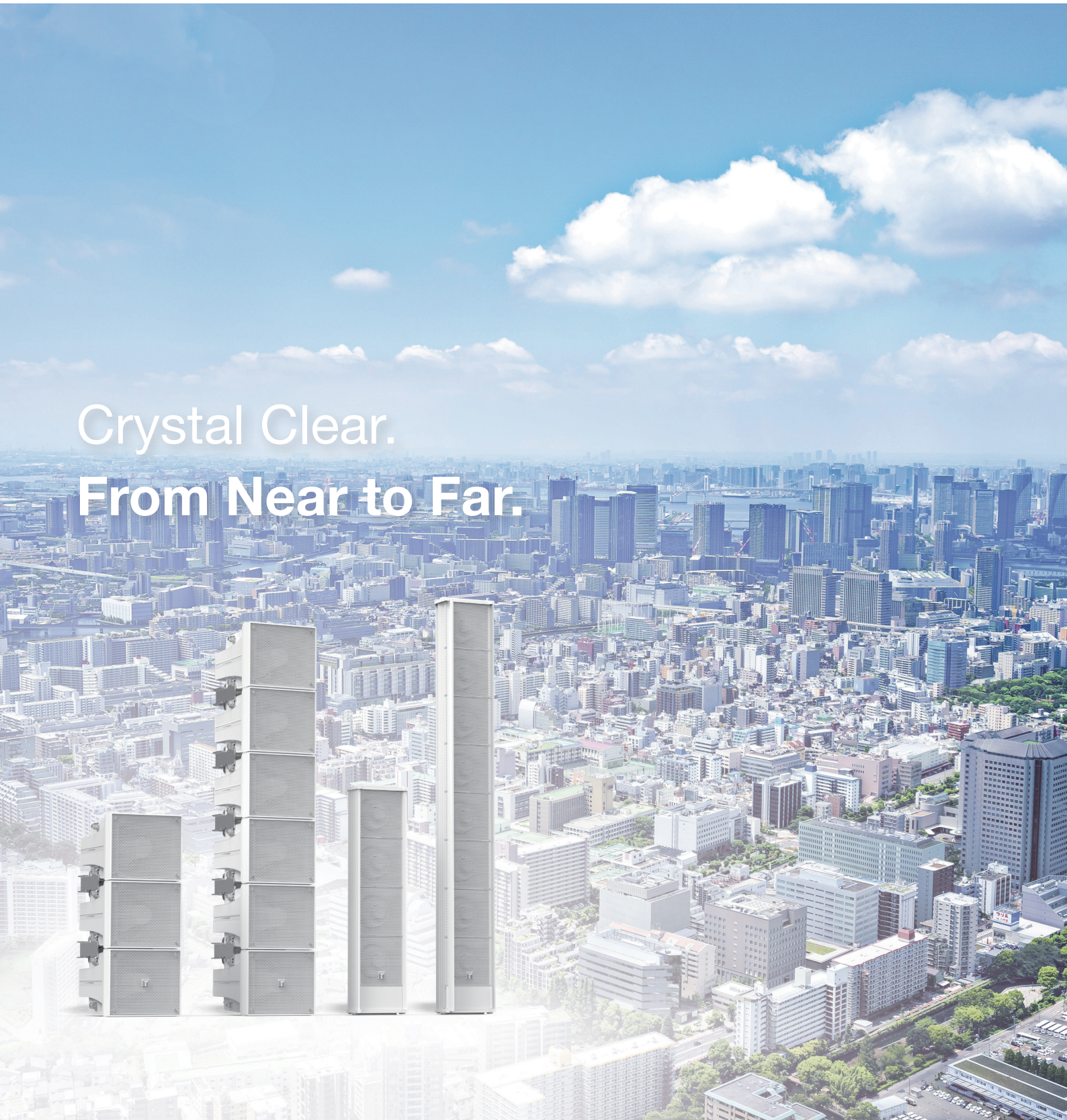
TOA

LONG RANGE HORN ARRAY SPEAKER

HA Series



Loud. Clear. Unmistakable – Even in Noise.

