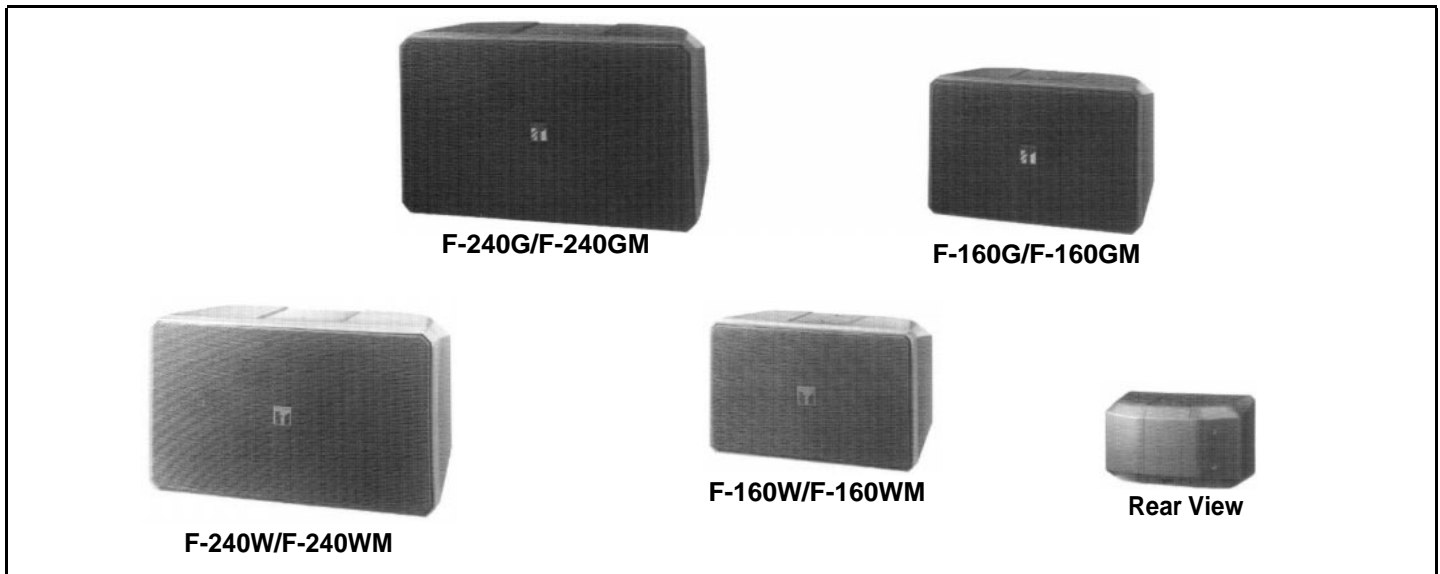


TOA SPEAKER SYSTEM

FOREGROUND MUSIC SPEAKERS

F-240G/240W/240GM/240WM
F-160G/160W/160GM/160WM



DESCRIPTION

TOA's F-240 and F-160 Series of foreground/background music speakers are ideal for applications requiring both sonic quality and designer styling. These two-way, ported systems provide a wide frequency range and high power handling capacity in an attractive, acoustically-efficient polypropylene enclosure.

Each of the F-240 and F-160 Series includes four models—two dark gray and two white, indicated by the suffix 'G' or 'W'. Models with the suffix 'GM' or 'WM' include a built-in 70/100 volt matching transformer. In all, eight models are available to match a variety of job requirements.

The F-240 Series features a 6 $\frac{1}{4}$ " woofer and a 1" titanium dome tweeter, which includes an acoustic equalizer and a 90" x 90" CD horn for uniform sound distribution at high frequencies. Frequency response is 65Hz - 20kHz, with crossover at 4kHz. Sensitivity is rated at 92dB (1W/1m).

The F-160 Series features a 5" woofer and a 1" dome tweeter, which also includes an acoustic equalizer and a 90" x 90" CD horn. Frequency response is 100Hz - 20kHz, with crossover at 4kHz. Sensitivity is rated at 91dB, measured in whole-space (1W/1m).

Both the F-240G/W and F-160G/W feature a continuous pink-noise power rating of 50 watts at 8 Ω , and a continuous program power rating of 150 watts at 8 Ω . Built-in protection circuitry guards all components against overloads.

