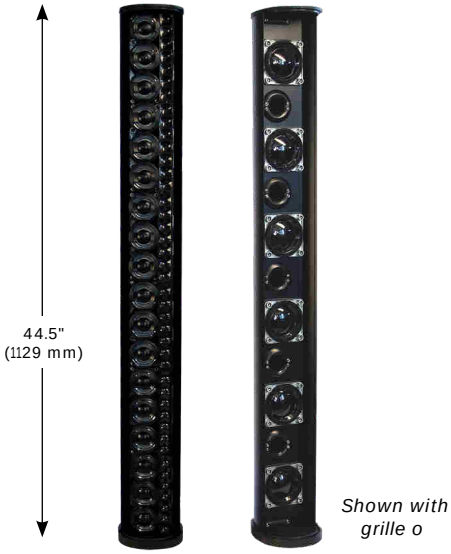
DATA SHEET
DESONO E Series

ENT-FR/LF
THREE-WAY, FULL-RANGE COLUMN LINE SOURCE LOUDSPEAKER



FEATURES

- Zoom Certified
- Modular design for versatile coverage, free of unwanted lobes
- Wide frequency range and high output level
- Highly intelligible voice reproduction and excellent musical sound quality
- Simple installation using a variety of versatile mounting accessories
- Integrated T-Bar mounting bracket included with each column

APPLICATIONS

Houses of worship · Auditoria
Live theaters · Gymnasiums · Athletic facilities
Convention centers · Museums · Meeting and conference rooms · Airports · Train stations Stadium concourses · Multipurpose venues Challenging acoustic spaces · Architecturally sensitive environments

DESCRIPTION

The Desono ENT-FR and ENT-LF column line-arrays delivers true line-source performance in a compact weather-resistant package. Designed for permanent installation applications including auditoria, airports and train stations, conference centers, houses of worship, stadium concourses and museums, ENT-FR and ENT-LF o□ers high output and high power handling capability that outperforms comparable systems, boasting multiple low frequency, midrange and high frequency drivers for consistent coverage, delivering a uniform, constant vertical beamwidth from 800 Hz to 16 kHz.

Each E Series full-range column includes six low frequency neodymium drivers, eighteen 2.35-inch midrange drivers and forty-two 1" HF drivers contained within six 7-inch long x 1-inch wide planar-coupled patent-pending Compact Ribbon Emulator (CRE) high frequency elements. E Series is designed to be modular, allowing the installer to use multiple E Series full-range columns and low frequency extension columns to create extremely narrow focused vertical coverage previously only possible using powered, steered column line-arrays.

TECHNICAL SPECIFICATIONS[1]

	ENT-FR Full-Range 3-Way Column	ENT-LF Low Frequency Column
Operating Mode	Passive	Passive
Operating Environment	Indoor or outdoor direct exposure	Indoor or outdoor direct exposure
Operating Range[2]	200 Hz - 20 kHz	200 Hz - 1.6 kHz
Nominal Beamwidth (H x V)	Horizontal: 120° Vertical: 12° or 6° (user configurable)	Using the LF column (s) enhances vertical pattern control at lower frequencies
Transducers	LF: Six 3.5" neodymium MF: Eighteen 2.35" HF: Forty-two 1" (six 7" long by 1" wide planar-coupled Compact Ribbon Emulators)	LF: Six 3.5" drivers with optimized spacing, allows extension of the narrow vertical beamwidth into the lower frequencies
Continuous Power Handling[3] @ Nominal Impedance	85V, 600W @ 12Ω (2400W Peak)	85V, 600W @ 12Ω (2400W Peak)
Nominal Sensitivity[4]	Curved (12°): 93 dB Straight (6°): 95 dB	90 dB
Nominal Maximum SPL[5] (Single unit)	Curved (12°): 120 dB Straight (6°): 122 dB	116 dB
Typical SPL at 100 feet (30 meters)	96 dB	Dependent on LF configuration
Required Accessories	Digital Signal Processor / External High Pass Filter - 200Hz, 12 dB /octave	Digital Signal Processor / 200 Hz High Pass Filter
Recommended Amplifiers	600W - 1200W @ 12Ω (85V - 120V)	600W - 1200W @ 12Ω (85V - 120V)

