

TECHNICAL SPECIFICATIONS

ILA412

Product Group: Installation Class
System Type: Three-way Line Array

FEATURES AND ADVANCES

- Engineered for Seamless Vertical Coverage
- Symmetric Box Design with 80° Horizontal Coverage
- High Power Handling 8132 12" LF Drivers
- Versatile Rigging System
- Custom Weatherproofing Options Available

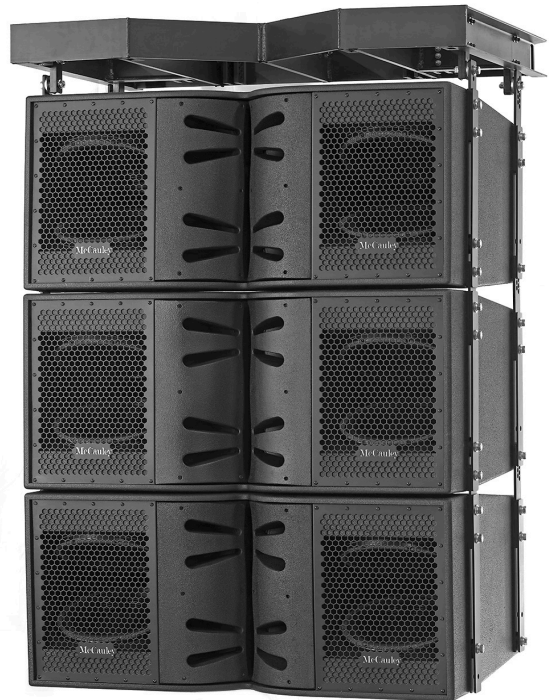
PRODUCT DESCRIPTION

The ILA412 is a 3-way, axisymmetric large format line array system designed specifically for permanent installation. The system is engineered to deliver high definition, high SPL sound reinforcement for a broad range of applications, including concert halls, stadiums, houses of worship, and large clubs.

Each ILA412 line array cabinet features four manifold loaded 12" McCauley 8132 Low-Mid drivers, four 77087 8" Midrange Drivers and six 1.0" exit compression drivers on a 80° x 10° slot-loaded wave guide.

The McCauley 8132 LF driver is built around a new field serviceable motor with integrated aluminum heat sink. The new motor design has a thinner, 0.2" top plate and longer 0.875" by 4.0" diameter aluminum coil which improves the linearity of the BI vs. displacement profile. The 8132 LF driver features a hybrid composite-paper cone which balances light weight and high stiffness, to improve overall sensitivity, with the internal damping that is inherent to paper cone loudspeakers.

The coupling of the cone drivers and high frequency waveguide has been specially engineered to produce a rich and fully balanced sound from 40 Hz to 18 kHz. The 8132 12" LF drivers are manifold loaded to improve the sensitivity over their operating band and increase array density. The 77087 8" midrange drivers are phase plug loaded to match the pattern of the HF around the crossover frequency and reduce cabinet to cabinet interferences. The HF slot loaded waveguide is optimized to reduce resonances which would require DSP equalization. The sensitivity of each component has been specifically engineered for the ILA412 to allow for the extra HF headroom which is often required in longer throw applications.



CONSTRUCTION

The enclosure is constructed from 15mm 13-ply void-free birch plywood and is coated with a weather and wear resistant ProCoat™ polyurea hybrid finish. All rigging components are weather protected with a heat cured epoxy powder coat finish. Components in the front of the enclosure are protected by a fitted grill made from perforated steel that is coated with heat cured epoxy powder, and lined with acoustically transparent foam.

The ILA412 is available with weather proofing options for harsh installation environments. All wood products are treated with a waterproof conformal coating. All loudspeaker drivers are made using water resistant adhesives and all soft parts impregnated with a proprietary silicone based compound. The standard NL8/Phoenix connectors are replaced by a water-tight gland nut, with AWG 12-8 SOOW or higher grade pigtail. Contact McCauley Sound Engineering Support for assistance selecting the options for your project.