The F-240 and F-160 Series are engineered to combine maximum efficiency with a flat frequency response when mounted in a half- or quarter-space environment. The typical position for a foreground/background speaker is against a wall or at the intersection of a wall and a ceiling or second wall. This is the acoustical environment for which the new F-Series is optimized.

The F-240GM/WM and the F-160GM/WM feature an internal line matching transformer with four impedance selections for 100 volt line and five selections for 70 volt line, adjustable via a rotary switch under the rear cover. These four models each have five 70 volt transformer taps ranging from 2.5 watts to 30 watts.

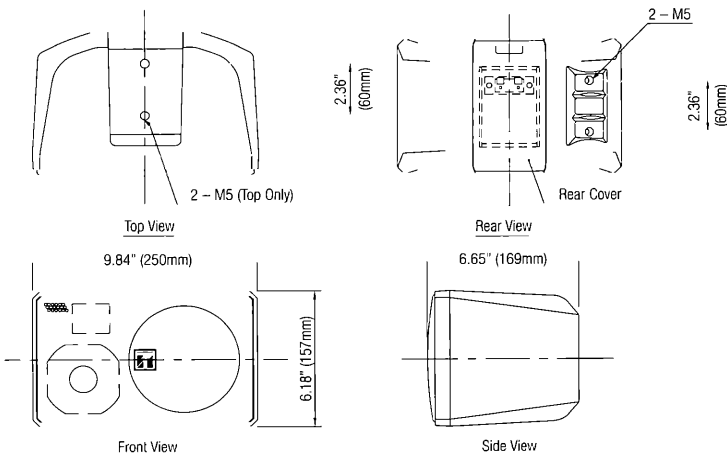
All systems are easily mounted in vertical or horizontal positions with a wide range of optional mounting brackets, and a logo badge on the front grille rotates to match the enclosure's orientation. A rear cover with a cable feed slot protects connection terminals.

FEATURES

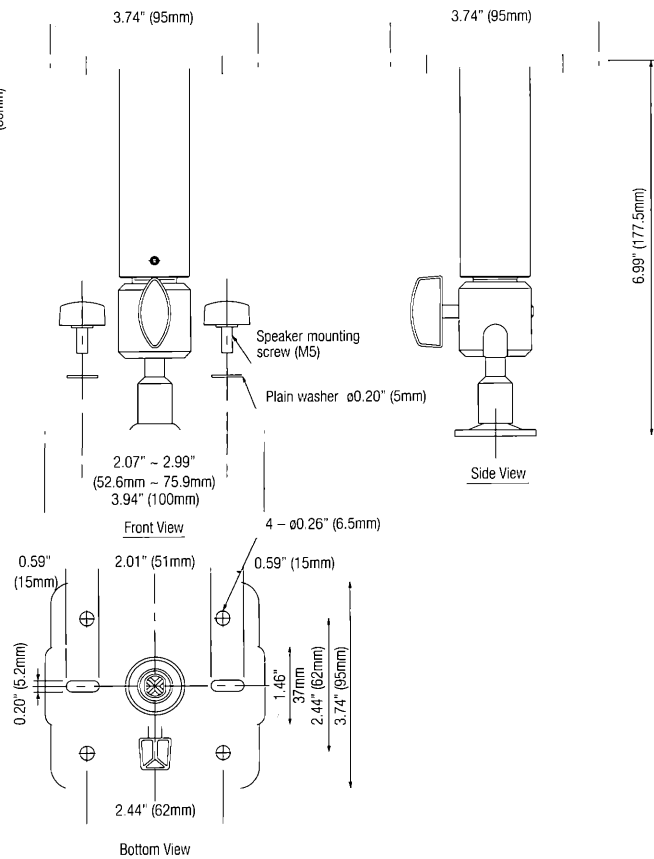
- Two-way foreground/background music speaker systems combine sonic quality with designer styling,
- All systems feature wide range and continuous pink-noise power rating of 50 watts at 8 Ω (continuous program power rating of 150 watts at 8 Ω).
- Eight models available to match versatile job requirements.
- The F-240 Series includes 6 1/4" woofer and 1" titanium dome tweeter with acoustic equalizer and 90" x 90" CD horn.
- F-160 Series includes 5" woofer and 1" dome tweeter with acoustic equalizer and 90" x 90" CD horn.
- Internal protection circuitry guards all speaker components against overloads in the 8 Ω version.
- Engineered to provide maximum efficiency with a flat frequency response when mounted in half- or quarter-space environments.
- F-240GM/WM and F-160GM/WM have built-in 70/100 volt transformer, adjustable via rotary switch under rear cover.
- All models equipped with push-type input connector.
- Easily mounted with optional mounting brackets in vertical or horizontal position; logo badge on front grille rotates to match enclosure orientation.
- Enclosure has a rear cover with cable feed slot to protect connection terminals.
- Acoustically-efficient polypropylene enclosure in white ("W" models) or dark gray ("G" models).

