/LF	DSP w/1-way filter

PERFORMANCE

Operating Range: 33 Hz to 154 Hz

Nominal Beamwidth:

Horz 360°
Vert 360°

Axial Sensitivity (SPL):

LF1/LF2 (whole space)	96 dB	33 Hz to 154 Hz
(half space)	102 dB	33 Hz to 154 Hz

Input Impedance (ohms):

	Nominal	Minimum
LF1/LF2	4	4.2 @ 143 Hz

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

Accelerated Life Test:

System		
LF1/LF2	63.2 V	1000 W @ 4 ohm

Calculated Axial Output Limit (whole space SPL):

	Average	Peak
LF/LF2 (whole space)	126 dB	132 dB
(half space)	132 dB	138 dB

ORDERING DATA

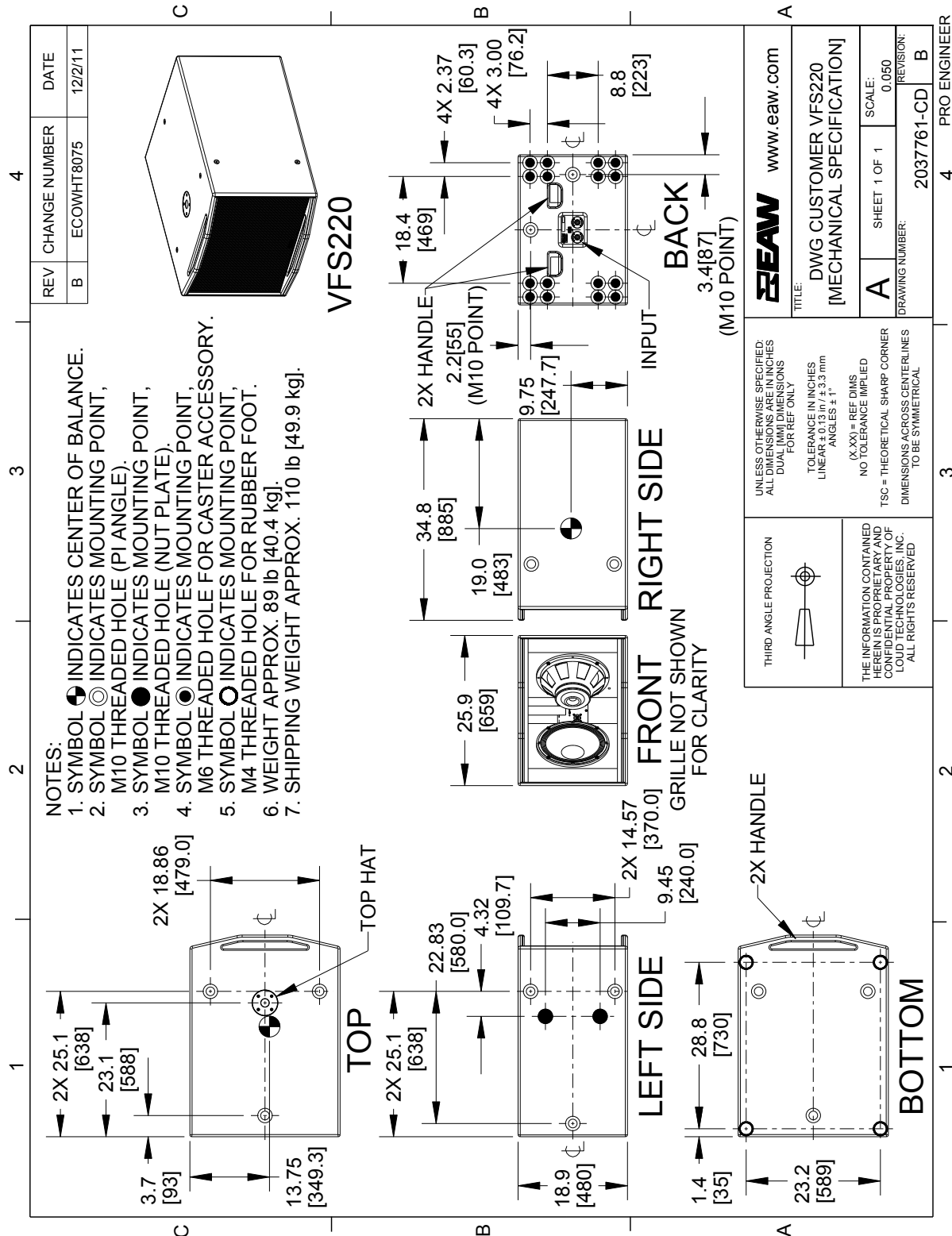
Description	Part Number
EAW VFS220 Double 12-inch Subwoofer Black	2038059-90
EAW VFS220 Dual 12-inch Subwoofer White	2038846-90

