

# WIDE-DISPERSION SPEAKER SYSTEM

## F-1000/F-2000 SERIES



### DESCRIPTION

The TOA F-1000 and 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 Octagon Horn wide dispersion-angle (110° x 100° on the F-2000 and 90° x 90° on the F-1000) high-frequency horns, plus an easily-added 80° x 80° dispersion angle horn adapter on the F-2000 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 IP-X4 splash-proof standards.

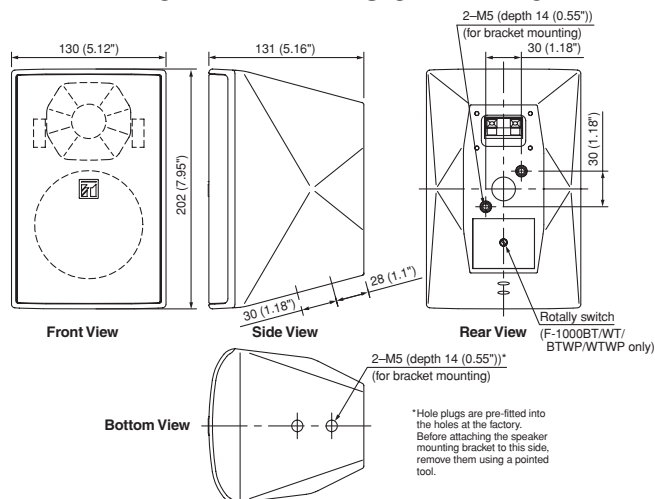
### FEATURES

- 110° x 100° (F-2000) and 90° x 90° (F-1000) dispersion angle high-frequency horns (Octagon Horn) ensure an enhanced sound coverage area and a more even balanced tone.
- Easily-mountable 80° x 80° dispersion angle horn adapter included on the F-2000 for increased dispersion control.
- Waterproof design with anticorrosive punching net and terminal cover, meeting IP-X4 splash-proof ratings, available on models F-1000BTWP/WTWP and 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 and ceilings.
- 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: 87dB, 1W, 1m (F-1000)  
92dB, 1W, 1m (F-2000 without horn adapter)  
93dB, 1W, 1m (F-2000 with horn adapter)

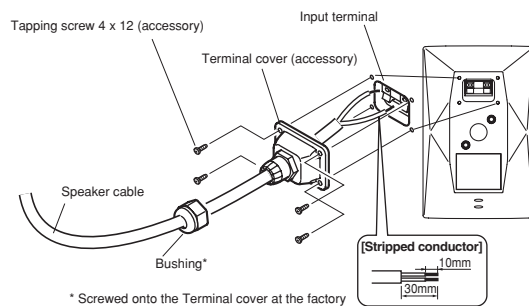
# F-1000 SERIES

F-1000B/W/BT/WT/BTWP/WTWP

## APPEARANCE AND DIMENSIONAL DIAGRAM



## TERMINAL COVER USE (F-1000BTWP/WTWP only)



### Notes

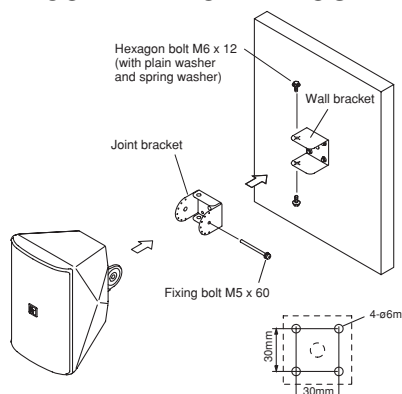
- For the speaker cable, use a cable with a diameter of 6 – 10 mm, which will fit the cable bushing.
- To ensure waterproof capabilities, firmly mount the terminal cover to the speaker and tighten the bushing on the cover.

## WALL BRACKET AND JOINT BRACKET MOUNTING

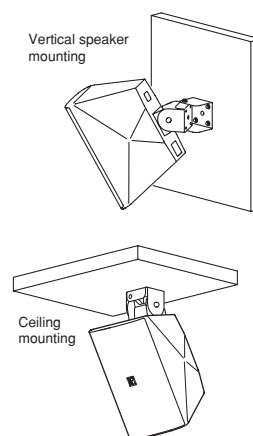
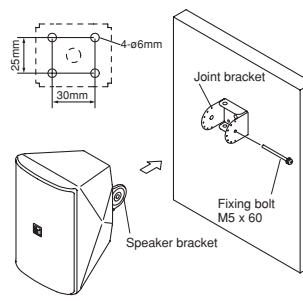
### Wall bracket mounting

