

product specification

RX699

6.5 inch Coaxial Loudspeaker

tq install™
SERIES



Overview

The RX699 is a high efficiency, high fidelity coaxial loudspeaker that provides output capability typical of a much larger loudspeaker. The transducer's high efficiency and horn-loaded HF compression driver give the RX699 a surprisingly high output-to-size ratio, and its broad 90° x 90° coverage is particularly effective in close quarters. The RX699's compact enclosure may be mounted close to walls or ceilings, under balconies, or along a stage front with minimal effect on sight lines. Its small size also allows it to be readily concealed within a venue's architecture when the loudspeaker must be hidden from view.

Fulcrum Acoustic's **TQ™** processing is an integral part of the RX699 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 RX699 is an excellent option any time moderately high SPLs are required but limited space is available. Spoken word sounds very natural, and the coaxial design assures that this remains so even off-axis. Low frequency extension to 87 Hz enables it to integrate well with subwoofers for full range music reproduction. The RX699 is a perfect choice for delay fill, background music, and speech reproduction systems, which makes it ideal for houses of worship, theaters, restaurants, nightclubs, museum kiosks, theme parks, and more.

Performance Specifications¹

Operating Mode

Single-amplified w/ DSP

Operating Range²

87 Hz to 20 kHz

Nominal Beamwidth

90° x 90°

Transducers

HF/LF: Coaxial 1.0" diaphragm compression driver, neodymium magnet; 6.5" woofer, 2.0" voice coil, ceramic magnet

Power Handling @ Nominal Impedance³

53 V / 175 W @ 16 Ω

Nominal Sensitivity @ Input Voltage⁴ (whole space)

100 dB @ 4.00 V

Nominal Maximum SPL (peak / continuous)

129 dB / 123 dB

Equalized Sensitivity @ Input Voltage⁵

89 dB @ 4.00 V

Equalized Maximum SPL⁶ (peak / continuous)

118 dB / 112 dB

Recommended Power Amplifier

175 W to 350 W @ 16 Ω

Physical Specifications

Connections (RX699)

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

Connections (RX699-WR)

Terminal strip input

Mounting / Suspension Points

(2) M6 yoke points,
(2) M6 nut plates 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

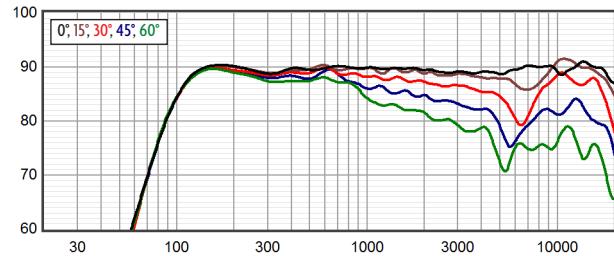
RX699 U Bracket [YK1106], Terminal strip input,
Custom color finish, Weather-resistant (WR) enclosure,
70 V multi-tap transformer (RX699-MT60)

product specification

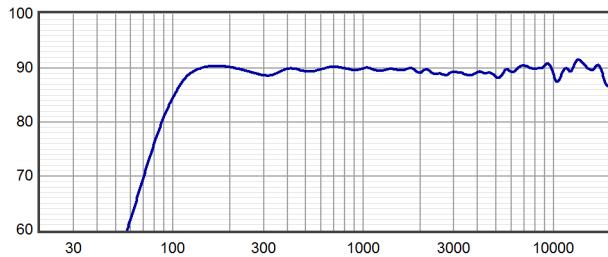
Axial Sensitivity (dB SPL, 4.00 V @ 1m)^{7,8}



