

JFL213 Specifications



FEATURES

- Two-way, constant curvature line array module
- Compact and light; a "one-person lift"
- Easy to mount, fly or ground stack
- Two-module, pole-mounted arrays or up to five modules flown
- Classic EAW output, pattern control and fidelity

DESCRIPTION

The JFL213 compact, two-way line array module features a range of EAW's most innovative line array technologies within a mobile, light-weight package appropriate in a wide range of small- to medium-sized venues. With its companion subwoofer, the JFL118, this easy-to-use system solves problems in both portable and permanently installed applications.

The JFL213's two-way design mounts dual 10-in cone transducers in an optimally vented enclosure and spaced to extend pattern control into the low frequency range. Three horn-loaded, 0.75-in exit / 1.75-in voice coil compression drivers deliver even dispersion of high frequency information over the entire 110° horizontal coverage area.

EAW engineers optimized the JFL213's size, shape and weight for easy transport and setup by a single person, with side handles designed as part of the rigging system and aligned with the enclosure's center of balance. Users can mount up to two JFL213s on a loudspeaker stand with a 35mm/1.38-in diameter pole. The cleverly-designed, dual-angle pole mount cup allows the bottom enclosure to be aimed 0° or -15°. (A two-module array with the lower modules aimed at -15° aims the upper module at 0°.) The JFL118 features an integrated pole mount cup, letting it serve as a large, stable base for pole mounting.

The JFL213's ultra-strong rigging system allows users to hang up to five modules with a 10:1 safety factor, which meets or exceeds all standards enforced throughout the world. A single person can easily connect the modules to the accessory FB221 Fly Bar as well as to each other. The FB221 also doubles as a ground stack base for up to four JFL213s. For permanent installation, each JFL213 provides a pair of M10 threaded mounting points.

The JFL213 allows users to switch between single- or bi-amp powering modes. The JFL213 delivers optimal performance when operated in bi-amp mode with an EAW UX Series digital processor. In addition to the HF shading filters, UX Series digital processor deliver EAW Focusing™ setting, which correct for anomalies that occur in the time domain of any loudspeaker or transducer.

Enclosures are protected by our tough, scratch-resistant RoadCoat™ finish and durable, foam-backed steel grilles protect the transducers. Six year warranty.

2-WAY FULL-RANGE LOUDSPEAKER 110° × 15°

See *NOTES TABULAR DATA* for details

CONFIGURATION

Subsystem:

	Transducer	Loading
LF	2× 10 in cone	Vented
HF	3× .75 in exit, 1.75 in voice coil compression driver	Horn-loaded

Operating Mode:

	Amplifier Channels	External Signal Processing
Single-amp	LF/HF	High pass filter
Bi-amp	LF,HF	DSP w/2-way filters

PERFORMANCE

Operating Range: 65 Hz to 20 kHz

Nominal Beamwidth:

Horz	110°
Vert	15°

Axial Sensitivity (whole space SPL):

LF/HF	95 dB	65 Hz to 20 kHz
LF	96 dB	65 Hz to 1520 Hz
HF	102 dB	1320 Hz to 20 kHz

Input Impedance (ohms):

	Nominal	Minimum
LF/HF	8	6.4 @ 200 Hz
LF	8	6.5 @ 630 Hz
HF	16	11.9 @ 20 kHz

High Pass Filter: High Pass =>60 Hz, 12 dB/octave Butterworth

Accelerated Life Test:

LF/HF	79.9 V	800 W @ 8 ohm
LF	79.9 V	800 W @ 8 ohm
HF	35.7 V	80 W @ 16 ohm

Calculated Axial Output Limit (whole space SPL):

