

# F-2000 Series Wide-Dispersion Speakers



## DESCRIPTION

The TOA F-2000 Series comprise a two-way speaker line of compact units offering wide frequency response and higher, more powerful performance. These highly adaptable speaker systems are intended to meet the requirements of a wide range of venues and applications, both indoors and outdoors.

For clear, wide-area sound coverage, the Series include wide dispersion-angle ( $110^{\circ} \times 100^{\circ}$ ) high-frequency horns (Octagonal Horn), plus an easily-added  $80^{\circ} \times 80^{\circ}$  dispersion angle horn adapter for tighter dispersion control. Both high-impedance and low-impedance models are available. Low impedance models come with separate HF and LF protection circuitry. High impedance models have a rear-panel rotary control for making impedance settings that optimally match amplifier and speaker performance.

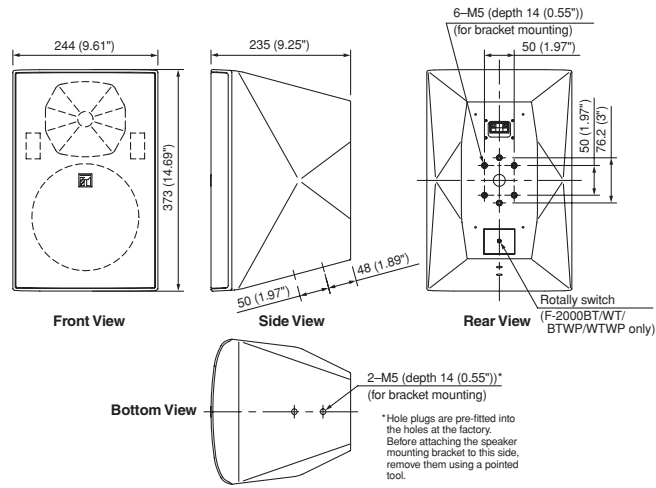
The speaker units have a design that combines stylishness and a high degree of performance-enhancing rigidity. Even the decor-enhancing convex bulge on the side of the casing serves to improve rigidity. Brackets for easy speaker-stand, wall and ceiling installation are included, and there are also optionally available brackets for more challenging installation venues and sound reinforcement applications. Push-in terminals make connections quick and easy, and there are models for outdoor use that meet IPX4 splash-proof standards.

## FEATURES

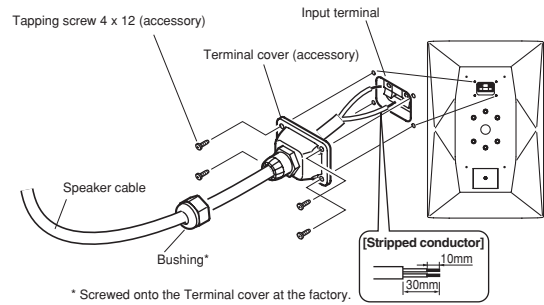
- $110^{\circ} \times 100^{\circ}$  dispersion angle high-frequency horns (Octagonal Horn) ensure an enhanced sound coverage area and a more even balanced tone.
- Easily-mountable  $80^{\circ} \times 80^{\circ}$  dispersion angle horn adapter for increased dispersion control.
- Splash-proof design with anticorrosive punching net and terminal cover, meeting IPX4 splash-proof ratings, available on models F-2000BTWP/WTWP.
- All speaker models are repaintable.
- Low impedance models have high and low frequency filter and protection circuitry.
- Included accessory brackets allow a wide choice of installations on walls, ceilings and speaker stands.
- Optionally available brackets meet an even wider variety of installation demands.
- Stylish and highly rigid casing design for attractive installation with clearer sound reproduction.
- Sensitivity: 92dB (1W, 1m) (without horn adapter)/93dB (1W, 1m) (with horn adapter)



