

CS121v2-WR

21 inch Subcardioid Subwoofer



Overview

The CS121v2-WR is a subcardioid subwoofer module intended for permanent installation in a wide range of outdoor venues. It includes a single, high power 21 inch direct-radiating woofer in a compact, IP55 weather-resistant enclosure. A variety of mounting points facilitate suspension via user-supplied shoulder eye bolts or an optional yoke bracket.

The CS121v2 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 CS121v2 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 Specifications¹

Operating Mode

Single-amplified w/ DSP

Operating Range²

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 Impedance³

126 V / 2000 W @ 8 Ω

Nominal Sensitivity @ Input Voltage⁴ (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 Voltage⁵ (half / whole space)

99 dB / 93 dB @ 2.83 V

Equalized Maximum SPL⁶ (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

(1) Terminal Strip
Pin 1+/-: LF
Pin 2+/-: No Connection

Mounting / Suspension Points

(16) M10 x 1.5 eye bolt angle points, (2) M12 x 1.75 yoke points

Dimensions / Weight

See page 4

Finish

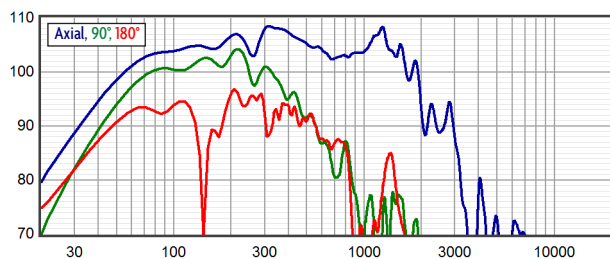
Black painted enclosure w/ matte black grille

Options

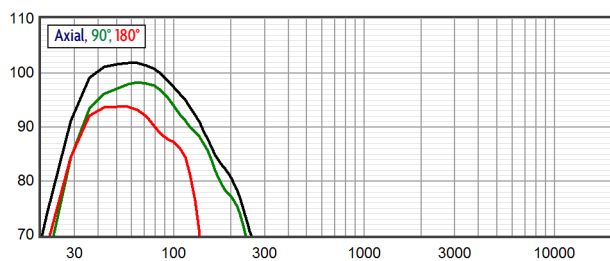
YK-FH15 Ceiling Mount Yoke Bracket, Custom color finish

preliminary product specification

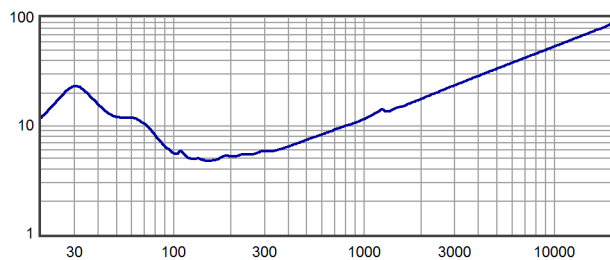
Sensitivity (dB SPL, 2.83 V @ 1 m, half space)^{7,8}



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



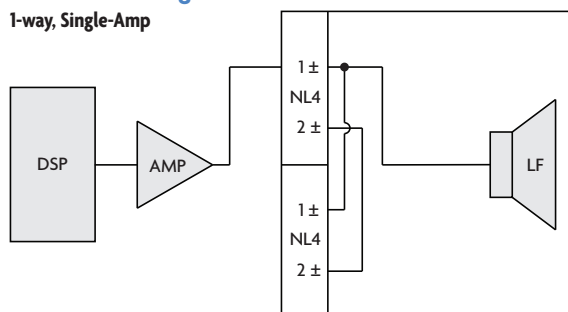
Impedance (ohms)



preliminary product specification

Connection Diagram

1-way, Single-Amp



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.



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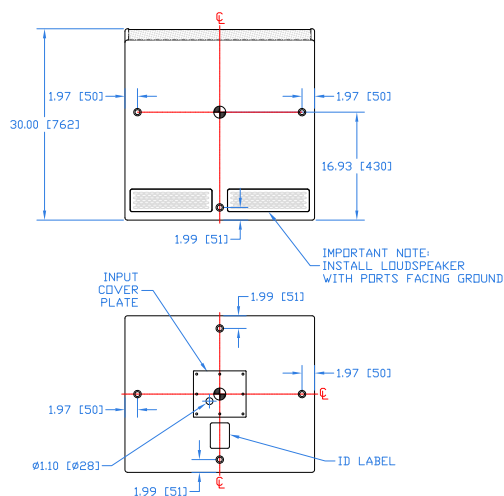
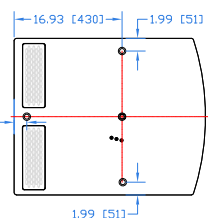
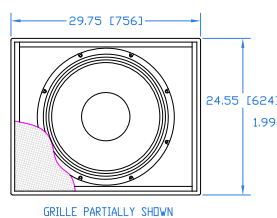
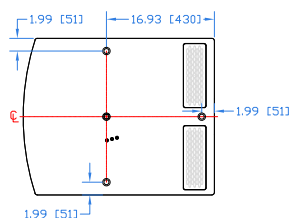
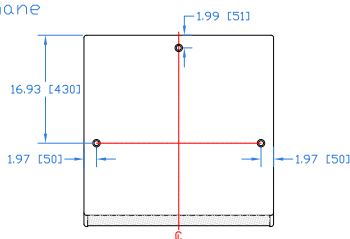
preliminary product specification

