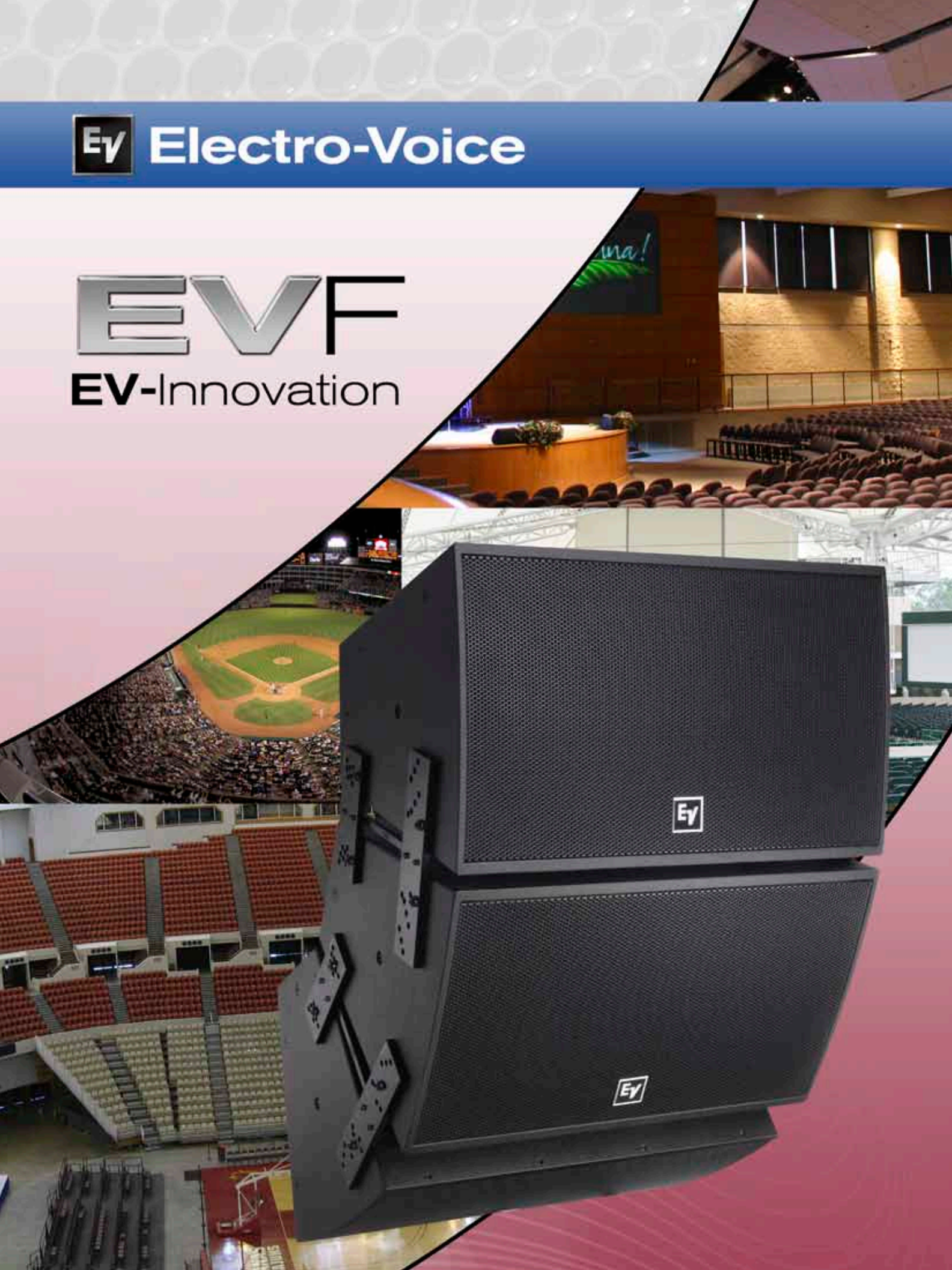