## APPEARANCE AND DIMENSIONAL DIAGRAM



## TERMINAL COVER USE (F-2000BTWP/WTWP only)



### Notes

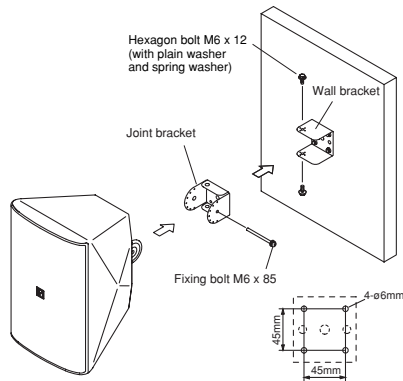
- For the speaker cable, use a cable with a diameter of 6 – 10 mm, which will fit the cable bushing.
- To ensure waterproof capabilities, firmly mount the terminal cover to the speaker and tighten the bushing on the cover.

## WALL BRACKET AND JOINT BRACKET MOUNTING (ACCESSORY BRACKETS)

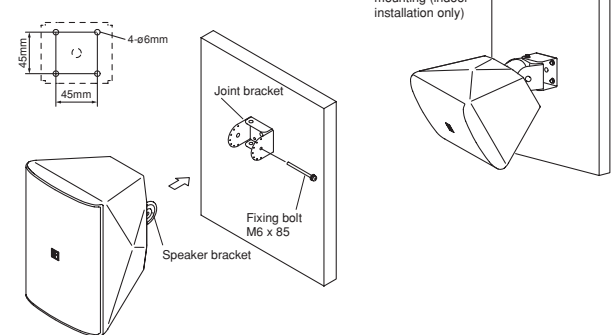
### Wall bracket mounting

Vertical installation  
Horizontal: Max. 70°,  
Vertical: Max. 45° downward

Horizontal installation  
Horizontal: Max. 45°,  
Vertical: Max. 45° downward



### Joint bracket mounting



## SPECIFICATIONS

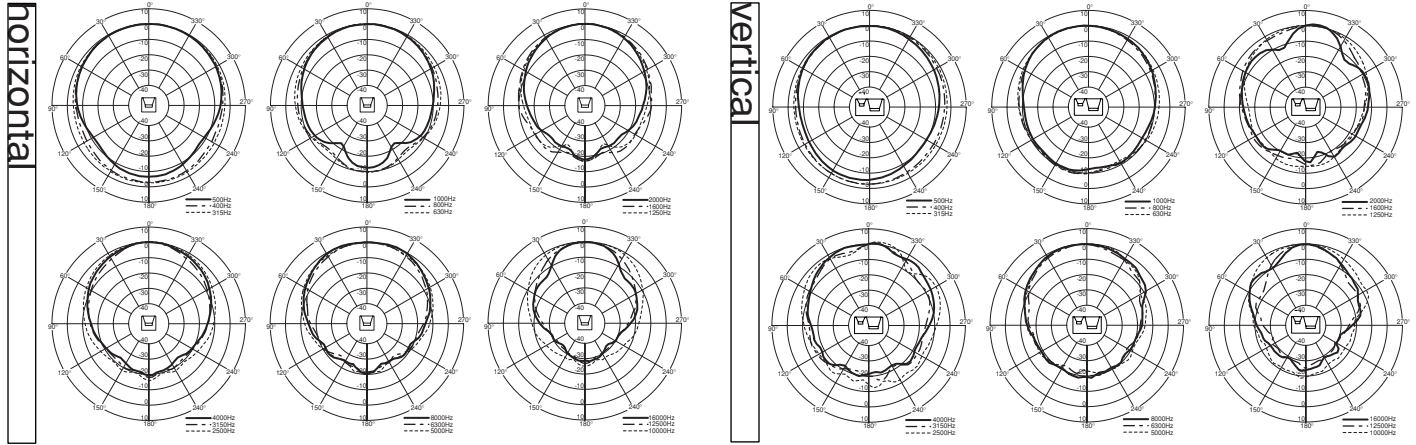
Model No.	F-2000B	F-2000W	F-2000BT	F-2000WT	F-2000BTWP*	F-2000WTWP*
Enclosure Type	Bass-reflex type					
Power Handling Capacity	60 W (continuous pink noise) 180 W (continuous program)		—			
Rated Input	—		60 W			
Rated Impedance	8 Ω		100V line: 170Ω (60W), 330 Ω (30W), 670 Ω (15W), 3.3 kΩ (3W) 70V line: 83Ω (60W), 170Ω (30W), 330 Ω (15W), 670 Ω (7.5W), 3.3 kΩ (1.5W)			
Sensitivity	92 dB (1W, 1m) at installation in 1/2 free sound field 93 dB (1W, 1m) at installation in 1/2 free sound field (with horn adapter)					
Frequency Response	65 - 20,000 Hz, -10 dB at installation in 1/2 free sound field					
Crossover Frequency	2.5 kHz					
Directivity Angle	Horizontal: 110°, Vertical: 100° Horizontal: 80°, Vertical: 80° (with horn adapter)					
Speaker Component	Low frequency: 20 cm (8") cone-type High frequency: 25 mm (1") dome tweeter					
Input Terminal	Push-in terminal					
Water Protection	—				IPX4	
Operating Temperature	-10°C to +50°C (14°F to 122°F)					