F-160 SERIES APPEARANCE & DIMENSIONAL DIAGRAMS

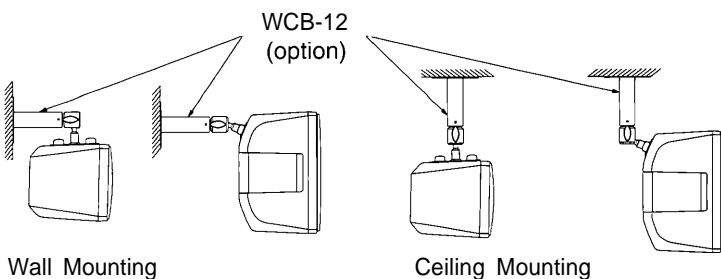
F-160 Series Speakers



WCB-12 Wall/Ceiling Mounting Bracket

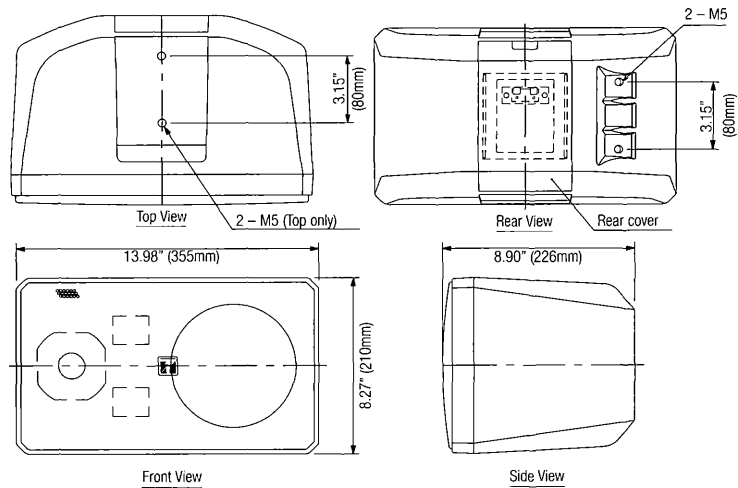


F-160 Installation (with WCB-12)