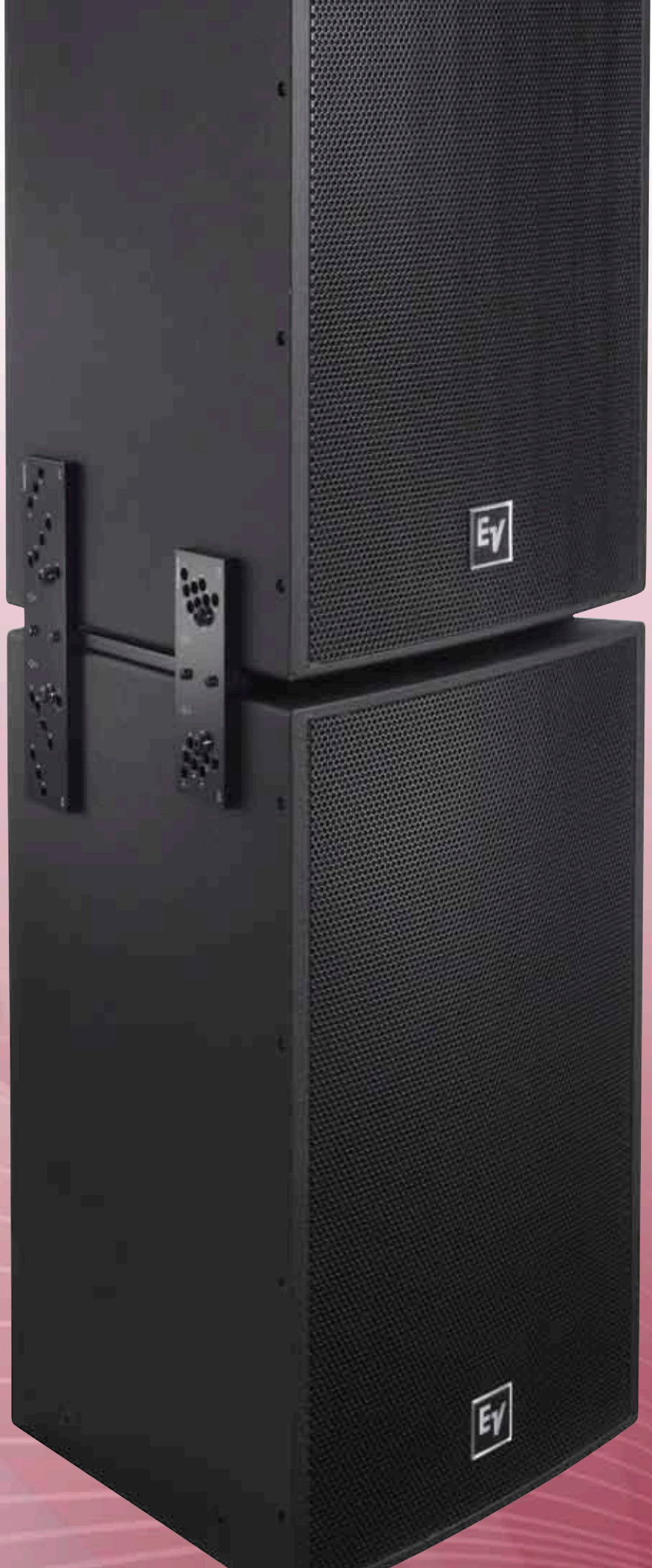
Electro-Voice

