US212

Dual 12 inch Direct-Radiating Subwoofer



Overview

The US212 is a dual 12 inch, ultra-compact, direct radiating subwoofer that is designed to provide gut churning impact and solid musicality. Its 4 inch voice coils, strong neodymium magnets, and innovative low-turbulence ports permit an optimal tuning to be achieved in an enclosure that is unusually small for a dual 12 inch subwoofer.

For overhead suspension, fourteen M10 suspension points allow either horizontal or vertical orientation. For ground stacking, the supplied vibration isolators may be threaded into any three M10 mounting points to prevent spurious vibrations and "walking". When stacking enclosures, the vibration isolators nest in recesses surrounding the mounting points in the cabinet below. The input is mounted on a chamfer at the rear of the enclosure, allowing cable access without requiring additional space between the enclosure and a wall or stage.

The US212 is perfectly suited for highly dynamic live performance venues and nightclubs, A/V screening rooms, and low frequency effects in theme parks. And, its small size allows it to be used under stages or built into small cavities.

Performance Specifications [1]

Operating Mode
Single or dual amplified w/ DSP*
** See page 3 for connection diagrams*

Operating Range [2]
35 Hz to 152 Hz

Nominal Beamwidth
Spherical within operating range

Transducers
LF: (2) 12.0" woofers, 4.0" voice coil; neodymium magnet

Power Handling @ Nominal Impedance [3]
75 V, 1400 W (two 8 Ω loads, 700 W each)*
**Woofers wired separately*

Nominal Sensitivity @ Input Voltage [4] (half / whole space)
102 dB / 96 dB @ 2.00 V

Nominal Maximum Continuous SPL (half / whole space)
140 dB / 134 dB peak
134 dB / 128 dB continuous

Equalized Sensitivity @ Input Voltage [5] (half / whole space)
96 dB / 90 dB @ 2.00 V

Equalized Maximum SPL [6] (half / whole space)
134 dB / 128 dB peak
128 dB / 122 dB continuous

Recommended Power Amplifier
1400 W to 2100 W @ 4 Ω

Physical Specifications

Connections
(2) Neutrik NL4 Speakon
Pin 1+/-: LF 1
Pin 2+/-: LF 2

Mounting / Suspension Points
(16) M10 eye bolt angle points

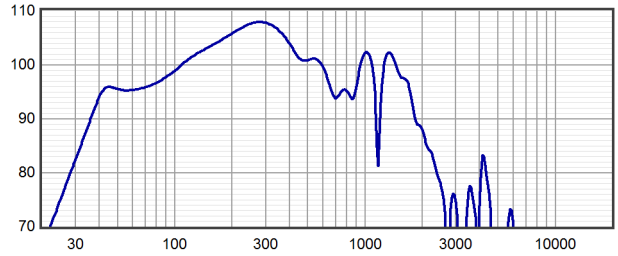
Dimensions / Weight
See pages 5 & 6

Finish
Black painted enclosure w/ matte black grille, or
White painted enclosure w/ matte white grille

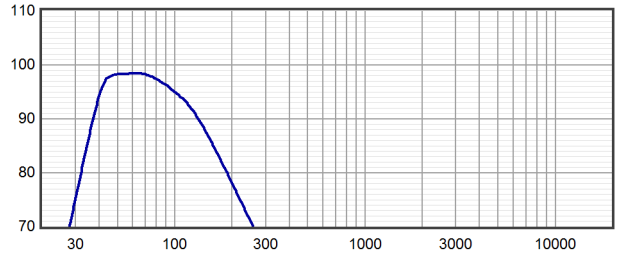
Options

Terminal strip input, Custom color finish,
Weather-resistant (WR) enclosure & hardware

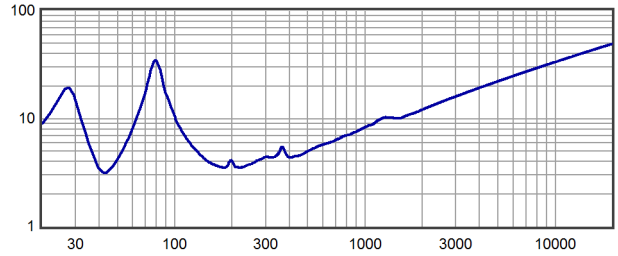
Axial Sensitivity (dB SPL, 2.00 V @ 1 m, half space)[7, 8]



Axial Processed Response (dB, half space)[7, 9]



Impedance (ohms)



Technologies

The 12 inch woofers in the US212 have 4 inch voice coils, unusually strong neodymium magnet structures, and dual silicone impregnated spiders for high excursion and long term stability. This allows the pair of woofers to handle 1400 watts of long term power, and provides the motor strength required to operate effectively in such a small enclosure.