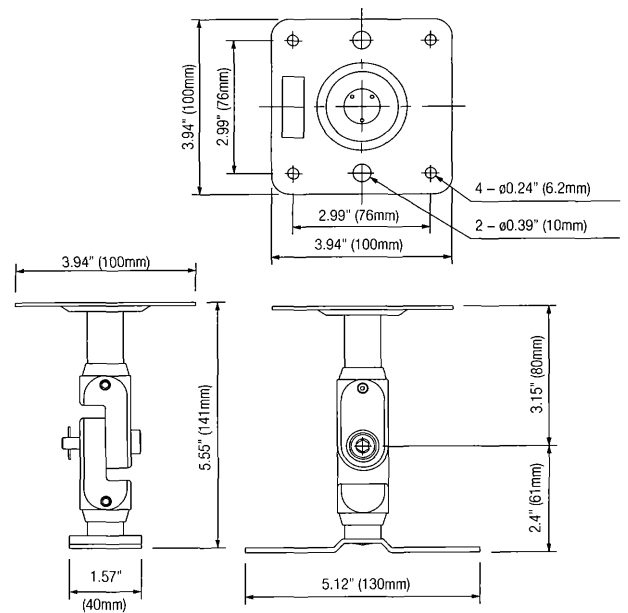


F-240 SERIES APPEARANCE & DIMENSIONAL DIAGRAMS

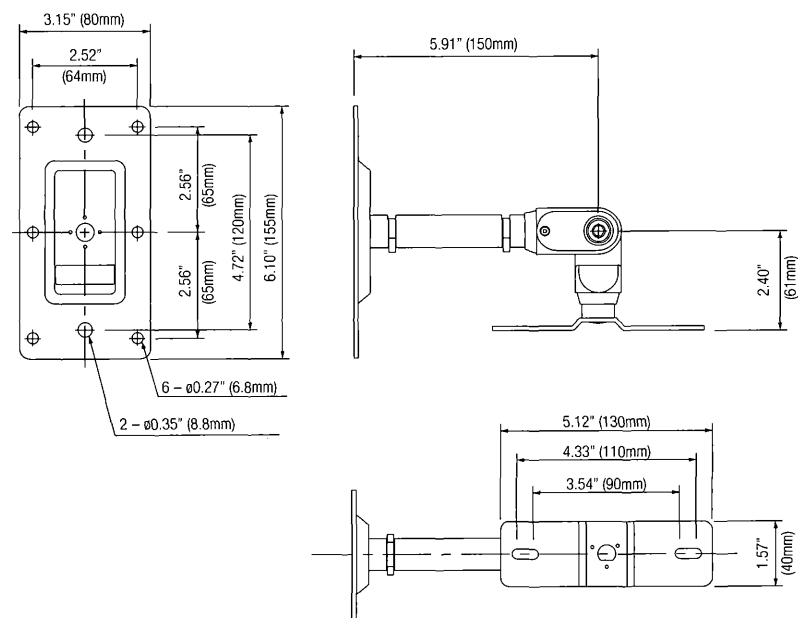
F-240 Series Speakers



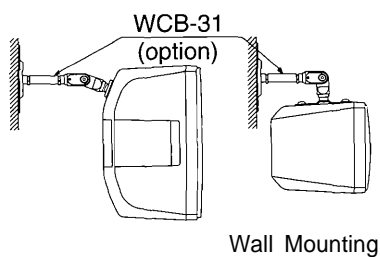
CMB-31 Ceiling Mounting Bracket



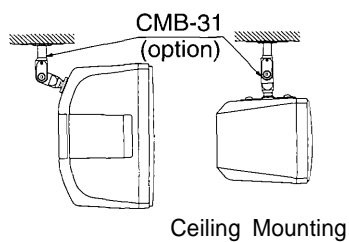
WCB-31 Wall Mounting Bracket



F-240 Installation (with WCB-31)

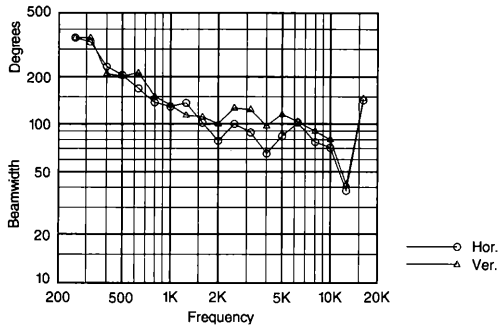


F-240 Installation (with CMB-31)