PHYSICAL

Ba□e Form	Configurable; straight, curved, and asymmetric curve [ENT-FR] Straight [ENT-LF]
Input Connection	Top: (1) Dual Banana (male) Bottom: (1) NL4 locking connector (2) Terminal strip (1) Banana (female)
Included Accessories	(1) T-Bar mounting bracket (1) Input wiring cover (1) Top connector cover
Environmental	IP54 per IEC 60529, designed in accordance with MIL-STD-810G. Included ABS plastic rain cover with integrated cable inlet and 1" (25.4 mm) knockout for conduit ingress
Dimensions H x W x D	44.5" x 5.5" x 7.36" (1129 mm x 140 mm x 187 mm)
Weight	40 lbs (18.1 kg) [ENT-FR] 25 lbs (11.3 kg) [ENT-LF]
Finish	Refer to the Technical Drawing (page 3)

OPTIONS

Accessories	ENT-PB Pan Bracket Kit ENT-PT Pan-Tilt Bracket Kit ENT-FK Fly Kit	ENT-CB Coupler Bracket ENT-750T 750W autoformer

**The E Series Full-Range Column is shipped from the factory in "CURVED" configuration with a nominal 12° vertical dispersion. For further information on dispersion with di□erent system configurations, reference the E Series Application Guide at www.biamp.com.

Biamp strives to improve its products on a continual basis. Specifications are therefore subject to change without notice.

DESONO E Series

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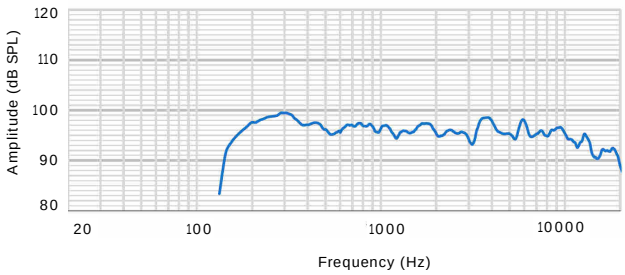
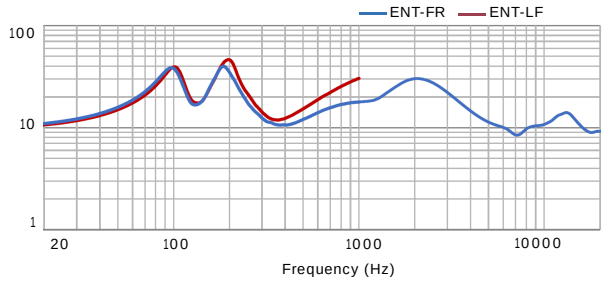
AXIAL PROCESSED RESPONSE[6]



IMPEDANCE (Ohms)

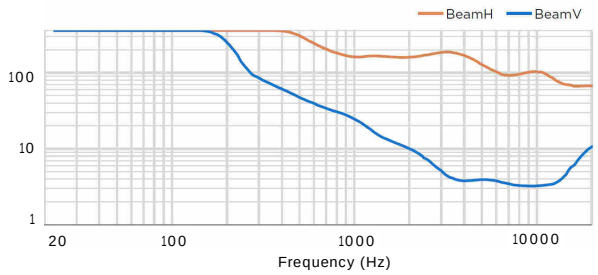
Single ENT-FR and ENT-LF



Impedance, Single ENT-FR — Min Z is 8.4Ω @ 9045 Hz
Impedance, Single ENT-LF — Min Z is 11.9Ω @ 370 Hz

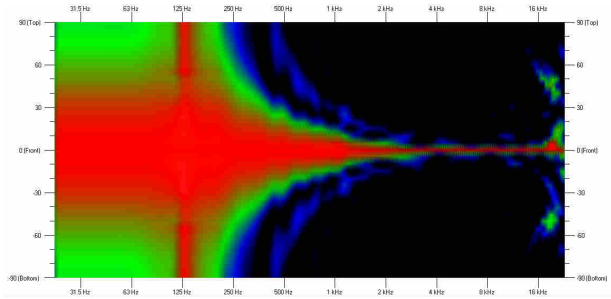
BEAMWIDTH (Degrees)[7]