Optional Accessories

EAW Eyebolt/Forged Shoulder (M10)	0031810
EAW SBK-MK23_VFS-VFR129 Flybar Black [FB2VSK]	2038319
EAW ACC CASTER KIT [ACC-CK200]	255017

ENCLOSURE

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



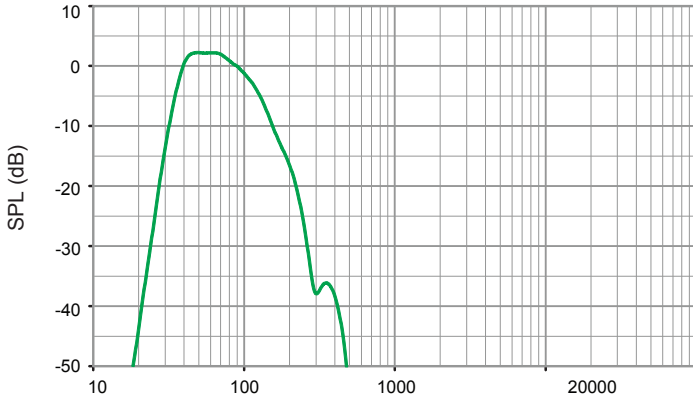
NOTE: This drawing has been reduced. Do not scale.

PERFORMANCE DATA

See *NOTES GRAPHIC DATA* for details

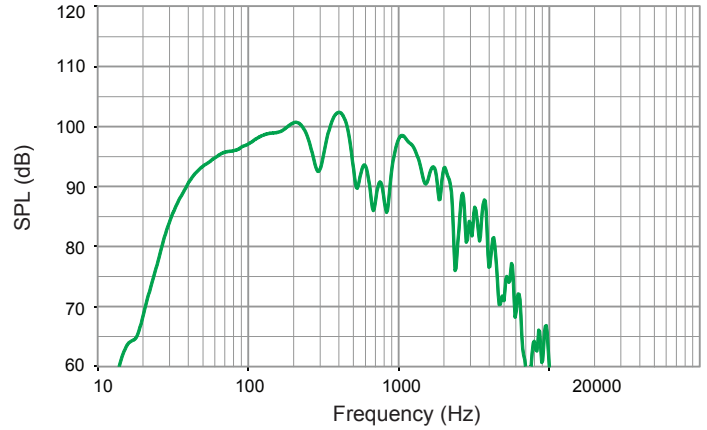
Frequency Response: Processed

LF = green



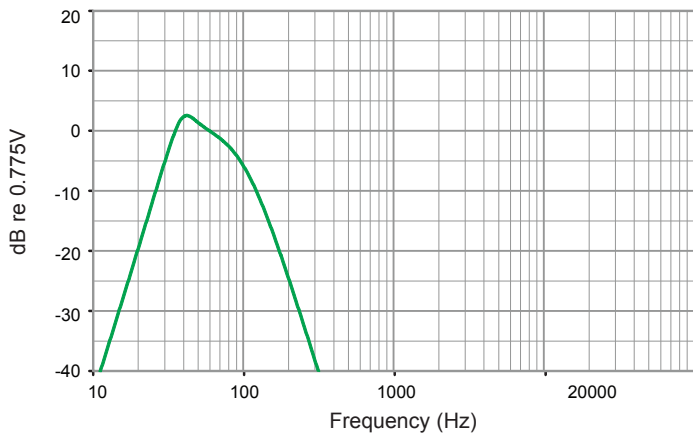
Frequency Response: Unprocessed

LF = green



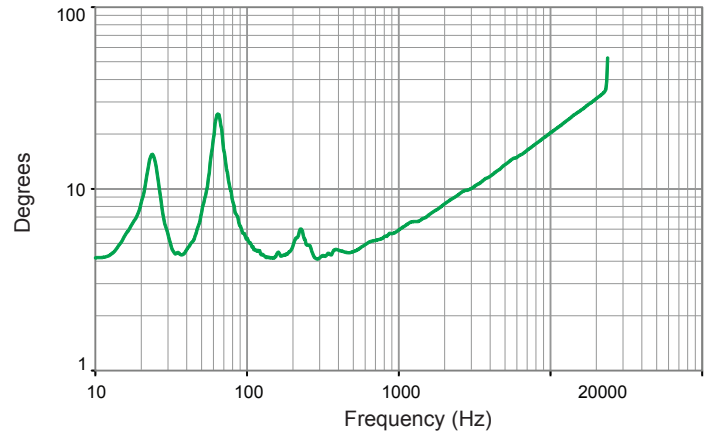
Processor Response

LF = green

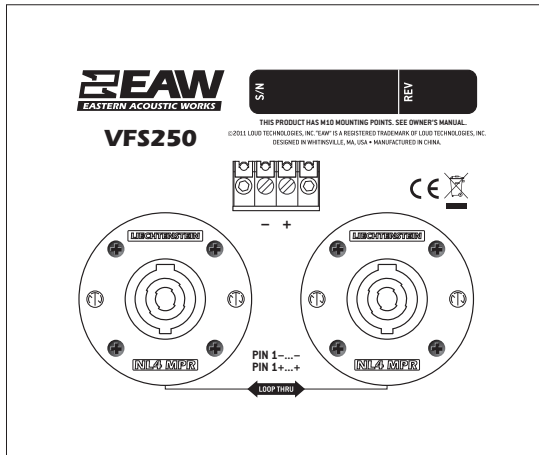


Impedance

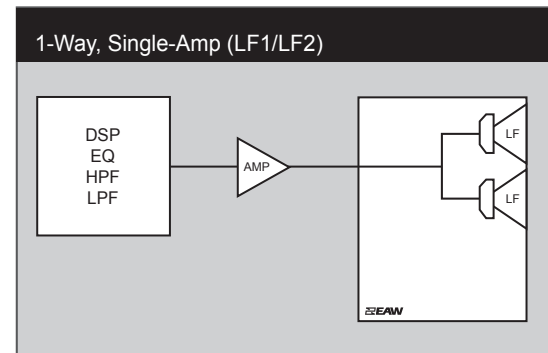
LF = green



INPUT PANEL



SIGNAL DIAGRAM



LEGEND

- DSP:** EAW UX8800 Digital Signal Processor –or– Integral Digital Signal Processing for NT products.
- 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.

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-windowed 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. **Enclosure Orientation:** For beamwidth and polar specifications, as shown in Mechanical Specification drawing.
8. **Volts:** Measured rms value of the test signal.
9. **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.
10. **SPL:** (Sound Pressure Level) Equivalent to the average level of a signal referenced to 0 dB SPL = 20 microPascals.
11. **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 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.
13. **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.
14. **Nominal Beamwidth:** Design angle for the -6 dB SPL points, referenced to 0 dB SPL as the highest level.
15. **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.
16. **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.
17. **Accelerated Life Test:** Maximum test input voltage applied with an EIA-426B defined spectrum; measured with recommended signal processing and Recommended Protection Filter.
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.
19. **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.