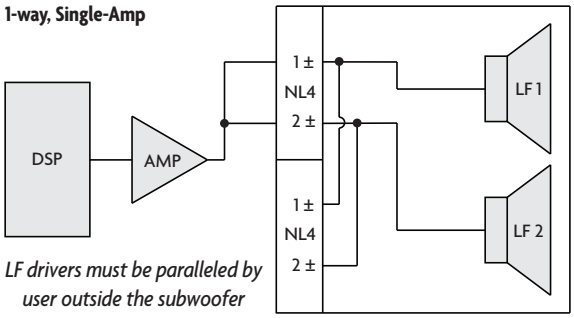
The enclosure shell is constructed of Baltic birch plywood, while the ports are constructed of curved plywood. The port design makes use of all available frontal area, minimizes turbulence, and smoothly guides the air flow around the woofers' magnet structures.

The specially-selected vibration isolators are much more effective than conventional loudspeaker feet. They are constructed of high-compliance neoprene for a high coefficient of friction, with a special shape that allows up to 4 mm of lateral displacement.

The net result is a subwoofer that provides low frequencies with a very authoritative character in a package that is less than half the size and weight of most competitive products.

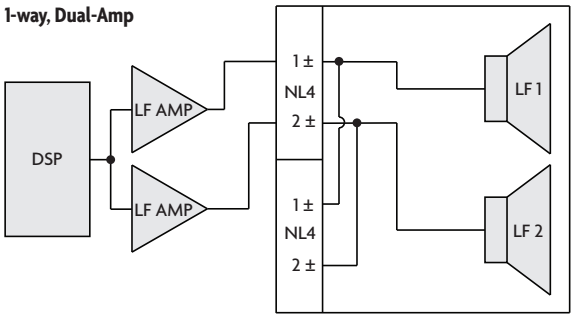
Connection Diagram

1-way, Single-Amp



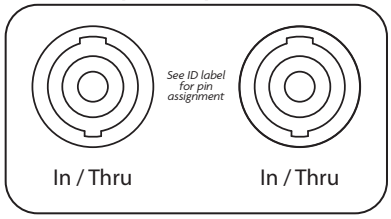
LF drivers must be paralleled by user outside the subwoofer

1-way, Dual-Amp



Connections

Neutrik NL4 Speakon Input



Mechanical Specification Drawings

2D and 3D DWG dimensional drawings are available for download at www.fulcrum-acoustic.com/resources

Notes

[1] **Performance Specifications** *All acoustic specifications rounded to nearest whole number. External DSP with Fulcrum Acoustic-provided settings is required to achieve the specified performance.*

[2] **Operating Range** *The frequency range within which the processed response is within 10 dB of the average.*

[3] **Power Handling** *Based on the AES power handling of the transducers.*

[4] **Nominal Sensitivity** *The 1-meter-referenced SPL produced by a 1 watt band limited pink noise signal, with no processing applied.*

[5] **Equalized Sensitivity** *The 1-meter-referenced SPL produced when an EIA-426-B signal is applied to an equalized loudspeaker system, at a level which produces a total power of 1 watt, in sum, to the loudspeaker subsections.*

[6] **Equalized Maximum SPL** *The 1-meter-referenced SPL produced when an EIA-426-B signal is applied to an equalized loudspeaker system, at a level which drives at least one subsection to its rated power.*