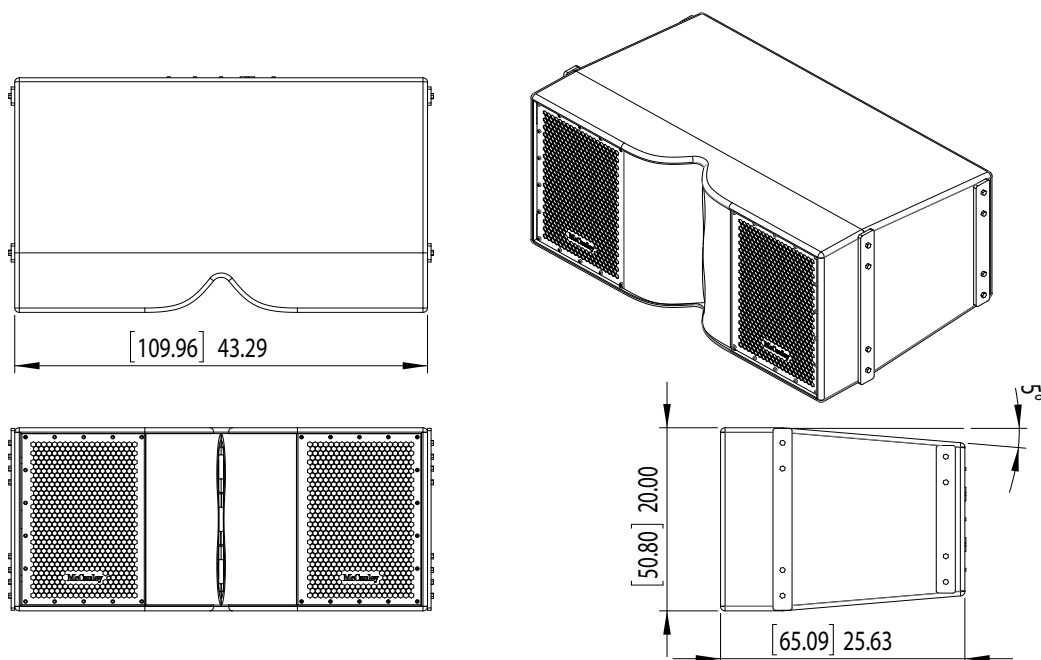
PERFORMANCE PARAMETERS

System Type	Three-way Line Array
Transducers	(4) 8132-16 12" Cone Transducers (4) 77087-8 8" Cone Transducers (6) 77069-16 1" Exit Compression Drivers
Frequency Response (-10dB / ±3dB)	35Hz / 40Hz-18kHz
Suggested Processing	Lake Processing or Tesira DSP
Nominal Impedance (Drivers Parallel / Discrete)	LF 4.0 Ω / 8.0 Ω MF 8.0 Ω HF 10.5 Ω
Sensitivity (LF / MF / HF) 2.83Vrms @ 1m	105 dB SPL / 105 dB SPL / 110 dB SPL
Program Maximum SPL (LF / MF / HF)	135 dB SPL / 135 dB SPL / 140 dB SPL
Power Rating (AES2-2013 2hr Test / Program)	LF 2000W / 4000W @ 4.0 Ω MF 800W / 1600W @ 8.0 Ω HF 300W / 600W @ 10.5 Ω

PHYSICAL PROPERTIES

Weight	230lb / 104.3kg
Dimensions (Without Casters)	INCHES 20.0H x 43.3W x 26.0D CENTIMETERS 508H x 1100W x 660D
Enclosure Material	15mm multi-ply Birch Laminate
Hardware	Integrated Rigging Optional 3/8-16 reinforced hang points
Finish	Procoat™ Polyurea-Hybrid Weatherproofing (Black is standard, White or Custom Colors Available)
Connectors	Parallel Neutrik™ Speakon NL8 / Phoenix PC4 LF1 1+/- LF2 2+/- MF 3+/- HF 4+/-
Configurations	ILA412 - Standard ILA412A - Add Handles ILA412C1 - Phoenix Connector ILA412C2 - Gland-Nut w/ Internal Terminal Strip
Options	Xx - Weather Proofing Options (Contact Support)
Optional Accessories	ILA412K - Tig Welded Aluminum Cart, 3 Boxes MB412A - Tig Welded Aluminum Fly Bumper

