



TS212ac

Self Powered Dual 12 inch Direct-Radiating Subwoofer

*fa*PORTABLE.



Overview

The TS212ac is a portable, dual 12 inch, ultra-compact, direct radiating subwoofer that is designed to provide impressive low frequency 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.

Eight handles and an optional caster pallet facilitate transport of the enclosure. An M20-threaded connector plate is centered on the TS212ac's top panel for use with the optional, height-adjustable SPI Speaker Pole. This pole's M20 threaded bolt screws securely into the connector plate and is used to mount loudspeakers equipped with a 35 mm / 1.38 inch pole socket directly above the TS212ac. Four vibration isolation feet prevent spurious vibrations and "walking". When stacking enclosures, the vibration isolators nest in recesses in the enclosure below. The recesses are configured so that enclosures can be rotated to create cardioid arrays.

Four back panel selectable presets optimize the response for either normal, cardioid, or user-defined configurations. A full complement of input filters and delay, as well as signal levels and amplifier status, may be accessed via Ethernet, using **Armonia Pro Audio Suite™** control software. In addition, a pre-output EQ stage is available for programming custom presets. These presets may be saved and later recalled using the back panel Preset Select button or software.

The TS212ac's transducers are powered by two 1100 watt amplifier channels, designed and manufactured in Italy by Powersoft. The amplifier incorporates state-of-the-art Class-D technology with Power Factor Correction to produce extremely high efficiency, low noise, and low intermodulation distortion in a compact and lightweight package.

The TS212ac provides big subwoofer sound in a package that one person can easily transport, and its low profile allows it to fit into out-of-the-way places. The combination of high performance, labor saving portability, and aesthetic appeal represents an ideal solution for corporate A/V, television/radio productions, theatrical productions, nightclub PA, portable DJ systems, and more.

Performance Specifications¹

Operating Mode

Single-amplified w/ DSP

Operating Range²

31 Hz to 156 Hz

Nominal Beamwidth

Spherical within operating range

Transducers

LF: 2x 12.0" woofers, 4.0" voice coil; neodymium magnet

Power Handling @ Nominal Impedance³

75 V / 1400 W @ 4 Ω (2x 700 W @ 8 Ω)

Nominal Sensitivity @ Input Voltage⁴ (half / whole space)

103 dB / 97 dB @ 2.00 V

Nominal Maximum Continuous SPL (half / whole space)

141 dB / 135 dB peak
135 dB / 129 dB continuous

Equalized Sensitivity @ Input Voltage⁵ (half / whole space)

96 dB / 90 dB @ 2.00 V

Equalized Maximum SPL⁶ (half / whole space)

134 dB / 128 dB peak
128 dB / 122 dB continuous

Physical Specifications

Mounting / Suspension Points

M20 threaded connector plate for optional SPI speaker pole

Dimensions / Weight

See page 5

Finish

Black painted enclosure w/ matte black grille

Options

CP212 Face Pallet

SPI Speaker Pole

Height-adjustable between 905 mm / 35.6 in and 1450 mm / 57.1 in



product specification

Audio Input

Connectors

Analog In: Female XLR
Analog Out: Male XLR
AES3 In: Female XLR
Ethernet / AESOP: 2x 8P8C (RJ45)

Analog Input Wiring

Pin 1: Chassis
Pin 2: Signal +
Pin 3: Signal -

Input Impedance

10 k Ω balanced to ground

Input Sensitivity

1.5 Vrms / 6.0 dBu

Maximum Input Voltage

6.3 Vrms / 18.2 dBu

Controls

Preset Select: 1 thru 4, press and hold 3 sec to access 5 thru 8
Input Select: Analog, AES3 A, AES3 B, AES3 A+B
Input EQ: In / Out
Input Volume: Full clockwise = nominal gain

LED Indicators

Ready, signal, temp, limit, protect, selected preset,
selected input, input EQ in

Digital Signal Processing

DSP Encoding

24 bit / 48 kHz

DSP Latency

Analog Input: 3.52 ms

Input Processing (software accessible)

Three layers raised cosine parametric or graphic EQ
Filter Types: Peaking, asymmetrical, low and high shelf, low and high pass
Delay: 2 seconds
Gain
Polarity
Mute

Pre-Output Processing (software accessible)

Sixteen bands parametric EQ
Filter Types: Peaking, low and high shelf, low and high pass, band pass, band stop, all pass
Delay: 2 seconds
Gain
Mute