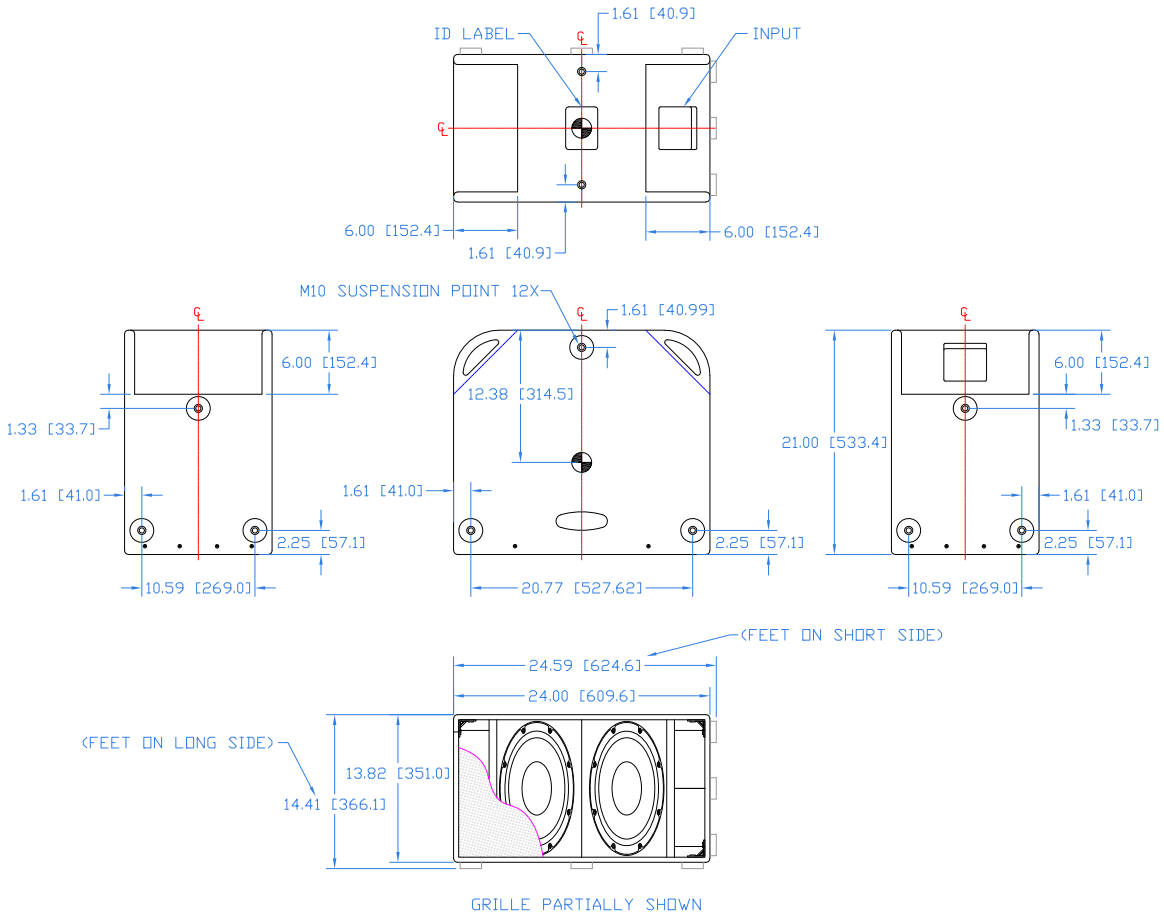
[7] **Resolution** *All response graphs are subjected to 1/6 octave cepstral smoothing with a gaussian weighting function.*

[8] **Axial Sensitivity** *The SPL plotted against frequency for a 1 watt swept sine wave, referenced to 1 m with no signal processing.*

[9] **Axial Processed Response** *The axial magnitude response with recommended signal processing applied.*

Notes:
1. Net Weight = Approx. 69.0 lb / 31.3 kg
2. Symbol ⊙ = M10 x 1.5 eye bolt angle point
3. Symbol ⊙ = M10 x 1.5 eye bolt angle point in 0.188 [4.76] deep foot recess
4. Symbol ⊕ = CoG
5. Three vibration isolating feet thread into suspension points on either short or long side (shown on both).

REVISIONS		
REV	DESCRIPTION	APPR / DATE
2	EXTENDED ENCLOSURE DEPTH, ADDED WEIGHT & COG	RAF 1/3/10
3	ADDED REAR MOUNTING POINTS	RAF 1/15/10
4	CORRECTED FOOT DIMS	RAF 10/29/10
5	ADD SHIPPING WEIGHT	RAF 12/13/11
6	REMOVE REAR FOOT RECESSES	RAF 1/25/16
7	UPDATE NOTES, FOOT HEIGHT	RAF 2/11/26

