



## SPEAKER SYSTEMS

**F12**

**F12M**

**F15**

**F25**

## SUBWOOFER

**F28**

**Owner's Manual**

**Mode d'emploi**

**Bedienungsanleitung**

**Manual de instrucciones**

**取扱説明書**

Thank you for purchasing a YAMAHA product. To obtain maximum performance from your YAMAHA speaker system and ensure many years of trouble-free operation, we recommend that you read this Owner's Manual thoroughly before use and keep it for future reference.

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English

Français

Deutsch

Español

日本語

Additions

# Precautions

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## AVOID EXCESSIVE HEAT, HUMIDITY, DUST AND VIBRATION

When choosing a location for your speakers, avoid the following:

- Direct sunlight, high temperatures (such as near heaters), or excessively low temperatures.
- High humidity.
- Areas subject to excessive dust accumulation and vibration.
- Non-level or unstable surfaces.

## HOW TO POWER UP YOUR SOUND SYSTEM

To avoid damage to your speakers and other parts of your system, when you turn on your system, ALWAYS turn the power amp on last! This will avoid loud, damaging pops that will annoy your audience, and blow your speakers. When you power down, the amplifier should ALWAYS be turned off first to avoid the same problems.

## MAKE SURE THE POWER IS OFF BEFORE MAKING OR REMOVING CONNECTIONS

Always turn the power switches of system components OFF prior to connecting or disconnecting cables. Failure to do so may result in damage to speakers as well as to connected equipment.

## DISCONNECT CABLES BEFORE MOVING THE SYSTEM

To prevent short circuits or breakage of cables, always disconnect cables prior to moving system equipment.

## MATCH CONNECTOR POLARITY

When using two or more speaker systems, be sure match the polarity (+/-) of the speaker system connectors to those at the amplifier. If the polarities do not match, the sounds produced by the speakers will interfere with each other, making it impossible to achieve a well-balanced sound field.

## KEEP THIS OWNER'S MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE

## ■ To protect your speakers

When choosing a power amplifier to use with your speakers, make sure that its power output matches the speakers' power capacity (refer to the "Specifications" on page 5). Even if the amplifier's power output is lower than the speakers' PGM (program) power capacity, the speakers may be damaged when clipping of a high input signal occurs.

The following may cause damage to speakers:

- Feedback caused when using a microphone.
- Continuous high sound pressure level produced by electronic instruments.
- Continuous high-power output distorted signals.
- Popping noises caused by turning on equipment, or by connecting or disconnecting system components while the amplifier is turned on.



This product, when used in combination with amplification and/or additional loudspeakers, may be capable of producing sound levels that could cause permanent hearing loss.

DO NOT operate at high volume levels or at a level that is uncomfortable. If you experience any discomfort or ringing in the ears, or suspect an hearing loss, you should consult an audiologist.

## SPEAKER HANDLES

The handles on your speakers are for transportation. The F12M/F25/F28 models are not designed for suspension or hanging. Only the F12/F15 models are designed for suspension. Please consult a qualified engineer for proper hanging techniques.

## Fly-Ware

Hang correctly according to the instructions on page 4.