Vertical installation  
Horizontal: Max. 82°,  
Vertical: Max. 45° downward

Horizontal installation  
Horizontal: Max. 60°,  
Vertical: Max. 45° downward



### Joint bracket mounting



## SPECIFICATIONS

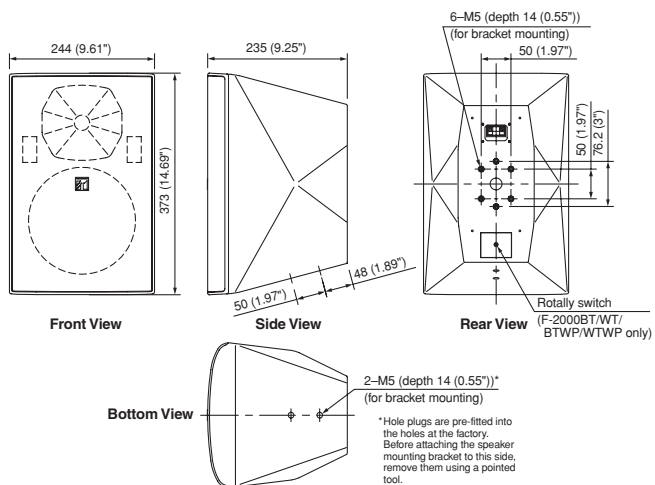
| Model No.               | F-1000B                                                                                                                                                                                                    | F-1000W                                                                                                                                                                                                   | F-1000BT                                                                                                                                                                                                   | F-1000WT                                                                                                                                                                                                   | F-1000BTWP*                                                                                                                                                                                                | F-1000WTWP*                                                                                                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enclosure Type          | Bass-reflex type                                                                                                                                                                                           |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Power Handling Capacity | 30 W (continuous pink noise)<br>90 W (continuous program)                                                                                                                                                  |                                                                                                                                                                                                           | —                                                                                                                                                                                                          |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Rated Input             | —                                                                                                                                                                                                          |                                                                                                                                                                                                           | 15 W                                                                                                                                                                                                       |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Rated Impedance         | 8 Ω                                                                                                                                                                                                        |                                                                                                                                                                                                           | 100V line: 670Ω (15W), 2 kΩ (5W), 3.3 kΩ (3W), 10 kΩ (1W)<br>70V line: 330Ω (15W), 670Ω (7.5W), 2 kΩ (2.5W), 3.3 kΩ (1.5W), 10 kΩ (0.5W)                                                                   |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Sensitivity             | 87 dB (1W, 1m) at installation in 1/2 free sound field                                                                                                                                                     |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Frequency Response      | 85 – 20,000 Hz, -10 dB at installation in 1/2 free sound field                                                                                                                                             |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Crossover Frequency     | 5 kHz                                                                                                                                                                                                      |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Directivity Angle       | Horizontal: 90°, Vertical: 90°                                                                                                                                                                             |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Speaker Component       | Low frequency: 10 cm (4") cone-type<br>High frequency: Balanced 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<br>Punched net: Surface-treated steel plate, black, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, black, paint<br>Speaker bracket: Die-cast aluminum, black, paint | Enclosure: HIPS resin, white<br>Punched net: Surface-treated steel plate, white, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, white paint<br>Speaker bracket: Die-cast aluminum, white, paint | Enclosure: HIPS resin, black<br>Punched net: Surface-treated steel plate, black, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, black, paint<br>Speaker bracket: Die-cast aluminum, black, paint | Enclosure: HIPS resin, white<br>Punched net: Surface-treated steel plate, white, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, white, paint<br>Speaker bracket: Die-cast aluminum, white, paint | Enclosure: HIPS resin, black<br>Punched net: Surface-treated steel plate, black, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, black, paint<br>Speaker bracket: Die-cast aluminum, black, paint | Enclosure: HIPS resin, white<br>Punched net: Surface-treated steel plate, white, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, white, paint<br>Speaker bracket: Die-cast aluminum, white, paint |
| Dimensions              | 130 (W) × 202 (H) × 131 (D) mm (5.12" × 7.95" × 5.16")                                                                                                                                                     |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Weight                  | 1.8 kg (3.97 lb) (including the supplied brackets)                                                                                                                                                         |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            | 2 kg (4.41lb) (including the supplied brackets)                                                                                                                                                            |                                                                                                                                                                                                            |
| Accessories             | Speaker bracket × 1, Joint bracket × 1, Wall bracket × 1, Bracket fixing screw × 1 set                                                                                                                     |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            | Speaker bracket × 1, Joint bracket × 1, Wall bracket × 1, Bracket fixing screw × 1 set, Terminal cover × 1, Terminal cover mounting screw × 4                                                              |                                                                                                                                                                                                            |
| Option                  | Board hanger bracket: HY-BH10B<br>Ceiling mount bracket: HY-CM10B<br>Cluster bracket: HY-CL10B                                                                                                             | Board hanger bracket: HY-BH10B<br>Ceiling mount bracket: HY-CM10W<br>Cluster bracket: HY-CL10B                                                                                                            | Board hanger bracket: HY-BH10B<br>Ceiling mount bracket: HY-CM10B<br>Cluster bracket: HY-CL10B                                                                                                             | Board hanger bracket: HY-BH10B<br>Ceiling mount bracket: HY-CM10W<br>Cluster bracket: HY-CL10B                                                                                                             | Speaker mount bracket: YS-60B                                                                                                                                                                              |                                                                                                                                                                                                            |
| Recommended Subwoofer   | HB-1, FB-10, FB-100                                                                                                                                                                                        |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |

\* Note: Avoid installing the speaker in locations close to the seashore or in indoor swimming facilities.

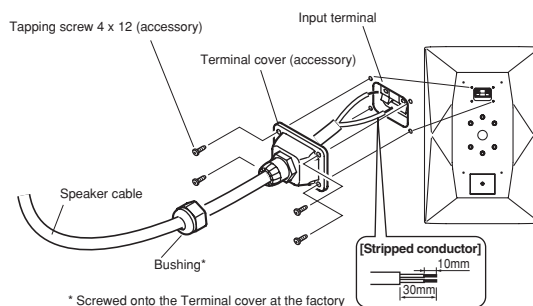
# F-2000 SERIES

## F-2000B/W/BT/WT/BTWP/WTWP

### APPEARANCE AND DIMENSIONAL DIAGRAM



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



#### Notes

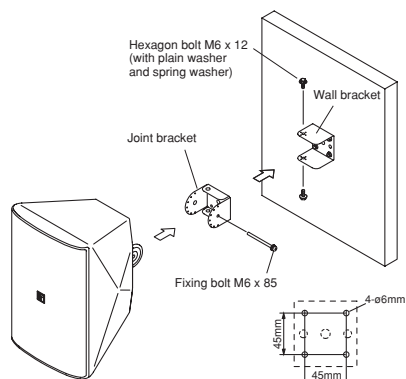
- For the speaker cable, use a cable with a diameter of 6 – 10 mm, which will fit the cable bushing.
- To ensure waterproof capabilities, firmly mount the terminal cover to the speaker and tighten the bushing on the cover.