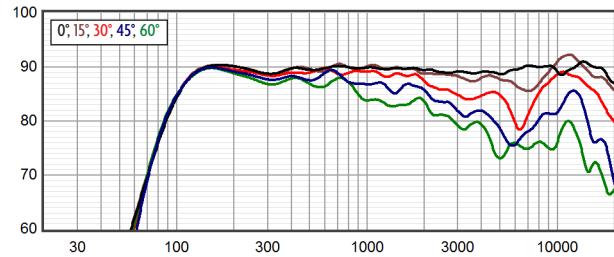
Horizontal Off Axis Response^{7,11}



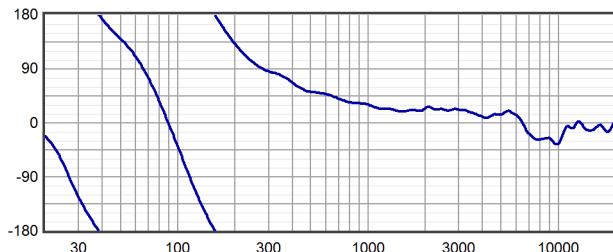
Axial Processed Response (dB)^{7,9}



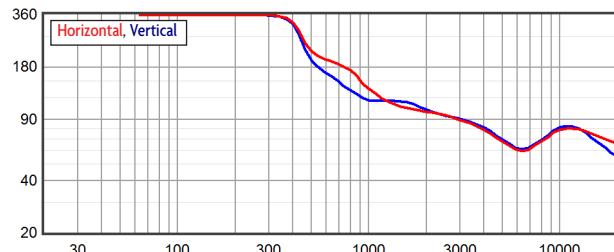
Vertical Off Axis Response^{7,11}



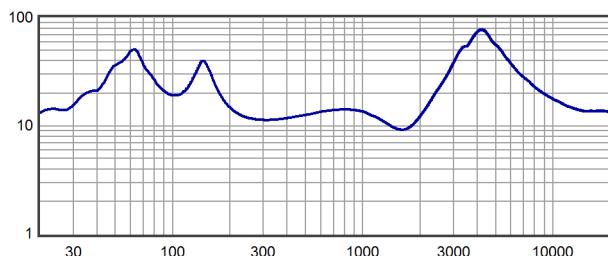
Axial Processed Phase Response (degrees)^{7,10}



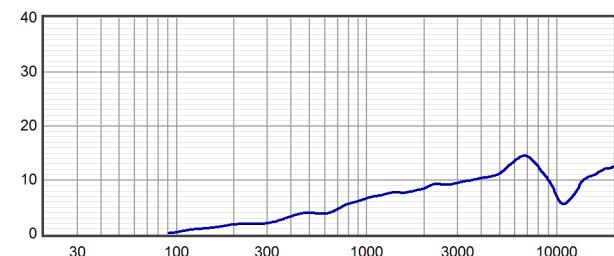
Beamwidth^{7,12}



Impedance (ohms)



