



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 and 90° x 60° horn can be rotated in 45° increments, which allows its coverage to be tailored to best suit an application's requirements. The enclosure's vertically trapezoidal shape allows it to be installed very close to ceilings or beneath large arrays 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 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. Its unique shape and compact size complements many architectural styles, which facilitates acceptance by interior designers and architects. This makes it the perfect choice for houses of worship, theaters, restaurants, transportation facilities, theme parks, and more.

Performance Specifications¹

Operating Mode

Single-amplified w/ DSP

Operating Range²

81 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 Impedance³

63 V / 250 W @ 16 Ω

Nominal Sensitivity @ Input Voltage⁴ (whole space)

104 dB @ 4.00 V

Nominal Maximum SPL (peak / continuous)

134 dB / 128 dB

Equalized Sensitivity @ Input Voltage⁵

94 dB @ 4.00 V

Equalized Maximum SPL⁶ (peak / continuous)

124 dB / 118 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 x 1.0 yoke points, (2) M6 x 1.0 pull back points

Dimensions / Weight

See page 5

Finish

Black painted enclosure w/ matte black grille, or

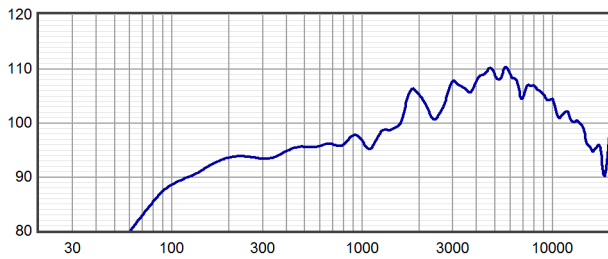
White painted enclosure w/ matte white grille

Options

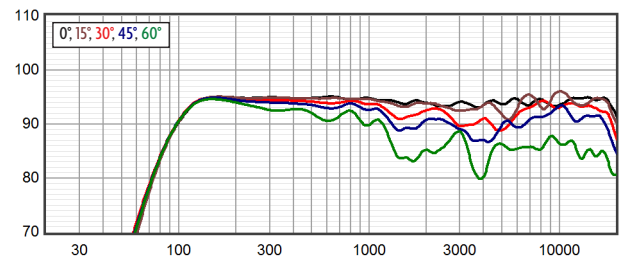
YK-CX8 yoke bracket, Terminal strip input, Custom color finish, Weather-resistant (WR) enclosure & hardware



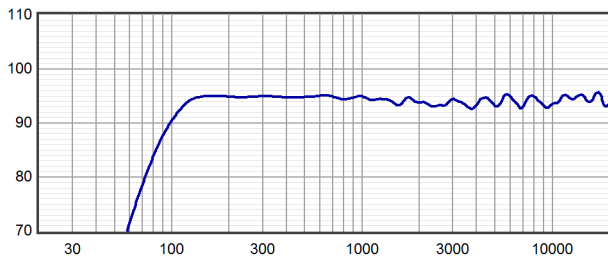
Axial Sensitivity (dB SPL, 4.00 V @ 1 m)^{7,8}