### WALL BRACKET AND JOINT BRACKET MOUNTING

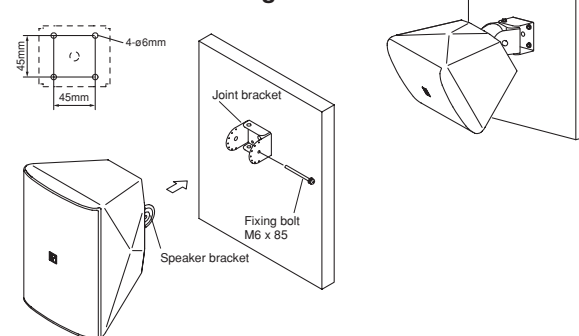
#### Wall bracket mounting

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)<br>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)<br>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<br>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°<br>Horizontal: 80°, Vertical: 80° (with horn adapter)                                                                                                                     |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Speaker Component       | Low frequency: 20 cm (8") cone-type<br>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<br>Punched net: Surface-treated steel plate, black, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, black, paint<br>Speaker bracket: Die-cast aluminum, black, paint | Enclosure: HIPS resin, white<br>Punched net: Surface-treated steel plate, white, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, white paint<br>Speaker bracket: Die-cast aluminum, white, paint | Enclosure: HIPS resin, black<br>Punched net: Surface-treated steel plate, black, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, black, paint<br>Speaker bracket: Die-cast aluminum, black, paint | Enclosure: HIPS resin, white<br>Punched net: Surface-treated steel plate, white, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, white, paint<br>Speaker bracket: Die-cast aluminum, white, paint | Enclosure: HIPS resin, black<br>Punched net: Surface-treated steel plate, black, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, black, paint<br>Speaker bracket: Die-cast aluminum, black, paint | Enclosure: HIPS resin, white<br>Punched net: Surface-treated steel plate, white, paint<br>Joint bracket, wall bracket: Steel plate, t1.6, white, paint<br>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 (16.31lb) (including the supplied brackets)                                                                                                                                                         |                                                                                                                                                                                                            |                                                                                                                                                                                                            |
| Accessories             | Speaker bracket × 1, Joint bracket × 1, Wall bracket × 1,<br>Bracket fixing screw × 1 set,<br>Horn adapter × 1, Horn adapter mounting screw × 4                                                            |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            | Speaker bracket × 1, Joint bracket × 1, Wall bracket × 1,<br>Bracket fixing screw × 1 set,<br>Horn adapter × 1, Horn adapter mounting screw × 4,<br>Terminal cover × 1, Terminal cover mounting screw × 4  |                                                                                                                                                                                                            |
| Option                  | Ceiling mount bracket: HY-CM20B<br>Cluster bracket: HY-CL20B                                                                                                                                               | Ceiling mount bracket: HY-CM20W<br>Cluster bracket: HY-CL20B                                                                                                                                              | Ceiling mount bracket: HY-CM20B<br>Cluster bracket: HY-CL20B                                                                                                                                               | Ceiling mount bracket: HY-CM20W<br>Cluster bracket: HY-CL20B                                                                                                                                               | Speaker mount bracket: SP-131, YS-60B                                                                                                                                                                      |                                                                                                                                                                                                            |
| Recommended Subwoofer   | FB-100, FB-120B/W                                                                                                                                                                                          |                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |                                                                                                                                                                                                            |

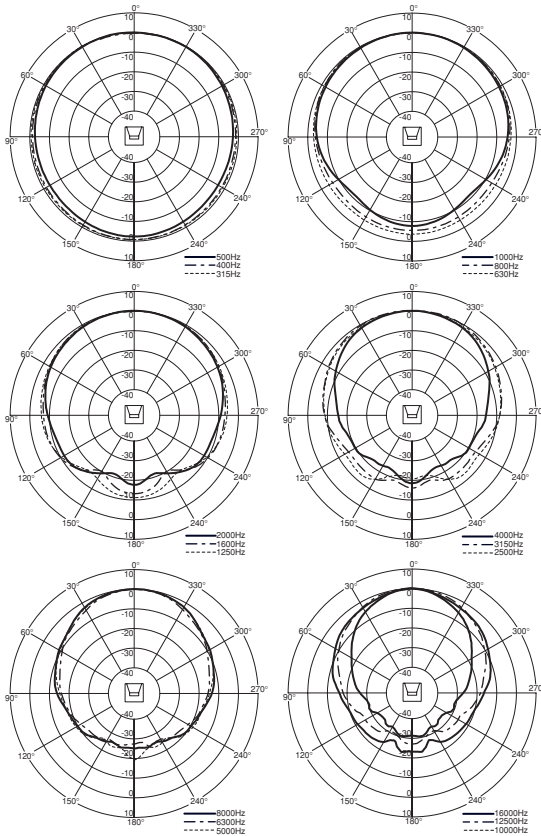
\* Note: Avoid installing the speaker in locations close to the seashore or in indoor swimming facilities.

