CX896

8 inch Coaxial Loudspeaker

tq install™ SERIES

Overview

The CX896 is a coaxial loudspeaker that provides the output capability of a traditional 8 inch 2-way, horn-loaded-HF loudspeaker, but in a much more compact enclosure. Its coaxial transducer can be rotated in 45° increments, which allows its coverage to be tailored to best suit an application's requirements. The enclosure's 30° vertically trapezoidal shape allows mounting very close to ceilings or under balconies with minimal effect on sight lines.

Fulcrum Acoustic's **TQ**™ processing is an integral part of the CX896 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.

The CX896's 90° x 60° high frequency horn is particularly effective for fill systems where targeted pattern control is desirable. In addition, its 16 ohm nominal impedance makes it an excellent solution for high fidelity, foreground distributed systems where a high loudspeaker-to-amplifier ratio is desirable.

Performance Specifications[1]

Operating Mode
Single-amplified w/ DSP

Operating Range [2]
84 Hz to 20 kHz

Nominal Beamwidth (rotatable)
90° x 60°

Transducers
HF/LF: Coaxial 1.7" titanium diaphragm compression driver; 8.0" woofer, 2.0" voice coil; single neodymium magnet

Power Handling @ Nominal Impedance [3]
63 V / 250 W @ 16 Ω

Nominal Sensitivity @ Input Voltage [4] (whole space)
103 dB @ 4.00 V

Nominal Maximum SPL (peak / continuous)
133 dB / 127 dB

Equalized Sensitivity @ Input Voltage [5]
95 dB @ 4.00 V

Equalized Maximum SPL [6] (peak / continuous)
125 dB / 119 dB

Recommended Power Amplifier
250 W to 500 W @ 16 Ω

Physical Specifications

Connections
(2) Neutrik NL4 Speakon
Pin 1+/-: Full Range
Pin 2+/-: NC

Mounting / Suspension Points
(2) M6 yoke points, (2) M6 pull back points,
(4) M6 t-nuts for third-party pan/tilt mounts

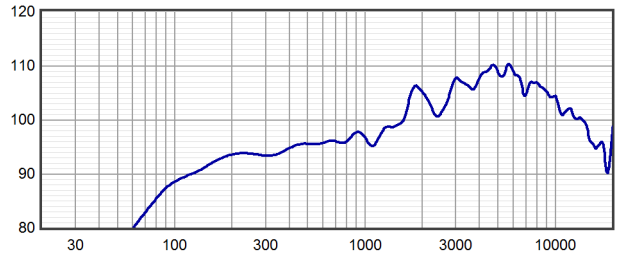
Dimensions / Weight
See page 5

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

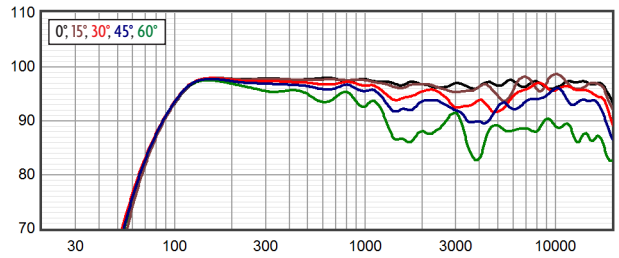
Options

CX896 U Bracket [YK1408], Terminal strip input,
Custom color finish, Weather-resistant (WR) enclosure

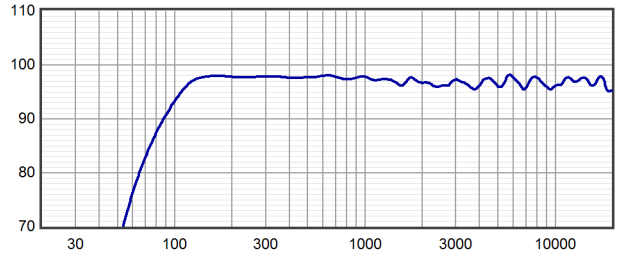
Axial Sensitivity (dB SPL, 4.00 V @ 1 m)[7, 8]



