

product specification

VX599

5.25 inch Coaxial Loudspeaker



Overview

The VX599 is a high efficiency, high fidelity coaxial loudspeaker that is designed to augment Venueflex's active acoustics and spatial audio system. The transducer's high efficiency and horn-loaded HF compression driver give the VX599 a surprisingly high output-to-size ratio, and its broad 90° x 90° coverage is particularly effective in close quarters. The VX599's compact enclosure may be mounted close to walls or ceilings and be easily concealed for spatial audio reproduction, augmented acoustics, and active reverberation systems.

Fulcrum Acoustic's **TQ**™ processing is an integral part of the VX599 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 is provided exclusively by Venueflex signal processors.

Performance Specifications¹

Operating Mode

Single-amplified w/ DSP

Operating Range ²

100 Hz to 20 kHz

Nominal Beamwidth

90° x 90°

Transducers

HF/LF: Coaxial 1.0" diaphragm compression driver, neodymium magnet; 5.25" woofer, 1.7" voice coil, ceramic magnet

Power Handling @ Nominal Impedance ³

49 V / 150 W @ 16 Ω

Nominal Sensitivity @ Input Voltage 4 (whole space)

93 dB @ 4.00 V

Nominal Maximum SPL (peak / continuous)

121 dB / 115 dB

Equalized Sensitivity @ Input Voltage 5

85 dB @ 4.00 V

Equalized Maximum SPL ⁶ (peak / continuous)

113 dB / 107 dB

Recommended Power Amplifier

150 W to 300 W @ 16 Ω

Physical Specifications

Connections

Terminal strip input

Mounting / Suspension Points

(2) M6 x 1.0 yoke points,

(2) M6 x 1.0 nut plates for third-party pan/tilt mounts

Dimensions / Weight

See page 5

Finish

Black painted enclosure w/ matte black grille

Optional Accessory

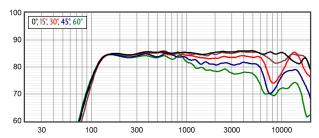
YK-RX5 Yoke Bracket



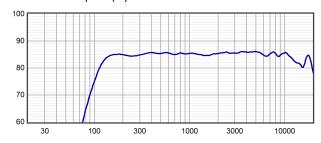
Axial Sensitivity (dB SPL, 4.00 V @ 1 m) 7, 8



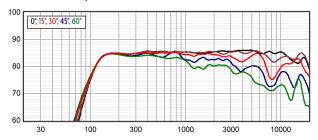
Horizontal Off Axis Response 7, 11



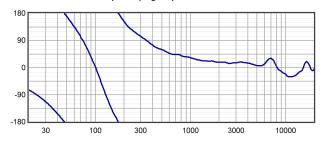
Axial Processed Response (dB)^{7, 9}



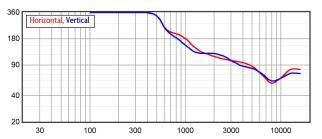
Vertical Off Axis Response 7, 11



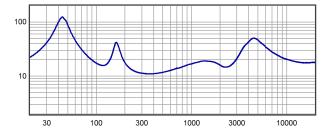
Axial Processed Phase Response (degrees) 7, 10



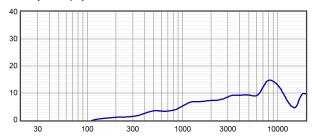
 $Beamwidth^{7,\,12}$



Impedance (ohms)

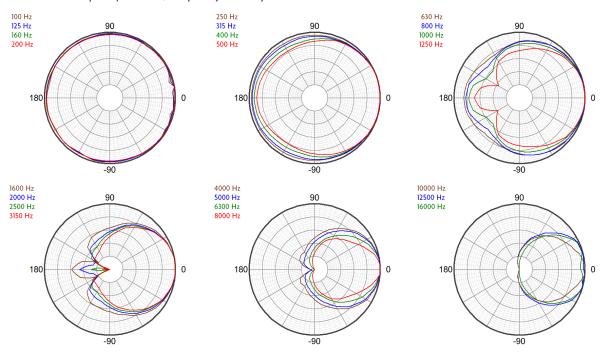


Directivity Index (dB)¹³

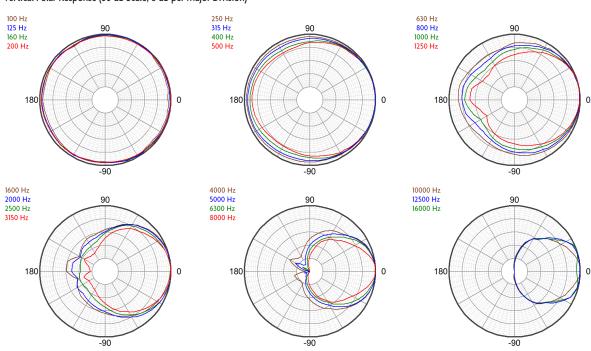




Horizontal Polar Response (30 dB Scale, 6 dB per Major Division)