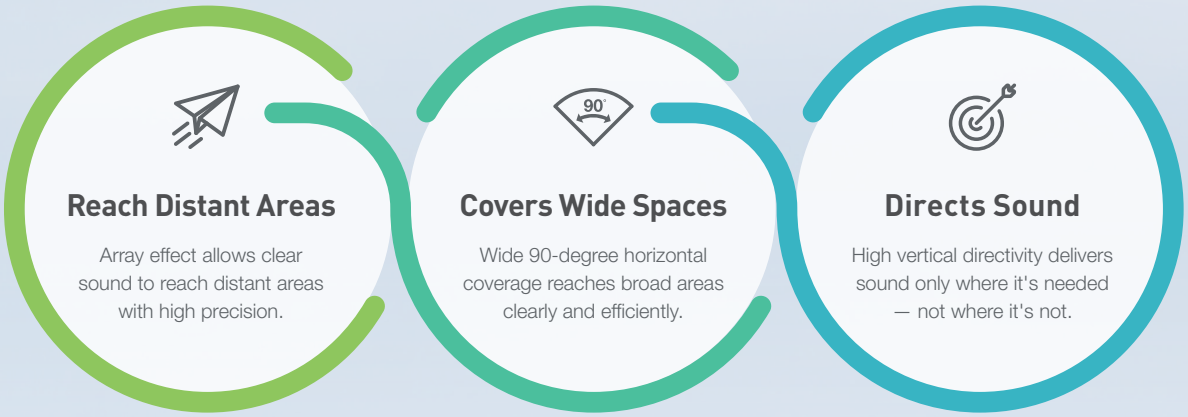
When communication must cut through distance, wind, and industrial noise, TOA's Horn Array Speakers deliver unmatched clarity and reach. Engineered for large-scale outdoor environments, these speakers project highly intelligible sound across hundreds of meters, while minimizing noise spill to nearby areas. With precision-directivity and durable construction, they are trusted in ports, factories, stadiums, and beyond.

EN54 IP66

The Power of
Horn Array Technology

The HA Series harnesses the power of horn array technology to achieve performance that a single horn alone cannot deliver.

HA Series

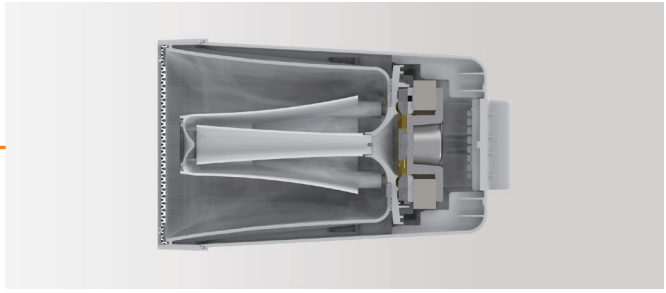


TOA Horn Array Speaker

The HA Series is designed to deliver clear, powerful sound where it's needed most, reaching far distances without overwhelming nearby listeners. Its wide horizontal coverage minimizes dead zones, reducing the number of speakers required and maximizing cost performance. Thanks to precise vertical directivity, sound stays focused, avoiding excessive loudness directly below the speaker while ensuring that every listener, near or far, hears messages clearly and confidently. Ideal for stadiums, transport hubs, and large outdoor spaces, the HA Series turns challenging environments into spaces where communication is effortless and reliable.

01 What is a Horn Array Technology

Cross-Section of a Single Horn

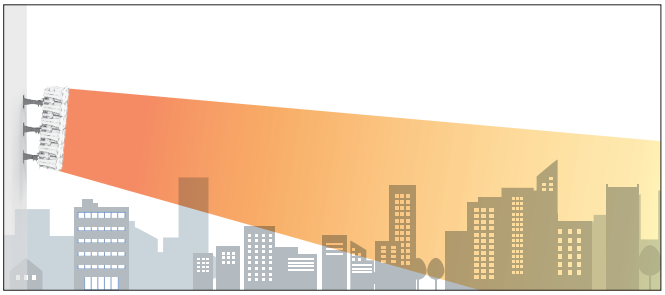


A horn array places multiple horns in precise alignment so their sound waves combine and reinforce each other. This array effect projects audio farther with greater clarity, spreads evenly across wide spaces, and directs energy horizontally to avoid excessive loudness nearby — delivering powerful yet comfortable sound where it's needed most.

