



# CS218L

## Dual 18 inch Subcardioid Subwoofer



### Overview

The CS218L is a low profile, dual 18 inch subcardioid subwoofer module intended for permanent installation in a wide range of venues. 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. Twelve M10 mounting points facilitate either horizontal or vertical overhead suspension. Four vibration isolation feet prevent spurious vibrations and “walking” in horizontal ground stack applications.

The CS218L incorporates Fulcrum’s patented *Passive Cardioid Technology™* to overcome one of the major challenges of many loudspeakers: excessive rear LF radiation. Unlike active cardioid loudspeakers, Fulcrum’s passive cardioid technology does not require an additional amplifier channel or additional transducer to achieve its impressive low frequency directional control: >10 dB of rear rejection over the subwoofer’s operating range.

The subcardioid behavior is produced by a meticulously conceived acoustical circuit which balances the position of the low frequency driver, the enclosure depth and volume, and specially constructed rear-mounted ports which include a calibrated resistive element. By opting for a subcardioid pattern as opposed to a pure, hyper or super cardioid pattern, the rear rejection increases when the modules are deployed in a subwoofer array.

Fulcrum Acoustic’s **TQ™** processing is an integral part of the CS218L design. Sound, innovative acoustical design combined with state of the art digital processing leads to exceptional clarity and precise transient response, even at very high sound pressure levels. The required digital signal processing can be provided by one of many supported platforms.

### Performance Specifications<sup>1</sup>

#### Operating Mode

Single or dual amplified w/ DSP\*

\* See page 3 for connection diagrams

#### Operating Range<sup>2</sup>

32 Hz to 168 Hz

#### Nominal Beamwidth

Subcardioid (>10 dB rear rejection) within operating range

#### Transducers

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

#### Power Handling @ Nominal Impedance<sup>3</sup>

80 V / 1600 W @ 4 Ω (1-way single amp)

80 V / 2x 800 W @ 8 Ω (1-way dual amp)

#### Nominal Sensitivity @ Input Voltage<sup>4</sup> (half / whole space)

106 dB / 100 dB @ 2.00 V

#### Nominal Maximum Continuous SPL (half / whole space)

144 dB / 138 dB peak

138 dB / 130 dB continuous

#### Equalized Sensitivity @ Input Voltage<sup>5</sup> (half / whole space)

102 dB / 96 dB @ 2.00 V

#### Equalized Maximum SPL<sup>6</sup> (half / whole space)

140 dB / 134 dB peak

134 dB / 128 dB continuous

#### Recommended Power Amplifier

1600 W to 2400 W @ 4 Ω (1-way single amp)

700 W to 1200 W @ 8 Ω (1-way dual amp)

### Physical Specifications

#### Connections

(2) Neutrik NL4 Speakon

Pin 1+/-: LF1

Pin 2+/-: LF2

#### Mounting / Suspension Points

(12) M10 x 1.5 eye bolt angle points,

(4) vibration isolation feet\*

\* For flown applications CS218L may be ordered with filler bolts rather than feet

#### Dimensions / Weight

See page 4

#### Finish

Black or white painted enclosure

White enclosure does not include handles

#### Options

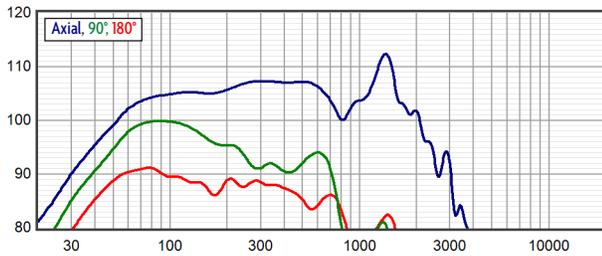
Terminal strip input, Custom color finish,

Weather-resistant (WR) enclosure & hardware

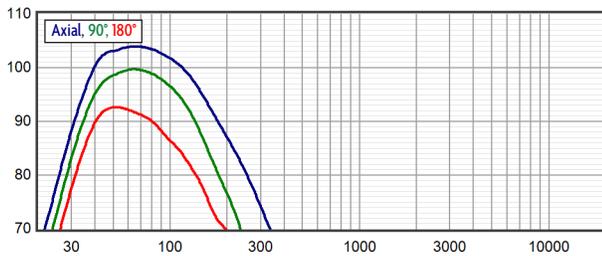


product specification

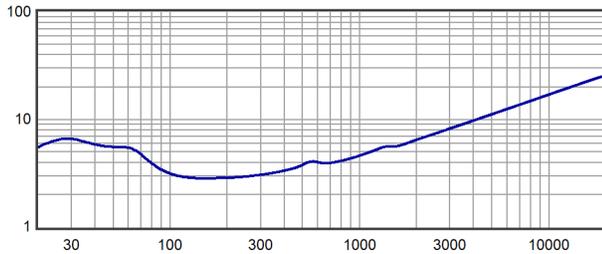
Axial Sensitivity (dB SPL, 2.00 V @ 1 m, half space)<sup>7,8</sup>



Axial Processed Response (dB, half space)<sup>7,9</sup>



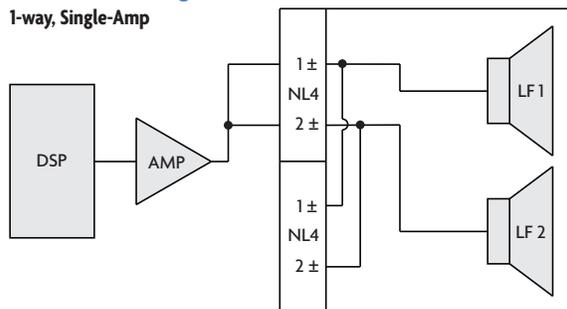
Impedance (ohms)



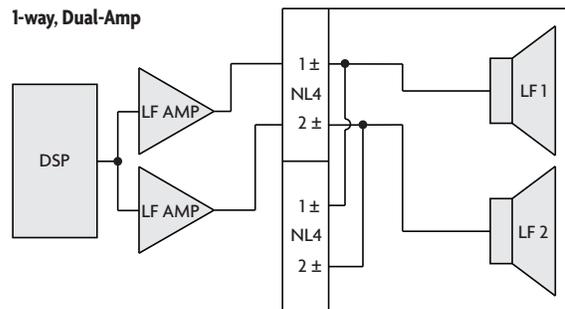


### Connection Diagrams

#### 1-way, Single-Amp



#### 1-way, Dual-Amp



### Mechanical Specification Drawings

2D and 3D DWG dimensional drawings are available for download at [www.fulcrum-acoustic.com/support](http://www.fulcrum-acoustic.com/support).

### Notes

- <sup>1</sup> **Performance Specifications** All acoustic specifications rounded to nearest whole number. External DSP with Fulcrum Acoustic-provided settings is required to achieve the specified performance.
- <sup>2</sup> **Operating Range** The frequency range within which the processed response is within 10 dB of the average.
- <sup>3</sup> **Power Handling** Based on the AES power handling of the transducers.
- <sup>4</sup> **Nominal Sensitivity** The 1-meter-referenced SPL produced by a 1 watt band limited pink noise signal, with no processing applied.
- <sup>5</sup> **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.
- <sup>6</sup> **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.
- <sup>7</sup> **Resolution** All response graphs are subjected to 1/6 octave cepstral smoothing with a gaussian weighting function.
- <sup>8</sup> **Axial Sensitivity** The SPL plotted against frequency for a 1 watt swept sine wave, referenced to 1 m with no signal processing.
- <sup>9</sup> **Axial Processed Response** The axial magnitude response with recommended signal processing applied.