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





Technologies

The VX599 includes a powerful ferrite-based low frequency section and a tightly integrated 1 inch neodymium compression driver, which positions the compression driver diaphragm very close to the woofer voice coil. This allows the system to maintain coherent summation and provide consistent off axis response through a passive crossover, allowing it to be powered with a single amplifier channel.

Connection Diagram 2-way, Single-Amp 1± TRML 2± XOVER HF LF

Mechanical Specification Drawings

2D and 3D DWG dimensional drawings are available for download at www.fulcrum-immersive.com.

2 ±

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.



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REVISIONS REV DESCRIPTION APPR / DATE **NEW ISSUE** RAF 5/23/12 1. Net Weight = Approx. 8.5 lb / 3.9 kg 2. Ship Weight = Approx. 12.5 lb / 5.7 kg 3. Symbol • = M6 nut plate 4. 2x M6 nut plates on left side for third party pan/tilt mounts 5. Symbol ⊕ = CoG -M6 NUT PLATE, 2X 3.00 [76] - 5.95 [151] -TOP - 5.60 [142] --M6 NUT PLATE, 2X -ID LABEL 3.00 [76] 4.00 [102] -INPLIT 2.84 [72] GRILLE PARTIALLY SHOWN -2.88 [73] -3.50 [89] 3.00 [76]-LEFT **FRONT RIGHT** REAR Q 3.00 [76] BOTTOM UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES RELEASED THIRD ANGLE PROJECTION **SUTAT2** FULCRUM ACOUSTIC, LLC APPROVALS DATE TOLERANCE IN INCHES .X±.1 .XX±.015 .XXX±.005 FRACTIONS ±1/32 ANGLES ±1/2* 670 LINWOOD AVE, LINWOOD, MA 01525 USA

DRAWN:

CHECKED:

DES ENG:

MFG ENG:

RAF

TITLE:

DWG. NO.

SHEET

Mechanical Spec,

VX599

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820-100-160

SCALE: 1:8

REV

5/23/12

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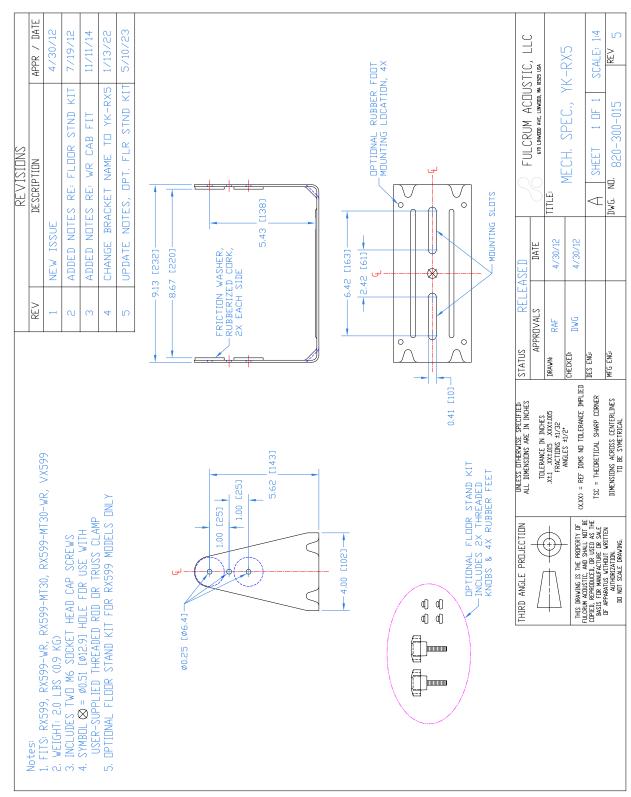
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TSC = THEORETICAL SHARP CORNER

DIMENSIONS ACROSS CENTERLINES TO BE SYMETRICAL





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