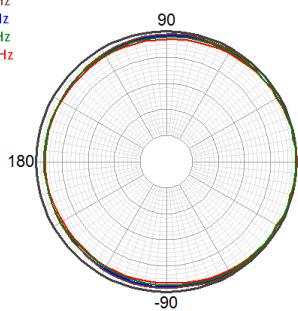
Directivity Index (dB)¹³



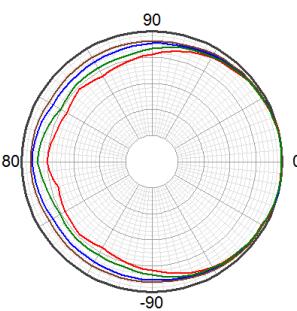
product specification

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

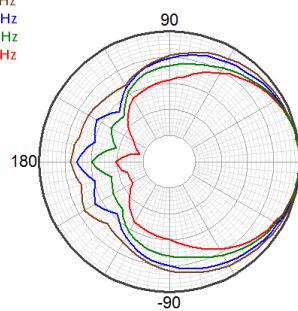
100 Hz
125 Hz
160 Hz
200 Hz



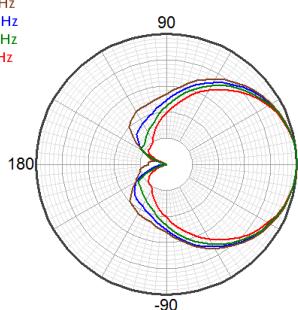
250 Hz
315 Hz
400 Hz
500 Hz



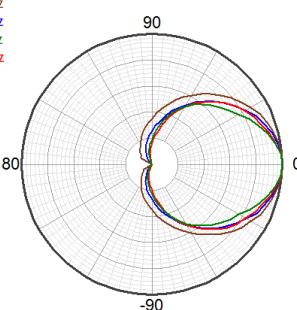
630 Hz
800 Hz
1000 Hz
1250 Hz



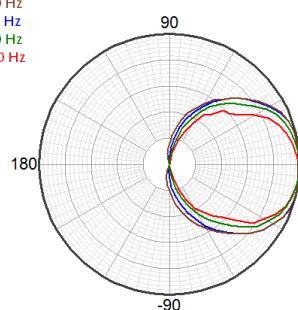
1600 Hz
2000 Hz
2500 Hz
3150 Hz



4000 Hz
5000 Hz
6300 Hz
8000 Hz

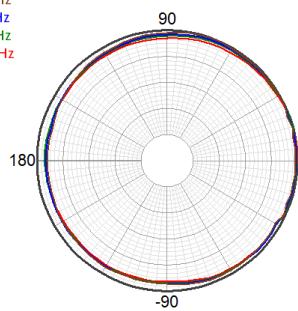


10000 Hz
12500 Hz
16000 Hz
20000 Hz

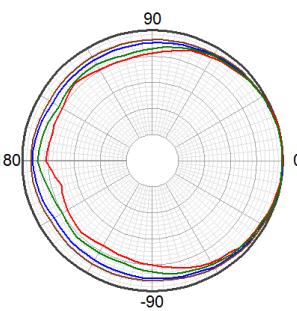


Vertical Polar Response (30 dB Scale, 6 dB per Major Division)

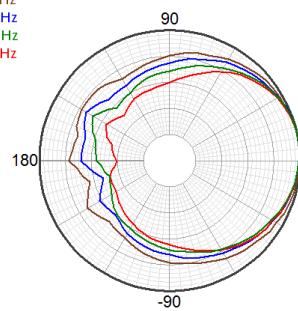
100 Hz
125 Hz
160 Hz
200 Hz



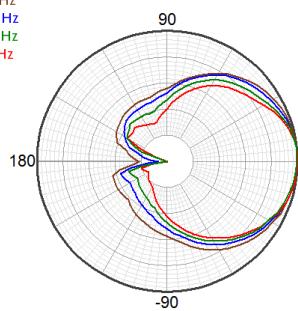
250 Hz
315 Hz
400 Hz
500 Hz



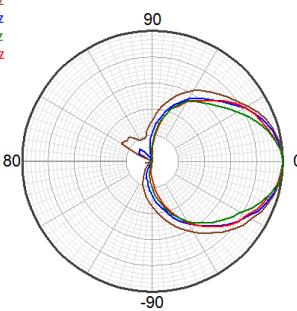
630 Hz
800 Hz
1000 Hz
1250 Hz



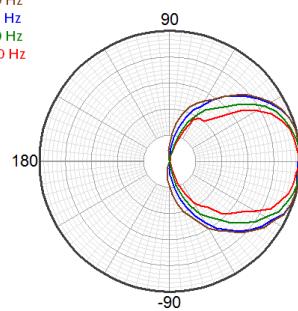
1600 Hz
2000 Hz
2500 Hz
3150 Hz



4000 Hz
5000 Hz
6300 Hz
8000 Hz



10000 Hz
12500 Hz
16000 Hz
20000 Hz

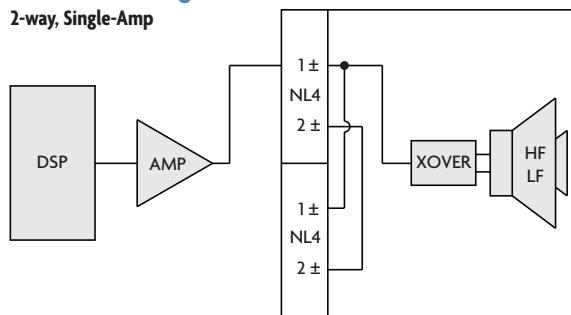


Technologies

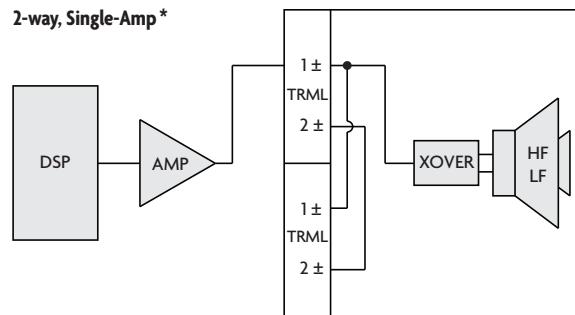
The RX699 includes a powerful ferrite-based low frequency section and a tightly integrated 1 inch neodymium compression driver, which positions the compression driver diaphragm very close to the woofer voice coil. This allows the system to maintain coherent summation and provide consistent off axis response through a passive crossover, allowing it to be powered with a single amplifier channel.