Finish	Enclosure: HIPS resin, black Punched net: Surface-treated steel plate, black, paint Joint bracket, wall bracket: Steel plate, t2.0, black, paint Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS resin, white Punched net: Surface-treated steel plate, white, paint Joint bracket, wall bracket: Steel plate, t2.0, white, paint Speaker bracket: Die-cast aluminum, white, paint	Enclosure: HIPS resin, black Punched net: Surface-treated steel plate, black, paint Joint bracket, wall bracket: Steel plate, t2.0, black, paint Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS resin, white Punched net: Surface-treated steel plate, white, paint Joint bracket, wall bracket: Steel plate, t2.0, white, paint Speaker bracket: Die-cast aluminum, white, paint	Enclosure: HIPS resin, black Punched net: Surface-treated steel plate, black, anticorrosive paint Joint bracket, wall bracket: Stainless steel (SUS304), t2.0 Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS resin, white Punched net: Surface-treated steel plate, white, anticorrosive paint Joint bracket, wall bracket: Stainless steel (SUS304), t2.0 Speaker bracket: Die-cast aluminum, white, paint
Dimensions	244 (W) × 373 (H) × 235 (D) mm (9.61" × 14.69" × 9.25")					
Weight	6.5 kg (14.33 lb) (including the supplied brackets)			7.4 kg (16.31 lb) (including the supplied brackets)		
Accessories	Speaker bracket × 1, Joint bracket × 1, Wall bracket × 1, Bracket fixing screw × 1 set, Horn adapter × 1, Horn adapter mounting screw × 4				Speaker bracket × 1, Joint bracket × 1, Wall bracket × 1, Bracket fixing screw × 1 set, Horn adapter × 1, Horn adapter mounting screw × 4, Terminal cover × 1, Terminal cover mounting screw × 4	
Options	Ceiling mount bracket: HY-CM20B Cluster bracket: HY-CL20B	Ceiling mount bracket: HY-CM20W Cluster bracket: HY-CL20B	Ceiling mount bracket: HY-CM20B Cluster bracket: HY-CL20B	Ceiling mount bracket: HY-CM20W Cluster bracket: HY-CL20B	Speaker mount bracket: SP-131, YS-60B	
Recommended Subwoofer	FB-100, FB-120B/W					

\* Note: Do not install the speaker at places where it is likely to be corroded such as bathroom, indoor pools or seaside.