# F-1000 SERIES

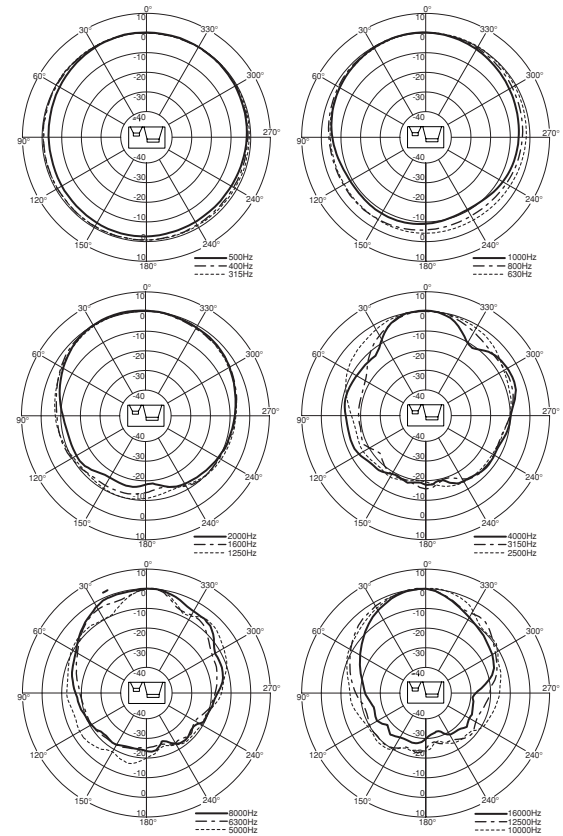
## CHARACTERISTIC DIAGRAMS

### Polar Response

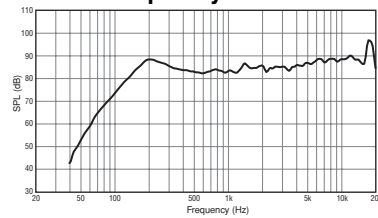
horizontal



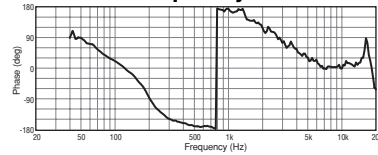
vertical



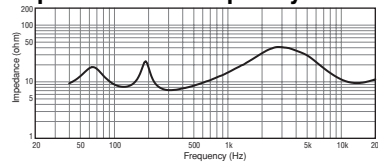
### SPL vs. Frequency



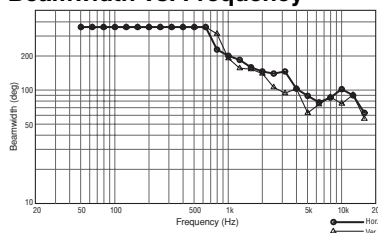
### Phase vs. Frequency



### Impedance vs. Frequency

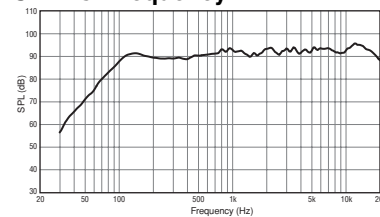


### Beamwidth vs. Frequency

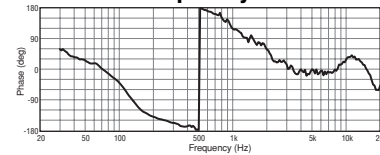


### • without HF Horn Adapter

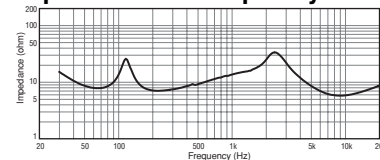
#### SPL vs. Frequency



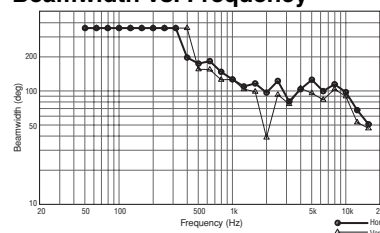