Single ENT-FR [Straight (6°)]



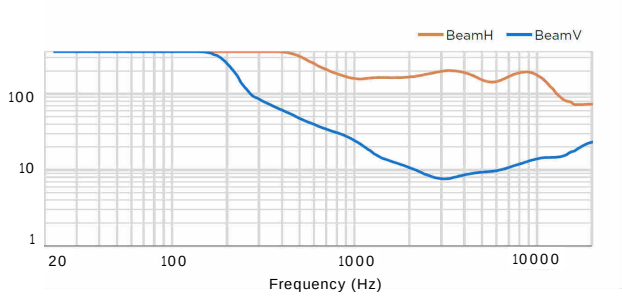
VERTICAL DIRECTIVITY MAP (Degrees)[7]

Single ENT-FR [Straight (6°)]



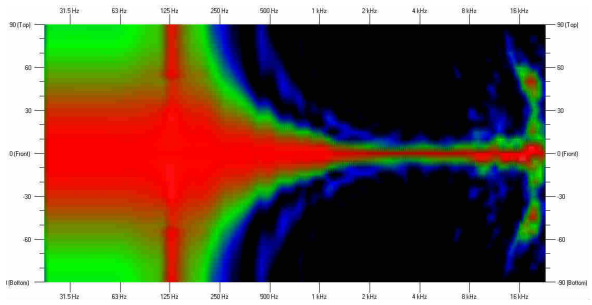
BEAMWIDTH (Degrees)[7]

Single ENT-FR [Curved (12°)]



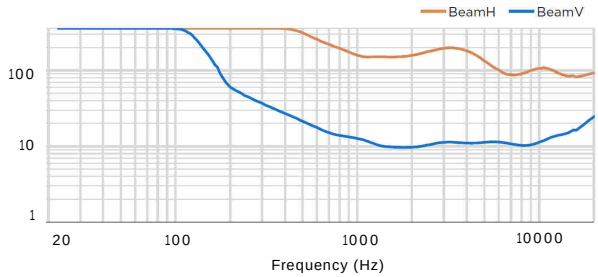
VERTICAL DIRECTIVITY MAP (Degrees)[7]

Single ENT-FR [Curved (12°)]



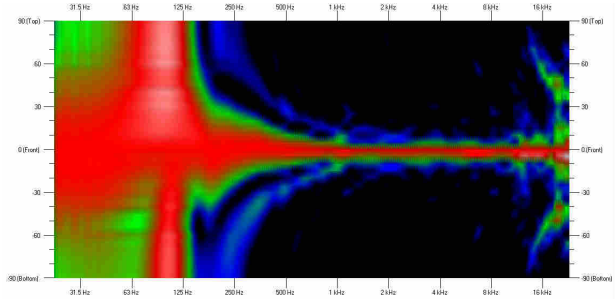
BEAMWIDTH (Degrees)[7]

Dual ENT-FR [Curved (12°)] and ENT-LF



VERTICAL DIRECTIVITY MAP (Degrees)[7]

Dual ENT-FR [Curved (12°)] and ENT-LF



DESONO E Series

ENT-FR/LF

THREE-WAY, FULL-RANGE COLUMN LINE SOURCE LOUDSPEAKER

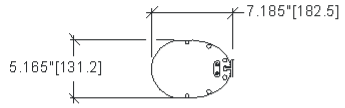
TECHNICAL DRAWING / DIMENSIONS / FINISH

H x W x D
44.5" x 5.5" x 7.36"
(1129 mm x 140 mm x 187 mm)

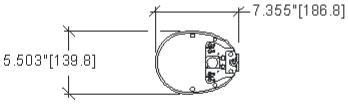
Unit Weight
40 lbs (18.1 kg) - ENT-FR
25 lbs (11.3 kg) - ENT-LF