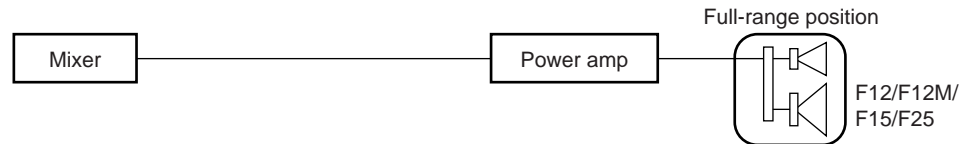
# Connection example

- SPEAKER SYSTEMS: F12/F12M/F15/F25
- SUBWOOFER: F28

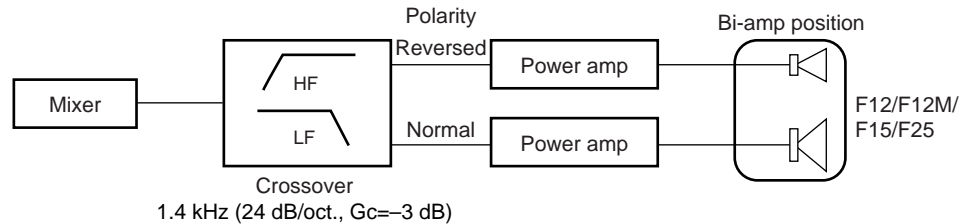
## Connections

### Stand alone

- ① Use as full-range speaker system

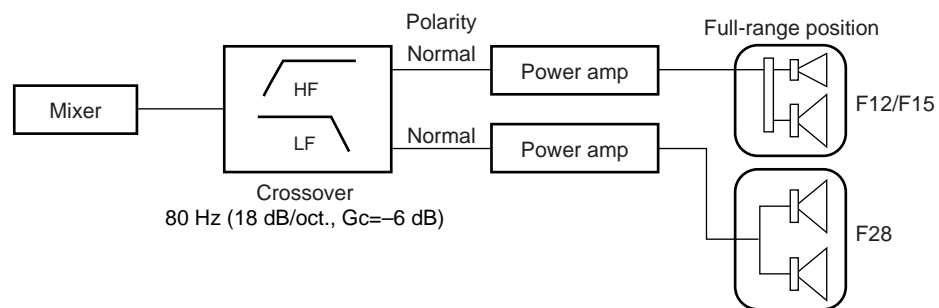


- ② Use as bi-amp speaker system

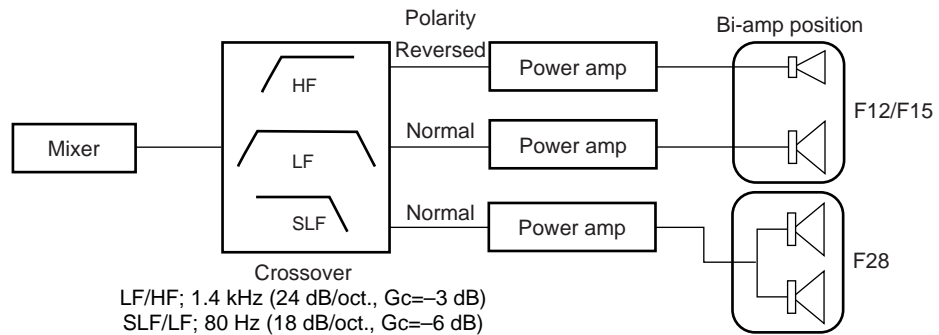


### Use combined with subwoofer

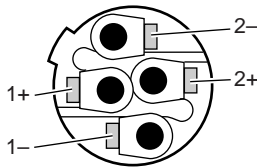
- ① 2-way crossover



- ② 3-way crossover



## Speaker system and Neutrik NL4FC connector connections

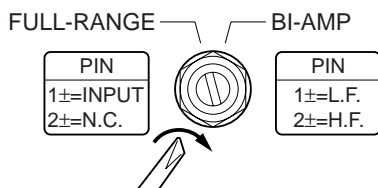


Neutrik NL4FC connector

Full-range operation		Bi-amp operation		Subwoofer	
1+	+	1+	LF+	1+	+
1-	-	1-	LF-	1-	-
2+		2+	HF+	2+	
2-		2-	HF-	2-	

## Bi-amp drive

The F12/F12M/F15/F25 also support bi-amp drive.



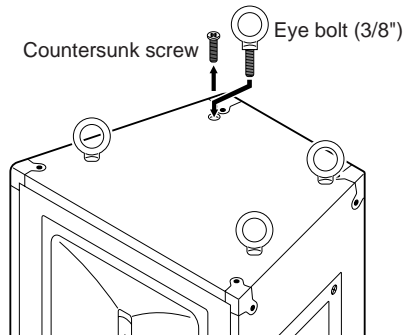
For bi-amp drive, switch the mode switch from FULL-RANGE to BI-AMP with a flat-bladed screwdriver.

**Caution:** • Do not switch the mode switch during operation.

# Hanging installation

The F12/F15 can be installed hanging. Remove the four countersunk screws on the top or bottom of the speaker system, screw in the four accessory eye bolts and hang with wire.

When hanging the speaker system, carry out the work under the guidance of an expert with a safe method appropriate to the actual installation and environment.

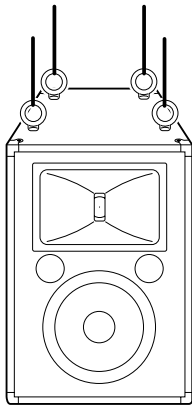


- Warning:**
- Always use the accessory eye bolts.
  - Always hang with four eye bolts on one surface.
  - Do not use the handle to hang the speaker system.