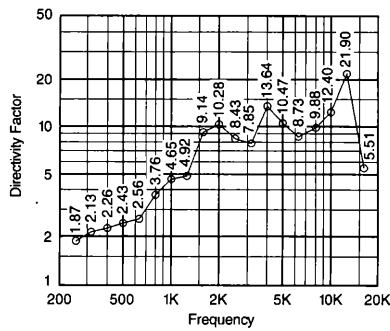


F-240 SERIES — CHARACTERISTIC DIAGRAMS

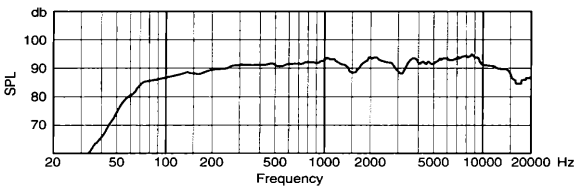
Beamwidth vs. Frequency



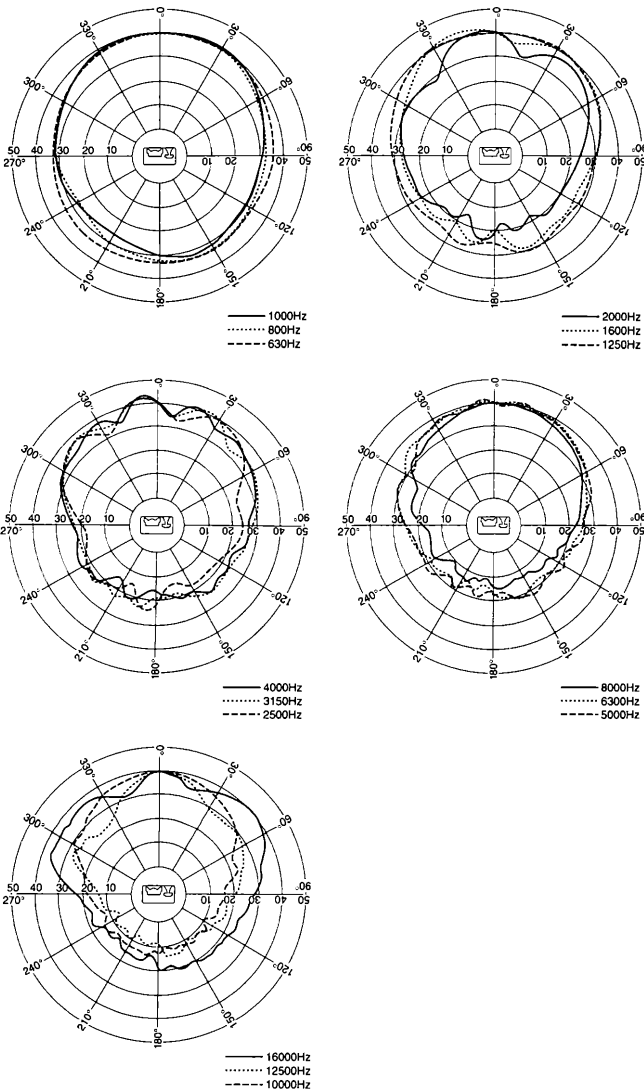
Directivity Factor vs. Frequency



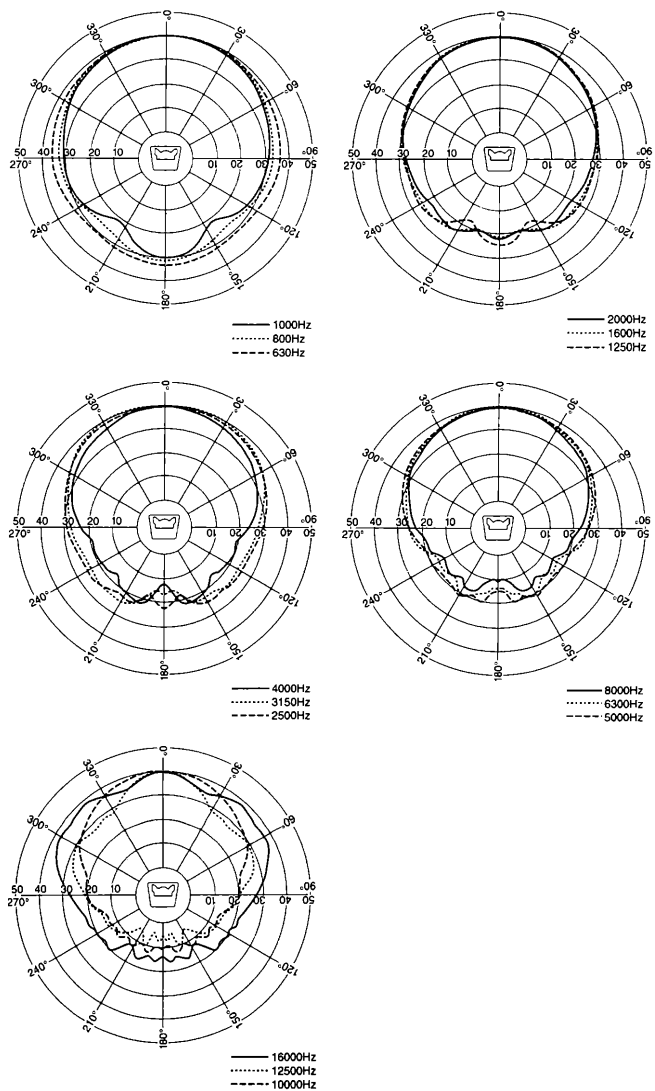
Frequency Response (1W/1m: 1/3 Octave Pink-Noise)



