Panasonic®

20cm (8") 2-way — WS-AT80
30cm (12") 2-way — WS-AT200
38cm (15") 2-way — WS-AT300
30cm (12") Subwoofer — WS-AT250
38cm (15") Subwoofer — WS-AT350

SCENG HORN

Compact High Power Speaker

AT-Series

RAMSA
Professional Audio Systems

Revolutionary new

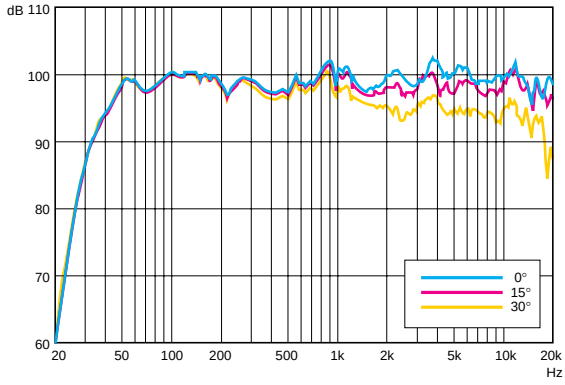
AT-Series Covering Area

Powerful Handling Capacity

Type	Model No.	Continuous Program Input	RMS*Input (EIA-RS426A)	Sensitivilty (1m/1W)
2-way	WS-AT80	160-watt	80-watt	92dB
	WS-AT200	300-watt	150-watt	99dB
	WS-AT300	400-watt	200-watt	99dB
Sub woofer	WS-AT250	—	400-watt	91dB
	WS-AT350	—	400-watt	92dB

*Effective power measured by the test method prescribed by EIA (Electronic Industries Association) RS-426-A (1980). (The test signal is white noise passed through a RC high pass filter with a time constant of 4 msec. and a RC low pass filter with a time constant of 5 msec.)

FREQUENCY RESPONSE WITH WS-AT300/350 AND WS-SP2A



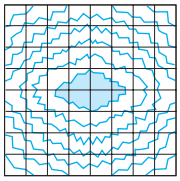
"all-around" sound and shape

The design philosophy behind the RAMSA AT-Series was to create an outstanding sound quality, with performance integrity at all sound levels. This precludes the use of dynamic processing, which is non-linear by definition, requiring transducers to be carefully designed and skillfully crafted with performance parameters in harmony with the overall system performance objectives.
The RAMSA AT-Series speaker systems are high-integrity building blocks, creating sound systems that deliver audiophile sound quality at high sound levels, with professional reliability and features.
Speaker systems include the WS-AT80/AT200/AT300 2way speakers, and the WS-AT250/AT350 subwoofers.
Coherence, frequency uniformity, and dynamic linearity are-inherent at all operating levels.

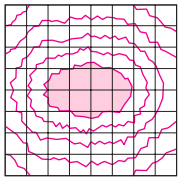
Flawless Propagation of Wave Front Ensures Superb Sound Quality

The structure of traditional fixed-directional horns results in the disturbance of radiation impedance, which is a cause of unnatural sound. RAMSA has eliminated this problem by designing an ideal horn shape via computer simulation, resulting in accurate reproduction with minimal disturbance to the wave front. The high-frequency driver utilizes a new SCWG (Square Contour Wave Guide) horn. Ordinary rectangular horn type speakers radiate sounds in a diamond shaped pattern. When speakers of this type are used, interference can occur and cause frequency distribution to change, or phase cancellation (see illustration) . To avoid this , RAMSA's unique SCWG horn radiates in a circular pattern, offering directivity control at angles of 45 degrees horizontally, vertically, and obliquely. As a result, this SCWG horn can radiate sound waves at closer intervals than conventional horns to prevent interference and phase cancellations. The SCWG horn delivers an even distribution of sound pressure in a wide frequency band, thus offering increased intelligibility.