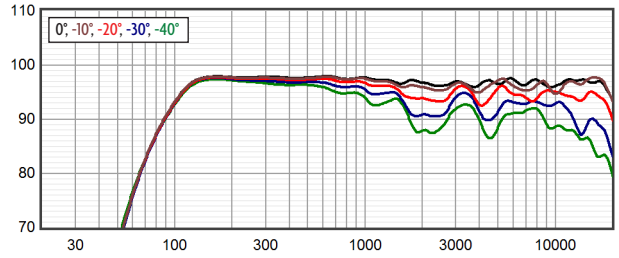
Horizontal Off Axis Response[7, 11]



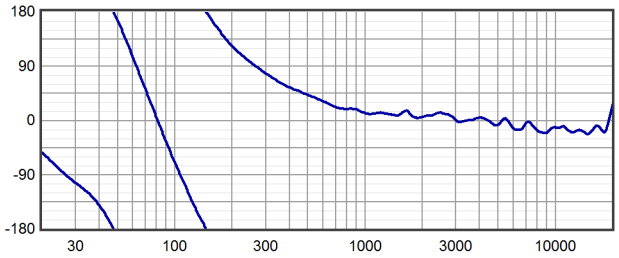
Axial Processed Response (dB)[7, 9]



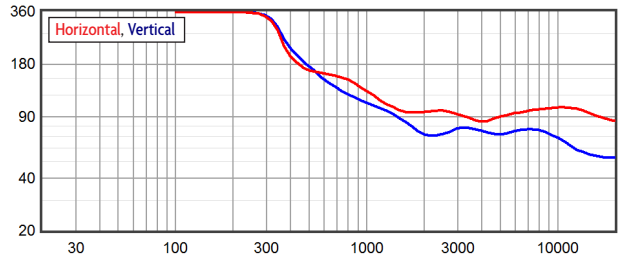
Vertical Off Axis Response[7, 11]



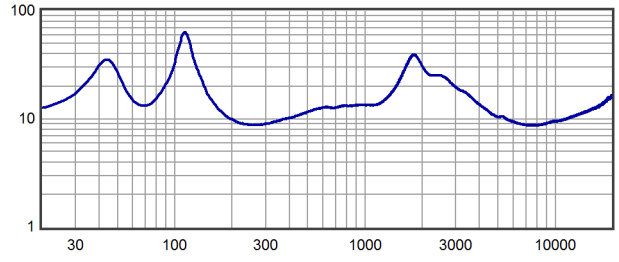
Axial Processed Phase Response (degrees)[7, 10]



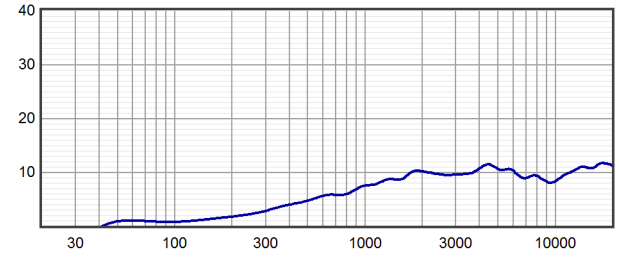
Beamwidth[7, 12]