	Average	Peak
LF/HF	124 dB	130 dB
LF	125 dB	131 dB
HF	124 dB	130 dB

ORDERING DATA

Description	Part Number
EAW JFL213 Black	2039855-90
EAW JFL213 White	2041840-90

Optional Accessories

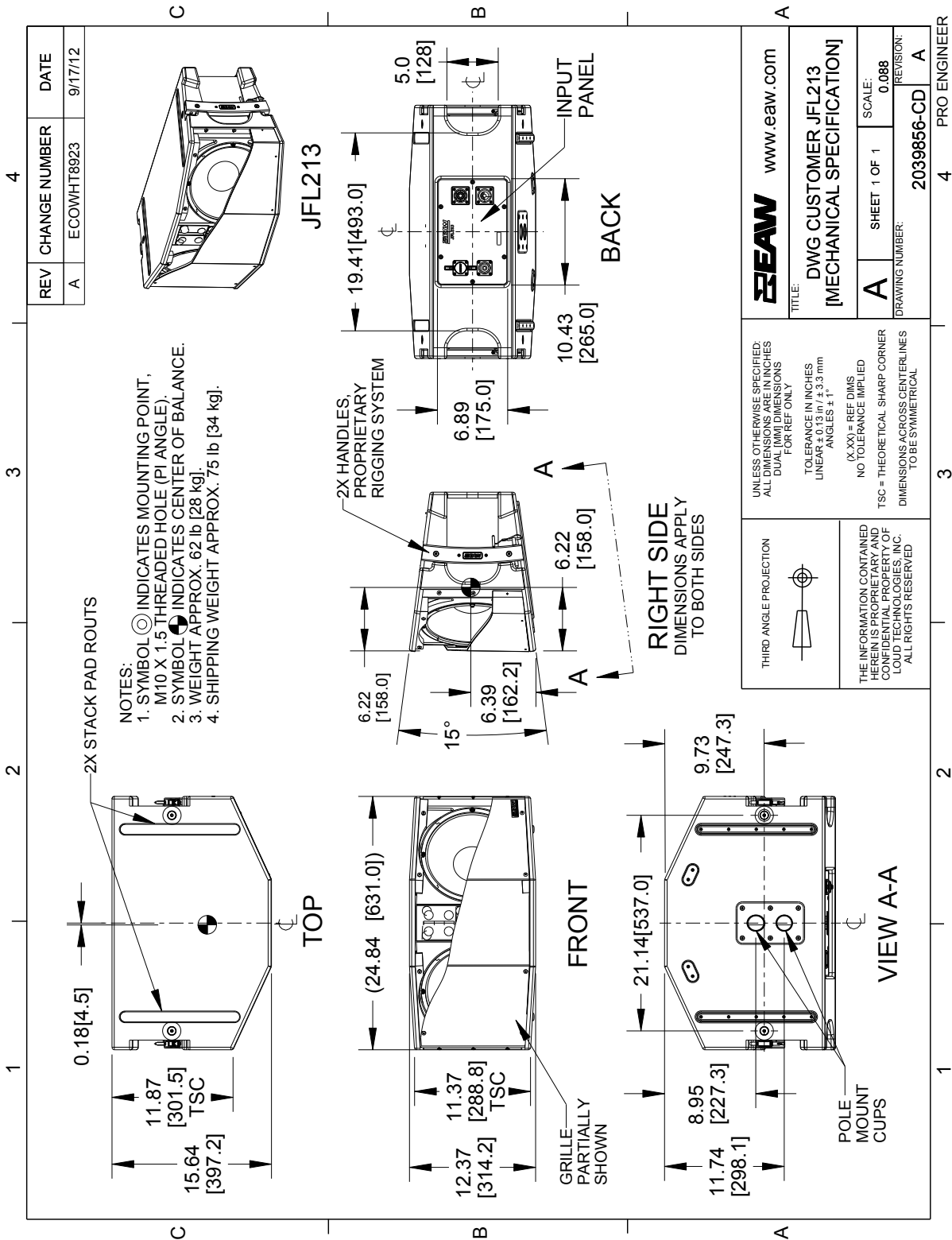
Eye Bolt Forged Shoulder M10 X 1.5 X 37mm	0029818
Flybar JFL & HDA Black [FB221]	2036411



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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.