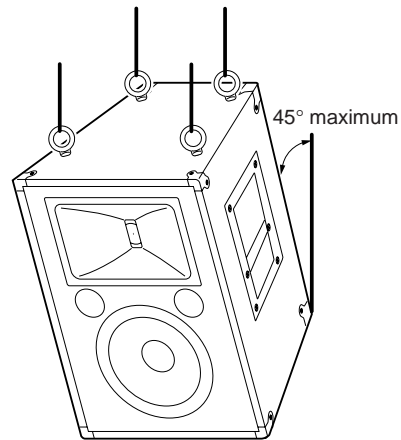
## Standards and use conditions for flying

- ① Always hang from four points. (Figure 1)
- ② Use the fittings for the F12/F15 with a total load no greater than 172 kg including the speakers, eye bolts, wires, etc.
- ③ Use with a hanging angle of no greater than 45°. (Figure 2)
- ④ When hanging in a vertical array, use no more than 4 levels of F12s or 3 levels of F15s.
- ⑤ Verify the strength of wire rope, ceiling fittings, and connection fittings.

\* ①–⑤ above are reference values.



(Figure 1: Always hang from four points.)



(Figure 2: Retraction angle 45° maximum)

## Maintenance inspection

Parts can deteriorate due to wear, corrosion, etc. during use. For the sake of safe usage, inspect periodically.

# Specifications

## ■ SPEAKER SYSTEMS

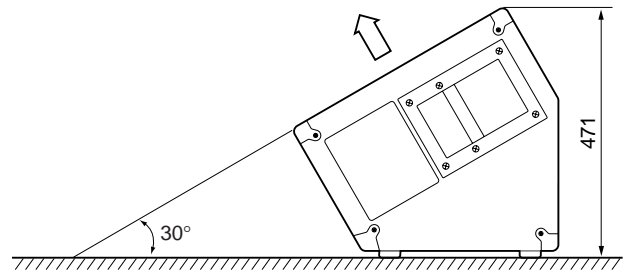
Model		F12	F12M	F15	F25
Frequency Range		55 Hz to 20 kHz		45 Hz to 20 kHz	
Power Capacity	NOISE	350 W (EIA RS-426)			700 W (EIA RS-426)
	PRGM	700 W			1400 W
	MAX	1400 W			2800 W
Nominal Impedance		8Ω			4Ω
Sensitivity		98 dB (W, m)		99 dB (W, m)	98 dB (W, m)
Nominal Dispersion	Horizontal	60°	40°	60°	
	Vertical	40°	60°	40°	
Crossover Frequency		1.5 kHz			
Input Connectors		NEUTRIK NL4MPR ×2			
Mode Switch		Full Range & Bi-Amp			
Components	LF	12" cone (JAY5130)		15" cone (JAY6150)	15" cone × 2 (JAY6150)
	HF	3" Titanium diaphragm driver (JAY2120)			
Enclosure		Bass Reflex Type			
Dimensions (W × H × D)		500 × 714 × 375 mm	705 × 465 × 447 mm	575 × 855 × 435 mm	575 × 1225 × 550 mm
Weight		34 kg	32.5 kg	40 kg	63 kg
Accessory		3/8" Shoulder Eye Bolts × 4 pcs	—	3/8" Shoulder Eye Bolts × 4 pcs	—

## ■ SUBWOOFER

Model		F28
Frequency Range		35 Hz to 2 kHz
Power Capacity	NOISE	1000 W (EIA RS-426)
	PRGM	2000 W
	MAX	4000 W
Nominal Impedance		4Ω
Sensitivity		98 dB (W, m)
Input Connectors		NEUTRIK NL4MPR ×2
Components		18" cone ×2 (JAY7020)
Enclosure		Bass Reflex Type
Dimensions (W × H × D)		1225 × 585 × 655 mm
Weight		72.5 kg

Specifications subject to change without notice.