Amplifier

Type

Two-channel Class D

Output Power

EIAJ test, 1 kHz, 1% THD: 2x 1100 W @ 8 Ω
Maximum Output Voltage: 2x 150 V peak

Frequency Response

10 Hz to 25 kHz, ± 3 dB, for 1 W @ 4 Ω

S/N Ratio

> 115 dBA, 20 Hz to 20 kHz

Crosstalk Separation

> 71 dB @ 1 kHz

Slew Rate

50 V / microsecond @ 8 Ω , input filter bypassed

Damping Factor

> 10000 @ 100 Hz

Distortion

THD+N: < 0.05% from 0.1 W to full power (typically < 0.02%)
SMPTE IMD: < 0.05% from 0.1 W to full power (typically < 0.02%)
DIM100 IMD: < 0.05% from 0.1 W to full power (typically < 0.02%)

Efficiency

> 75% (typical)

Cooling

Temperature-controlled variable speed internal fan

Maximum Operating Ambient Temperature

40° C

Protection Systems

Over-temp power limiting, thermal shutdown, short-circuit,
overload output protection

AC Mains

Connections

Mains In: Neutrik powerCON NAC3MPA
Mains Out: Neutrik powerCON NAC3MPB

Mains Voltage

100 to 240 V~, 50/60 Hz with PFC

Current Draw (1/8 max output power)

5.2 to 2.6 A

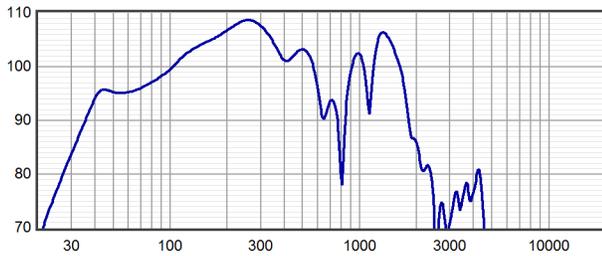
Thermal Emission (1/8 power @ 4 Ω)

297 BTU/h 75 kcal/h

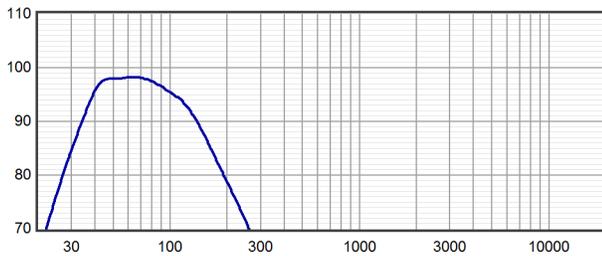


product specification

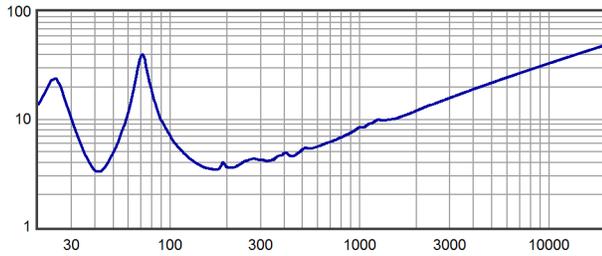
Axial Sensitivity (dB SPL, 2.00 V @ 1 m, half space)^{7,8}



Axial Processed Response (dB, half space)^{7,9}



Impedance (ohms)





Technologies

The 12 inch woofers in the TS212ac 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.

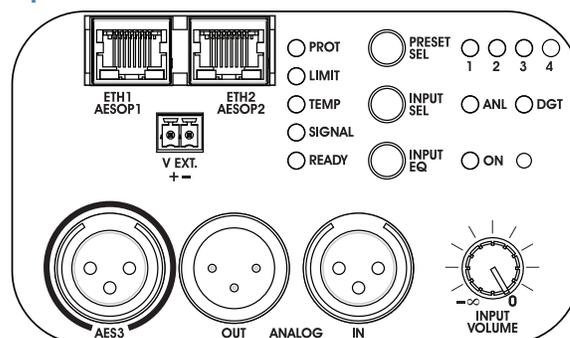
The specially-selected vibration isolators are much more effective than conventional loudspeaker feet. They are constructed of high-compliance neoprene for a high coefficient of friction and up to 4 mm of lateral displacement.

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.