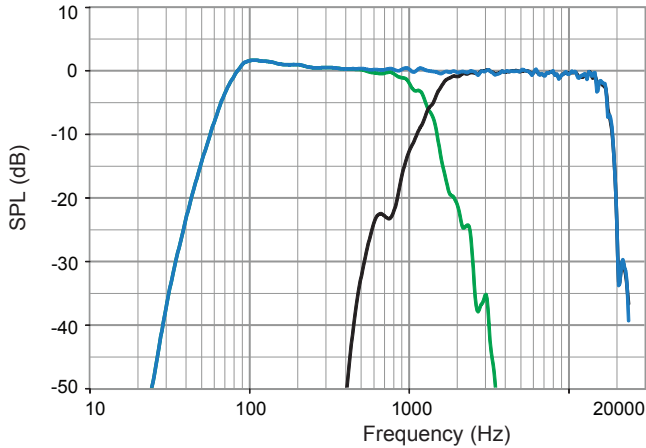
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PERFORMANCE DATA

See *NOTES GRAPHIC DATA* for details

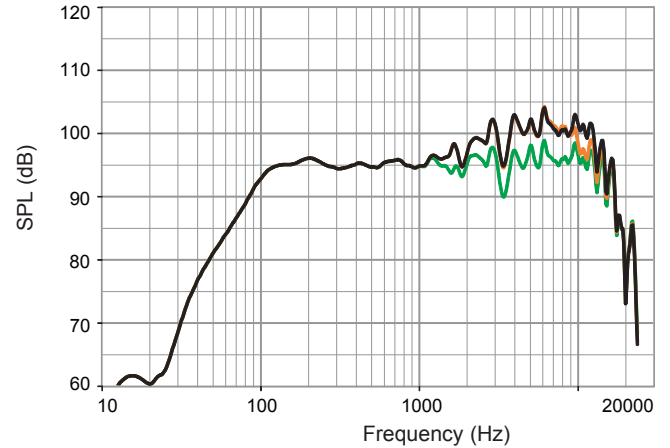
Frequency Response: Processed

LF = green, HF = black, Complete = blue



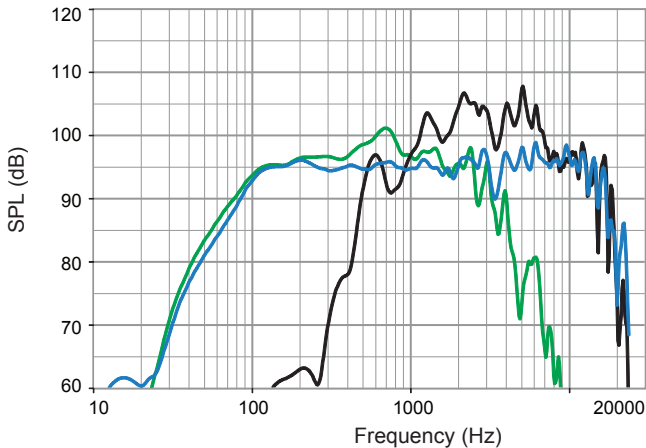
Frequency Response: Unprocessed Single-amp