EVF

EV-Innovation




EV
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EV-Innovation

A New Era for Installed Sound

The EV-Innovation (EV-I) family of loudspeakers sees Electro-Voice redefine the state-of-the-art in installed sound once again.

EV-I is the result of the largest development program in the history of Electro-Voice. Building upon an 80-year heritage of audio design excellence proven in thousands of installations around the world, EV-I systems offer an unprecedented combination of audio performance, versatility, ease of use, and aesthetics focused directly on the requirements of installed sound systems.

At the heart of the EV-I family are brand-new and highly refined transducers, designed by EV engineers—the most knowledgeable and passionate in the industry—using the very latest developmental and diagnostic tools exclusive to Electro-Voice R&D. EV-I currently comprises three system formats: horn-load (EVH), front-load (EVF), and true line array (EVA). Manufactured to the highest standards in EV factories, EV-I systems collectively represent the most comprehensive family of loudspeakers the industry has ever seen.

EVF — Compact, Front-Loaded Full-Range Systems with 12- and 15-Inch Woofers

The most popular class of loudspeakers for sound reinforcement is full-range two-way systems with 12- or 15-inch front-loaded woofers. This configuration provides an attractive combination of high performance, modest size, and modest cost, particularly appropriate in acoustically well-behaved environments. EVF expands on Electro-Voice's popular FRi and FRi+ series by adding supplementary low-frequency systems and more coverage patterns, providing a dedicated solution for installed sound applications.

While EVF systems can be biamped, highly sophisticated internal fourth-order EQ/crossover networks provide superb passive performance and eliminate the need for digital signal processing and multiple amplifier channels.

- **Seven coverage patterns aid the design process.**
- **High maximum SPL output capability with extremely low distortion.**
- **All 12- and 15-inch enclosures and the 18-inch subwoofer have the same height, promoting attractive clusters.**
- **Biampable, but sophisticated internal crossover/EQ networks make cost-saving passive operation very attractive.**
- **Available in black or white in one of three versions: EVCoat™ (interior use), PI (indirect weather exposure), and FG (fiberglass—direct exposure).**

-Innovation

EVF

In the most popular class of loudspeakers for sound reinforcement—compact systems with 12- and 15-inch front-loaded woofers—EVF provides the most coverage patterns (seven) in a physical package offering an unusually high degree of rigging flexibility.

EVF Constant-Directivity Waveguides

Electro-Voice developed the first “constant directivity” waveguides in the 1970s, which, unlike conventional devices of the day, maintained their rated coverage angles over a wide frequency range. EV constant directivity meant that anyone seated in the waveguide’s pattern received the same frequency balance as anyone else, a great boon in providing truly uniform coverage and sound quality across a venue.

Today’s EVF waveguides incorporate the design refinements of over 30 years’ development. Their square mouths make all seven EVF coverage patterns rotatable, so that enclosure orientation is independent of the desired horizontal coverage pattern. Their 12-inch mouth size is a good match to the EVF’s 12- and 15-inch woofers, allowing modest overall enclosure dimensions. This size is also large enough to provide pattern control well into the critical midrange frequencies, appropriate for acoustically well-behaved spaces. (For venues with reverberation times greater than 2-2.5 seconds, the EVH horn-loaded series is recommended.)

EVF-1122S and EVF-1152S Medium-Power Series Acoustic Performance

Each EVF-1122S loudspeaker is a compact, 12-inch two-way full-range system. Each loudspeaker contains an SMX2121 12-inch 400-W woofer and one ND2B medium-format, 2-inch-diaphragm, 40-W neodymium high-frequency compression driver on a 12-inch-square rotatable waveguide. Six waveguide patterns are available, from medium- to short-throw and some with extended, 60° or 90° vertical coverage: 60° x 40°, 60° x 60°, 90°x 40°, 90° x 60°, 90° x 90° and 120° x 60°. This broad selection makes it much easier to create a cluster that precisely addresses your space.

Each EVF-1152S 15-inch system employs the SMX2151 15-inch woofer, providing sensitivity 3 dB higher than an EVF-1122S system and very high for a front-loaded system: 101 dB 1 W/1 m. The EVF 15-inch systems trade the very-short-throw/very-wide-angle 120° x 60° pattern of the EVF-1122S/126 for the long-throw/narrow-angle 40° x 30° pattern of the EVF-1152S/43, for seven coverage patterns overall.