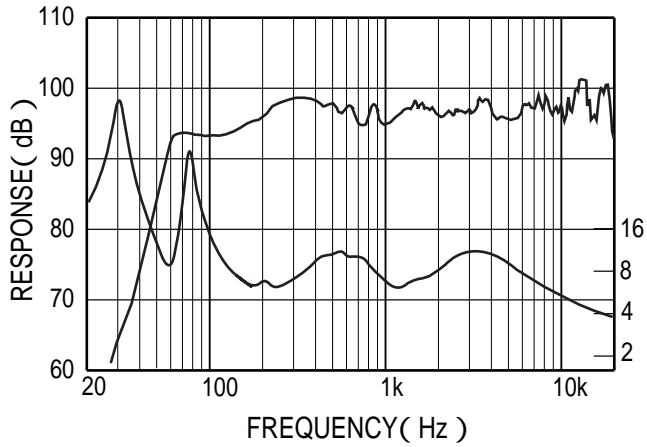
## ☆ F12M floor mounting angle



# Technical Data

## F12/F12M

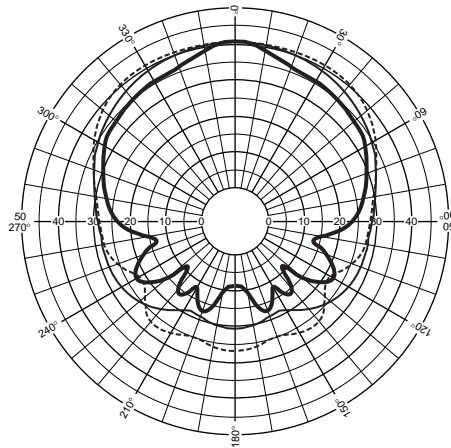
Frequency Response/Impedance



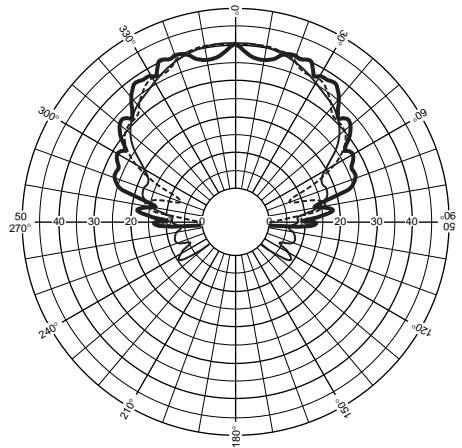
F12; Horizontal Directivity

F12M; Vertical Directivity

- 500Hz ———
- 1kHz - - - - -
- 2kHz ———



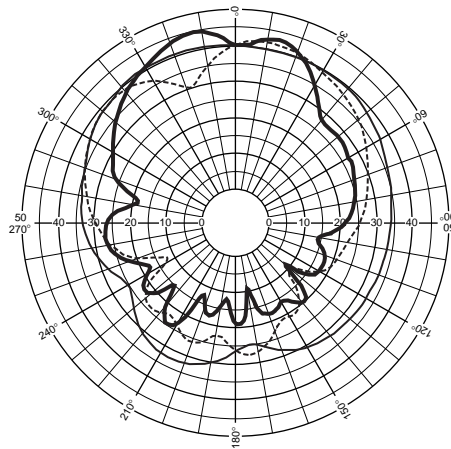
- 4kHz ———
- 8kHz - - - - -