Single Box = green, Multi Box = orange, Long Throw = black



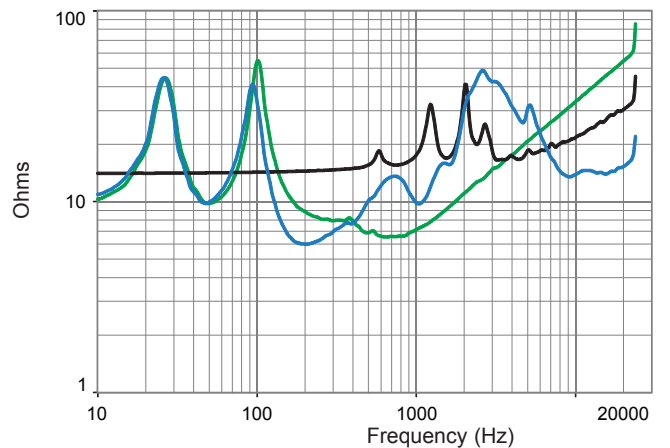
Frequency Response: Unprocessed

LF = green, HF = black, Complete = blue



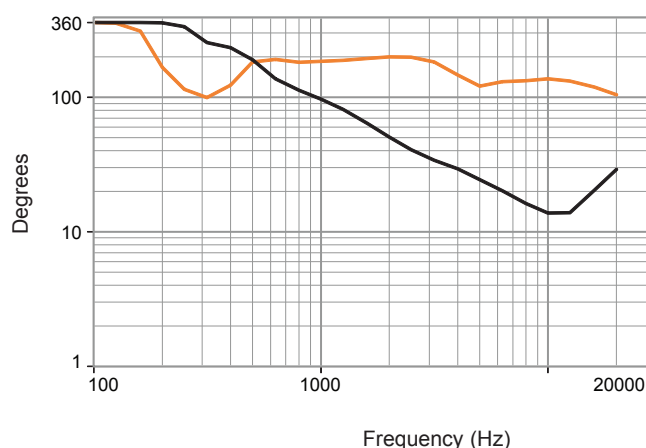
Impedance

LF = green, HF = black, Complete = blue



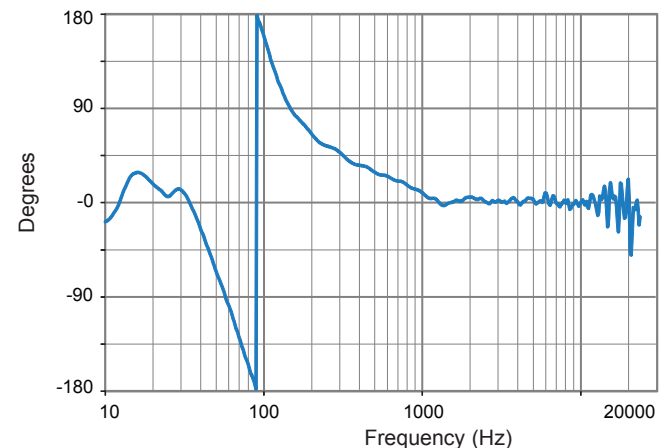