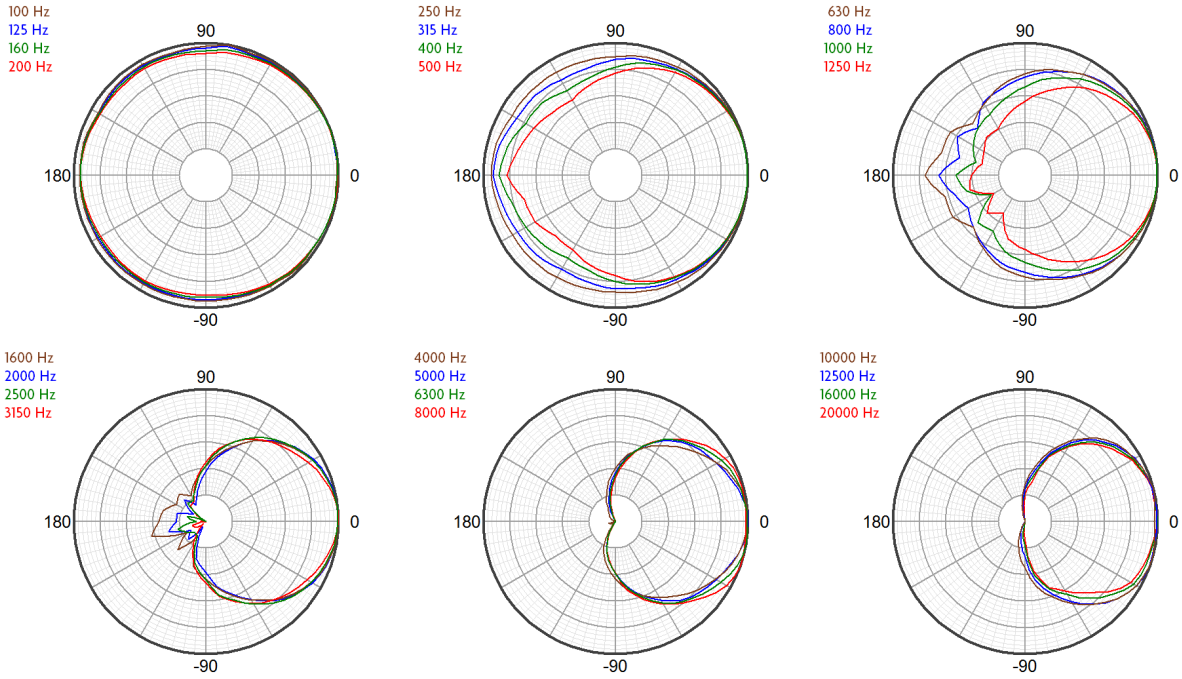
Impedance (ohms)



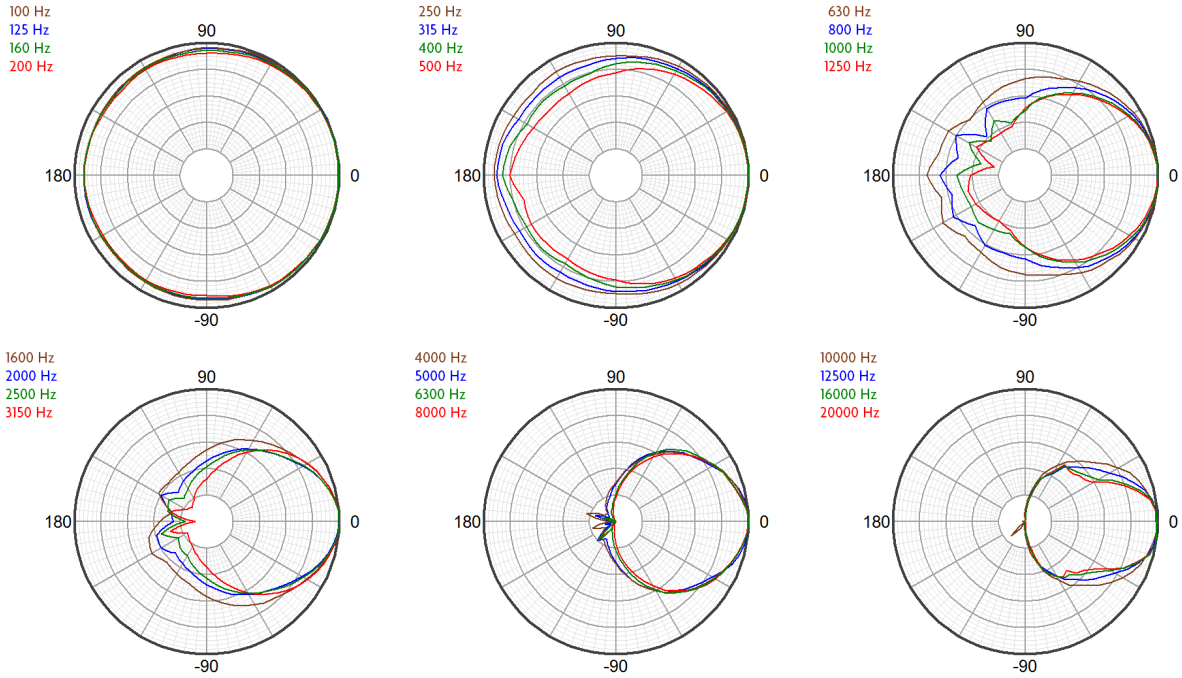
Directivity Index (dB)[13]