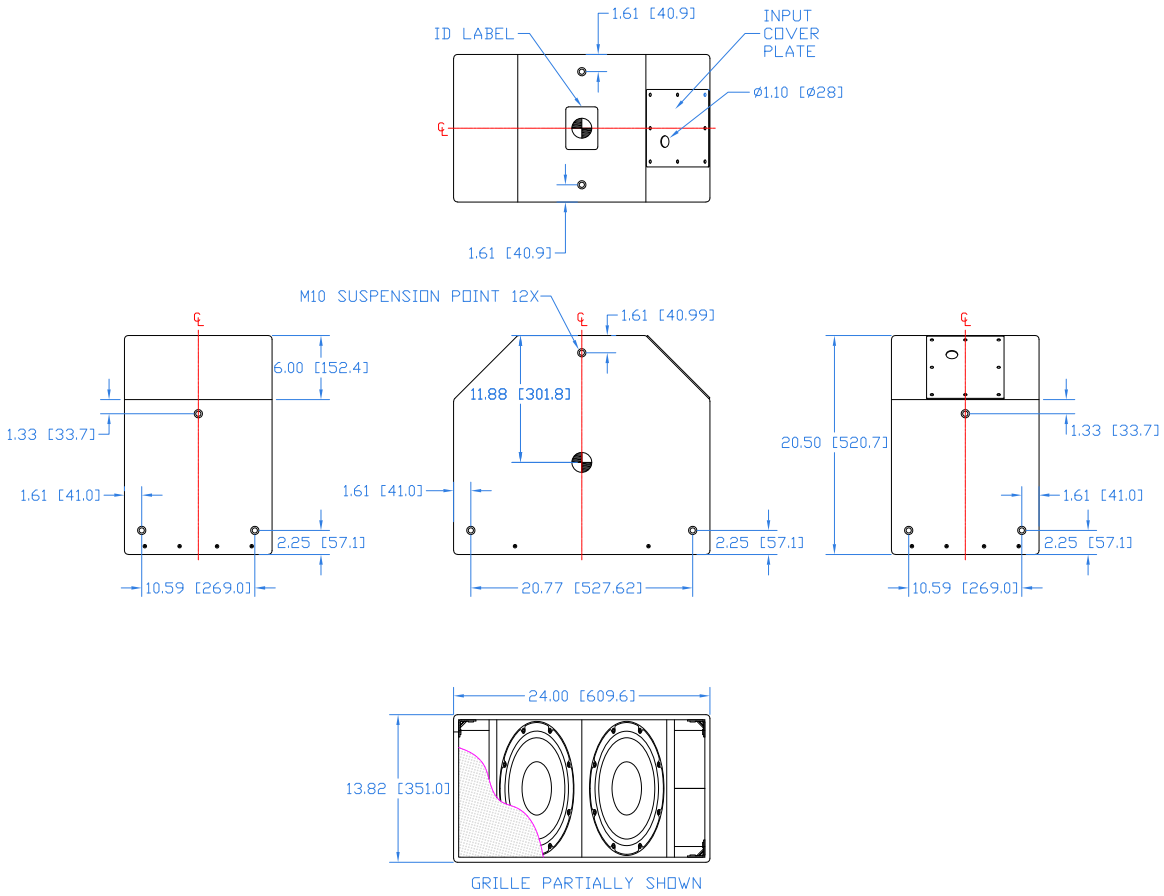


THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCE IN INCHES .X±.1 .XX±.015 .XXX±.005 FRACTIONS ±1/32 ANGLES ±1/2° (X.XX) = REF DIMS NO TOLERANCE IMPLIED TSC = THEORETICAL SHARP CORNER DIMENSIONS ACROSS CENTERLINES TO BE SYMETRICAL	STATUS RELEASED	FULCRUM ACOUSTIC, LLC 1 MAIN STREET, WHITINSVILLE, MA 01588 USA
		APPROVALS / DATE	TITLE: Mechanical Spec. US212
		DRAWN: RAF 9/2/09	
		CHECKED: DWG 9/2/09	
		DES ENG:	B SHEET 1 OF 1 SCALE: 1:16
THIS DRAWING IS THE PROPERTY OF FULCRUM ACOUSTIC, AND SHALL NOT BE COPIED, REPRODUCED, OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF APPARATUS WITHOU WRITTEN AUTHORIZATION. DO NOT SCALE DRAWING.		MFG ENG:	DWG. NO. 820-100-024 REV 7

Drawing is reduced. Do not scale.

Notes:
1. Net Weight <= Approx. 69.0 lb / 31.3 kg
2. Symbol ⊙ = M10 x 1.5 eye bolt angle point
3. Symbol ⊕ = CoG
4. Enclosure material:
   Fiberglass Reinforced Polyurethane

REVISIONS		
REV	DESCRIPTION	APPR / DATE
1	NEW ISSUE	DWG 1/19/10
2	GENERAL DRAWING UPDATES	RAF 1/25/16
3	UPDATE NOTES, ENCLOSURE MATERIAL, INPUT COVER PLATE	RAF 2/11/26



THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCE IN INCHES .X±.1 .XX±.015 .XXX±.005 FRACTIONS ±1/32 ANGLES ±1/2° (X.XX) = REF DIMS NO TOLERANCE IMPLIED TSC = THEORETICAL SHARP CORNER DIMENSIONS ACROSS CENTERLINES TO BE SYMETRICAL	STATUS RELEASED	FULCRUM ACOUSTIC, LLC 1 MAIN STREET, WHITINSVILLE, MA 01588 USA
		APPROVALS / DATE	
		DRAWN: DWG 1/19/10	TITLE: Mechanical Spec. US212-WR
		CHECKED:	
THIS DRAWING IS THE PROPERTY OF FULCRUM ACOUSTIC, AND SHALL NOT BE COPIED, REPRODUCED, OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF APPARATUS WITHOU WRITTEN AUTHORIZATION. DO NOT SCALE DRAWING.		DES ENG:	B SHEET 1 OF 1 SCALE: 1:16
		MFG ENG:	DWG. NO. 820-100-028 REV 3

Drawing is reduced. Do not scale.