



emacoustics

R4

## ULTRA COMPACT PRECISION PASSIVE POINT SOURCE

### TECHNICAL DATA SHEET

**The EM Acoustics Reference Series of loudspeakers is not simply another iteration of a familiar slim profile form-factor. Rather, the series is the physical result of our ambition to redefine what is possible from a loudspeaker of this kind. A benchmark in physical and sonic elegance, possessing exceptional headroom and stability across all demands, the Reference Series represents the ultimate no-compromise option for point source applications.**

### FEATURES AND BENEFITS

- Two-way passive design
- Exceptional headroom
- Natural, open and elegant voicing
- Unique crossover approach combined with FIR for unrivalled impulse response
- Interchangeable wide (120 x 70) and narrow (80 x 70) rotatable waveguides
- 2 x 4" neodymium LF/MF, 1.5" annular HF drive units
- Flexible rigging and mounting options
- Impact and weather-resistant black or white finishes as standard
- RAL colour and permanent outdoor use options

### APPLICATIONS

- Theatrical fills & delays
- Houses of Worship
- Conference, corporate and audio-visual
- Themed attractions



The smallest loudspeaker in the Reference Series, the R4 is an ultra-compact 2-way passive system engineered to convey the elegance, performance and headroom of the Reference Series in the most compact package possible. Intended to expand the application range below the R5, the R4 retains the same DNA as its siblings, delivering truly abundant audio that defies its physical size. This makes the R4 perfect as a powerful front fill or theatrical delay, or for sleek reinforcement in a corporate or audio/visual setting, or subtle and sympathetic deployment in Houses of Worship. Despite its diminutive footprint, the R4 has a surprising overall SPL output and low frequency performance, making it ideal for themed attractions and perfectly suited to any context where both performance and size are critical.

The slim enclosure contains a pair of state-of-the-art 1.3" (34mm) voice coil 4" (102mm) neodymium LF/MF drivers, and a 1.5" (38mm) voice coil annular HF compression drive unit. The use of a ring diaphragm HF unit retains the ultra-low harmonic distortion levels for which the Reference Series has become renowned. As with the other models in the series, this HF drive unit feeds one of

two alternate waveguides, which are direct derivations of the ground-breaking work undertaken on the other models in the series. The result is that these waveguides possess not only an incredibly natural tonal character, but unparalleled consistency of response both on and off-axis.

As with other Reference Series models, the R4 is supplied as standard with both waveguide options - although due to the shorter throw distance of the intended product applications the coverage angles are wider. The wide dispersion is 120° x 70°, and the narrower dispersion 80° x 70° offers more controlled coverage over longer distances. Minimal physical work and a simple change of preset in the amplifier transforms the R4 from a wide dispersion loudspeaker to a narrow and vice versa - offering excellent flexibility for rental users and installation customers alike. Which waveguide is installed - and crucially which orientation that waveguide is in - is easily identifiable without removing the front grille.

An entirely unique approach to crossover design marries the components together. The highly advanced crossover, in conjunction

with the FIR processing functions of our range of Advanced System Amplifiers, allows each drive unit to be used to the optimum extent. The combination of drive units, bespoke waveguide design and FIR processing yields flat frequency and phase responses and a consistency of sonic character across demand which is unrivalled by any loudspeaker in this class.

The use of intelligent bracing means the R4 retains the longevity and sonic advantages of a genuine plywood enclosure, whilst keeping weight remarkably low. The enclosure is coated with an impact and weather-resistant polyurethane finish which will enable the R4 to stand up to the most adverse conditions. This finish is available in both black and white as standard, and custom RAL colour matching options as well as permanent outdoor enhancements are also available.

The front grille is manufactured from stainless steel for enhanced lifespan and this is backed by an acoustically transparent fabric to complete the discreet appearance.

The enclosure includes multiple threaded rigging points for attachment of the variety of lightweight and discreet rigging options, both for permanent installations as well as life on the road.

The architecture and construction of the R4 combined with EM Acoustics' state-of-the-art FIR processing continues the unrivalled legacy of the Reference Series into a form factor suited to applications where physical discretion is as important as sonic elegance.