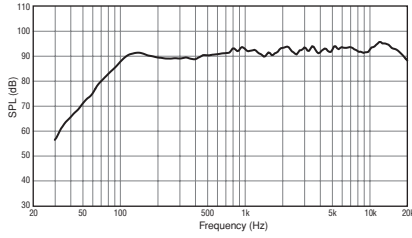
# CHARACTERISTIC DIAGRAMS

• without HF Horn Adapter

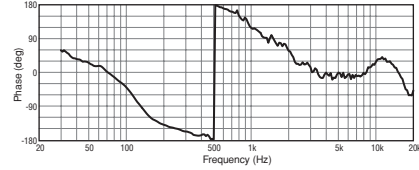
## Polar Response



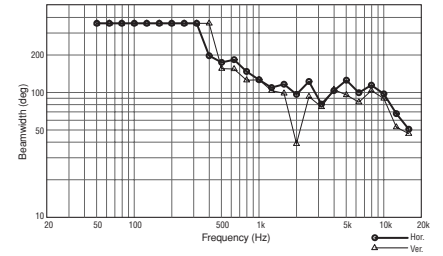
## SPL vs. Frequency



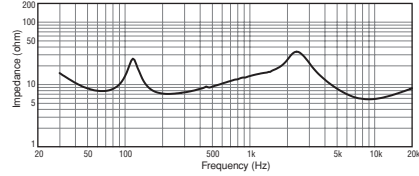
## Phase vs. Frequency



## Beamwidth vs. Frequency

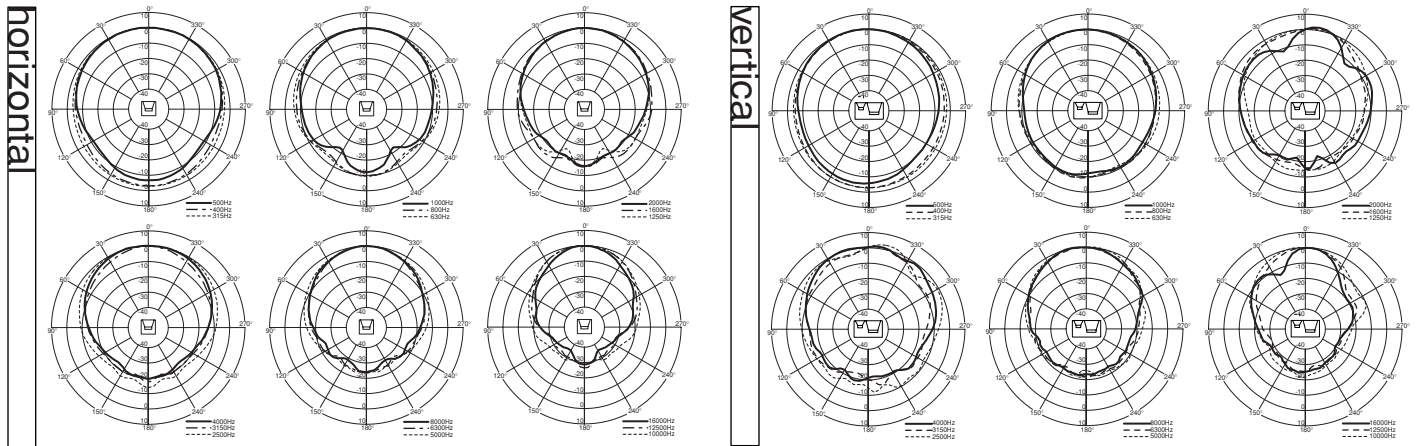


## Impedance vs. Frequency

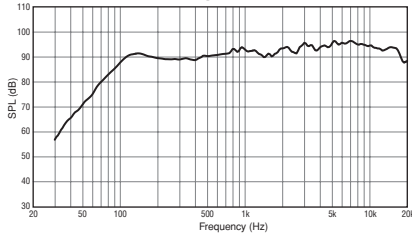


• with HF Horn Adapter

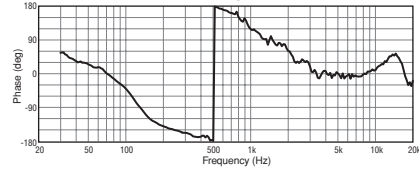
## Polar Response



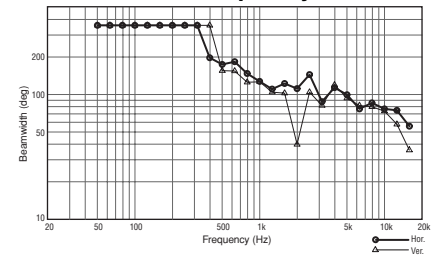
## SPL vs. Frequency



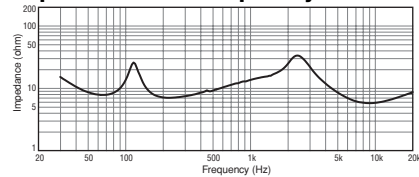
## Phase vs. Frequency



## Beamwidth vs. Frequency



## Impedance vs. Frequency



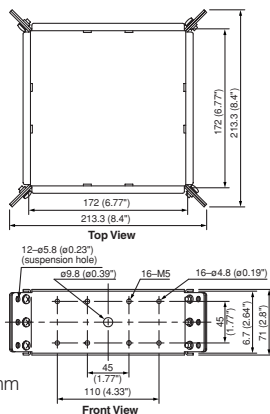
## OPTIONAL BRACKETS

### CLUSTER BRACKET for indoor use



#### HY-CL20B

- **Finish:** Steel plate, black, paint
- **Dimensions:** 213.3 (W) × 71 (H) × 213.3 (D)mm (8.4" × 2.8" × 8.4")
- **Weight:** 1.2kg (2.65 lb)

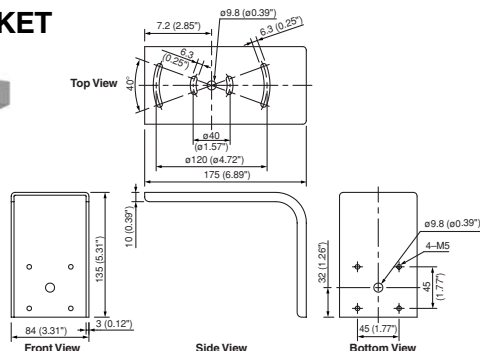


### CEILING MOUNT BRACKET for indoor use



#### HY-CM20B/W

- **Finish:** Steel plate, black, paint (HY-CM20W: white, paint)
- **Dimensions:** 84 (W) × 135 (H) × 175 (D)mm (3.31" × 5.31" × 6.89")
- **Weight:** 610g (1.34 lb)

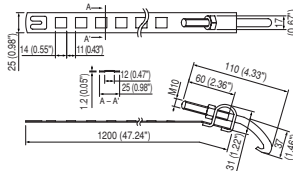