SMX Low-Frequency Transducer with fully symmetric drive

ND2B Medium-Format High-Frequency Compression Driver

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	EVF-1122S 64	EVF-1122S 66	EVF-1122S 94	EVF-1122S 96	EVF-1122S 99	EVF-1122S 126
Frequency Response (-3 dB)	58 - 16000 Hz[1,2]					
Frequency Response (-10 dB)	49 - 19000 Hz[1,2]					
Recommended High-Pass Frequency	65 Hz					
Sensitivity 1 W/1 m	98 dB					
Max. SPL/1m (calc) Peak	131 dB					
System Power Handling (Continuous/Program/Peak)	500 W continuous, 1000 W program, 2000 W peak[3]					
Nominal Impedance (Passive)	8 Ω					
Minimum Impedance	6 Ω					
Input Connections	Phoenix/Euroblock style screw terminals PI and FG versions include dual-gland-nut input-panel cover					
Coverage (Nominal -6 dB) H°	60 °	60 °	90 °	90 °	90 °	120 °
Coverage (Nominal -6 dB) V°	40 °	60 °	40 °	60 °	90 °	60 °
LF Transducer	SMX2121, 12 in (305 mm) Driver					
HF Transducer	ND2B, 2 in (51 mm) Diaphragm Compression Driver					
Internal Passive Crossover Frequency	1450 Hz					
Enclosure Material	13 Ply Weather Resistant Birch					
Grille	Standard versions: 16 GA Galvanneal, Powdercoat, with screen behind PI and FG versions: 18 GA Stainless, Powdercoat, with hydrophobic cloth behind					
Environmental	Standard versions: IEC 60529 IP44 PI and FG versions: IEC 60529 IP55					
Suspension	(22) M10 Threaded Points (one EBK-M10-EVI kit of four forged eyebolts included)					
Height Width Depth	30.26 in (768.6 mm) 16 in (406.3 mm) 16.27 in (413.3 mm)					
Weight Net	63.1 lbs (28.6 kg)					

1 Half-space measurement in passive mode
2 FG (full outdoors) versions have no enclosure vents, somewhat reducing their low frequency response
3 EIA RS-426A (eight hours)

	EVF-1152S 43	EVF-1152S 64	EVF-1152S 66	EVF-1152S 94	EVF-1152S 96	EVF-1152S 99
Frequency Response (-3 dB)	70 - 14000 Hz[1,2]					
Frequency Response (-10 dB)	41 - 18000 Hz[1,2]					
Recommended High-Pass Frequency	45 Hz					
Sensitivity 1 W/1 m	101 dB					
Max. SPL/1m (calc) Peak	134 dB					
System Power Handling (Continuous/Program/Peak)	500 W continuous, 1000 W program, 2000 W peak[3]					
Nominal Impedance (Passive)	8 Ω					
Minimum Impedance	6 Ω					
Input Connections	Phoenix/Euroblock style screw terminals PI and FG versions include dual-gland-nut input-panel cover					
Coverage (Nominal -6 dB) H°	40 °	60 °	60 °	90 °	90 °	90 °
Coverage (Nominal -6 dB) V°	30 °	40 °	60 °	40 °	60 °	90 °
LF Transducer	SMX2151, 15 in (381 mm) Driver					
HF Transducer	ND2B, 2 in (51 mm) Diaphragm Compression Driver					
Internal Passive Crossover Frequency	1450 Hz					
Enclosure Material	13 Ply Weather Resistant Birch					
Grille	Standard versions: 16 GA Galvanneal, Powdercoat, with screen behind PI and FG versions: 18 GA Stainless, Powdercoat, with hydrophobic cloth behind					
Environmental	Standard versions: IEC 60529 IP44 PI and FG versions: IEC 60529 IP55					
Suspension	(22) M10 Threaded Points (one EBK-M10-EVI kit of four forged eyebolts included)					
Height Width Depth	30.26 in (768.6 mm) 18.5 in (469.8 mm) 18.37 in (466.6 mm)					
Weight Net	70.9 lbs (32.1 kg)					