## TECHNICAL SPECIFICATIONS

ENCLOSURE TYPE:	Two-way passive point source, reflex loaded
DIMENSIONS (HxWxD):	(HxWxD) 420 (16.5) x 114 (4.5) x 150 (5.9) mm/(ins)
NET/SHIPPING WEIGHT:	4.7/5.3kg (10.3/11.6lbs)
FREQUENCY RESPONSE <sup>1</sup> :	90Hz – 20kHz ±3dB
SENSITIVITY <sup>2</sup> :	92dB
DISPERSION <sup>3</sup> :	Wide 120° x 70°, narrow 80° x 70°, both rotatable
DRIVE UNITS:	LF/MF: 2 x 1.3" (34mm) voice coil, 4" (102mm) neodymium drive units HF: 1.5" (38mm) voice coil neodymium annular compression drive unit
LOUDSPEAKERS PER AMPLIFIER (maximum for full loudspeaker SPL):	DQ6: 3 per channel, DQ10: 4 per channel, DQ20: 4 per channel Di06: 1 per channel, Di10: 2 per channel, Di20: 3 per channel
LOUDSPEAKERS PER AMPLIFIER (recommended absolute maximum) <sup>4</sup> :	DQ6: 4 per channel, DQ10: 4 per channel, DQ20: 4 per channel Di06: 2 per channel, Di10: 3 per channel, Di20: 4 per channel
POWER HANDLING:	250W RMS, 500W program
MAXIMUM SPL <sup>5</sup> :	115dB continuous, 121dB peak
NOMINAL IMPEDANCE:	8 ohms
CROSSOVER:	Asymmetric internal passive
CONNECTORS:	2 x Neutrik® speakON™ NLT4MP
ENCLOSURE:	12mm (1/2") multi-laminate Birch plywood – rebated, screwed and glued Finished in impact and weather-resistant textured polyurethane
RIGGING & HARDWARE:	2 x M8 threaded fittings 2 x M6 threaded fittings
GRILLE:	Hex punched stainless steel backed with acoustically transparent fabric
OPTIONS:	Colours/Weather Protection
ACCESSORIES:	FC-R4v vertical flying cradle FC-R4h horizontal flying cradle IB-R4 installation bracket WMS50 wall bracket

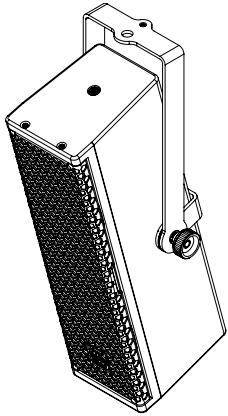
### NOTES ON MEASUREMENT CONDITIONS:

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

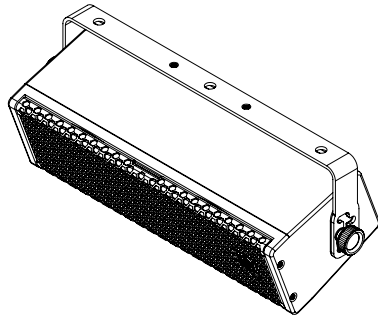


emacoustics

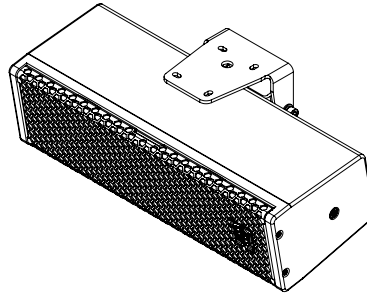
## RIGGING ACCESSORIES



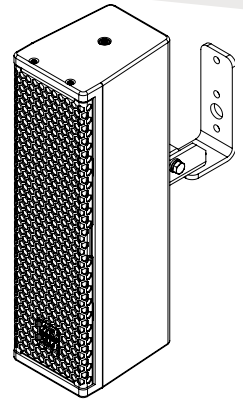
FC-R4v



FC-R4h



IB-R4



WMS50

## ENCLOSURE OPTIONS

R4 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. R4 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