Notes:

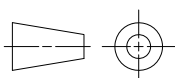
1. Net Weight <= Approx. 132.0 lb / 59.9 kg
2. Symbol = M10x1.5 eye bolt angle point
3. Symbol = M12x1.75 nut plate
4. Symbol = CoG
5. Optional YK-FH15 Yoke Bracket attaches to provided M12 nut plates
6. Symbol = Index plate mounting points for optional yoke Bracket
7. Enclosure construction:
Fiberglass Reinforced Polyurethane

REVISIONS

REV	DESCRIPTION	APPR / DATE
1	NEW ISSUE	RAF 01/22/25
2	ADD MISSING M10 POINT TO BTM VIEW	RAF 01/21/26



THIRD ANGLE PROJECTION



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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 SYMMETRICAL

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APPROVALS	DATE
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TITLE: Mechanical Spec,
CS121v2-WR

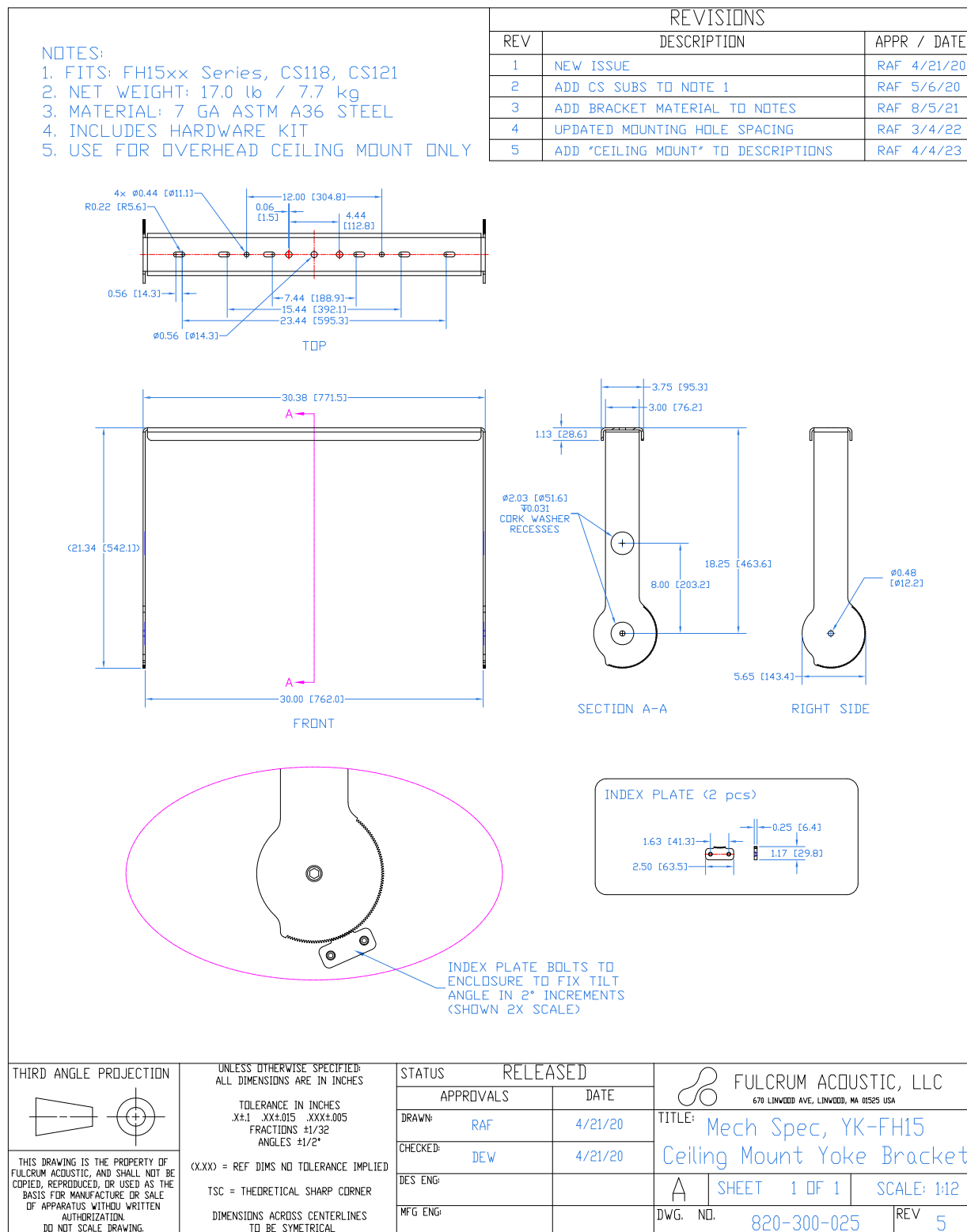
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optional accessory