The diagram below compares the sound dispersion of a conventional speaker (left) and the HA Series (right). As shown, conventional speakers often concentrate excessive volume directly beneath the unit, creating uncomfortable noise for nearby listeners while still failing to deliver clear sound at a distance. The HA Series, by contrast, uses horn array technology to project audio powerfully and clearly across long distances, while keeping sound levels balanced and comfortable near the speaker. This ensures that announcements remain intelligible, consistent, and pleasant for everyone in the coverage area — from those standing close by to those listening far away.

Sound Dispersion of the Conventional Horn Speaker

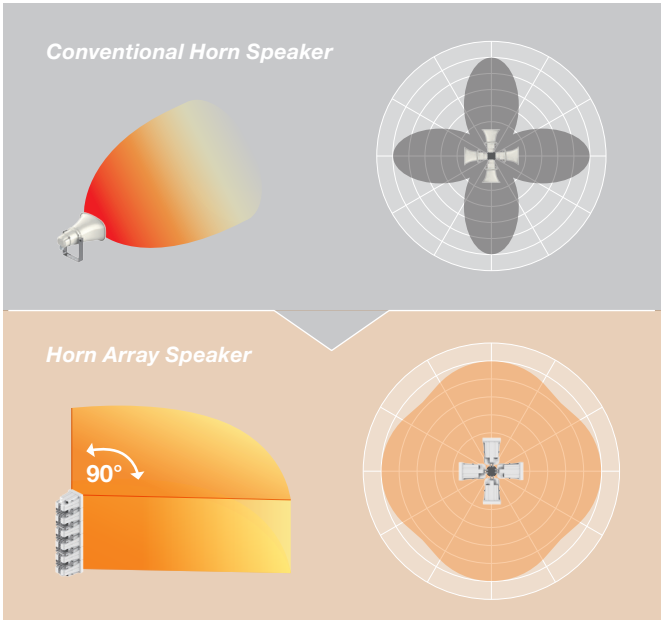
Sound Dispersion of the Horn Array Speaker



02 Application Examples

Thanks to its unique horn array design, the HA Series is an ideal solution for environments requiring long-range, wide-area coverage and clear sound control. It performs well in noisy sites such as factories, ports, and shopping streets, as well as in large outdoor areas like transit hubs, parking lots, and parks. The HA Series is also highly effective in tunnels, where echoes are common, as its controlled directivity suppresses reflections while carrying sound clearly over long distances. In Japan, where TOA is headquartered, it has been widely adopted by municipalities and organizations for disaster-response announcements, and for daily use in parks, factories, amusement facilities, and commercial districts — proving its reliability across diverse public spaces.

Sound dispersion comparison



Emergency announcements in large parks

Images are for the Japanese market and may differ in specifications or colors.

Public address along roads and inside tunnels

Images are for the Japanese market and may differ in specifications or colors.

The HA Series delivers more than performance — it delivers peace of mind. From daily use to critical emergencies, its clear and controlled sound ensures messages reach everyone who needs to hear them. With TOA's horn array technology, it stands as a trusted solution for safer and more connected public spaces.

HA-1030EN / 1060EN Long Range Array Speaker

- Horn array for clear long-range voice projection
- IP66-rated for harsh outdoor use
- Weatherproof durability with double drip-proof design and salt-resistant paint finish
- Wide horizontal coverage for broad-area public address applications
- Available in 30 W (4-unit) and 60 W (8-unit) models
- Built-in high-pass filter for speaker protection
- EN 54-24 compliant for evacuation systems
- Optional mounting bracket for flexible installation

