HA-2240EN

LONG RANGE ARRAY SPEAKER 240W



The HA-2240EN is composed of multiple horn speakers positioned in an array. It is a highly efficient speaker. Clear voice can be transmitted to a distant place without acoustic correction. The built-in high-pass filter cuts the bass that can damage the speaker. Drip-proof structure, and a salt-resistant paint finish, it has excellent durability in an outdoor permanent environment.
The HA-2240EN is certified to the European Standard EN 54-24: 2008, Loudspeaker for voice alarm systems for fire detection and fire alarm systems
In compliance with the British Standard BS 5839-8: 2008. DoP number is 23-104.

Key features

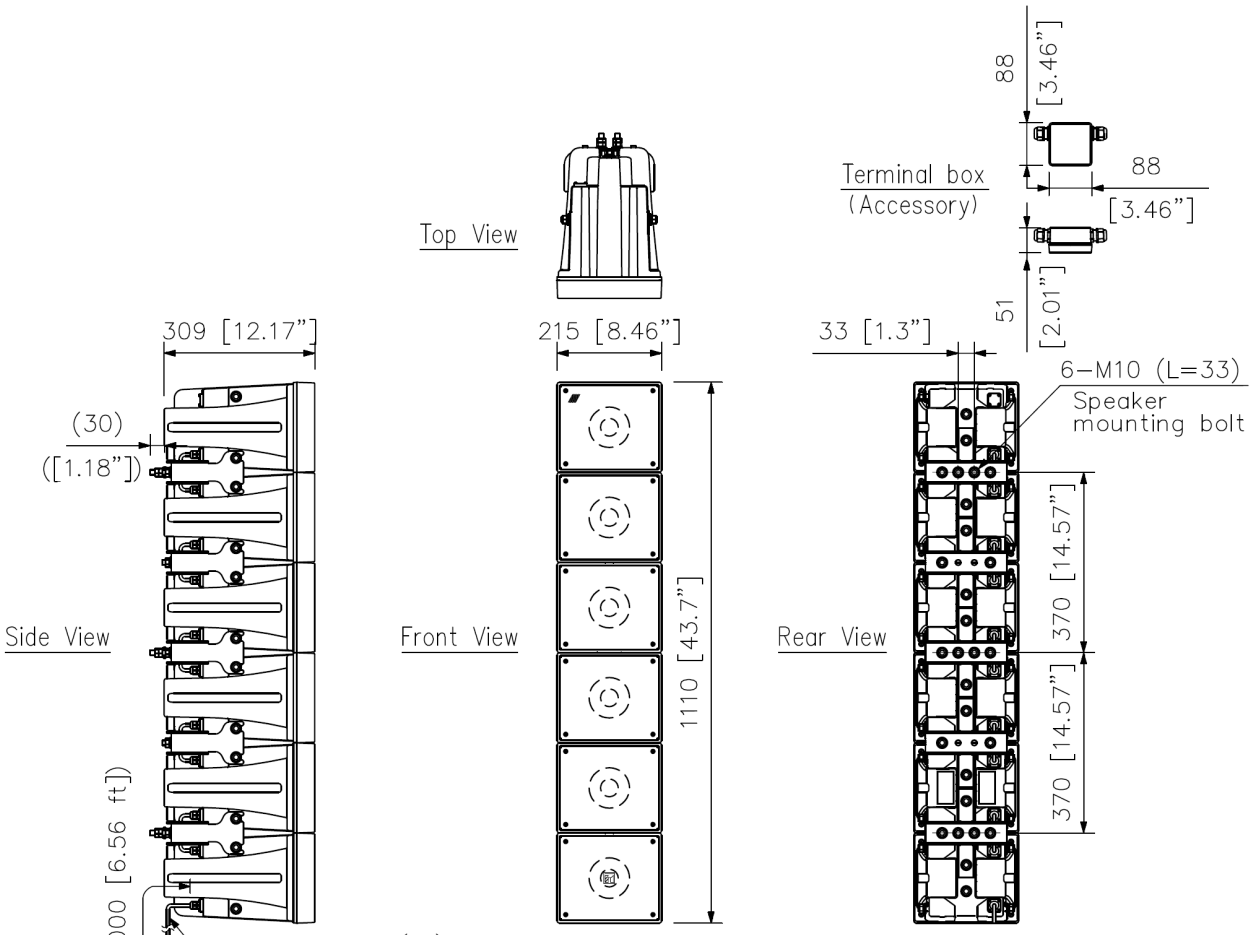
- Horn array for clear long-range voice projection
- IP66-rated for harsh outdoor use
- Weatherproof durability with double drip-proof design and saltresistant paint finish
- Wide horizontal coverage for broad-area public address applications
- Built-in high-pass filter for speaker protection
- EN 54-24 compliant for evacuation systems
- Optional mounting bracket for flexible installation