1 Half-space measurement in passive mode
2 FG (full outdoors) versions have no enclosure vents, somewhat reducing their low frequency response
3 EIA RS-426A (eight hours)

EVF-1122D and EVF-1152D
High-Power Series Acoustic Performance

The EVF-1122D and EVF-1152D full-range systems substitute the DH7N large-format, 3-inch-diaphragm, 75-W compression driver and 500-W woofers—DVX3121A 12-inch in the EVF-1122D and DVX3151A 15-inch in EVF-1152D. While the continuous maximum output of the "D" systems is unchanged (see specifications), their dynamic performance is improved. The higher power capacity of the woofers and, especially, the compression driver allow the systems to produce higher sound levels at a given level of distortion. The higher power capacity also results in less power compression, where attempts to increase the sound level are not fully realized because as the voice coils heat up their impedance rises, reducing the acoustic effiency of the speaker system.

DVX Low-Frequency Transducer with forced air cooling

DH7N Large-Format High-Frequency Compression Driver

	EVF-1122D 64	EVF-1122D 66	EVF-1122D 94	EVF-1122D 96	EVF-1122D 99	EVF-1122D 126
Frequency Response (-3 dB)	57 - 18000 Hz[1,2]					
Frequency Response (-10 dB)	49 - 21000 Hz[1,2]					
Recommended High-Pass Frequency	65 Hz					
Sensitivity[1] 1 W/1 m	97 dB					
Max. SPL/1m (calc)[1]	131 dB					
System Power Handling (Continuous/Program/Peak)	600 W continuous, 1200 W program, 2400 W peak[3]					
Nominal Impedance (Passive)	8 Ω					
Minimum Impedance	6 Ω					
Input Connections	Phoenix/Euroblock style screw terminals PI and FG versions include dual-gland-nut input-panel cover					
Coverage (Nominal -6 dB) H°	60 °	60 °	90 °	90 °	90 °	120 °
Coverage (Nominal -6 dB) V°	40 °	60 °	40 °	60 °	90 °	60 °
LF Transducer	DVX3121A, 12 in (305 mm) Woofer					
HF Transducer	DH7N, 3 in (76 mm) Diaphragm Compression Driver					
Internal Passive Crossover Frequency	1300 Hz					
Enclosure Material	13 Ply Weather Resistant Birch					
Grille	Standard versions: 16 GA Galvanneal, Powdercoat, with screen behind PI and FG versions: 18 GA Stainless, Powdercoat, with hydrophobic cloth behind					
Environmental	Standard versions: IEC 60529 IP44 PI and FG versions: IEC 60529 IP55					
Suspension	(22) M10 Threaded Points (one EBK-M10-EVI kit of four forged eyebolts included)					
Height Width Depth	30.26 in (768.6 mm) 16 in (406.3 mm) 16.27 in (413.3 mm)					
Weight Net	65.5 lbs (29.7 kg)					

1 Half-space measurement in passive mode
2 FG (full outdoors) versions have no enclosure vents, somewhat reducing their low frequency response
3 EIA RS-426A (eight hours)