Beamwidth

Horizontal = orange Vertical = black



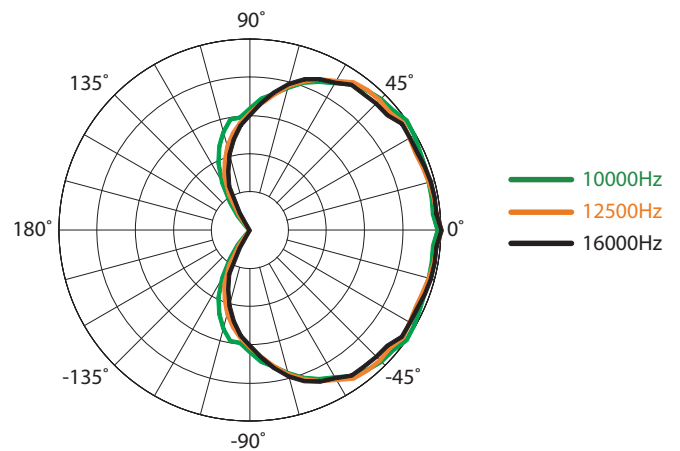
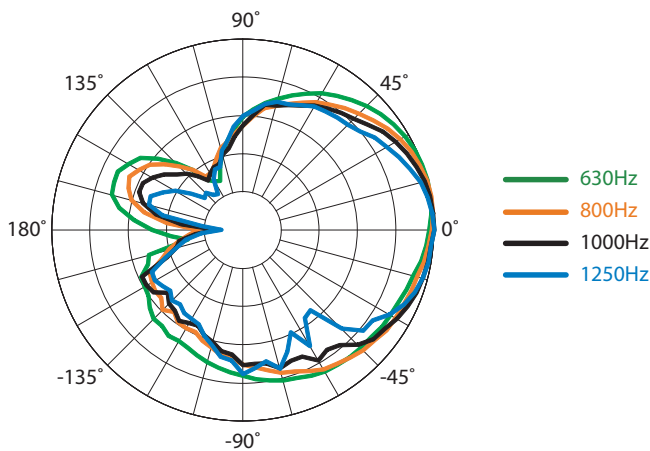
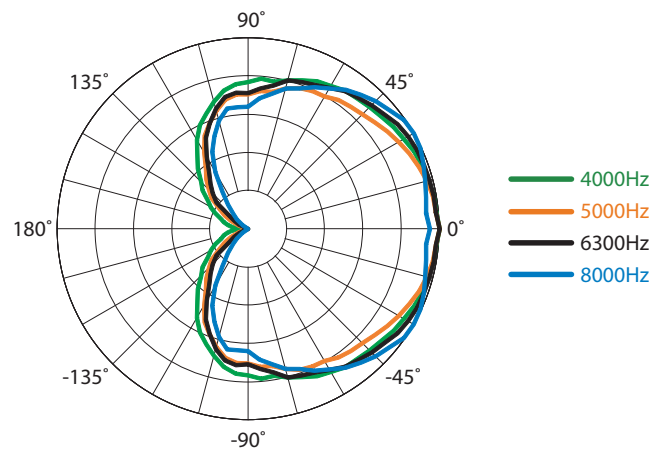
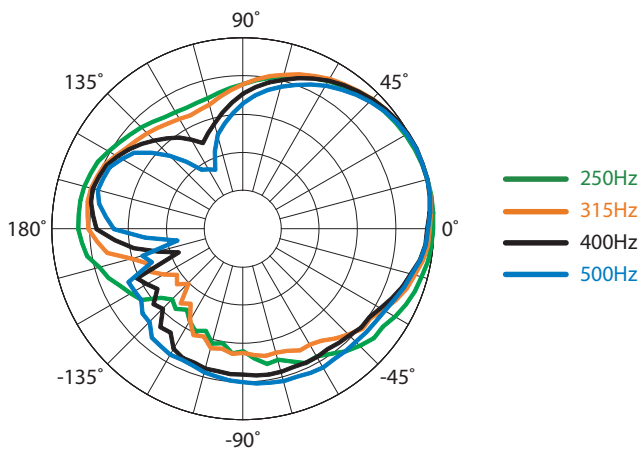
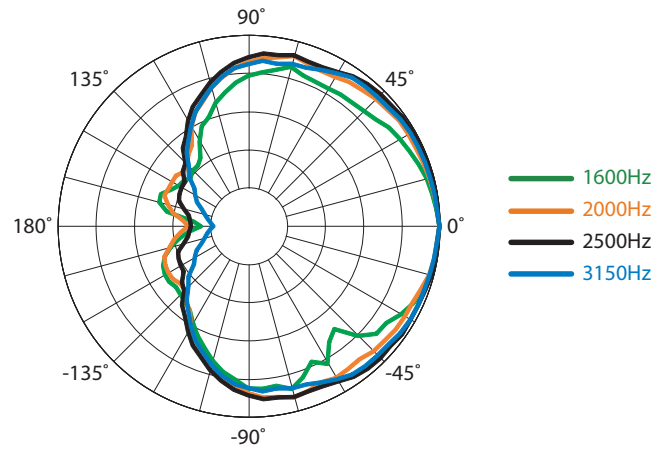
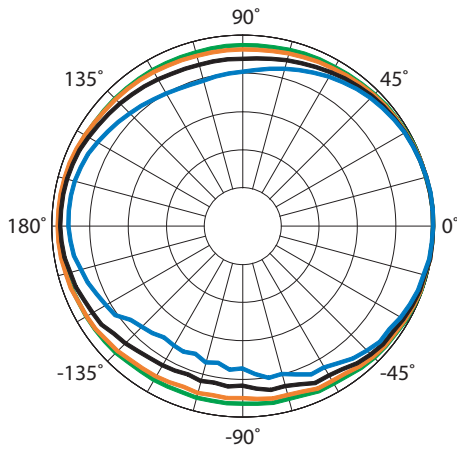
Phase Linearity