- 16kHz ———



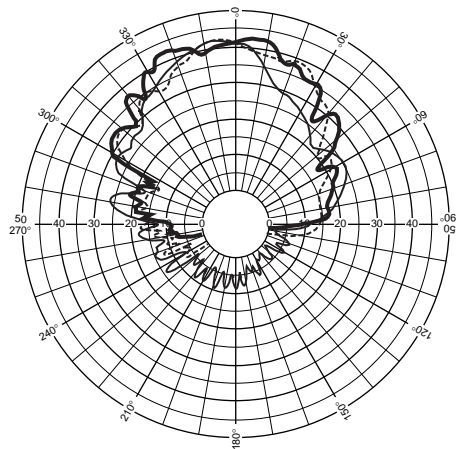
F12; Vertical Directivity

F12M; Horizontal Directivity

- 500Hz ———
- 1kHz - - - - -
- 2kHz ———

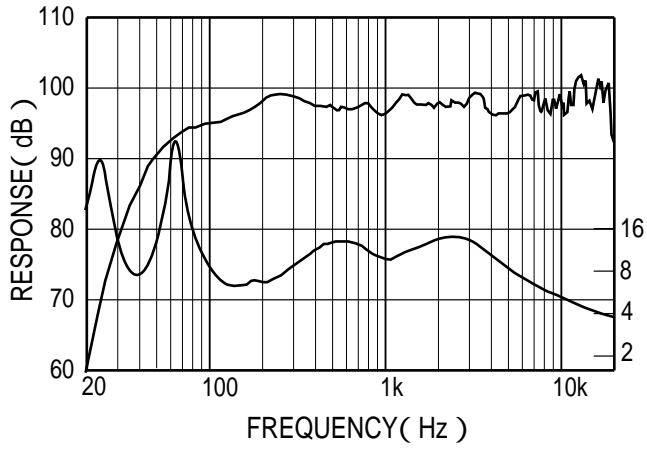


- 4kHz ———
- 8kHz - - - - -
- 16kHz ———



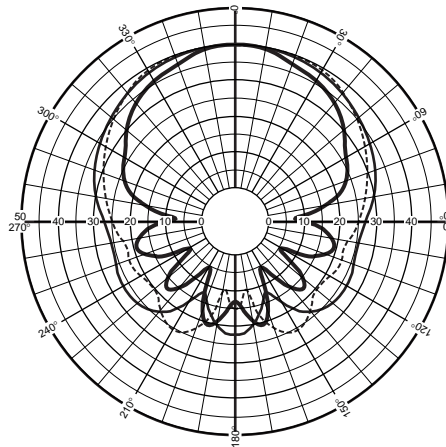
# F15

## Frequency Response/Impedance

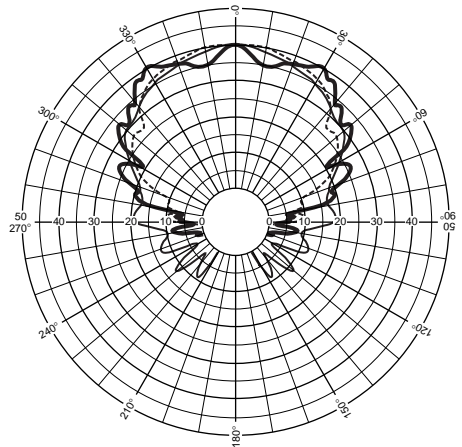


## Horizontal Directivity

- 500Hz ———
