



# FLS115

## 15 inch Subcardioid Subwoofer



### Overview

The FLS115 is a subcardioid line array subwoofer module intended for permanent installation in a wide range of venues. It includes a single, high power 15 inch direct-radiating woofer in a compact enclosure. The FLS115's rigging is designed to easily attach to the FL283 subcardioid line array module. The enclosure is shaped to accommodate up to 20 degrees of splay between adjacent enclosures, allowing for more sharply curved arrays than comparable line array subwoofers. Up to twelve modules may be suspended with a 10:1 design factor.

The FLS115 incorporates Fulcrum's patent-pending *Passive Cardioid Technology™* to overcome one of the major challenges of most line arrays: excessive rear LF radiation. Unlike active cardioid loudspeakers, Fulcrum's passive cardioid technology does not require an additional amplifier channel or additional enclosure volume to achieve its impressive low frequency directional control—6 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 as a curved line array.

Fulcrum Acoustic's **TQ™** processing is an integral part of the FLS115 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>

31 Hz to 135 Hz

#### Nominal Beamwidth

Subcardioid (6 dB rear rejection) within operating range

#### Transducers

LF: 15.0" woofer, 4.5" voice coil; neodymium magnet

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

110 V / 1500 W @ 8 Ω

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

100 dB / 94 dB @ 2.83 V

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

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

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

93 dB / 87 dB @ 2.83 V

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

131 dB / 125 dB peak  
125 dB / 119 dB continuous

#### Recommended Power Amplifier

1500 W to 2250 W @ 8 Ω

### Physical Specifications

#### Connections

(2) Neutrik NL4 Speakon

Pin 1+/-: LF

Pin 2+/-: NC

#### Rigging System

Material: High grade steel & aluminum w/ anti-corrosion coating

Vertical Splay: 0° to 20° in 2° increments

Design factor: 12 loudspeakers @ 10:1

#### Dimensions / Weight

See page 4

#### Finish

Black painted enclosure w/ matte black grille

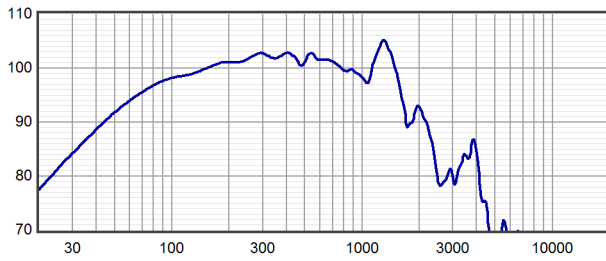
#### Accessories

Fly bar kit, Pull-up bar kit

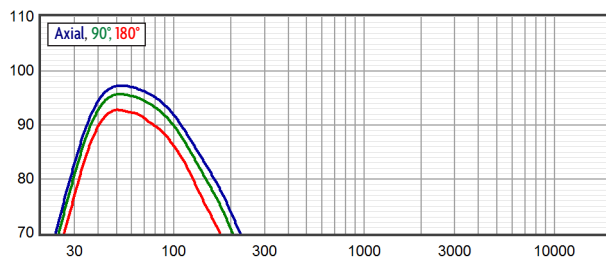


## product specification

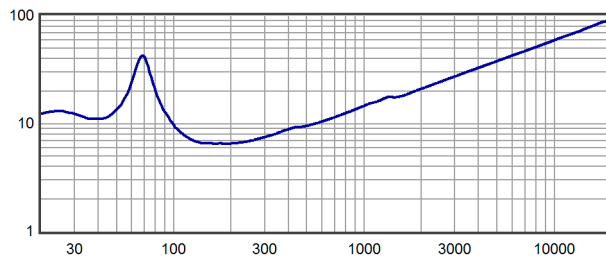
Axial Sensitivity (dB SPL, 2.83 V @ 1 m, half space)<sup>7,8</sup>



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



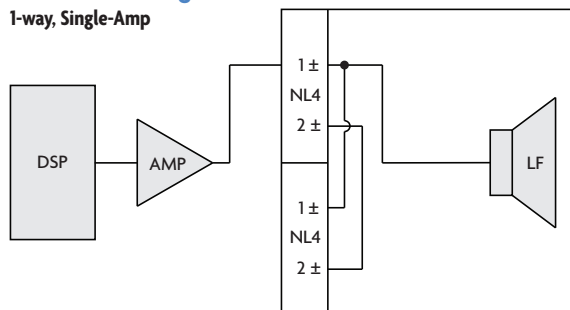
Impedance (ohms)