#### Phase vs. Frequency



#### Impedance vs. Frequency

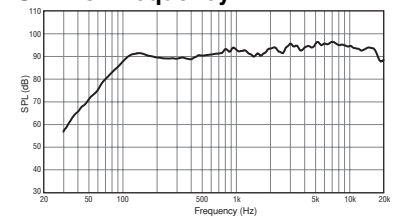


#### Beamwidth vs. Frequency

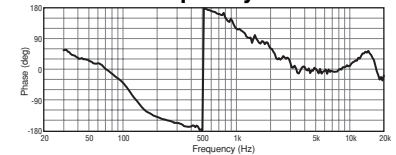


### • with HF Horn Adapter

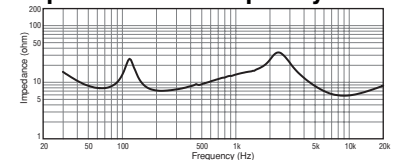
#### SPL vs. Frequency



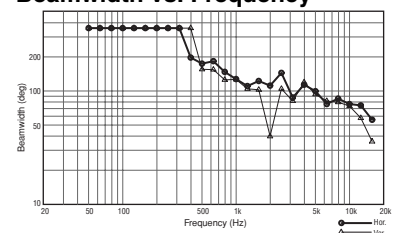
#### Phase vs. Frequency



#### Impedance vs. Frequency



#### Beamwidth vs. Frequency





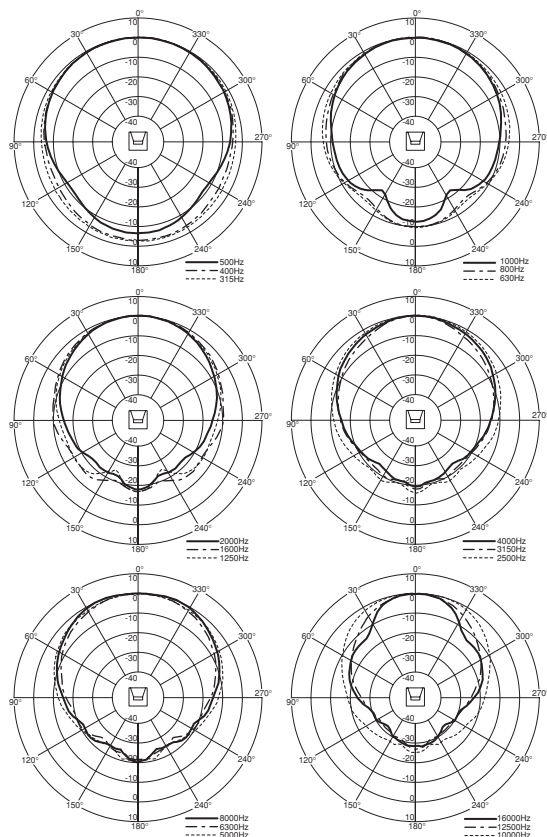
# F-2000 SERIES

## CHARACTERISTIC DIAGRAMS

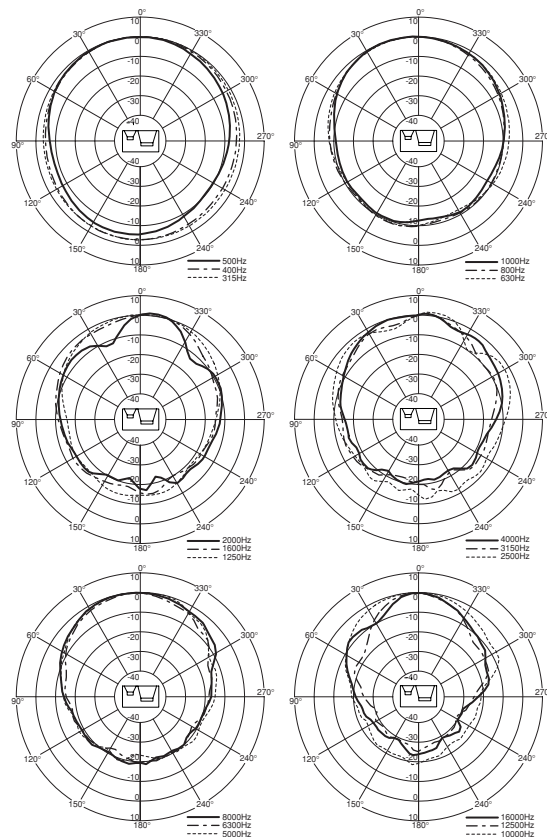
### • without HF Horn Adapter

#### Polar Response

horizontal



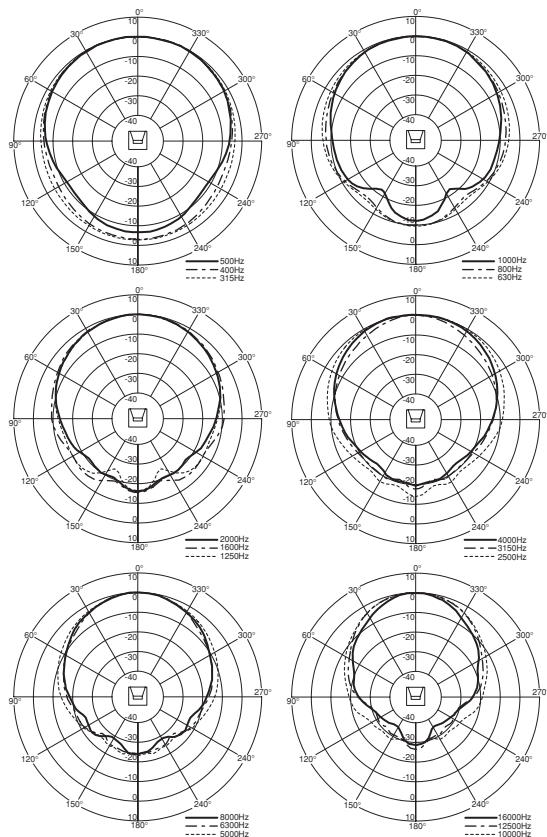
vertical



### • with HF Horn Adapter

#### Polar Response

horizontal



vertical