Horizontal Polar Response (30 dB Scale, 6 dB per Major Division)



Vertical Polar Response (30 dB Scale, 6 dB per Major Division)



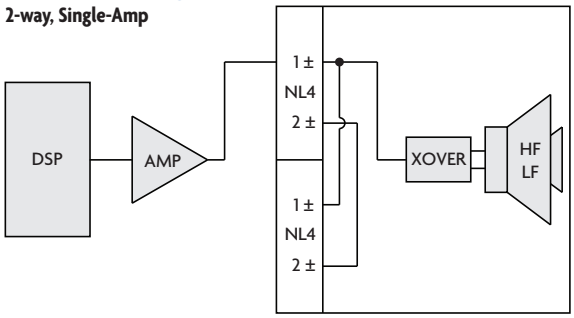
Technologies

The CX896 includes a neodymium-based coaxial transducer which allows the compression driver diaphragm to be positioned very close to the woofer voice coil. This allows the system to maintain coherent summation and consistent off axis response through a passive crossover, allowing it to be powered with a single amplifier channel.

The compression driver's 1.75 inch diameter diaphragm operates to a relatively low frequency. This allows the high frequency horn to smooth the polar response of the low frequency section in the frequency range where the horn would otherwise cause shadowing. The coaxial woofer's large radiating surface works in conjunction with the HF horn to improve directional control at the low frequency limit of the horn's operating range, increasing directional control beyond what can be accomplished by the horn alone.

Connection Diagram

2-way, Single-Amp



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.*

[10] **Axial Processed Phase Response** *The axial phase response with recommended signal processing applied, and latency removed.*

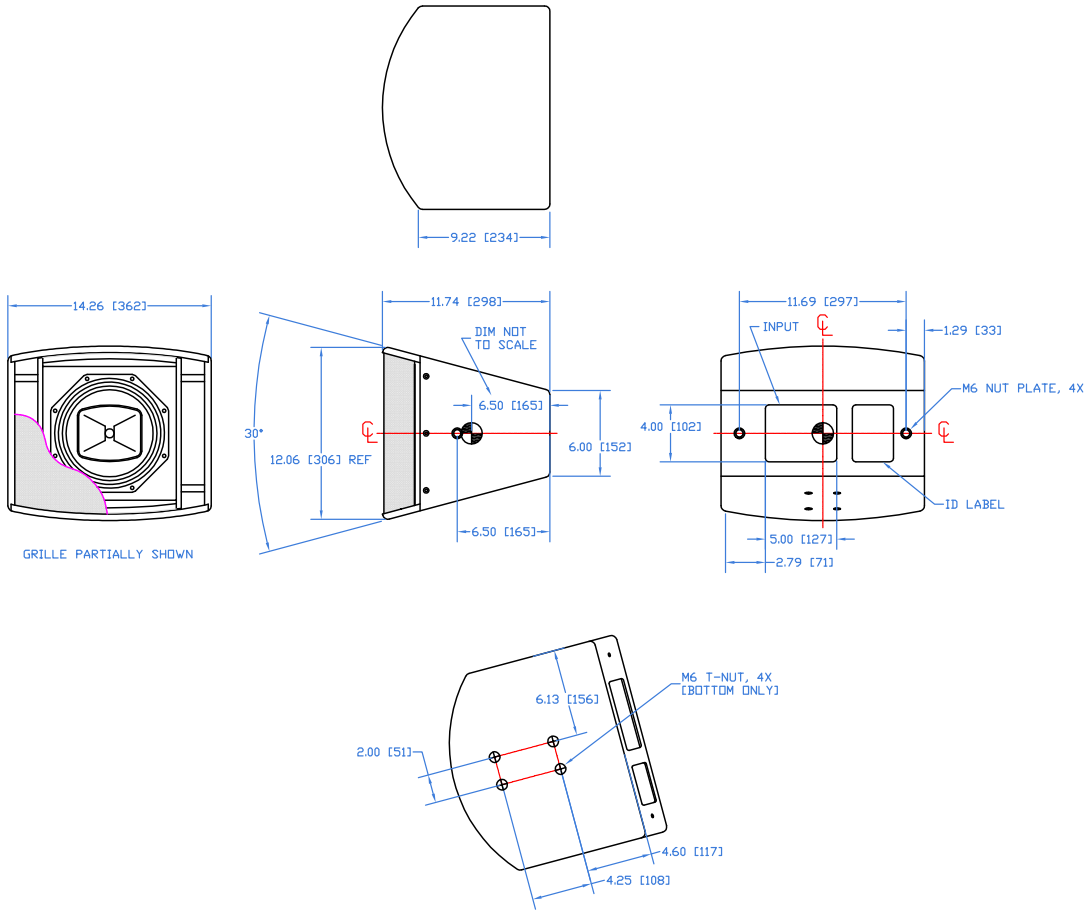
[11] **Horizontal / Vertical Off Axis Responses** *The magnitude response at various angles off axis, with recommended signal proceessing applied.*