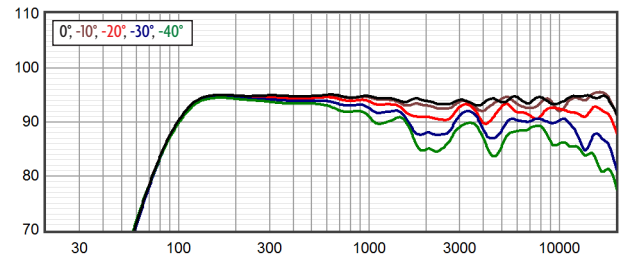
Horizontal Off Axis Response^{7,11}



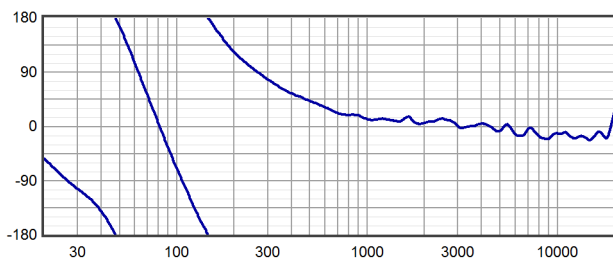
Axial Processed Response (dB)^{7,9}



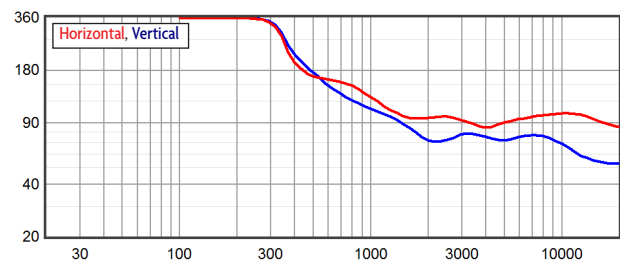
Vertical Off Axis Response^{7,11}



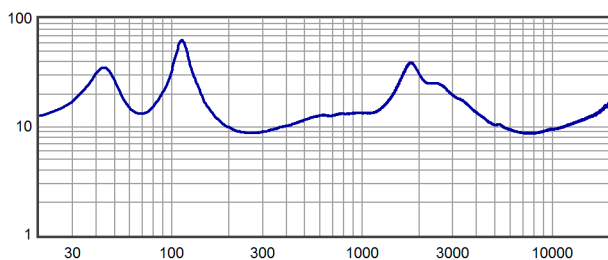
Axial Processed Phase Response (degrees)^{7,10}



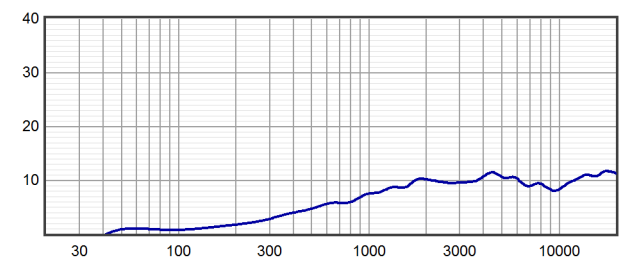
Beamwidth^{7,12}



Impedance (ohms)