Grille:
Powder-coated perforated marine-grade aluminum backed with color-matched foam or fabric backing.
Black (RAL#9004) or White (RAL#9003)

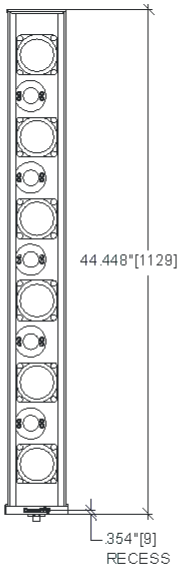
Enclosure / Finish
Black or White high gloss extruded paintable PVC



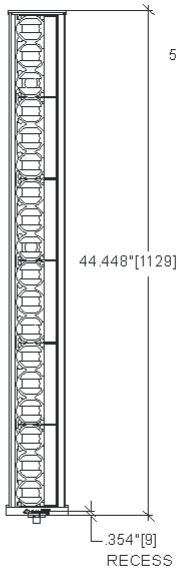
Top View



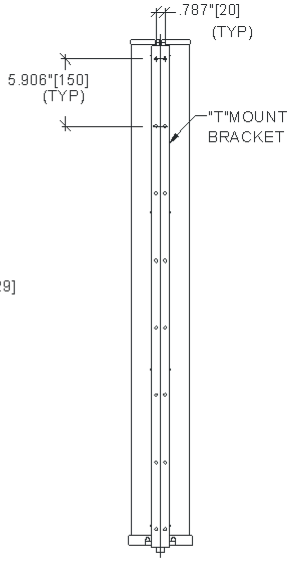
Bottom View



Front View
LF Module
Grille Removed



Front View
Full-Range Module
Grille Removed



Rear View

DESONO E Series

ENT-FR/LF - OPTIONAL MOUNTING BRACKETS

ENT-PT

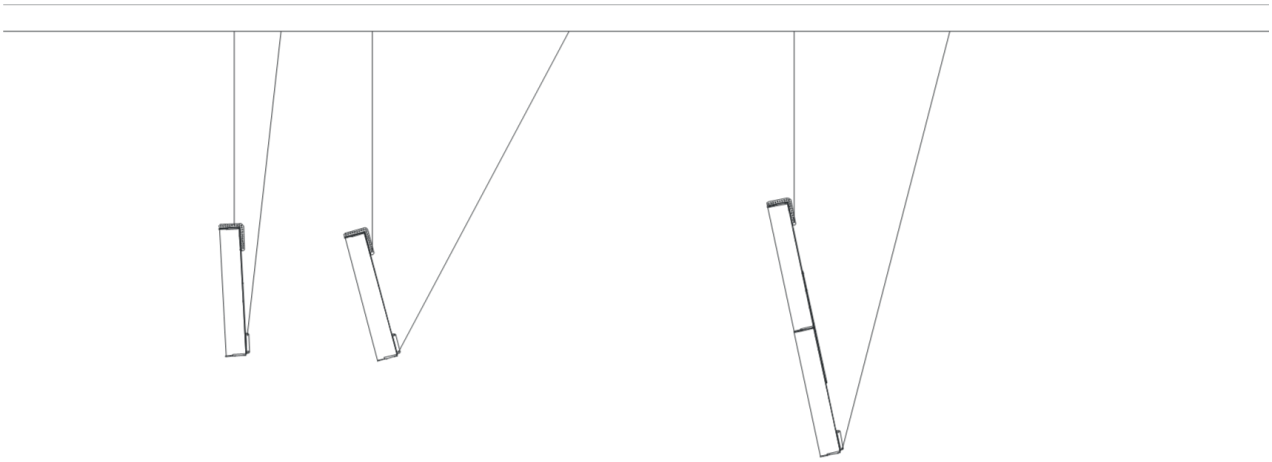
E SERIES PAN-TILT BRACKET

- Enables E Series to pan left and right up to 160° and/or to be tilted downwards
- Use with single-columns and column-assemblies (up to 5 columns)
- 1-to-3 column-assemblies may be tilted down at up to a 10° downward tilt
- 4-to-5 column-assemblies may be tilted down at up to a 5° downward tilt
- When installing loudspeaker assemblies with two or more columns, a coupler bracket (ENT-CB) must be used to join multiple columns together
- Available in black and white