[12] **Beamwidth** *The angle between the -6 dB points in a loudspeaker's polar response.*

[13] **Directivity Index (Di)** *The ratio of the on-axis sound pressure squared to the spherical average of the sound pressure squared at a particular frequency expressed in dB. To convert the directivity index to directivity factor (Q) use the formula* $10^{Di/10}$.

Notes:
1. Net Weight = Approx. 17.0 lb / 7.7 kg
2. Ship Weight = Approx. 22.0 lb / 10.0 kg
3. Symbol ⊙ = M6 nut plate
4. Symbol ⊕ = M6 t-nut for third party pan/tilt mounts
5. Symbol ◓ = CoG

REVISIONS		
REV	DESCRIPTION	APPR / DATE
1	RELEASE TO PRODUCTION	RAF 11/6/09
2	CORRECT REAR HEIGHT DIMENSION	RAF 12/11/09
3	ADD SHIPPING WEIGHT	RAF 12/5/11
4	OMNIMOUNT TO "THIRD PARTY" IN NOTE 4	RAF 1/13/12

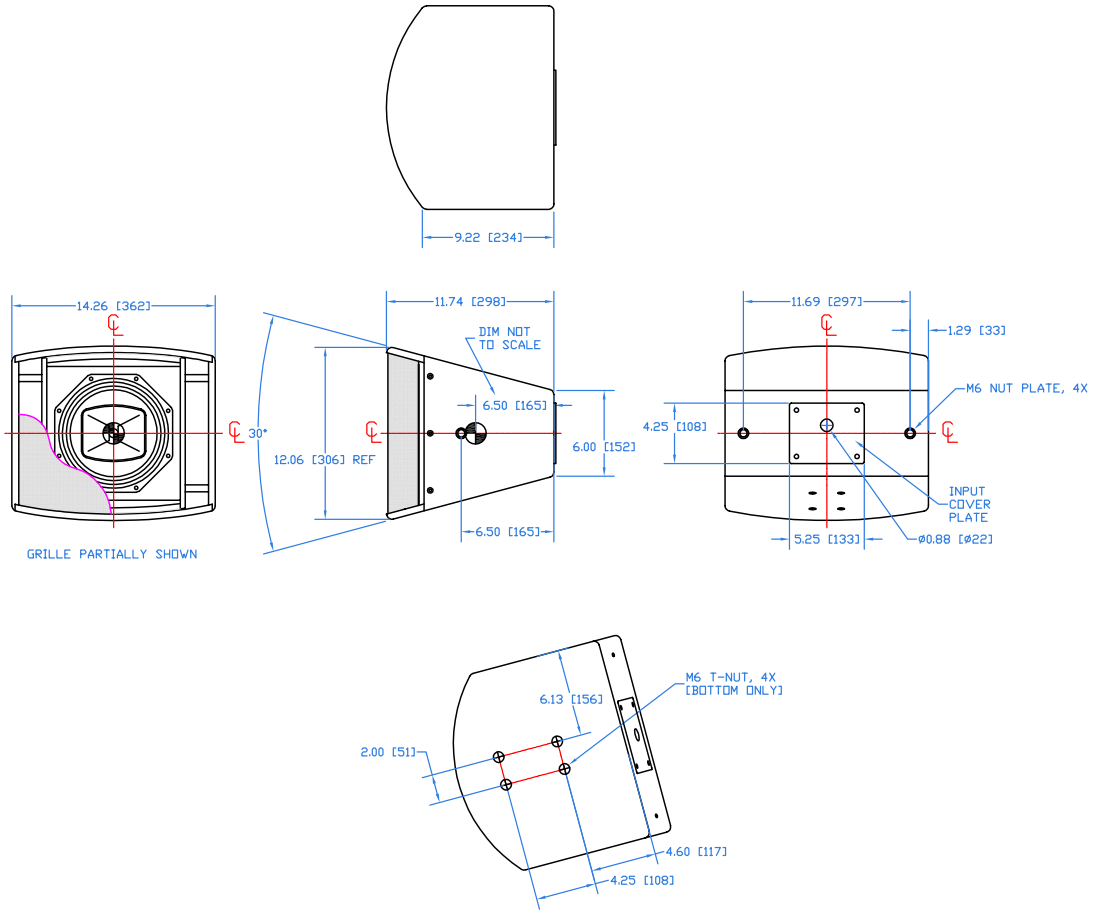


THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCE IN INCHES .X±.1 .XX±.015 .XXX±.005 FRACTIONS ±1/32 ANGLES ±1/2° (X.XX) = REF DIMS NO TOLERANCE IMPLIED TSC = THEORETICAL SHARP CORNER DIMENSIONS ACROSS CENTERLINES TO BE SYMETRICAL	STATUS RELEASED	FULCRUM ACOUSTIC, LLC 670 LINWOOD AVE, LINWOOD, MA 01525 USA
THIS DRAWING IS THE PROPERTY OF FULCRUM ACOUSTIC, AND SHALL NOT BE COPIED, REPRODUCED, OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF APPARATUS WITHOU WRITTEN AUTHORIZATION. DO NOT SCALE DRAWING.		APPROVALS / DATE DRAWN: DWG 2/10/09 CHECKED: RAF 6/12/09 DES ENG: MFG ENG:	TITLE: Mechanical Spec, CX896 A SHEET 1 OF 1 SCALE: 1:12 DWG. NO. 820-100-026 REV 4

Drawing is reduced. Do not scale.

Notes:
1. Net Weight = Approx. 17.5 lb / 7.9 kg
2. Ship Weight = Approx. 22.5 lb / 10.2 kg
3. Symbol ⊙ = M6 nut plate
4. Symbol ⊕ = M6 t-nut for third party pan/tilt mounts
5. Symbol ⊕ = CoG