Specifications

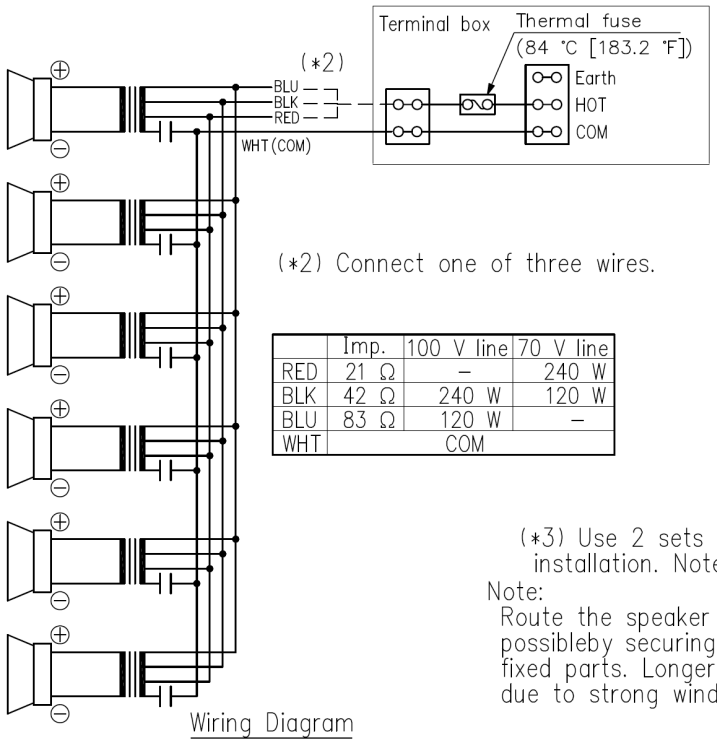
Rated Input	240 W
Rated Impedance	100 V line: 42 Ω (240 W), 83 Ω (120 W) 70 V line: 21 Ω (240 W), 42 Ω (120 W)
Sensitivity	115 dB (1 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)
Max. SPL	138 dB (240 W, 1 m) (500 Hz - 5 kHz, IEC60268-5)
Frequency Response	490 Hz - 4.2 kHz (-10 dB), 280 Hz - 8 kHz (-20 dB)
Speaker Component	Horn speaker unit x 6
Input Terminal	Ceramic terminal (3-pole), can be bridge-connected x1, Ceramic terminal (2-pole) x 1, Thermal fuse is included.
Cable Gland	Size: PG 13.5 - 12 (gray) x 1, Cable Diameter Range: 12.5 - 6.5 mm (0.49" - 0.26") Size: PG 13.5 - 08 (black) x 1, Cable Diameter Range: 9 - 4.5 mm (0.35" - 0.18"), Two cable glands are factory-installed.
Speaker Cable	4-core cabtype cord 2 m (6.56 ft)
Compatible Wire	For Ceramic terminal (3-pole), Conductor: Solid wire or 7-core wire No bridge connection: 0.8 - 10 mm² (AWG 18 - 7) for solid wire, 0.8 - 8 mm² (AWG 18 - 8) for 7-core wire Bridge connection: 0.8 - 2.5 mm² (AWG 18 - 13) for solid wire, 0.8 - 1.5 mm² (AWG 18 - 15) for 7-core wire
IP Code	IP66
EN 54-24 Specifications	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
Operating Temperature	-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 1110 (H) X 309 (D) mm (8.46" X 43.7" X 12.17")(excluding projection)
Weight	33 kg (72.75 lb) (unit only)
Included Accessories	Terminal box x 1
Optional Accessories	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.