### Connection Diagram

1-way, Single-Amp



### Mechanical Specification Drawings

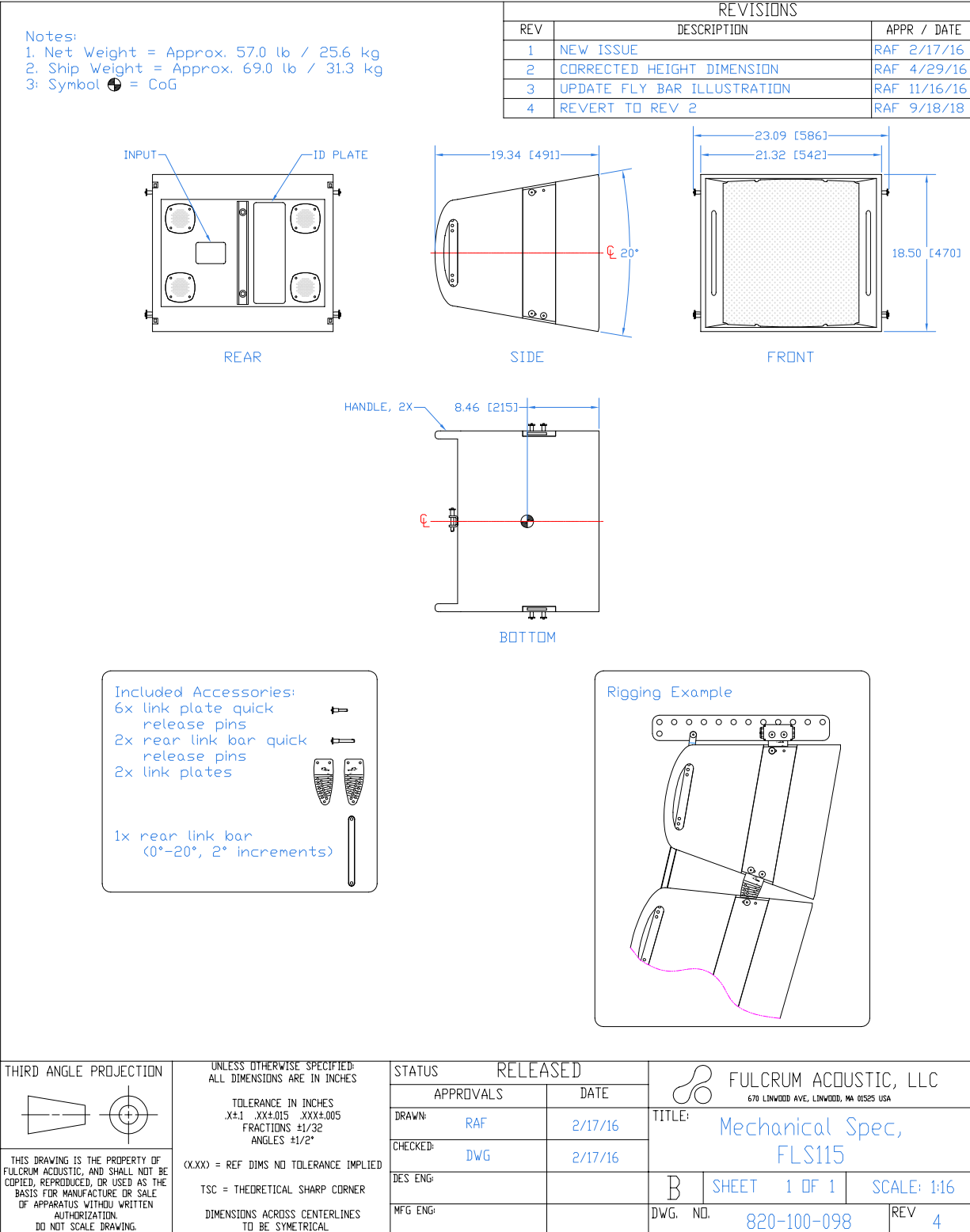
2D and 3D DXF dimensional drawings are available for download at [www.fulcrum-acoustic.com/support](http://www.fulcrum-acoustic.com/support).

### 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.



product specification



Drawing is reduced. Do not scale.