Polar Response — Horizontal

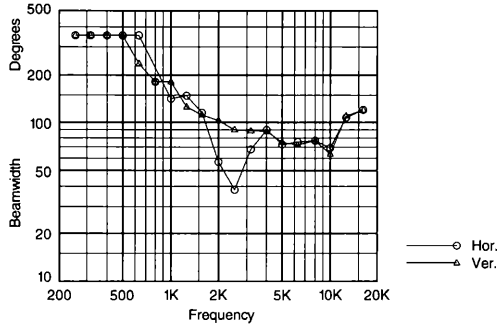


Polar Response — Vertical

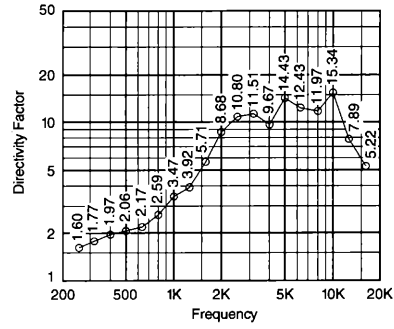


F-160 SERIES — CHARACTERISTIC DIAGRAMS

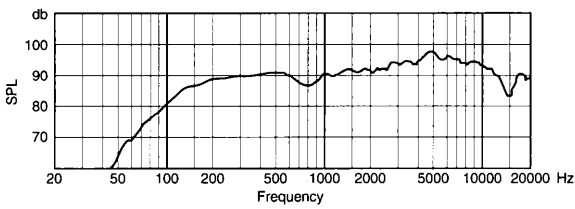
Beamwidth vs. Frequency



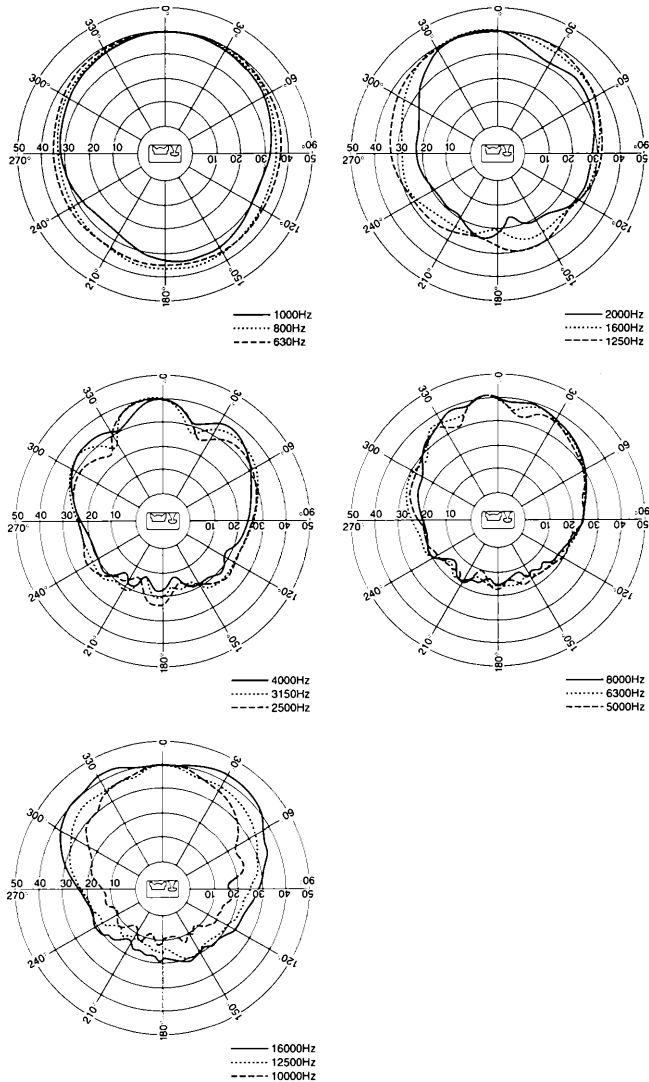
Directivity Factor vs. Frequency



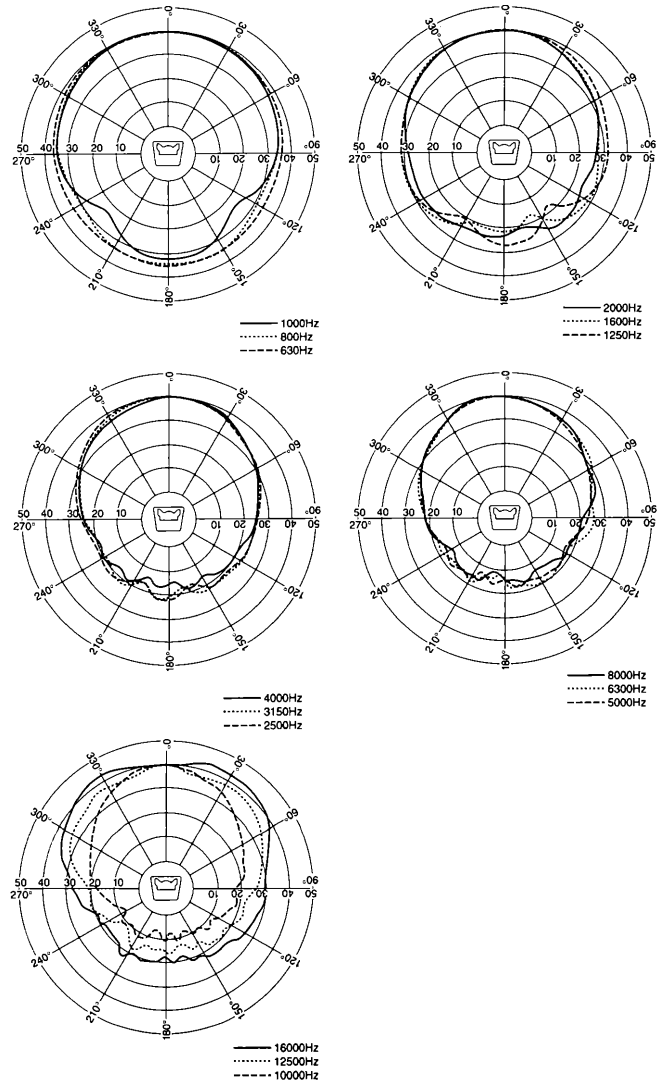
Frequency Response (1W/1m: 1/3 Octave Pink-Noise)



Polar Response — Horizontal



Polar Response — Vertical



SPECIFICATIONS

	F-240G/240W	F-160G/160W	F-240GM/240WM	F-160GM/160WM
Enclosure type	Bass-reflex			
Speaker	5" (13cm) cone woofer 1" (3cm) dome tweeter			
low frequency	6¼" (16cm) cone woofer	5" (13cm) cone woofer	6¼" (16cm) cone woofer	5" (13cm) cone woofer
high frequency	1" (3cm) titanium dome tweeter	1" (3cm) dome tweeter	1" (3cm) titanium dome tweeter	1" (3cm) dome tweeter
Rated impedance	8Ω		100V Line: 330Ω (30W), 500Ω (20W), 1kΩ (10W), 2kΩ (5W) 70V Line: 170Ω (30W), 330Ω (15W), 500Ω (10W), 1kΩ (5W), 2kΩ (2.5W)	