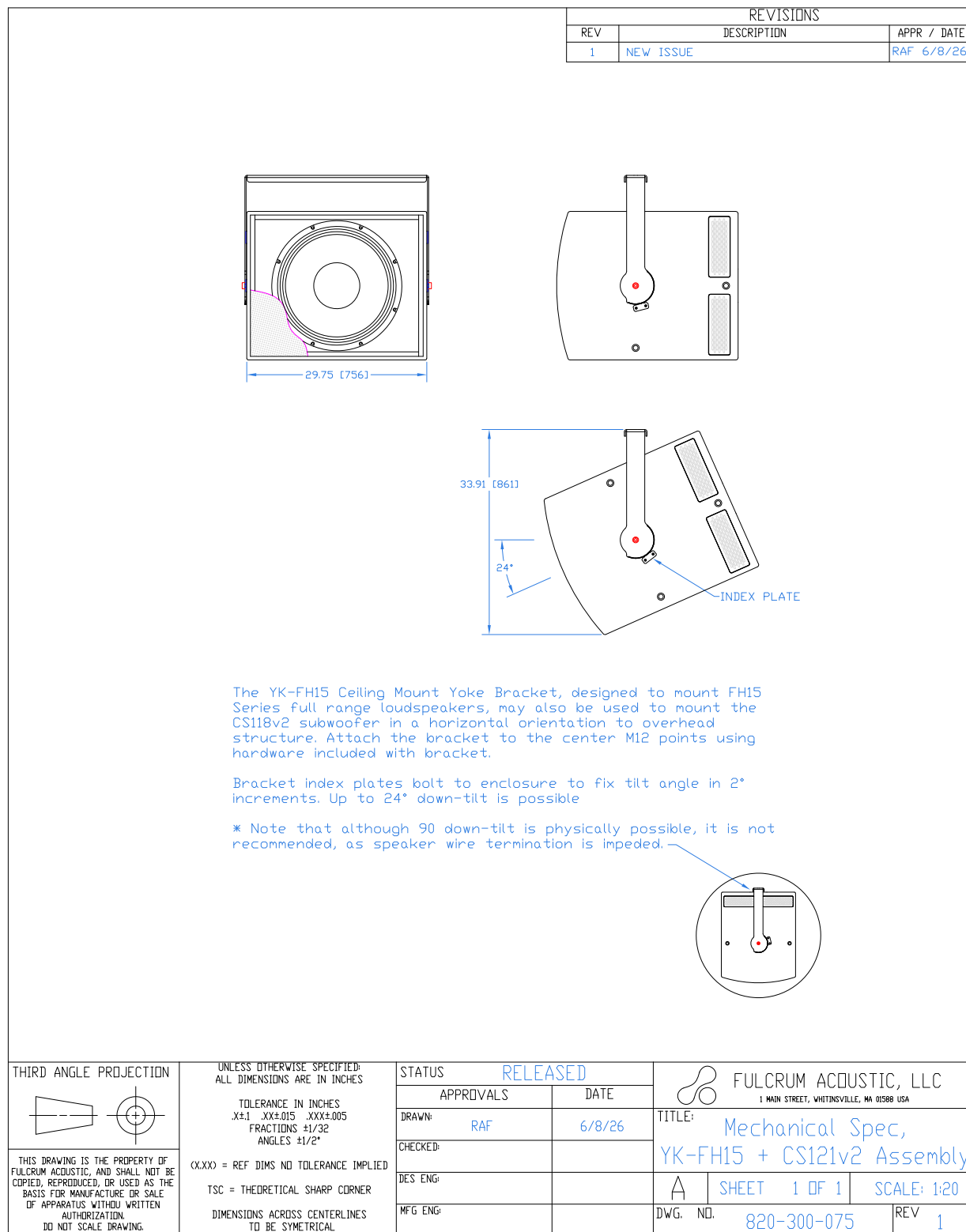


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