Connection Diagram

2-way, Single-Amp



2-way, Single-Amp*



* RX699-WR has terminal strip input.

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 processing applied.

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

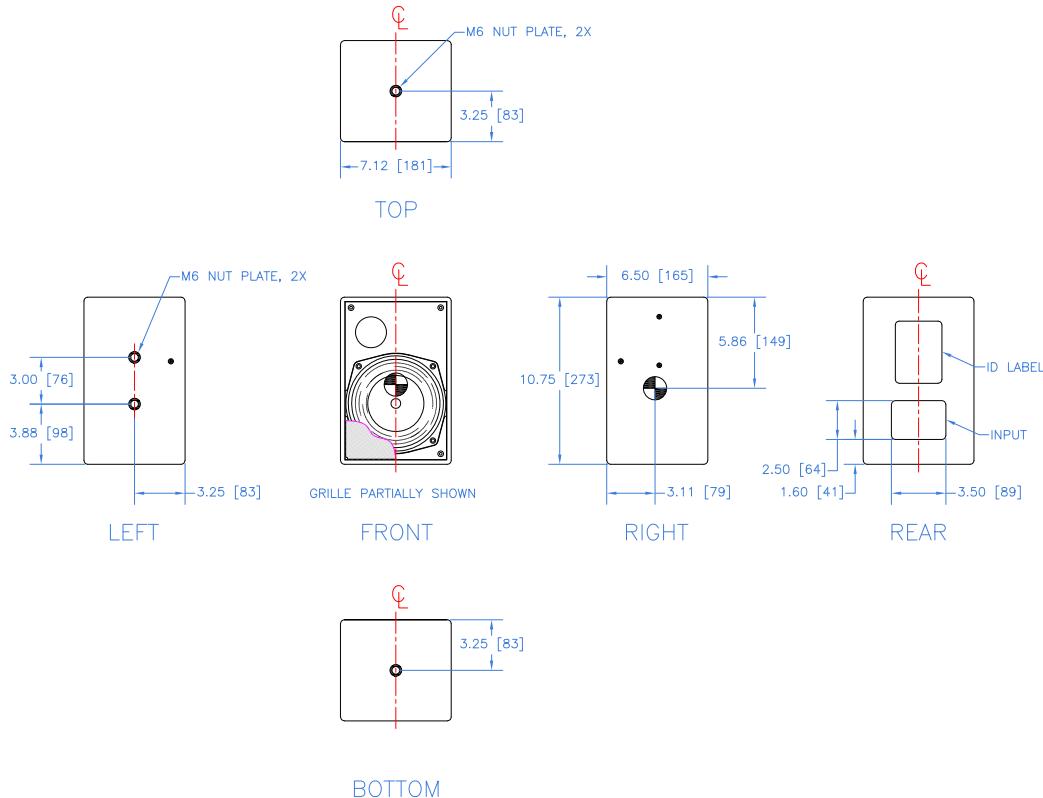
¹³ **Directivity Index (Di)** The ratio of the on-axis sound pressure squared to the spherical average of the sound pressure squared at a particular frequency expressed in dB. To convert the directivity index to directivity factor (Q) use the formula $10^{Di/10}$.