Specifications	HA-1030EN	HA-1060EN
Rated Input	30 W	60 W
Rated Impedance	100 V line: 330 Ω (30 W), 670 Ω (15 W) 70 V line: 170 Ω (30 W), 330 Ω (15 W)	100 V line: 170 Ω (60 W), 330 Ω (30 W) 70 V line: 83 Ω (60 W), 170 Ω (30 W)
Sensitivity	109 dB (1 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)	111 dB (1 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)
Max. SPL	123 dB (30 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)	128 dB (60 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)
Frequency Response	550 Hz - 4.8 kHz (-10 dB), 360 Hz - 12 kHz (-20 dB)	520 Hz - 4.6 kHz (-10 dB), 350 Hz - 11 kHz (-20 dB)
Speakers Component	Horn speaker unit X 4	Horn speaker unit X 8
IP code	IP66	IP66
EN 54-24 specifications	Sensitivity: 88 dB (1 W, 4 m), Max. SPL: 103 dB (30 W, 4 m) Coverage Angle (-6 dB): Horizontal: 190°(500 Hz), 165°(1 kHz), 85°(2 kHz), 45°(4 kHz) Vertical: 80°(500 Hz), 45°(1 kHz), 20°(2 kHz), 15°(4 kHz) Environmental Type: B (outdoor applications) IP Code: IP33C	Sensitivity: 89 dB (1 W, 4 m), Max. SPL: 106 dB (60 W, 4 m) Coverage Angle (-6 dB): Horizontal: 190°(500 Hz), 165°(1 kHz), 85°(2 kHz), 45°(4 kHz) Vertical: 40°(500 Hz), 25°(1 kHz), 15°(2 kHz), 15°(4 kHz) Environmental Type: B (outdoor applications) IP Code: IP33C
Speaker Cable	4-core cabtype cord 2 m (6.56 ft)	4-core cabtype cord 2 m (6.56 ft)
Cable Gland	Size: PG 13.5 - 12 (gray) ···1, Cable Diameter Range: 12.5 - 6.5 mm (0.49" - 0.26") Size: PG 13.5 - 08 (black) ···1, Cable Diameter Range: 9 - 4.5 mm (0.35" - 0.18"), Two cable glands are factory-installed.	
Input Terminal	Ceramic terminal (3-pole), can be bridge-connected ···1, Ceramic terminal (2-pole) ···1, Thermal fuse is included.	
Applicable Wire Size	For Ceramic terminal (3-pole), Conductor: Solid wire or 7-core wire No bridge connection: 0.8 - 10 mm^2 (AWG 18 - 7) for solid wire, 0.8 - 8 mm^2 (AWG 18 - 8) for 7-core wire Bridge connection: 0.8 - 2.5 mm^2 (AWG 18 - 13) for solid wire, 0.8 - 1.5 mm^2 (AWG 18 - 15) for 7-core wire	
Operating Temperature	-20 °C to +55 °C (-4 °F to 131 °F)	-20 °C to +55 °C (-4 °F to 131 °F)
Finish	Case: Aluminum, white (RAL 9016 equivalent), salt-resistant, paint Front grille: Aluminum, white (RAL 9016 equivalent), paint, Bolts: Stainless steel	
Dimensions	167 (W) X 665 (H) X 140.5 (D) mm (6.57" X 26.18" X 5.53") (excluding projection)	167 (W) X 1233 (H) X 140.5 (D) mm (6.57" X 48.54" X 5.53") (excluding projection)
Weight	8 kg (17.64 lb) (unit only)	14 kg (30.86 lb) (unit only)
Accessory	Terminal box ···1	
Option	Speaker mounting bracket: YS-1100A	

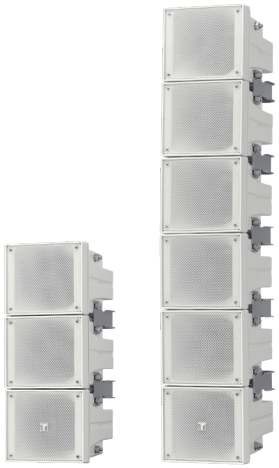
Notes: The speaker must be installed upright or facing down. Installing the speaker in any other position may render the drainage hole ineffective, eventually leading to an electrical failure or other damage.

Optional Accessory

The YS-1100A speaker mounting bracket is necessary for installing the speakers on a wall or a pole.