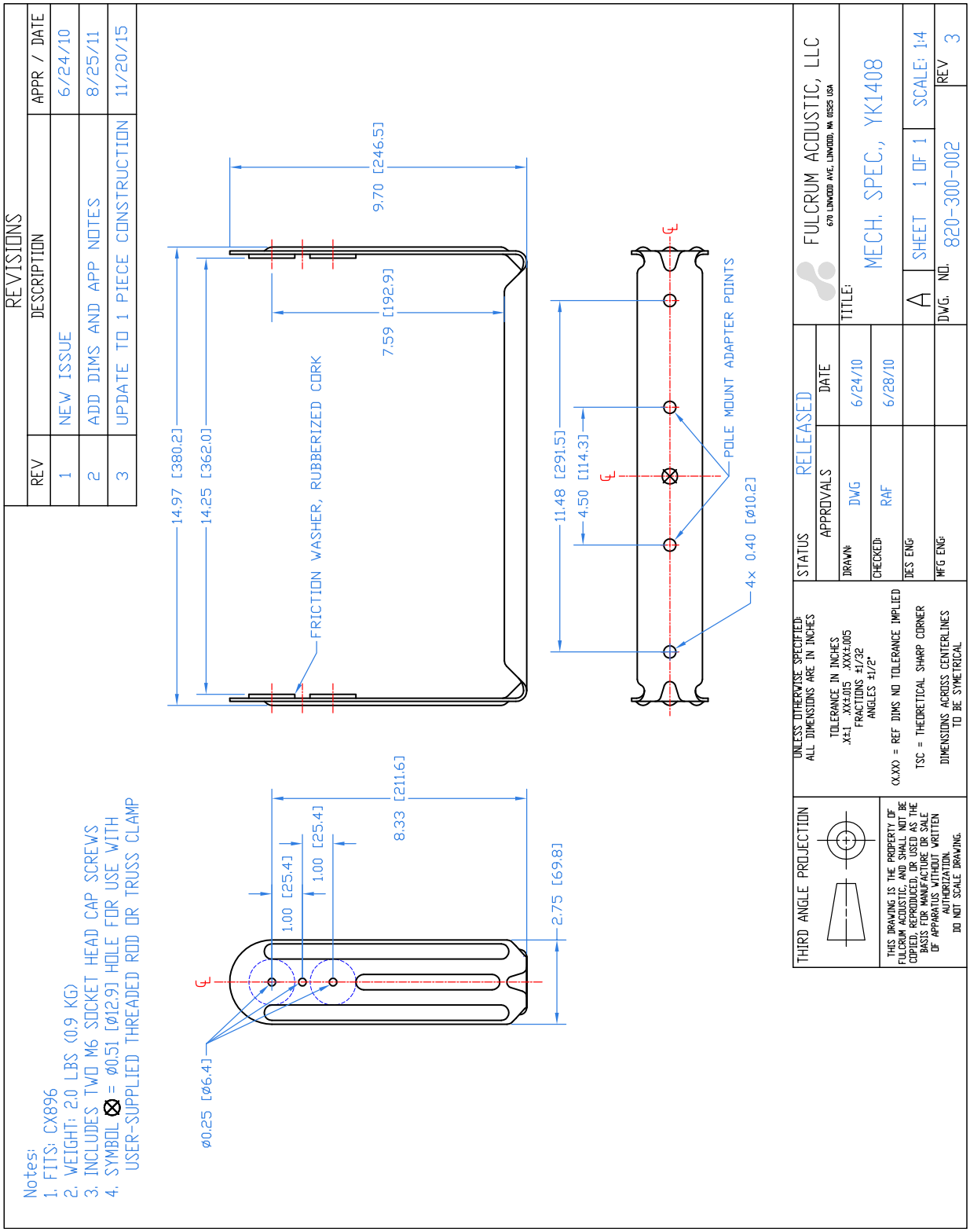
REVISIONS		
REV	DESCRIPTION	APPR / DATE
1	NEW ISSUE	RAF 3/19/15
2	ADD COVER PLATE DETAIL	RAF 12/01/15



THIRD ANGLE PROJECTION	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 SYMETRICAL	STATUS RELEASED	FULCRUM ACOUSTIC, LLC 670 LINWOOD AVE, LINWOOD, MA 01525 USA
THIS DRAWING IS THE PROPERTY OF FULCRUM ACOUSTIC, AND SHALL NOT BE COPIED, REPRODUCED, OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF APPARATUS WITHOU WRITTEN AUTHORIZATION. DO NOT SCALE DRAWING.		APPROVALS / DATE DRAWN: RAF 3/19/15 CHECKED: DWG 3/19/15 DES ENG: MFG ENG:	TITLE: Mechanical Spec, CX896-WR A SHEET 1 OF 1 SCALE: 1:12 DWG. NO. 820-100-084 REV 2

Drawing is reduced. Do not scale.

optional accessory



Drawing is reduced. Do not scale.