ENT-FK

E SERIES FLY KIT

- Enables E Series to be flown from the ceiling in an open space
- Use with single-columns and column-assemblies (up to 5 columns)
- When installing loudspeaker assemblies with two or more columns, a coupler bracket (ENT-CB) must be used to join multiple columns together
- Available in black and white



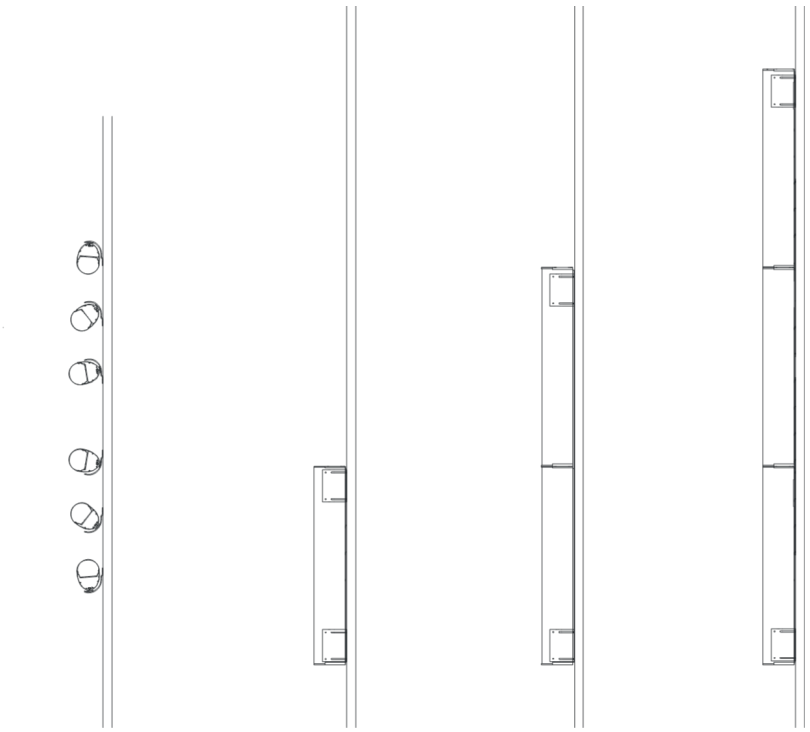
DESONO E Series

ENT-FR/LF - OPTIONAL MOUNTING BRACKETS

ENT-PB

E SERIES PAN BRACKET

- Enables E Series to pan left or right up to 80°
- Use with single-columns and column-assemblies (up to 5 columns)
- When installing loudspeaker assemblies with two or more columns, a coupler bracket (ENT-CB) must be used to join multiple columns together
- Available in black and white



DESONO E Series

ENT-FR/LF

THREE-WAY, FULL-RANGE COLUMN LINE SOURCE LOUDSPEAKER

ARCHITECTURAL SPECIFICATIONS

E SERIES FULL-RANGE COLUMN (ENT-FR)
The loudspeaker system shall be a three-way, full-range column line-array system with six 3.5-inch (89mm) neodymium low frequency drivers, eighteen 2.35-inch (60mm) mid-range drivers and forty-two 1-inch (25mm) high frequency drivers contained within six 7-inch long x 1-inch wide (178mm long x 25mm wide) planar-coupled patent-pending Compact Ribbon Emulator (CRE) high frequency elements. The mid-range and high frequency drivers shall be connected to integral crossovers with a crossover frequency of 1 kHz and 7 kHz respectively. There shall be two 2-terminal barrier strips, one NL4-compatible locking connector and male and female banana connectors. The loudspeaker enclosure shall be of extruded aluminum construction with molded nylon end caps in a black or white powder coat finish. The front of the enclosure shall be fitted with a matching black or white metal curved grille. The system shall have an amplitude response of 200 Hz to 20 kHz, input capability of 85V RMS / 12 ohms nominal impedance. The nominal dispersion of the loudspeaker system shall be configurable by the installation contractor at either 120°H x 12°V (curved ba□e) or 120°H x 6°V (straight ba□e) from 1 kHz to 16 kHz. The sensitivity at one meter shall be 93 dB when the vertical dispersion is adjusted to 12 degrees, and 95 dB when the vertical dispersion is adjusted to 6 degrees. The loudspeaker shall be 44.5 inches (1129 mm) high x 5.5 inches (140 mm) wide x 7.36 inches (187 mm) deep and weigh 38.5 lbs (17.4 kg). The loudspeaker shall be the E Series ENT-FR.