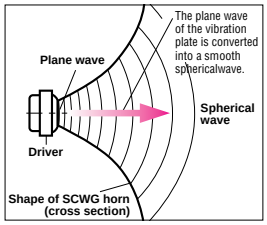
RAMSA SCWG Horn



Conventional horn

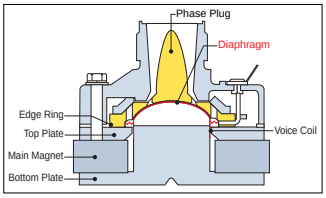


RAMSA SCWG horn



Built-in Compression Driver

A RAMSA exclusive compression driver is used for mid-range and high frequencies. This driver is highly rated and ensures superlative sound quality. A 35mm (WS-AT300/AT200) phenolic molding compound ***diaphragm*** manufactured with high precision, and an optimized gap between the ***phase plug*** and the ***diaphragm*** make it possible to reproduce sound faithfully all the way.



Molded Enclosure

The AT-series high impact molded resin enclosure exceeds conventional wooden box durability with less weight.

Input Terminal

The cabinet has both Neutrik Speakon™ and 1/4 TRS phone connections, connected in parallel connection on WS-AT200/AT300/AT250/AT350, and 1/4 TRS phone jack and wire-type terminals on WS-AT80.

Bass-Reflex Port of WS-AT250/AT350 for Low-End Details

A bass-reflex port is provided to ensure resonance at low frequencies. When a WS-SP2A processor is used, sound detail all the way down to 30Hz will be accurately reproduced.

Mounting System

The left and right sides, top and bottom and of the unit are each provided with two integral screw points to accommodate a variety of configurations, including a circular array and a hanging installation.

Shaped for Easy Stacking

The WS-AT200 with AT250, and / or the AT300 with AT350 have the same shapes, respectively. The design allows neat stacking, and the top and bottom surfaces fit together for a firm grip.

Shake Handle Ensures Easy Carrying-in and -out

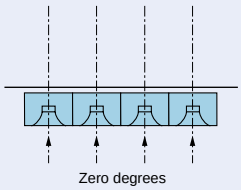
The large handle on the side provides a secure grip. The unit can be transported smoothly and set up on the site easily.

Special Trapezoidal Design to Facilitate Circular Array Installation

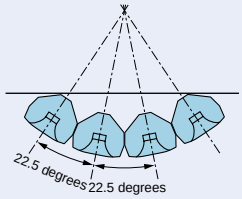
A unique multifaceted design provides sound pressure distribution characteristics that minimize distortion when multiple sets of speakers are used together. This design enables two speakers ganged together to cover a listening range of 90 degrees, and four speakers ganged together to cover a listening range of 180 degrees.

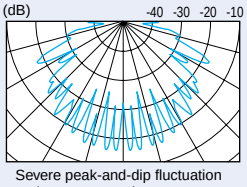
Sound Pressure Distribution Characteristics when Four Speakers Are Ganged Together

●Set in a Straight line (Conventional speaker)

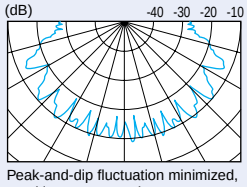


●Set in a circular array (RAMSA AT-series)





Severe peak-and-dip fluctuation and uneven sound



Peak-and-dip fluctuation minimized, resulting even sound coverage

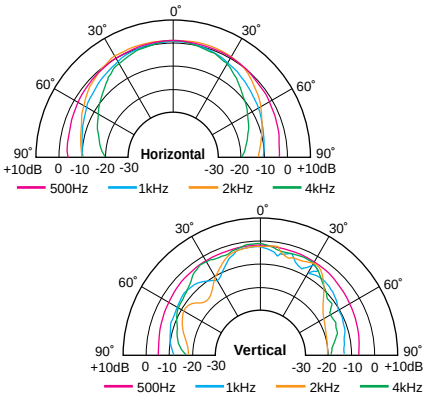
WS-AT 80

20cm (8") Compact High-Power Speaker

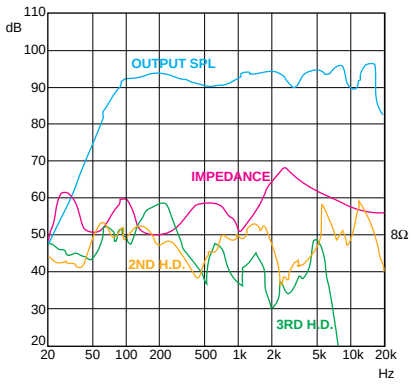
- ●20cm(8") 2-Way bass reflex speaker system
- ●Smooth response with high power handling capacity; 160W(continuous program), 80W(RMS)
- ●High-frequency driver utilizes new SCWG (Square Contour Wave Guide) horn
- ●High impact molded resin enclosure
- ●Six-sided trapezoidal design with built-in handle
- ●Equipped with thermal protection circuit

Input terminals
Parallel 1/4 TRS phone jack and push wire-type input terminals.