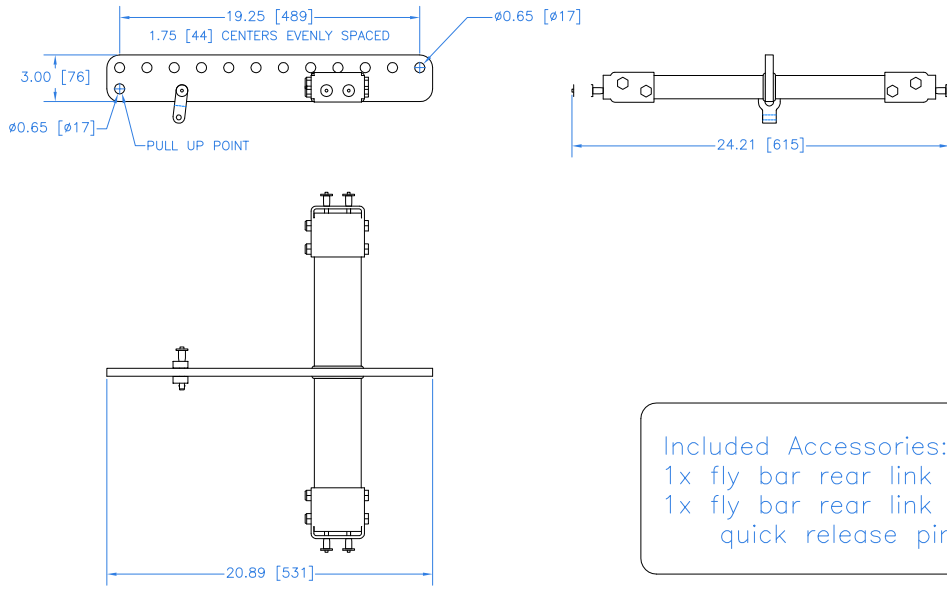


optional accessory

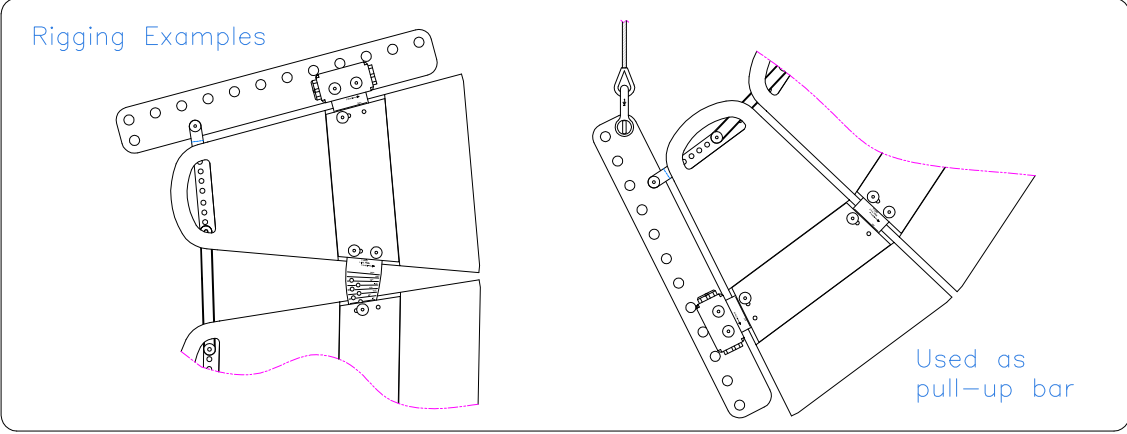
Notes:

1. Net Weight = Approx. 20.0 lb / 9.1 kg
2. Ship Weight = Approx. 25.0 lb / 11.3 kg

REVISIONS		
REV	DESCRIPTION	APPR / DATE
1	NEW ISSUE	RAF 9/16/15
2	UPDATE TO POLAR FOCUS FRAME	RAF 11/16/16
3	REVERT TO REV 1	RAF 9/18/18



Included Accessories:  
 1x fly bar rear link   
 1x fly bar rear link   
 quick release pin



THIRD ANGLE PROJECTION

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UNLESS OTHERWISE SPECIFIED:  
 ALL DIMENSIONS ARE IN INCHES

TOLERANCE IN INCHES  
 .XX±.015 .XXX±.005  
 FRACTIONS ±1/32  
 ANGLES ±1/2°

(XXX) = REF DIMS NO TOLERANCE IMPLIED

TSC = THEORETICAL SHARP CORNER

DIMENSIONS ACROSS CENTERLINES TO BE SYMMETRICAL

STATUS	RELEASED	
APPROVALS	DATE	
DRAWN: RAF	9/16/15	
CHECKED: DWG	9/16/15	
DES ENG:		
MFG ENG:		

FULCRUM ACOUSTIC, LLC  
 670 LINWOOD AVE, LINWOOD, MA 01925 USA

TITLE: Mechanical Spec, FL283 Fly Bar

A SHEET 1 OF 1 SCALE: 1:8

DWG. NO. 045-300-001 REV 3

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