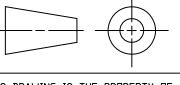
product specification

Notes:

1. Net Weight = Approx. 12.0 lb / 5.4 kg
2. Ship Weight = Approx. 16.0 lb / 7.3 kg
3. Symbol  = M6 nut plate
4. 2x M6 nut plates on left side for third party pan/tilt mounts
5. Symbol  = CoG

REVISIONS		
REV	DESCRIPTION	APPR / DATE
1	NEW ISSUE	RAF 11/23/11
2	OMNIMOUNT TO "THIRD PARTY" IN NOTE 4	RAF 1/13/12



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		APPROVALS	DATE	
DRAWN:	RAF	11/23/11	TITLE:	Mechanical Spec, RX699
CHECKED:	DWG	11/23/11		
DES ENG:			A	SHEET 1 OF 1 SCALE: 1:8
MFG ENG:			DWG. NO.	820-100-053 REV 2

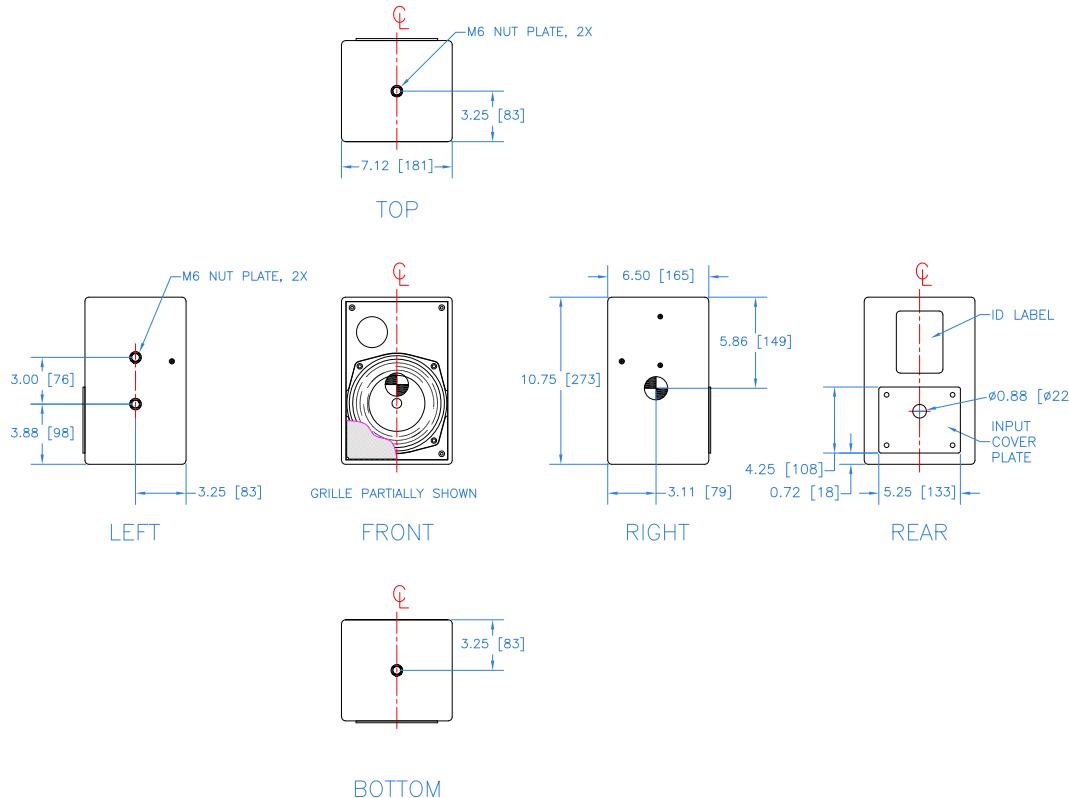
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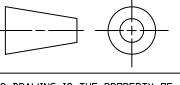
product specification, weather-resistant (WR) version

Notes:

1. Net Weight = Approx. 12.0 lb / 5.4 kg
2. Ship Weight = Approx. 16.0 lb / 7.3 kg
3. Symbol  = M6 nut plate
4. 2x M6 nut plates on left side for third party pan/tilt mounts
5. Symbol  = CoG