Complete = blue



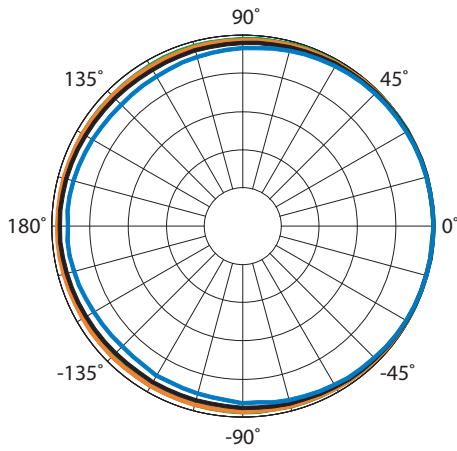
HORIZONTAL POLAR DATA

See *NOTES GRAPHIC DATA* for details

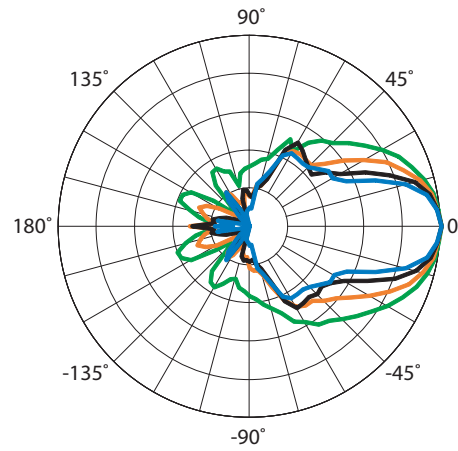


VERTICAL POLAR DATA

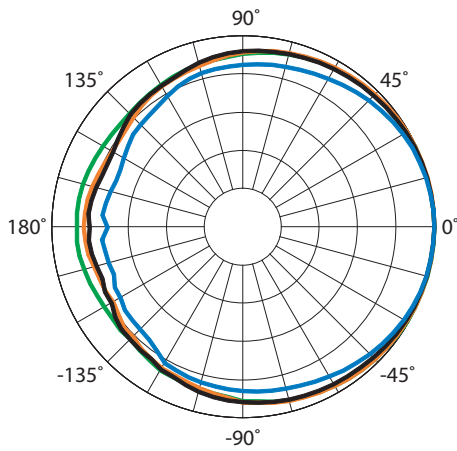
See *NOTES GRAPHIC DATA* for details



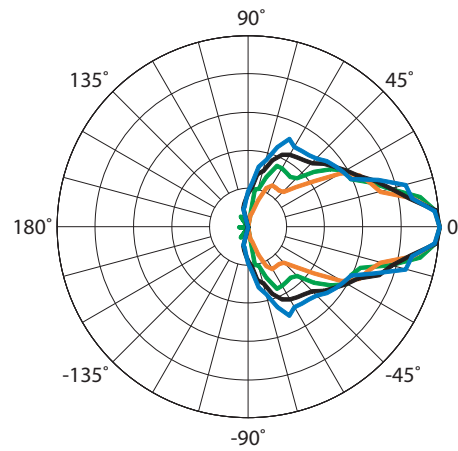
- 100Hz
- 125Hz
- 160Hz
- 200Hz



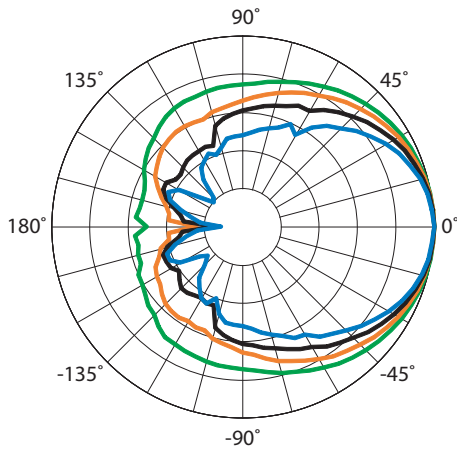
- 1600Hz
- 2000Hz
- 2500Hz
- 3150Hz