- 1kHz - - - - -
- 2kHz ———

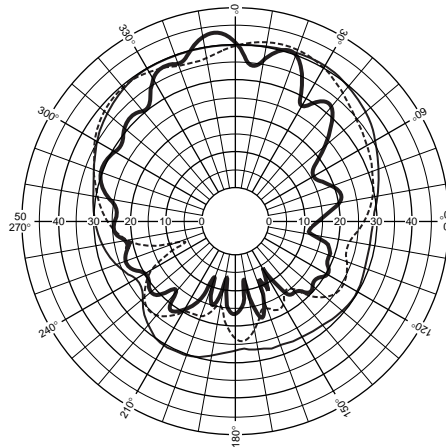


- 4kHz ———
- 8kHz - - - - -
- 16kHz ———

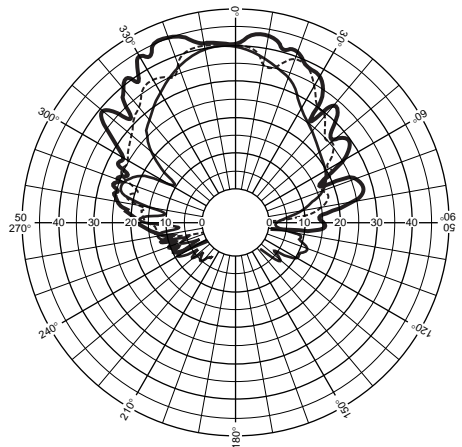


## Vertical Directivity

- 500Hz ———
- 1kHz - - - - -
- 2kHz ———

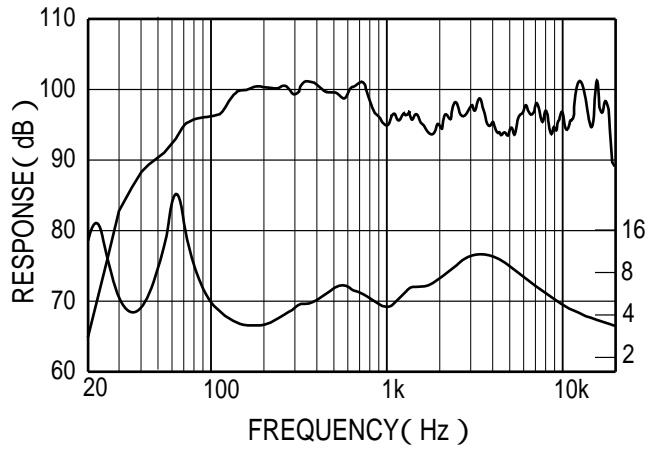


- 4kHz ———
- 8kHz - - - - -
- 16kHz ———

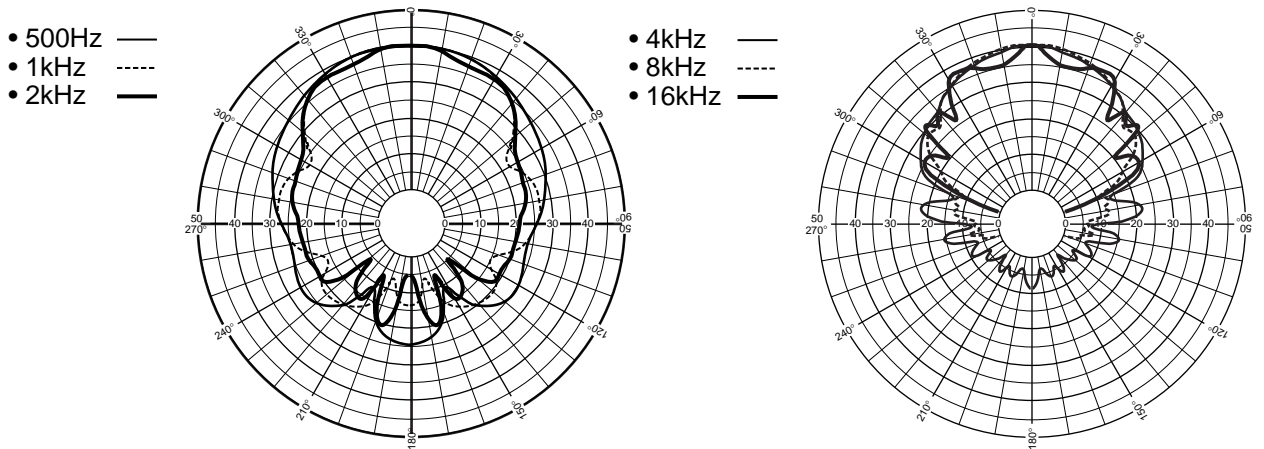


# F25

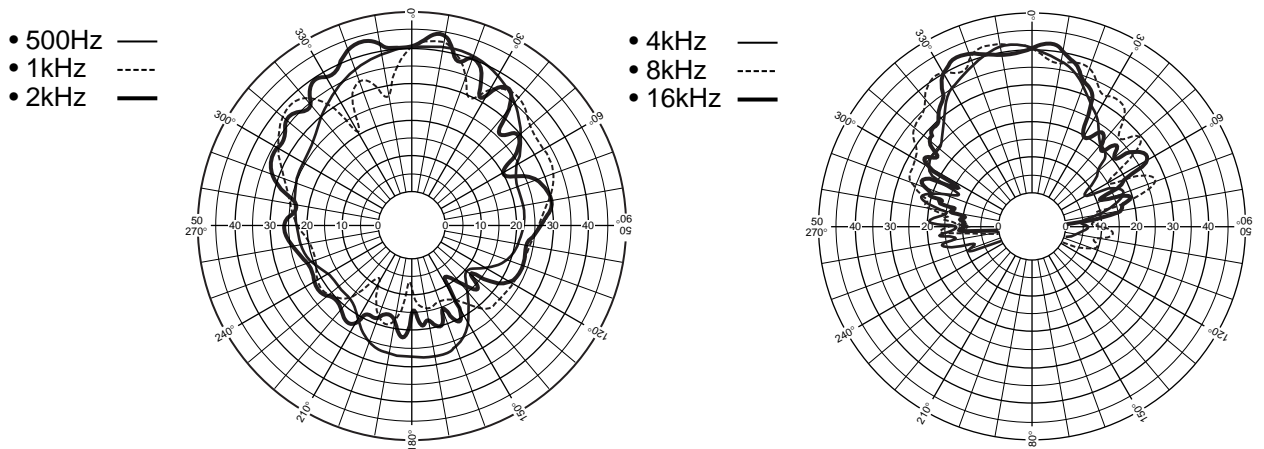