YS-1100A

HA-2120EN / 2240EN Long Range Array Speaker



- Horn array for clear long-range voice projection
- IP66-rated for harsh outdoor use
- Weatherproof durability with double drip-proof design and salt-resistant paint finish
- Wide horizontal coverage for broad-area public address applications
- Available in 120 W (3-unit) and 240 W (6-unit) models
- Built-in high-pass filter for speaker protection
- EN 54-24 compliant for evacuation systems
- Optional mounting bracket for flexible installation

Specifications	HA-2120EN	HA-2240EN
Rated Input	120 W	240 W
Rated Impedance	100 V line: 83 Ω (120 W), 170 Ω (60 W) 70 V line: 42 Ω (120 W), 83 Ω (60 W)	100 V line: 42 Ω (240 W), 83 Ω (120 W) 70 V line: 21 Ω (240 W), 42 Ω (120 W)
Sensitivity	113 dB (1 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)	115 dB (1 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)
Max. SPL	133 dB (120 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)	138 dB (240 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)
Frequency Response	550 Hz - 4.3 kHz (-10 dB), 290 Hz - 8 kHz (-20 dB)	490 Hz - 4.2 kHz (-10 dB), 280 Hz - 8 kHz (-20 dB)
Speakers Component	Horn speaker unit X 3	Horn speaker unit X 6
IP code	IP66	IP66
EN 54-24 specifications	Sensitivity: 91 dB (1 W, 4 m), Max. SPL: 110 dB (120 W, 4 m) Coverage Angle (-6 dB): Horizontal: 200°(500 Hz), 120°(1 kHz), 65°(2 kHz), 40°(4 kHz) Vertical: 80°(500 Hz), 40°(1 kHz), 20°(2 kHz), 15°(4 kHz) Environmental Type: B (outdoor applications) IP Code: IP33C	Sensitivity: 91 dB (1 W, 4 m), Max. SPL: 114 dB (240 W, 4 m) Coverage Angle (-6 dB): Horizontal: 200°(500 Hz), 120°(1 kHz), 65°(2 kHz), 40°(4 kHz) Vertical: 40°(500 Hz), 20°(1 kHz), 10°(2 kHz), 15°(4 kHz) Environmental Type: B (outdoor applications) IP Code: IP33C
Speaker Cable	4-core cabtype cord 2 m (6.56 ft)	4-core cabtype cord 2 m (6.56 ft)
Cable Gland	Size: PG 13.5 - 12 (gray) ···1, Cable Diameter Range: 12.5 - 6.5 mm (0.49" - 0.26") Size: PG 13.5 - 08 (black) ···1, Cable Diameter Range: 9 - 4.5 mm (0.35" - 0.18"), Two cable glands are factory-installed.	
Input Terminal	Ceramic terminal (3-pole), can be bridge-connected ···1, Ceramic terminal (2-pole) ···1, Thermal fuse is included.	
Applicable Wire Size	For Ceramic terminal (3-pole), Conductor: Solid wire or 7-core wire No bridge connection: 0.8 - 10 mm^2 (AWG 18 - 7) for solid wire,, 0.8 - 8 mm^2 (AWG 18 - 8) for 7-core wire Bridge connection: 0.8 - 2.5 mm^2 (AWG 18 - 13) for solid wire, 0.8 - 1.5 mm^2 (AWG 18 - 15) for 7-core wire	
Operating Temperature	-20 °C to +55 °C (-4 °F to 131 °F)	-20 °C to +55 °C (-4 °F to 131 °F)
Finish	Case: FRP, white (RAL 9016 equivalent), paint Front grille: Aluminum, white (RAL 9016 equivalent), paint, Bolts: Stainless steel	
Dimensions	215 (W) X 555 (H) X 309 (D) mm (8.46" X 21.85" X 12.17") (excluding projection)	215 (W) X 1110 (H) X 309 (D) mm (8.46" X 43.7" X 12.17") (excluding projection)
Weight	16 kg (35.27 lb) (unit only)	33 kg (72.75 lb) (unit only)
Accessory	Terminal box ···1	
Option	Speaker mounting bracket: YS-1100A	

Notes: The speaker must be installed upright or facing down. Installing the speaker in any other position may render the drainage hole ineffective, eventually leading to an electrical failure or other damage.

Optional Accessory

The YS-1100A speaker mounting bracket is necessary for installing the speakers on a wall or a pole.

YS-1100A

TOA

Smiles for the Public

Specifications are subject to change without notice for improvement. (202509) 8336110077-00