Power handling capacity	Continuous pink-noise: 50W* Continuous program: 150W		taps up to 30W	
Output SPL	92dB (1W/1m)**	91dB (1W/1m)**	92dB (1W/1m)**	91dB (1W/1m)**
Crossover frequency	4 kHz (passive network)			
Frequency response	65Hz - 20kHz (-10dB) 130Hz - 15kHz (-3dB)	100Hz - 20kHz (-10dB) 150Hz - 13kHz (-3dB)	65Hz - 20kHz (-10dB) 130Hz - 15kHz (-3dB)	100Hz - 20kHz (-10dB) 150Hz - 13kHz (-3dB)
Input connector	Push terminal			
Enclosure material	Polypropylene resin			
Color	Dark gray (F-240G) White (F-240W)	Dark gray (F-160G) White (F-160WM)	Dark gray (F-240GM) White (F-240WM)	Dark gray (F-160GM) White (F-160WM)
Dimensions (W x H x D)	14" x 8.3" x 8.9" (355 x 210 x 226mm)	9.8" x 6.2" x 6.7" (250 x 157 x 169mm)	14" x 8.3" x 8.9" (355 x 210 x 226mm)	9.8" x 6.2" x 6.7" (250 x 157 x 169mm)
Weight	10.8 lbs. (4.9 kg.)	7.3 lbs. (3.3 kg.)	12.1 lbs. (5.5 kg.)	8.6 lbs. (3.9 kg.)

