



# CS121

## 21 inch Subcardioid Subwoofer



### Overview

The CS121 is a subcardioid subwoofer module intended for permanent installation in a wide range of venues. It includes a single, high power 21 inch direct-radiating woofer in a compact enclosure. A variety of mounting points facilitate suspension via shoulder eye bolts or a yoke bracket.

The CS121 incorporates Fulcrum's patent-pending *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 CS121 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-amplified w/ DSP

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

29 Hz to 143 Hz

#### Nominal Beamwidth

Subcardioid (10 dB rear rejection) within operating range

#### Transducers

LF: 21.0" woofer, 6.0" voice coil; neodymium magnet

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

126 V / 2000 W @ 8 Ω

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

105 dB / 99 dB @ 2.83 V

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

144 dB / 138 dB peak  
138 dB / 132 dB continuous

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

99 dB / 93 dB @ 2.83 V

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

138 dB / 132 dB peak  
132 dB / 126 dB continuous

#### Recommended Power Amplifier

2000 W to 3000 W @ 8 Ω

### Physical Specifications

#### Connections

(2) Neutrik NL4 Speakon

Pin 1+/-: LF

Pin 2+/-: NC

#### Mounting / Suspension Points

(16) M10 eye bolt angle points

(4) M12 yoke points

#### Dimensions / Weight

See page 4

#### Finish

Black painted enclosure w/ matte black grille

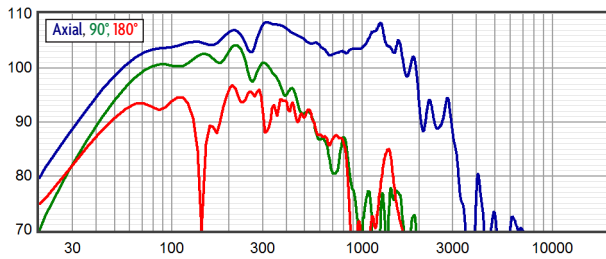
### Options

Terminal strip input, Custom color finish

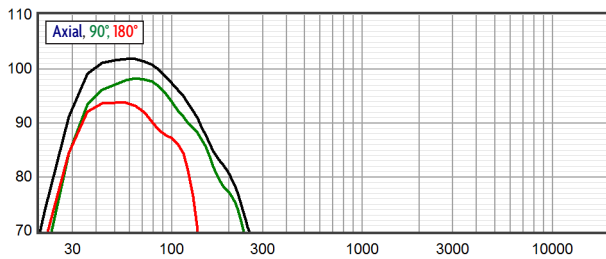


## product specification

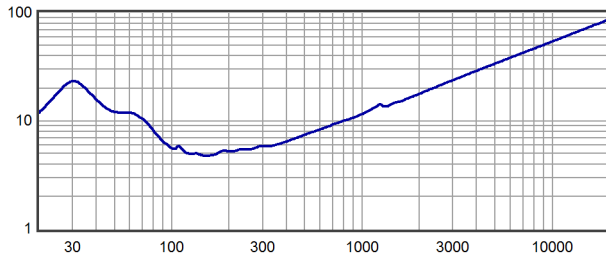
Sensitivity (dB SPL, 2.83 V @ 1 m, half space)<sup>7,8</sup>



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



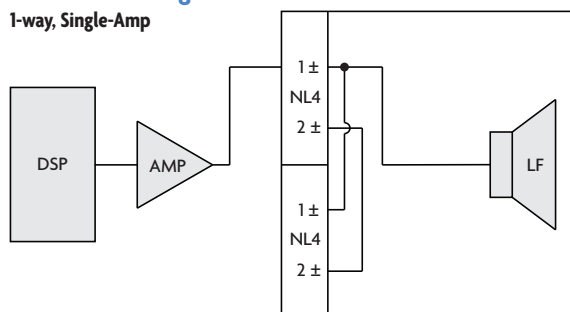
Impedance (ohms)