REVISIONS		
REV	DESCRIPTION	APPR / DATE
1	NEW ISSUE	RAF 11/13/14
2	ADD ID LABEL	RAF 1/17/22

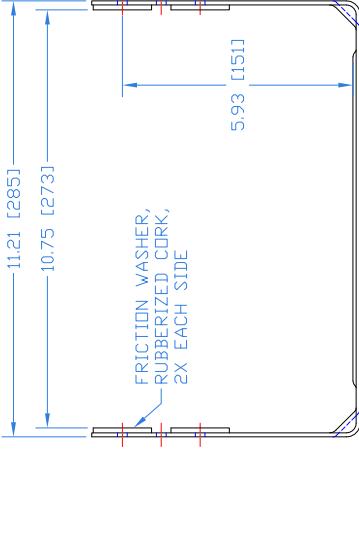


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		APPROVALS	DATE	
DRAWN:	RAF	11/13/14	TITLE:	Mechanical Spec, RX699-WR
CHECKED:	DWG	11/13/14		
DES ENG:			A	SHEET 1 OF 1 SCALE: 1:8
MFG ENG:			DWG. NO.	820-100-082 REV 2

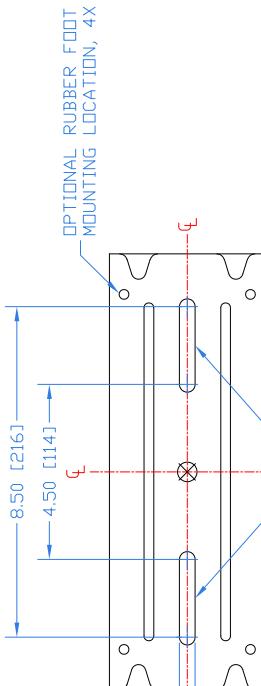
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optional accessory

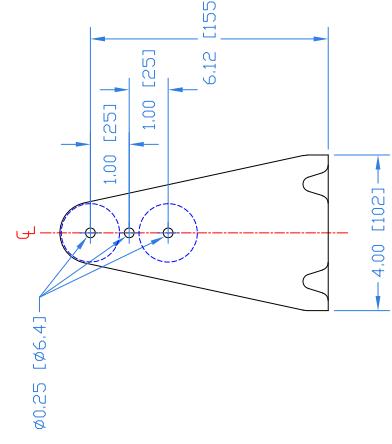
REVISITINGS			
REV	DESCRIPTION	APPR / DATE	
1	NEW ISSUE	4/30/12	
2	ADDED NOTES RE: FLOOR STND KIT	7/19/12	
3	ADDED NOTES RE: WR CAB FIT	11/13/14	
4	CHANGE BRACKET NAME TO YK-RX6	1/13/22	



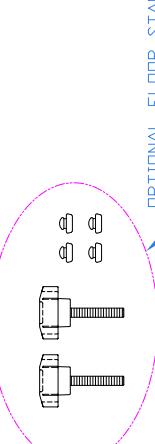
FRiction WASHER,
RUBBERIZED CORK,
2X EACH SIDE



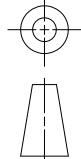
OPTIONAL MOUNTING LOCATION, 4X
MOUNTING SLOTS



OPTIONAL FLOOR STAND KIT
INCLUDES 2X THREADED
KNOBS & 4X RUBBER FEET



OPTIONAL FLOOR STAND KIT
INCLUDES 2X THREADED
KNOBS & 4X RUBBER FEET

THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES	STATUS	RELEASED	FULCRUM ACOUSTIC, LLC
	TOLERANCE IN INCHES ±0.1 XXX/0.05 FRACTIONS 1-1/32 ANGLES ±1/2°	APPROVALS	DATE	670 UNIONWOOD AVE, LINDEN, NJ 07045 USA
	(XXX) = REF DIMS NO TOLERANCE IMPLIED TSC = THEORETICAL SHARP CORNER DIMENSIONS ACROSS CENTERLINES TO BE SYMMETRICAL	DRAWN: RAF CHECKED: DVG DES ENG: MFG ENG:	4/30/12 4/30/12 4/30/12	TITLE: MECH. SPEC., YK-RX6
				SCALE: 1:4 REV 6
				Dwg. No. 820-300-014

Notes:
 1. FITS: RX699, RX699-WR, RX699-MT60, RX699-MT60-WR
 2. WEIGHT: 2.0 LBS (0.9 KG)
 3. INCLUDES TWO M6 SOCKET HEAD CAP SCREWS
 4. SYMBOL  = Ø0.51 [Ø12.9] HOLE FOR USE WITH
 USER-SUPPLIED THREADED ROD OR TRUSS CLAMP

Drawing is reduced. Do not scale.