### POLE MOUNT BRACKET



#### YS-60B

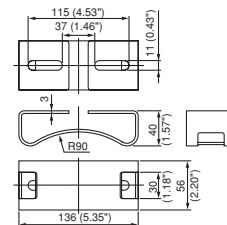
- **Applicable Pole:** Approx. ø90 (ø3.5") to ø340 (ø13.4") mm
- **Finish:** Electroless zinc-plated
- **Weight:** 360g (0.79lb.) (per band)
- **Product Composition:** Mounting band x 2



\* 2 units in set

#### SP-131\*

- **Finish:** Bracket: Stainless (SUS304)  
Bolt, nut, washer: Stainless
- **Weight:** 330 g (0.73 lb.) (per bracket)



## ARCHITECTURAL AND ENGINEERING SPECIFICATIONS

### F-2000B/F-2000W

The speaker shall be a two-way bass-reflex enclosure suitable for ceiling or wall mounting. The low frequency component shall be a 20 cm (8") cone-type woofer. The high frequency component shall be a 25 mm (1") dome tweeter. For clear, wide-area sound coverage, the speaker shall include 110° (H) × 100° (V) wide dispersion-angle high frequency horn, plus an easily-added 80° (H) × 80° (V) dispersion angle horn adapter for tighter dispersion control.

The speaker shall come with separate HF and LF protection circuitry.

The speaker shall be rated at 8 ohms. The sensitivity at a distance of 1m with a 1 W input level applied shall be 92 dB and 93 dB using the horn adapter. The rated power handling shall be 60 W continuous pink noise and 180 W continuous program. The speaker shall have a frequency response of 65 – 20kHz.