	EVF-1152D 43	EVF-1152D 64	EVF-1152D 66	EVF-1152D 94	EVF-1152D 96	EVF-1152D 99
Frequency Response (-3 dB)	70 - 18000 Hz[1,2]					
Frequency Response (-10 dB)	40 - 21000 Hz[1,2]					
Recommended High-Pass Frequency	45 Hz					
Sensitivity[1] 1 W/1 m	100 dB					
Max. SPL/1m (calc)[1]	134 dB					
System Power Handling (Continuous/Program/Peak)	600 W continuous, 1200 W program, 2400 W peak[3]					
Nominal Impedance (Passive)	8 Ω					
Minimum Impedance	6 Ω					
Input Connections	Phoenix/Euroblock style screw terminals PI and FG versions include dual-gland-nut input-panel cover					
Coverage (Nominal -6 dB) H°	40 °	60 °	60 °	90 °	90 °	90 °
Coverage (Nominal -6 dB) V°	30 °	40 °	60 °	40 °	60 °	90 °
LF Transducer	DVX3151A, 15 in (381 mm) Woofer					
HF Transducer	DH7N, 3 in (76 mm) Diaphragm Compression Driver					
Internal Passive Crossover Frequency	1300 Hz					
Enclosure Material	13 Ply Weather Resistant Birch					
Grille	Standard versions: 16 GA Galvanneal, Powdercoat, with screen behind PI and FG versions: 18 GA Stainless, Powdercoat, with hydrophobic cloth behind					
Environmental	Standard versions: IEC 60529 IP44 PI and FG versions: IEC 60529 IP55					
Suspension	(22) M10 Threaded Points (one EBK-M10-EVI kit of four forged eyebolts included)					
Height Width Depth	30.26 in (768.6 mm) 18.5 in (496.8 mm) 18.37 in (466.6 mm)					
Weight Net	75.7 lbs (34.4 kg)					

1 Half-space measurement in passive mode
2 FG (full outdoors) versions have no enclosure vents, somewhat reducing their low frequency response
3 EIA RS-426A (eight hours)

EVF-1121S, EVF-1151S, and EVF-2121S 12- and 15-Inch Low-Frequency Systems

These models are available to augment the low-frequency output ability of the EVF full-range systems. In their passive mode, the EVF-1121S and EVF-1151S have integral low-pass filters that roll off frequencies above 100 Hz at the rate of 12 dB per octave. This means that they can be used without an external digital signal processor (DSP) for crossover from the low-frequency to the full-range systems. As many as two full-range systems can be paralleled with an EVF low-frequency system on a single power-amplifier channel capable of driving a 2.1-ohm minimum impedance.

The two 12-inch woofers in the EVF-2121S provide additional sensitivity and twice the power capacity of the single-woofer EVF-1121S. (Note that the EVF-2121S does not incorporate a low-pass filter.)

EVF-1181S 18-Inch and EVF-2151D Dual-15-Inch Subwoofers

The EVF-1181S can be used with the full-range and low-frequency systems to extend low-frequency output down to 35 Hz (3 dB down). The EVF-2151D has a higher output capability down to 40 Hz (3 dB down). (Note that neither system incorporates a low-pass filter.)