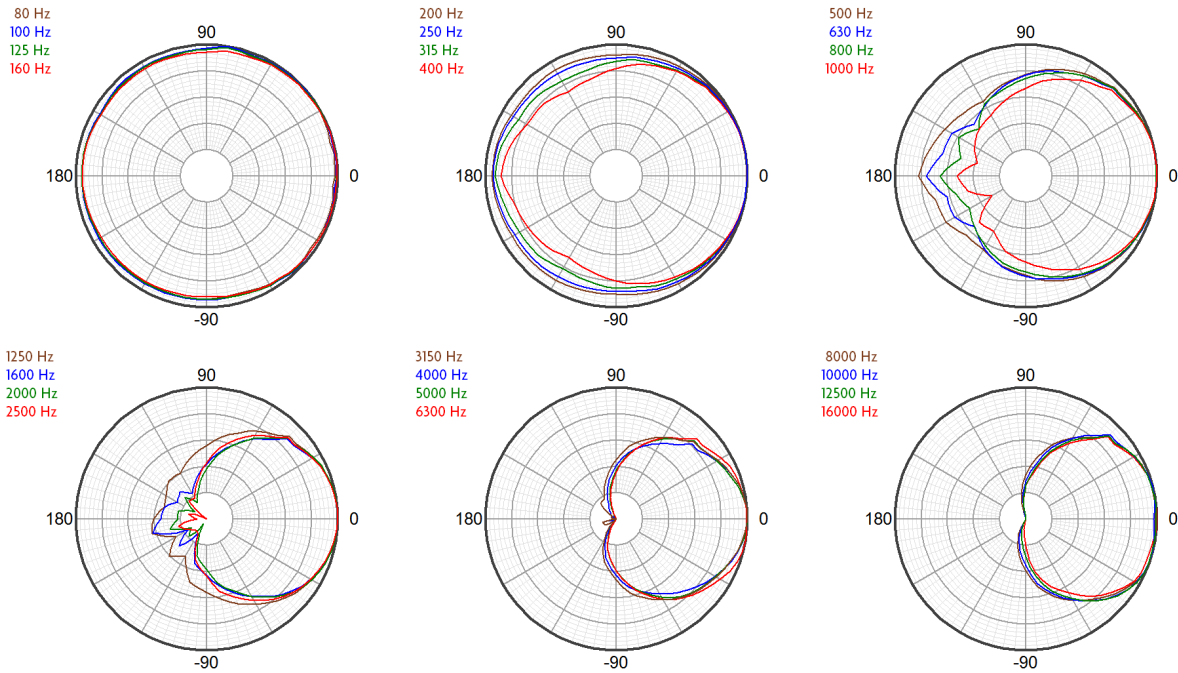


Directivity Index (dB)¹³

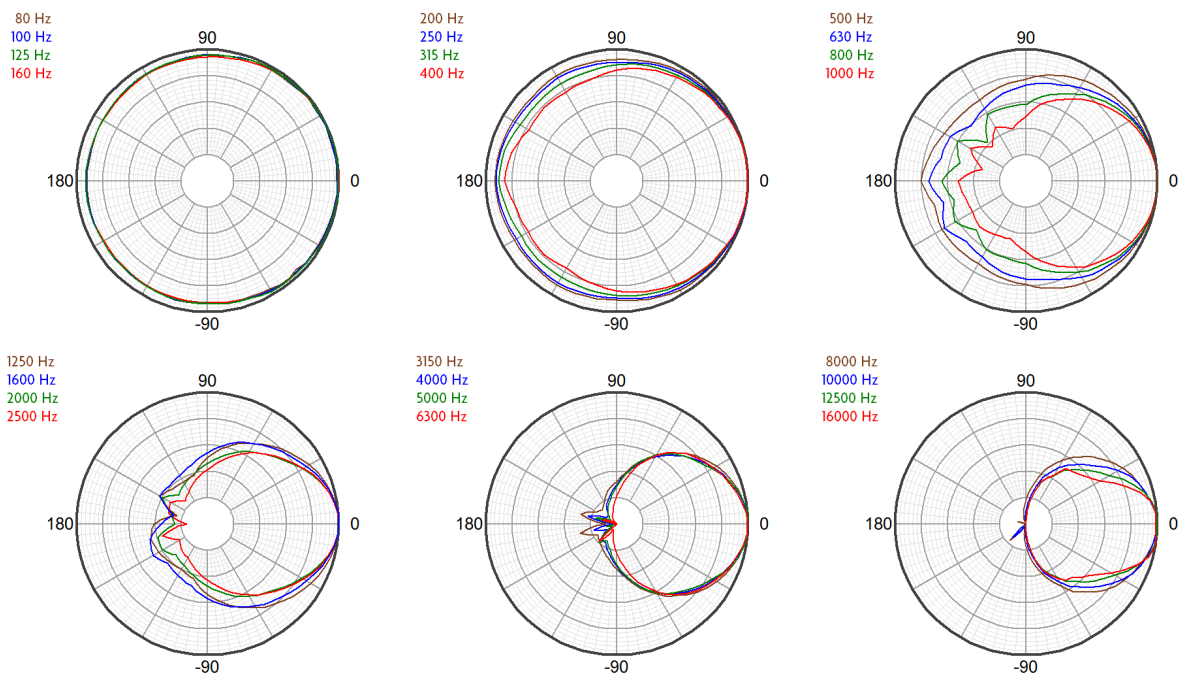




Horizontal Polar Response (30 dB Scale, 6 dB per Major Division)



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





Technologies

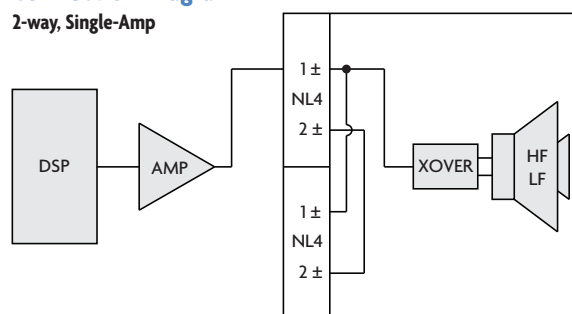
The CX896 includes a neodymium-based coaxial transducer which allows the compression driver diaphragm to be positioned very close to the woofer voice coil. This allows the system to maintain coherent summation and consistent off axis response through a passive crossover, allowing it to be powered with 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 DWG 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 processing 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 $10^{Di/10}$.