



emacoustics

TECHNICAL DATA SHEET

EMS-81X

COMPACT PASSIVE LOUDSPEAKER

The EMS-81X is a compact, powerful loudspeaker - a workhorse of the EMS Series. The EMS-81X is ideal for a wide range of applications ranging from small front-of-house duties to compact stage monitoring. Utilising our latest passive crossover topologies, and the utmost in drive unit technology, this loudspeaker is completely passive yet outperforms many bi-amplified or processed designs.

FEATURES AND BENEFITS

- Asymmetrical multi-angled cabinet for FOH or stage monitor use
- Genuine plywood cabinet for sonic benefit over plastic
- 8" neodymium LF, 1" exit neodymium HF drive units
- True passive design - no corrective DSP required
- Rotatable 90° x 60° waveguide
- 35mm pole mount
- Flexible rigging and mounting options
- Compatible with OmniMount™ and Powerdrive brackets
- Impact and weather resistant black or white finish as standard
- RAL colour and weather protection options

APPLICATIONS

- Small to medium theatre and touring events
- Small to medium live sound reinforcement
- Houses of worship
- Conference, corporate and audio-visual
- Theme parks

The EMS-81X is a two-way passive loudspeaker, using a 2" voice coil 8" (203mm) low frequency transducer. This low frequency drive unit is coupled via the internal passive crossover network to a 1.7" (44mm) diaphragm, 1" (25mm) exit neodymium high frequency transducer. This drive unit loads onto a rotatable 90° x 60° constant-coverage horn, which yields not only consistent response throughout its operating band across the whole coverage pattern but also strong attenuation outside of this pattern. The result is a loudspeaker with extremely consistent and predictable coverage, as well as stunning sonic detail – and all with the ease of use that passive crossover technology brings.

The drive units are housed within a compact, vented enclosure. The robust enclosure is constructed from premium 15mm (5/8") multi-laminate Birch plywood, and is heavily braced to minimise panel reflection. Five M8 threaded fixings are incorporated around the enclosure (two top, two bottom and one on the rear) for attachment of optional rigging hardware and safeties. Four M6 threaded fixings on the rear of the enclosure are compatible with OmniMount™ Series 30 and Powerdrive™ Series 75 bracket products. A 35mm pole mount socket is provided discretely on the underside for stand mounting. The enclosure also includes a flush



handle on the rear, and a pair of Neutrik® speakON™ NL4 connectors for input and enclosure link. Lastly, a tough hex-punched stainless steel grille backed with acoustically transparent fabric protects the drive units from damage. The grille can be quickly removed for service purposes or to rotate the HF waveguide – the orientation of which can be determined without removing the grille. The enclosure is finished in an impact and water-resistant black or white textured polyurethane as standard, however RAL colour matching as well as enhanced weather protection options are also available.

The EMS-81X requires a single amplifier channel, and the use of external DSP for system protection (high pass filters and limiters) is recommended - as such an efficient solution is one of EM Acoustics' range of Advanced System Amplifiers. Alternative DSP-enabled amplifiers can also be used, or conventional amplifiers with external processing - suitable DSP settings are provided on the EM Acoustics website for this purpose. The EMS-81X requires a single amplifier channel that is capable of delivering 400-500W RMS into an 8-ohm load.



TECHNICAL SPECIFICATIONS

ENCLOSURE TYPE:

DIMENSIONS (HxWxD)

NET/SHIPPING WEIGHT:

FREQUENCY RESPONSE¹:

SENSITIVITY²:

DISPERSION³:

DRIVE UNITS:

LOUDSPEAKERS PER AMPLIFIER (maximum for full loudspeaker SPL)

LOUDSPEAKERS PER AMPLIFIER (recommended absolute maximum)⁴

POWER HANDLING:

MAXIMUM SPL⁵:

NOMINAL IMPEDANCE:

CROSSOVER:

CONNECTORS:

ENCLOSURE:

RIGGING & HARDWARE:

GRILLE:

OPTIONS:

ACCESSORIES:

Two-way passive, reflex loaded

462 (18.2) x 262 (10.3) x 261 (10.3) mm/(ins)

13/14kg (28.6/30.8lbs)

75Hz – 20kHz ±3dB

95dB

90° x 60°, rotatable

8" (203mm) LF cone drive unit

1" (25mm) exit neodymium HF compression drive unit

DQ6: 3 per channel, DQ10: 4 per channel, DQ20: 4 per channel

Di06: 1 per channel, Di10: 2 per channel, Di20: 3 per channel

DQ6: 4 per channel, DQ10: 4 per channel, DQ20: 4 per channel

Di06: 2 per channel, Di10: 4 per channel, Di20: 4 per channel

250W RMS, 500W program

120dB continuous, 126dB peak

8 ohms

Asymmetric internal passive

2 x Neutrik® speakON™ NL4

15mm (5/8") multi-laminate Birch plywood – rebated, screwed and glued.

