



Sub218Lac

Self Powered Dual 18 inch Direct-Radiating Subwoofer

VLF Install



Overview

The Sub218L is a low profile, dual 18 inch vented subwoofer that is designed to provide extended low frequency support in a wide variety of installations. Its premium, high power transducers are physically engaging, yet are musically articulate enough to reproduce the subtlety and harmonic nuance of an upright bass or the low strings of a piano.

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 Sub218Lac's transducers are powered by two 1600 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.

Technologies

The two 18 inch woofers in the Sub218L have high power, 4 inch voice coils, and are capable of impressively large excursion. The enclosure is optimally tuned to provide maximum low frequency output.

Performance Specifications¹

Operating Mode

Single-amplified w/ DSP

Operating Range²

24 Hz to 152 Hz

Nominal Beamwidth

Spherical within operating range

Transducers

LF: 2x 18.0" woofers, 4.0" voice coil; ceramic magnet

Power Handling @ Nominal Impedance³

98 V / 2400 W @ 4 Ω (2x 1200 W @ 8 Ω)

Nominal Sensitivity @ Input Voltage⁴ (half / whole space)

103 dB / 97 dB @ 2.00 V

Nominal Maximum Continuous SPL (half / whole space)

143dB / 137 dB peak
137 dB / 131 dB continuous

Equalized Sensitivity @ Input Voltage⁵ (half / whole space)

102 dB / 96 dB @ 2.00 V

Equalized Maximum SPL⁶ (half / whole space)

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

Recommended Power Amplifier

2400 W to 3600 W @ 4 Ω

Physical Specifications

Mounting / Suspension Points

(12) M10 eye bolt angle points

Dimensions / Weight

See page 5

Finish

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

Options

Custom color finish



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 1600 W @ 4 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

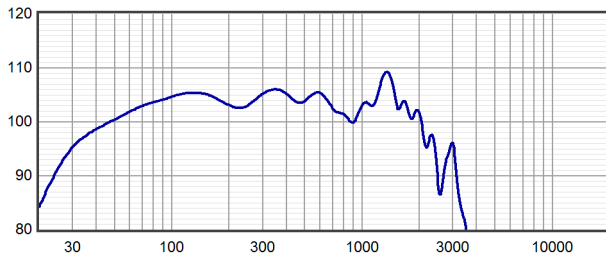
Thermal Emission (1/8 power @ 4 Ω)

297 BTU/h 75 kcal/h

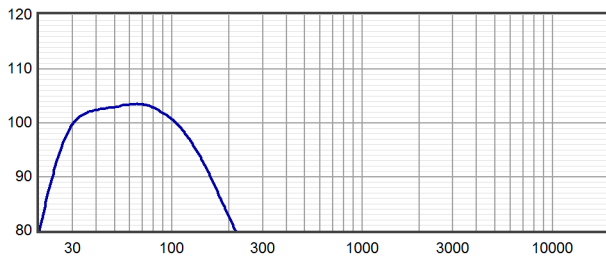


product specification

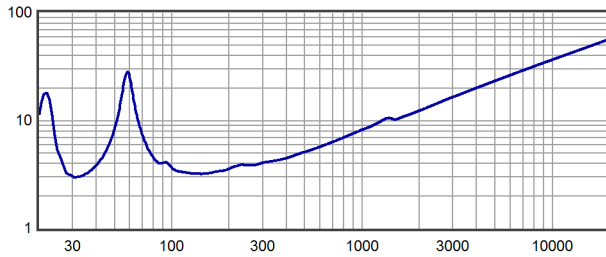
Axial Sensitivity (dB SPL, 2.00V @ 1 m, half space)^{7,8}



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

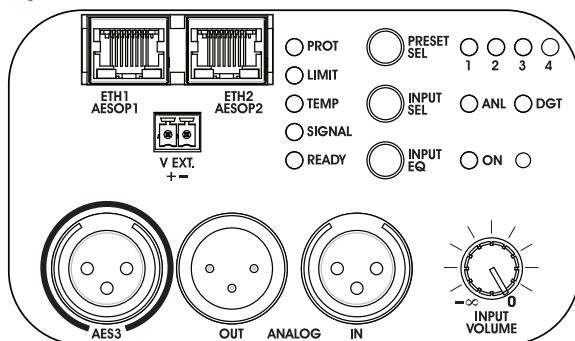


Impedance (ohms)