The speaker enclosure shall be constructed of HIPS resin. The speaker shall be available in white or black, and also be repaintable. The grille shall be a punched net, surface-treated steel plate. Brackets for speaker-stand, wall and ceiling installation shall be included, and there shall be also optionally available brackets for more demanding installation venues.

The unit shall be compact and lightweight with dimensions of 244 × 373 × 235 mm (9.61" × 14.69" × 9.25") and a weight of 6.5 kg (14.33 lbs).

The speaker shall be TOA model F-2000B/F-2000W.

The ceiling mount bracket shall be the HY-CM20B/HY-CM20W.

The cluster bracket shall be the HY-CL20B.

The subwoofer shall be the FB-100 or FB-120B/W.

### F-2000BT/F-2000WT

The speaker shall be a two-way bass reflex enclosure suitable for ceiling or wall mounting. The low frequency component shall be a 20 cm (8") cone-type woofer. The high frequency component shall be a 25 mm (1") dome tweeter. For clear, wide-area sound coverage, the speaker shall include 110° (H) × 100° (V) wide dispersion-angle high frequency horn, plus an easily-added 80° (H) × 80° (V) dispersion angle horn adapter for tighter dispersion control.

The rated input shall be 60 W. The speaker shall include a transformer having multiple taps (3 W, 15 W, 30 W, 60 W at 100 V and 1.5 W, 7.5 W, 15 W, 30 W, 60 W at 70 V) adjustable via the rear of the enclosure. The sensitivity at a distance of 1m with 1 W input level applied shall be 92 dB and 93 dB using the horn adapter. The speaker shall have a frequency response of 65 – 20kHz.

The speaker enclosure shall be constructed of HIPS resin. The speaker shall be available in white or black, and also be repaintable. The grille shall be a punched net, surface-treated steel plate. Brackets for speaker-stand, wall and ceiling installation shall be included, and there shall be also optionally available brackets for more demanding installation venues.

The unit shall be compact and lightweight with dimensions of 244 × 373 × 235 mm (9.61" × 14.69" × 9.25") and a weight of 7.4 kg (16.31 lbs).

The speaker shall be TOA model F-2000BT/F-2000WT.

The ceiling mount bracket shall be the HY-CM20B/HY-CM20W.

The cluster bracket shall be the HY-CL20B.

The subwoofer shall be the FB-100 or FB-120B/W.

### F-2000BTWP/F-2000WTWP

The speaker shall be a two-way bass reflex enclosure suitable for ceiling or wall mounting. The low frequency component shall be a 20 cm (8") cone-type woofer. The high frequency component shall be a 25 mm (1") dome tweeter. For clear, wide-area sound coverage, the speaker shall include 110° (H) × 100° (V) wide dispersion-angle high frequency horn, plus an easily-added 80° (H) × 80° (V) dispersion angle horn adapter for tighter dispersion control.

The rated input shall be 60 W. The speaker shall include a transformer having multiple taps (3 W, 15 W, 30 W, 60 W at 100 V and 1.5 W, 7.5 W, 15 W, 30 W, 60 W at 70 V) adjustable via the rear of the enclosure. The sensitivity at a distance of 1m with 1 W input level applied shall be 92 dB and 93 dB using the horn adapter. The speaker shall have a frequency response of 65 – 20kHz.

The speaker enclosure shall be constructed of HIPS resin. The speaker shall have an IEC 529 splash-proof rating of IPX4. The speaker shall have an operating temperature of -10° C to +50° C (14° F to 122° F). The speaker shall be available in white or black, and also be repaintable. The grille shall be a punched net, surface-treated steel plate with anticorrosive paint. Brackets for speaker-stand, wall and ceiling installation shall be included, and there shall be also optionally available brackets for more demanding installation venues.

The unit shall be compact and lightweight with dimensions of 244 × 373 × 235 mm (9.61" × 14.69" × 9.25") and a weight of 7.4 kg (16.31 lbs).

The speaker shall be TOA model F-2000BTWP/F-2000WTWP.

The pole mount brackets shall be the SP-131 and YS-60B.

The subwoofer shall be the FB-100 or FB-120B/W.