DIMENSIONAL ILLUSTRATIONS



ARCHITECTS AND ENGINEERS SPECIFICATIONS

Each, three-way, full range line array element shall incorporate four (4), McCauley 8132 12" (305mm) diameter, 4" (102mm) dual voice coil LF transducers, four (4), McCauley 77087 8" (203mm), 2" (51mm) voice coil Midrange transducers, and six (6), McCauley 77069 2.0" (51mm) diaphragm, 1.0" (25.4mm) exit, HF compression drivers.

The high frequency transducers shall feed a high gain, slot loaded, waveguide optimized to reduce resonance modes. The waveguide shall be coupled to a combined midrange phase-plug and horn mouth assembly engineered such that the directivity is matched at the crossover frequency. The -6dB pattern when measured at 20m shall be 80° x 10°. The total vertical coverage pattern of an array will vary with the number of enclosures and curvature selected.

The 77087 8" Midrange transducers shall be mounted individually in a sealed chamber of such volume to have maximally flat output in their operating band from 250Hz - 1200Hz. The 77087 transducers shall be phase plug loaded to increase sensitivity and to match the directivity of the HF section in the crossover band. The 8132 12" LF transducers shall be mounted in a ported chamber tuned for a maximally flat output when a minimum of four (4) enclosures are used in an array. The 8132 transducers shall be manifold loaded to increase sensitivity in their operating band from 40Hz - 250Hz.

The unprocessed system frequency response shall vary no more than ± 3 dB from 40 Hz to 18 kHz measured on axis. The LF section shall produce a Sound Pressure Level (SPL) of 105dB SPL at a distance of 1 meter with an electrical input of 2.83V, and shall be capable of producing a program output of 134 dB SPL on axis at 1 meter. The MF section shall produce an SPL of 104 dB SPL on axis at 1 meter with an electrical input of 2.83V, and shall be capable of producing a program output of 133 dB SPL on axis at 1 meter. The HF section shall produce an SPL of 109 dB SPL on axis at 1 meter with an electrical input of 2.83V, and shall be capable of producing a program output of 140 dB SPL on axis at 1 meter.

The LF section shall have a power rating of 2450W (per AES Standard AES2-2012) and shall have a nominal impedance of 4 Ω inside the operating band. The midrange section shall have a power rating of 800W and a nominal impedance of 8 Ω inside the operating band. The high frequency section shall have a power rating of 300W and a nominal impedance of 10 Ω inside the operating band.

The loudspeaker enclosure shall have a maximum weight of 230 lbs. (104.3 kg) and shall measure 20.0 in. (508mm) high at the front, 43.3 in. (1100mm) in width, and 26.0 in. (660mm) in depth. The enclosure top and bottom shall taper at 5° from a maximum frontal height, narrowing in the vertical plane toward the rear. The enclosure shall be constructed of multi-ply void-free birch hardwood plywood and shall have a weather and wear resistant ProCoat™ polyuria hybrid finish. Components in the front of the enclosure are to be protected by a compound-curved grill made from perforated steel that is coated with heat cured epoxy powder, and lined with acoustically transparent foam.

Input connectors shall be two locking Neutrik NL8 or Phoenix PC4 wired in parallel with 10 AWG wire. The connectors shall have a contact resistance of less than 3 m Ω , insulation rating of at least 250 Vrms, and rated continuous current rating of 20 A per contact. The lifetime of the connectors shall be at least 5000 mating cycles. The connectors shall meet or exceed UL 94 HB flammability standards.

Pins 1+, 1-, and 2+, 2- shall be wired to LF1 and LF2 8 Ω sections. Pins 3+, 3- shall be wired to the 8 Ω MF section, and Pins 4+, 4- shall be wired to the 10.5 Ω HF section.

The three-way full range line array element shall be the McCauley Sound ILA412.