Input Panel



Sub218Lac Presets

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

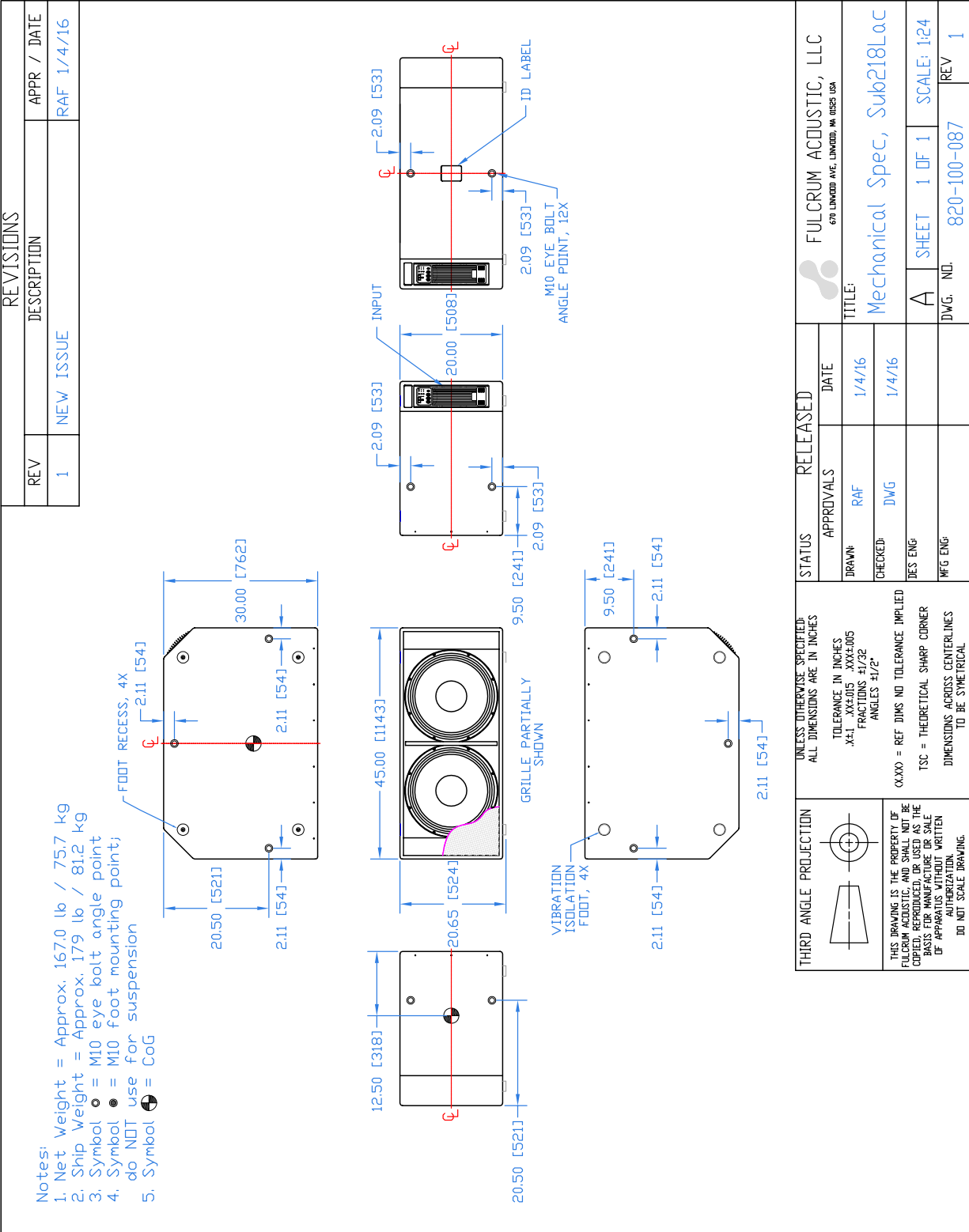
Presets 5-8 user-programmable in **Armonía Pro Audio Suite™** control software. Press and hold rear panel Preset Select button 3 seconds to access these presets.

Mechanical Specification Drawings

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

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.