Dimensions



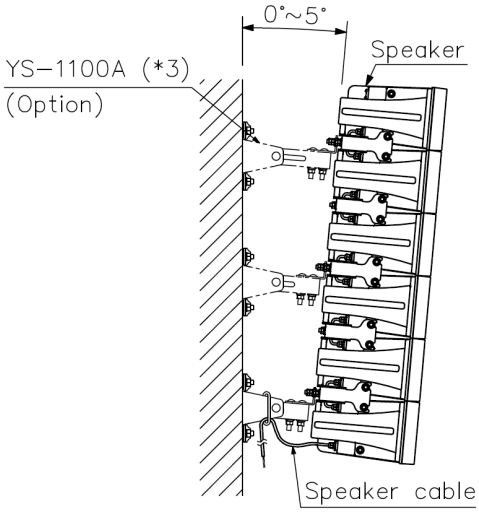
(*1) Wiring Precaution
Cut off or securely insulate any excess wires. Failure to do so could cause short circuits that might result in failures of the speaker or connected amplifier.



(*2) Connect one of three wires.

	Imp.	100 V line	70 V line
RED	21 Ω	–	240 W
BLK	42 Ω	240 W	120 W
BLU	83 Ω	120 W	–
WHT	COM		

Wiring Diagram



(*3) Use 2 sets of YS–1100A brackets (2 pieces per set) for installation. Note that one of these brackets will not be used.

Note:
Route the speaker cables in as short a configuration as possibleby securing them to nearby brackets or other firmly fixed parts. Longer wiring distances may result in cable breakage due to strong winds or other potentially harmful conditions.

Speaker mounting example

UNIT: mm

Note: Numerical values in parentheses are for reference only.

A&E specifications

The Long Range Array Speaker shall be designed for outdoor public address and emergency voice alarm systems requiring high intelligibility and long-distance coverage. The speaker shall incorporate six horn speaker units arranged in a vertical array to achieve narrow vertical and wide horizontal directivity.
The speaker shall have a rated input of 240 W and support 100 V and 70 V line systems with selectable impedance settings of 42 Ω (240 W) and 83 Ω (120 W) for 100 V, and 21 Ω (240 W) and 42 Ω (120 W) for 70 V. Sensitivity shall be 115 dB (1 W, 1 m), and maximum SPL shall be 138 dB (240 W, 1 m).
The frequency response shall be 490 Hz – 4.2 kHz (–10 dB) and 280 Hz – 8 kHz (–20 dB). The speaker shall include a built-in high-pass filter for speaker protection. Coverage angle shall be 120°(1 kHz) for horizontal and 20°(1 kHz) for vertical. The speaker shall comply with EN 54-24 standards.
Input terminals shall be ceramic type, consisting of one 3-pole and one 2-pole terminal, and shall include a thermal fuse. The enclosure shall be made of FRP with a white RAL 9016 finish and aluminum front grille. The speaker shall be IP66-rated for dust and water protection.
The operating temperature range shall be –20 °C to +55 °C (–4 °F to +131 °F).
Dimensions shall be 215 (W) × 1110 (H) × 309 (D) mm (8.46" × 43.7" × 12.17"), and weight shall be 33 kg (72.75 lbs).
Optional extras: Speaker Mounting Bracket (YS-1100A)
Manufacturer: TOA Corporation
Model: HA-2240EN