Mechanical Specification Drawings

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

Input Panel



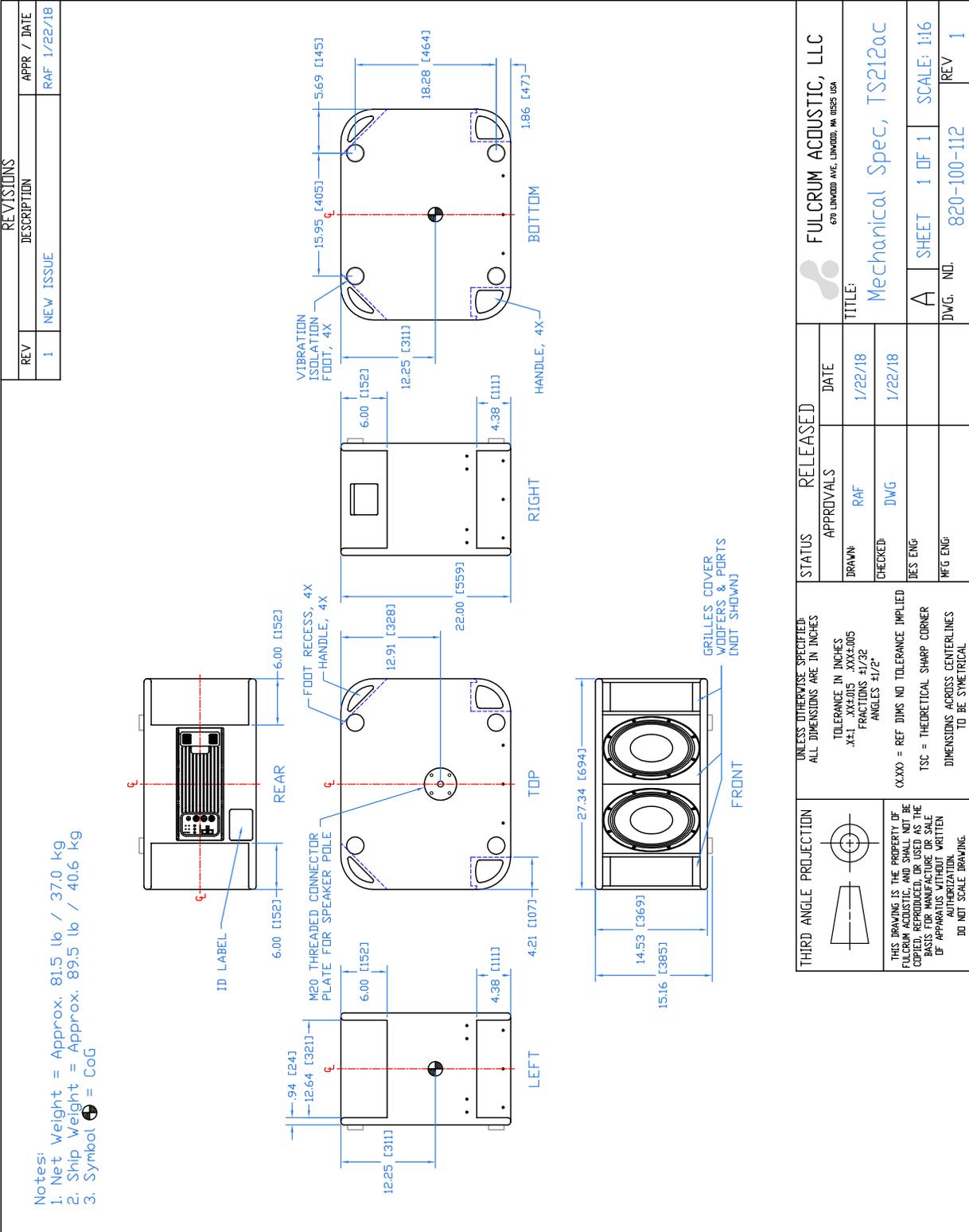
TS215ac Presets

Preset 1	Normal
Preset 2	Cardioid - Front
Preset 3	Cardioid - Rear
Preset 4	No LPF - Use w/ External DSP

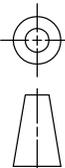
Presets 5-8 user-programmable in **Armonia Pro Audio Suite™** control software. Press and hold rear panel Preset Select button 3 seconds to access these presets.

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.



Drawing is reduced. Do not scale.

THIRD ANGLE PROJECTION	STATUS	RELEASED	APPROVALS	DATE
	DRAWN	RAF	1/22/18	1/22/18
	CHECKED	DVG	1/22/18	
	DES'G			
	MFG'G			

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCE IN INCHES .X41 XX.015 XX4.005 FRACTIONS 1/32 ANGLES 1/2°	FULCRUM ACOUSTIC, LLC 670 LINWOOD AVE. LINWOOD, MA 01825 USA
(X.XX) = REF DIMS NO TOLERANCE IMPLIED TSC = THEORETICAL SHARP CORNER DIMENSIONS ACROSS CENTERLINES TO BE SYMMETRICAL	TITLE: Mechanical Spec, TS212ac
	A SHEET 1 OF 1 SCALE: 1:16 DWG. NO. 820-100-112 REV 1