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	EVF-1121S	EVF-1151S	EVF-2121S	EVF-1181S	EVF-2151D
Frequency Response (-3 dB)	70 - 98 Hz[1,2]	67 - 95 Hz[1,2]	54 - 145 Hz[1,2]	35 - 100 Hz[1,2]	40 - 2600 Hz[1,2]
Frequency Response (-10 dB)	48 - 120 Hz[1,2]	46 - 124 Hz[1,2]	41 - 330 Hz[1,2]	28 - 650 Hz[1,2]	30 - 3200 Hz[1,2]
Recommended High-Pass Frequency	50 Hz	35 Hz	45 Hz	33 Hz	35 Hz
Internal Passive Low-Pass Filter	100 Hz, 12 dB per octave		none	none	none
Sensitivity 1 W/1 m	103 dB		100 dB	99 dB	101 dB
Max. SPL/1m (calc) Peak	135 dB		135 dB	131 dB	137 dB
System Power Handling (Continuous/Program/Peak)	400 W continuous, 800 W program, 1600 W peak[3]		800 W continuous, 1600 W program, 3200 W peak[3]	400 W continuous, 800 W program, 1600 W peak[3]	1000 W continuous, 2000 W program, 4000 W peak[3]
Nominal Impedance	Passive: 4 Ω Biamp: 8 Ω		Passive: N/A Biamp: 4 Ω	Passive: N/A Biamp: 8 Ω	Passive: N/A Biamp: 4 Ω
Minimum Impedance	Passive: 3.4 Ω		Passive: N/A Biamp: 2.8 Ω	Passive: N/A Biamp: 6 Ω	Passive: N/A Biamp: 2.7 Ω
	Biamp: 5.5 Ω	Biamp: 6.4 Ω			
Input Connections	Phoenix/Euroblock style screw terminals PI and FG versions include dual-gland-nut input-panel cover				
Coverage (Nominal -6 dB) H°	Omnidirectional in normal operating range				
Coverage (Nominal -6 dB) V°	Omnidirectional in normal operating range				
Transducer	EVS12SB, 12 in (305 mm) Driver	EVS15SB, 15 in (381 mm) Driver	Two EVS12SB, 12 in (305 mm) Driver	EVS18SB, 18 in (457 mm) Driver	Two DVX3159A, 15 in (381 mm) Drivers
Enclosure Material	13 Ply Weather Resistant Birch				
Grille	Standard versions: 16 GA Galvanneal, Powdercoat, with screen behind PI and FG versions: 18 GA Stainless, Powdercoat, with hydrophobic cloth behind				
Environmental	Standard versions: IEC 60529 IP44 PI and FG versions: IEC 60529 IP55				
Suspension	(22) M10 Threaded Points (one EBK-M10-EVI kit of four forged eyebolts included)			(28) M10 Threaded Points (one EBK-M10-EVI kit of four forged eyebolts included)	(28) M10 Threaded Points (one EBK-M10-EVI kit of four forged eyebolts included)
Height Width Depth	30.26 in (768.6 mm) 16.0 in (406 mm) 16.27 in (413.3 mm)	30.26 in (768.6 mm) 18.5 in (470 mm) 18.4 in (467 mm)	30.26 in (768.6 mm) 18.5 in (470 mm) 18.4 in (467 mm)	30.26 in (768.6 mm) 26.6 in (675.6 mm) 28.6 in (726.4 mm)	30.26 in (768.6 mm) 26.6 in (675.6 mm) 28.6 in (726.4 mm)
Weight Net	57.7 lbs (26.2 kg)	62.6 lbs (28.4 kg)	82.4 lbs (37.4 kg)	101.2 lbs (45.9 kg)	117 lbs (53.1 kg)

1 Half-space measurement
2 FG (full outdoors) versions have no enclosure vents, somewhat reducing their low frequency response
3 AES-1984 (eight hours)

EVF Series Mechanical Aspects

The EVF full-range and low-frequency systems may be suspended using the 22 threaded rigging points and supplied EBK-M10-EVI kit of four forged eyebolts (the EVF-1181S and EVF-2151D subwoofers have 28 points). Clusters can be made using the eyebolt kits but are mechanically simplified by a carefully worked out series of optional rigging kits, which connect to the rigging points.

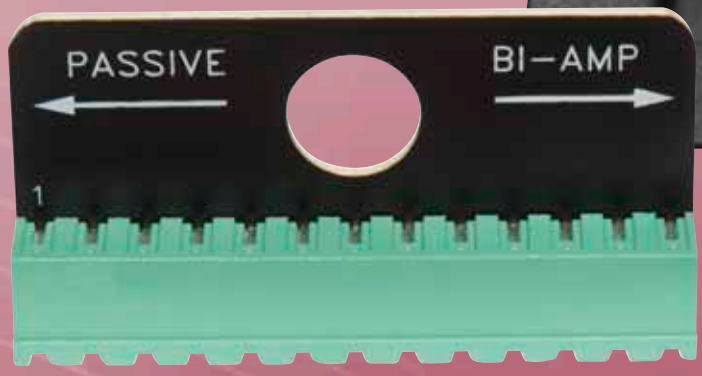
Enclosures are available in three degrees of weather resistance:

- **EVCoat™ for interior use**
- **PI for indirect weather exposure, such as under a roof overhang (EVCoat™ plus stainless-steel hydrophobic grille and the CDG dual-gland-nut input-panel cover)**
- **FG for direct exposure (PI grille and input-panel cover plus fiberglass finish)**
- **External fasteners on all systems are stainless steel**

Input Panel, Switch Card and Access Card

This new input panel was designed from the installer's perspective and has a range of innovative, user-friendly features:

- **Easy-access passive/biamp switch card.**
- **The same interface for the passive/biamp card can be used as an access point to test woofers and drivers without the need to dismantle the enclosure.**
- **Four-pin Phoenix/Euroblock screw-terminal connectors, which accept up to 10-gauge wire (AWG).**
- **Panel accepts three optional covers: the CDNL4, equipped with dual Neutrik Speakon® NL4 chassis connectors for quick-disconnect applications, the CSG, equipped with a gland nut for weather-protection of the connection points, and the CDG, equipped with dual gland nuts.**
- **The CDG dual gland-nut cover is included with PI and FG models.**
- **An internal landing pad for the optional TK-150 70/100-V transformer is on the rear of the input panel. Simply install the transformer on the input panel and attach the wire harness to the PC board, then reinstall the panel, attaching the included label around the Phoenix terminal block—the input block is now the power-tap selector.**



The plug-in card system is a unique feature of the EV-Innovation family of loudspeakers. This simple device (EVI-AC) allows diagnostic access to the transducers and protection circuitry inside the enclosure WITHOUT requiring any disassembly or disconnections beyond simple removal and replacement of the plug-in passive/bi-amp switch card. The EVI-AC works with all EVA, EVF and EVH two-way and low-frequency systems with plug-in card.

-Innovation

EVF systems have 22 or more internal rigging points, providing multiple choices for rigging the enclosures. Enclosures may be connected one above another using the supplied EBK-M10-EVI forged-eyebolt kits. However, commonly encountered clusters are more easily fabricated using the accessory HRK and VRK rigging kits. The rigging system is designed to carry a variety of array configurations in vertical or horizontal cluster formats with a safety factor of greater than 8:1.

Rigging Kits for Vertical Cluster Arrays

VRK-1 Vertical Rigging Kit

For typical vertical clusters using EVF full-range enclosures, with or without EVF low-frequency systems, one VRK-1 kit allows the attachment of two such enclosures in a vertical configuration. Two rigging kits are required to assemble a three-box cluster. Additional kits can be used to vertically cluster up to five systems, depending on weight and height limitations noted in the user manual.

VRK-2 Vertical Rigging Kit

One VRK-2 kit allows the attachment of one EVF full-range or low-frequency system to one EVF subwoofer or EVH full-range enclosure. Additional kits can be used to vertically cluster up to five systems, depending on weight and height limitations noted in the user manual.

VRK-3 Vertical Rigging Kit

One VRK-3 kit allows the attachment of one EVF subwoofer to an EVH full-range system.

Rigging Kits for Horizontal Cluster Arrays

HRK-1 Horizontal Rigging Kit

For typical horizontal clusters using EVF full-range enclosures, with or without EVF low-frequency systems, one HRK-1 kit allows the attachment of two such enclosures side by side. Two rigging kits are required to assemble a three-box cluster. Additional HRK-1 kits can be used to assemble two-over-two and three-over-three clusters (within certain weight and height limitations as outlined in the user manual).

HRK-2 Horizontal Rigging Kit

One HRK-2 kit allows the attachment of an EVF full-range or low-frequency enclosure to an EVF subwoofer or EVH full-range system. Another HRK-2 can be used to attach an EVF full-range or low-frequency system to the other side of an EVF subwoofer or EVH full-range system.

HRK-3 Horizontal Rigging Kit

One HRK-3 kit allows the attachment of one EVF subwoofer to an EVH full-range system.

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