### Connection Diagram

1-way, Single-Amp

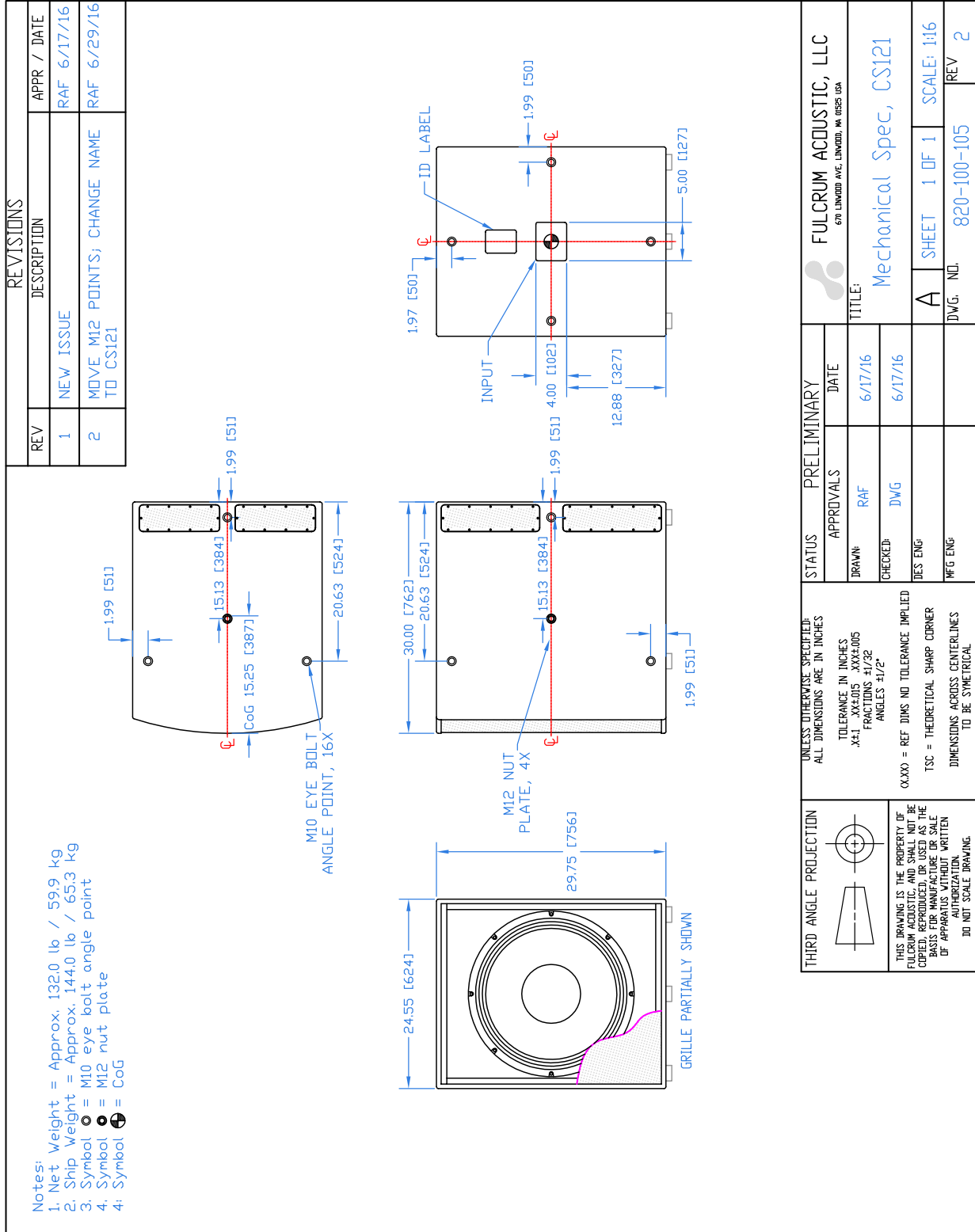


### Mechanical Specification Drawings

2D and 3D DXF 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.



Drawing is reduced. Do not scale.