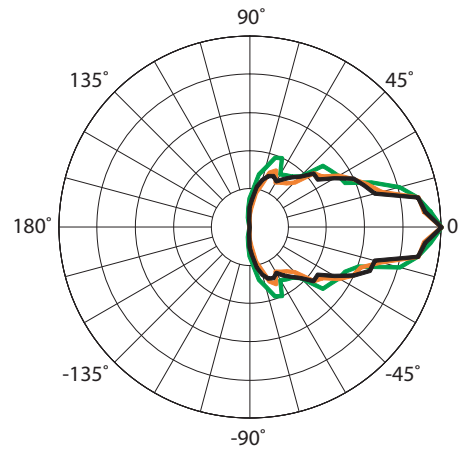
- 250Hz
- 315Hz
- 400Hz
- 500Hz



- 4000Hz
- 5000Hz
- 6300Hz
- 8000Hz



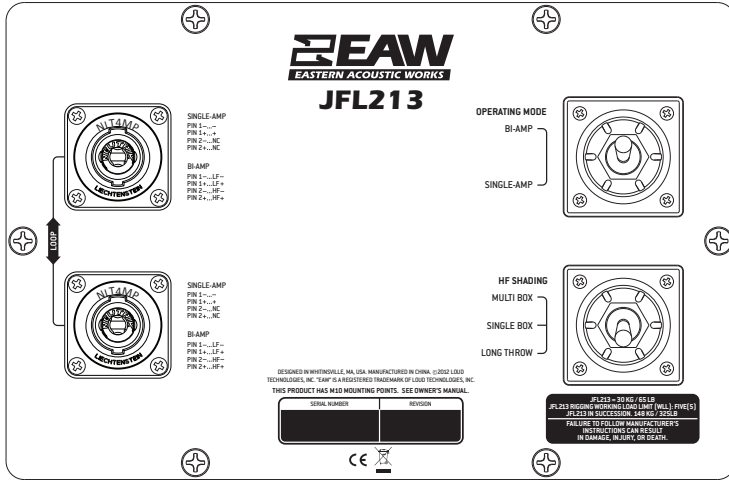
- 630Hz
- 800Hz
- 1000Hz
- 1250Hz



- 10000Hz
- 12500Hz
- 16000Hz

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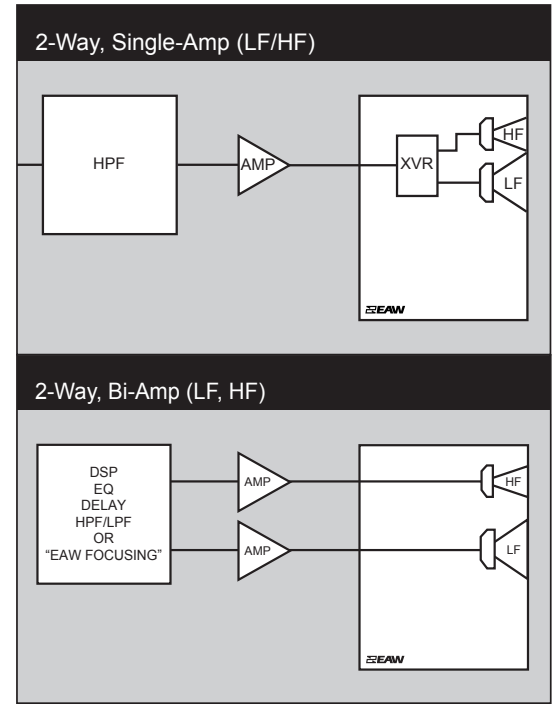
INPUT PANEL



LEGEND

- 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

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.