* Continuous 24 hours pink-noise of 50Hz - 20kHz. ** Pink noise of 330Hz - 3.3kHz. All specifications subject to change.

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The speaker systems shall be the two-way, ported TOA F-240 and F-160 Series, which provide a wide frequency range and high power handling capacity. The F-240 and F-160 Series shall be engineered to combine maximum efficiency with a flat frequency response when mounted in a half- or quarter-space environment.

The F-240 Series (F-240G, F-240W, F-240GM, F-240WM) shall feature a 6¼" (16cm) woofer and a 1" (3cm) titanium dome tweeter with an acoustic equalizer and a 90° x 90° constant directivity horn for uniform sound distribution at high frequencies. Frequency response shall be 65Hz - 20kHz, with crossover at 4kHz. Sensitivity shall be rated at 92dB (1W/1m).

The F-160 Series (F-160G, F-160W, F-160GM, F-160WM) shall feature a 5" (13cm) woofer and a 1" (3cm) dome tweeter with an acoustic equalizer and a 90° x 90° constant directivity horn. Frequency response shall be 100Hz - 20kHz, with crossover at 4kHz. Sensitivity shall be rated at 91dB (1W/1m).

The F-240G/W and F-160G/W shall have a continuous pink-noise power rating of 50 watts at 8Ω and continuous program power rating of 150 watts at 8Ω. All F-Series speakers shall have push-type input connectors, and all 8Ω versions shall have protection circuitry to guard components against overloads.

The F-240GM/WM and F-160GM/WM shall have five 70 volt transformer taps ranging from 2.5 watts to 30 watts. An internal line matching transformer with four impedance selections for 100 volt line and five impedance selections for 70 volt line, adjustable via a rotary switch under the rear cover shall be included.

The enclosures shall be made of acoustically-efficient polypropylene, in gray (G-suffix) or white (W-suffix). All speakers shall be easily mounted in vertical or horizontal positions, with a wide range of optional brackets. The front grille shall have a logo badge that rotates to match the vertical or horizontal enclosure orientation. The enclosure shall have a rear cover with cable feed slot to protect connection terminals, while providing an attractive appearance.

The F-240G/W/GM/WM shall measure 14"W x 8.3"H x 8.9"D (355 x 210 x 226mm). The F-160G/W/GM/WM shall measure 9.8"W x 6.2"H x 6.7"D (250 x 157 x 169mm). The speaker systems shall weigh: 10.8 lbs/4.9 kg. (F-240G/W); 12.1 lbs/5.5 kg. (F-240GM/WM); 7.3 lbs/3.3 kg. (F-160G/M); and 8.6 lbs./3.9 kg. (F-160GM/WM).

OVERLOAD PROTECTION

The F-240G/W and F-160G/W feature built-in overload protection circuitry. A sudden drop of either the high or low frequencies during speaker operation indicates the protection circuit has been activated. After approximately 3 - 30 seconds, the system will automatically reset itself. If the protection circuit activates again, reduce the system volume.

OPTIONAL MOUNTING BRACKETS

F-160 Series:

WCB-12/WCB-12W Wall/Ceiling Mounting Bracket
MAB-1 Microphone Stand Mounting Bracket

F-240 Series:

WCB-31/WCB-31W Wall Mounting Bracket
CMB-31/CMB-31W Ceiling Mounting Bracket
STB-3 Speaker Stand Adaptor
ST-20 Tripod Speaker Stand



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