## Frequency Response/Impedance



## Horizontal Directivity



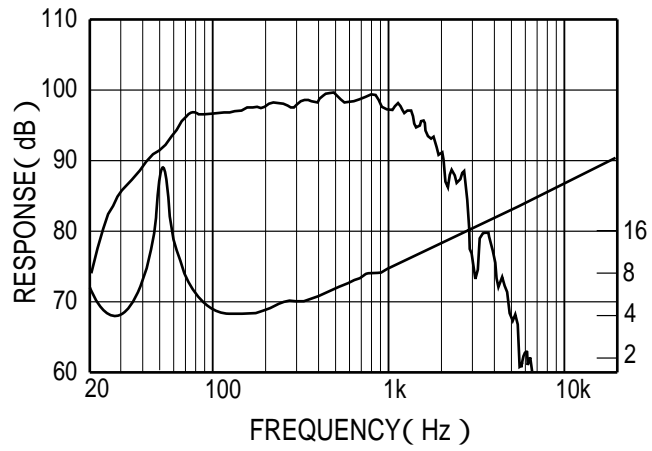
## Vertical Directivity





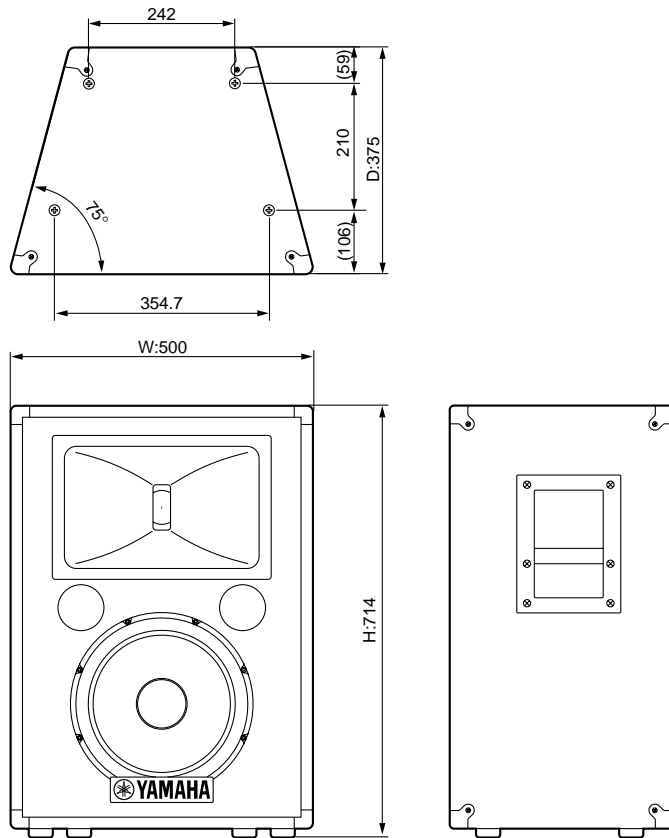
F28

Frequency Response/Impedance

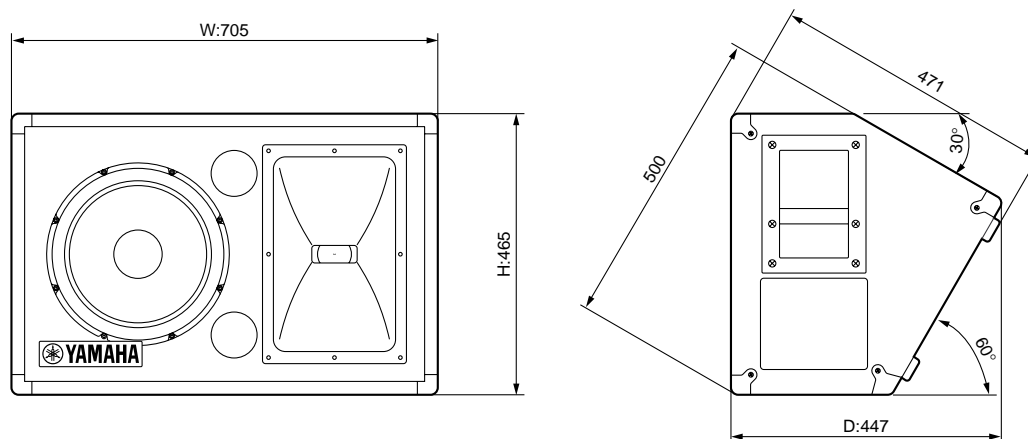


# Dimensions

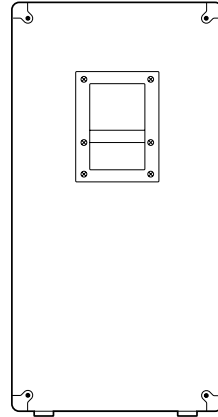
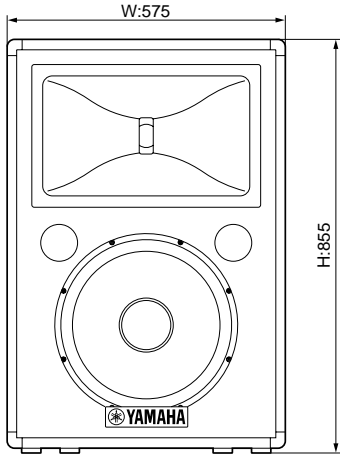
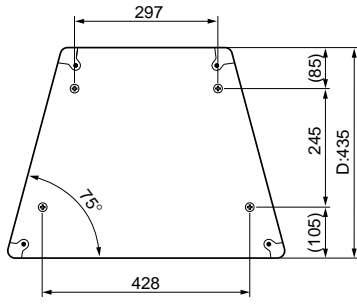
F12