Finished in impact and weather resistant black or white polyurethane

5 x M8 threaded mounting points

4 x M6 threaded points for OmniMount™ Series 30/Powerdrive™ Series 75 brackets

1 x flush handle on rear, 1 x 35mm pole mount socket

Hex punched stainless steel backed with acoustically transparent fabric

Custom Colour, enhanced weather protection (OD model)

FC-81Xv vertical flying cradle

FC-81Xh horizontal flying cradle

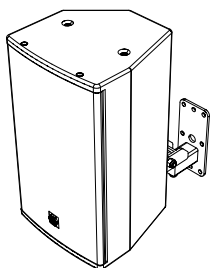
DFB-81X dual enclosure flying plate set

WHH75 installation wall bracket

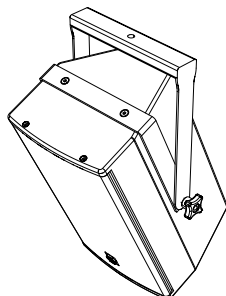
NOTES ON MEASUREMENT CONDITIONS:

¹Measured on-axis at 2m in an anechoic environment and referenced to 1m. ²Measured in half space at 2m with 4W sine wave input and referenced to 1m. ³Nominal dispersion, measured in an anechoic environment and averaged over stated bandwidth. ⁴These loudspeaker quantities are the recommended maximum, and will not drive the loudspeaker to full output. ⁵Calculated and verified by subjective listening test of familiar program material.

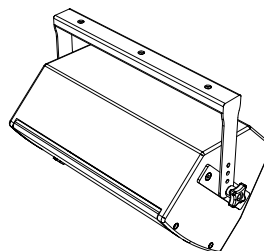
RIGGING ACCESSORIES



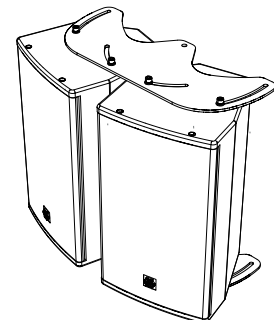
WHH75



FC-81Xv



FC-81Xh

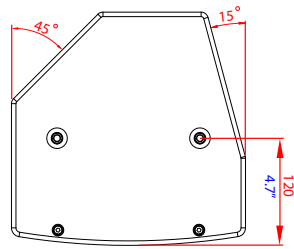


DFB-81X

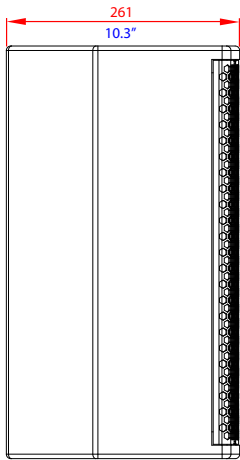
ENCLOSURE OPTIONS

EMS-81X enclosures are available as standard in black or white textured polyurethane finish. Custom RAL colours can be supplied on request; extended lead times and set up costs apply. EMS-81X enclosures can also be supplied as an outdoor version (OD), with enhanced weather protection features, many bespoke to the customer's request. Please contact your local EM Acoustics representative for details.

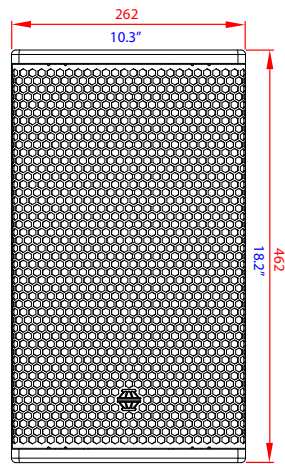
ENGINEERING DRAWING



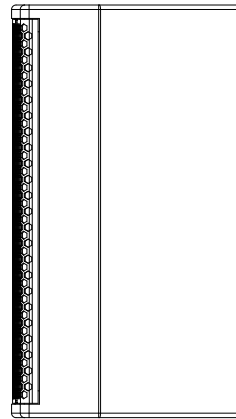
TOP



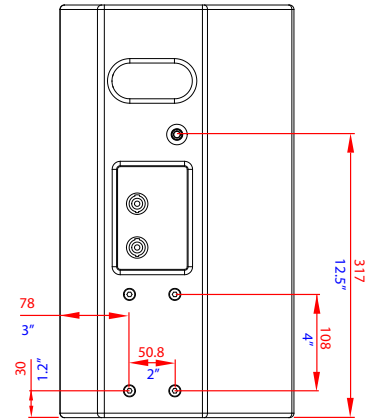
LEFT



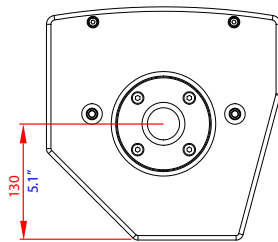
FRONT



RIGHT



REAR



BOTTOM