E SERIES LOW FREQUENCY EXTENSION COLUMN (ENT-LF)
The loudspeaker system shall be a low frequency device with six 3.5-inch (89mm) neodymium low frequency drivers with optimized spacing, designed to be used in conjunction with a full-range column line-array device to allow extension of the loudspeaker array system's narrow vertical beamwidth into the lower frequencies. The drivers shall be connected to an integral crossover with a crossover frequency of 1.6 kHz. There shall be two 2-terminal barrier strips, one NL4-compatible locking connector and male and female banana connectors. The loudspeaker enclosure shall be of extruded aluminum construction with molded nylon end caps in a black or white powder coat finish. The front of the enclosure shall be fitted with a matching black or white metal curved grille. The system shall have an amplitude response of 200 Hz to 1.6 kHz, input capability of 85V RMS / 12 ohms nominal impedance, and 90 dB sensitivity at one meter. The loudspeaker shall be 44.5 inches (1129 mm) high x 5.5 inches (140 mm) wide x 7.36 inches (187 mm) deep and weigh 24 lbs (10.9 kg). The loudspeaker shall be the E Series ENT-LF.

NOTES

1. *PERFORMANCE SPECIFICATIONS All measurements are taken indoors using a time-windowed and processed signal to eliminate room e ects, approximating an anechoic environment, a distance of 6.0 m. All acoustic specifications are rounded to the nearest whole number. An external DSP using settings provided by Biamp is required to achieve the specified performance; further performance gains can be realized using the FIR loudspeaker optimization presets available in Biamp's Community Amplified Loudspeaker Controllers (ALC SERIES).*
2. *OPERATING RANGE The frequency range in which the on-axis processed response remains within 10dB of the average SPL.*
3. *CONTINUOUS POWER HANDLING Maximum continuous input voltage (and the equivalent power rating, in watts, at the stated nominal impedance) that the system can withstand, without damage, for a period of 2 hours using an EIA-426-B defined spectrum; with recommended signal processing and protection filters.*
4. *NOMINAL SENSITIVITY Averaged SPL over the operating range with an input voltage that would produce 1 watt at the nominal impedance. Swept sine wave axial measurements with no external processing applied in whole space, except where indicated.*
5. *NOMINAL MAXIMUM SPL Calculated based on nominal / peak power handling, respectively, and nominal sensitivity; exclusive of power compression.*
6. *AXIAL PROCESSED RESPONSE The on-axis variation in acoustic output level with frequency of the complete loudspeaker system with recommended signal processing applied. 1/6 octave Gaussian smoothing applied.*
7. *BEAMWIDTH The angle between the -6dB points in the polar response of the loudspeaker when driven in the operating mode which utilizes the largest number of individually amplified pass bands. 1/6 octave Gaussian smoothing applied.*

Data presented on this spec sheet represents a selection of the basic performance specifications for the model. These specifications are intended to allow the user to perform a fair, straightforward evaluation and comparison with other loudspeaker spec sheets. For a detailed analysis of this loudspeaker's performance, please download the GLL file and/or the CLF file from our website: biamp.com

CAUTION: *Installation of loudspeakers should only be performed by trained and qualified personnel. It is strongly recommended that a licensed and certified professional structural engineer approve the mounting design.*