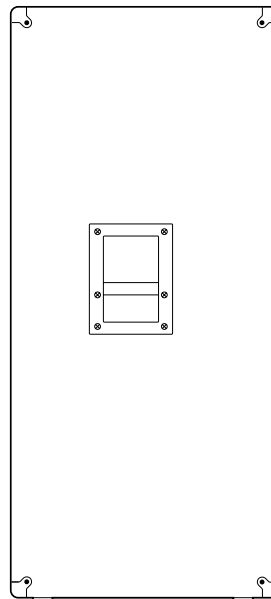
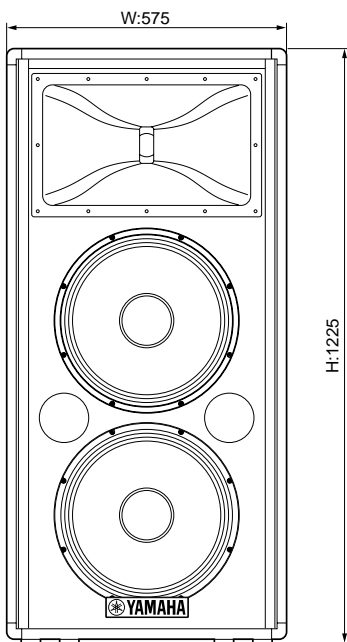
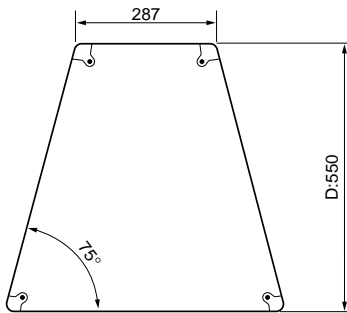
F12M



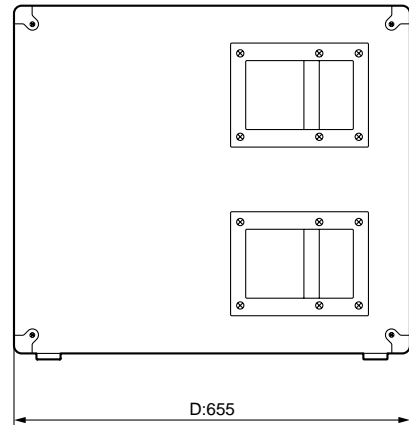
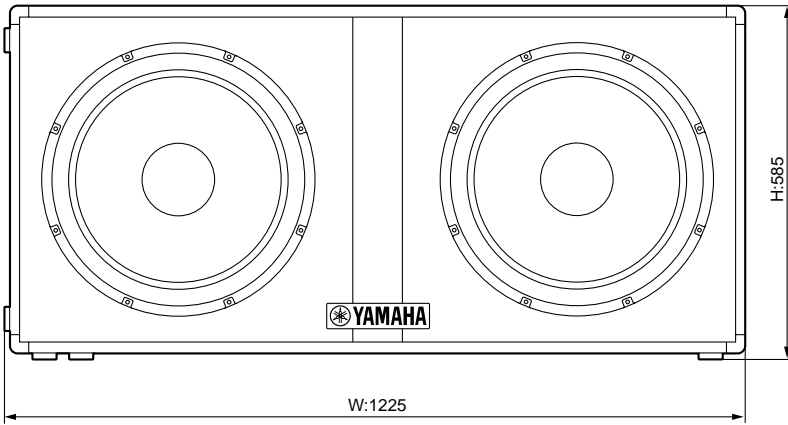
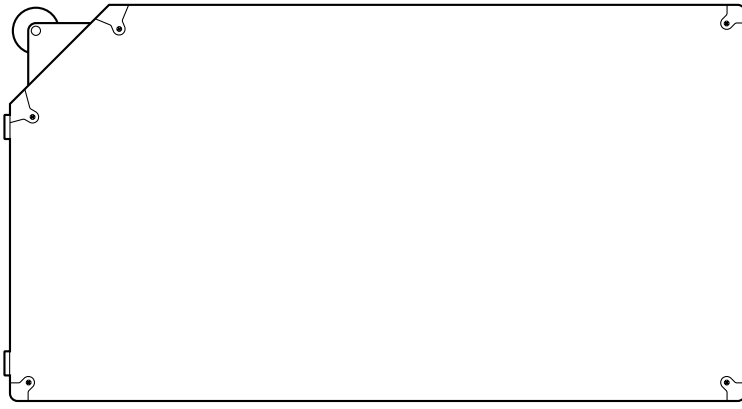
F15



F25



F28



Unit : mm