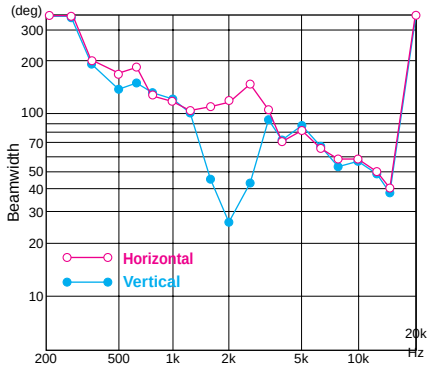
Directivity



Frequency Response



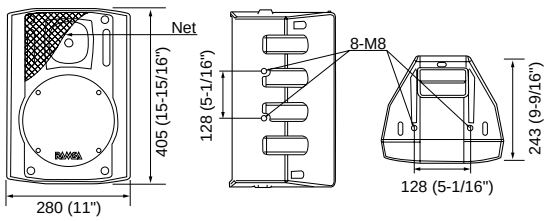
Beamwidth Response



Specifications

Speaker Type	2-way, bass-reflex
Input Impedance	8Ω
Power Handling Capacity	80W (RMS EIA-RS426A), 160W (continuous program)
Sensitivity	92 dB (1 m/1 W)
Frequency Response	70 Hz –20 kHz
Crossover Frequency	2,000 Hz
Drivers	LF : 20cm (8") woofer HF : 60˚× 60˚ SCWG horn/compression driver
Dispersion	60˚(horizontal) × 60˚(vertical)
Dimensions (HxWxD)	405x280x243mm (16-15/16" × 11" × 9-9/16")
Weight	approx. 7.5kg (16.5 lbs)
Input Terminals	1/4 TRS phone connector Push wire terminal
Mounting Hardware	Forged Eye Bolts

Dimensions



Unit : mm (inches)

RAMSA
Professional Audio Systems

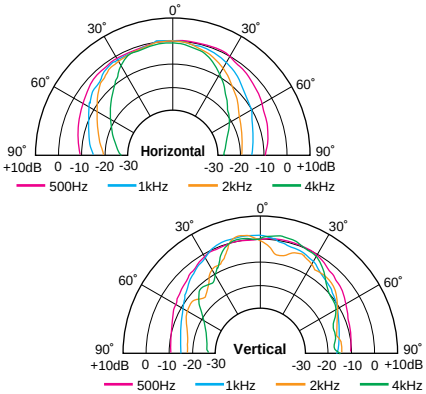
WS-AT200

30cm(12") Compact High-Power Speaker

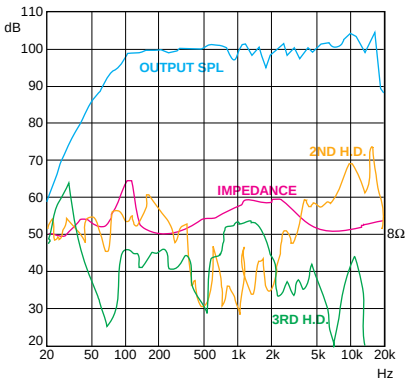
- ●30cm(12") 2-Way bass reflex speaker system
- ●Smooth response with high power handling capacity; 300W(continuous program),150W(RMS)
- ●High-frequency driver utilizes new SCWG (Square Contour Wave Guide) horn
- ●High impact molded resin enclosure
- ●Six-sided trapezoidal design with built-in handle
- ●Also be used as floor monitor and has built-in stand adapter
- ●Equipped with thermal protection circuit

Input terminals
Parallel Neutrik Speakon™ and 1/4 TRS phone input connectors

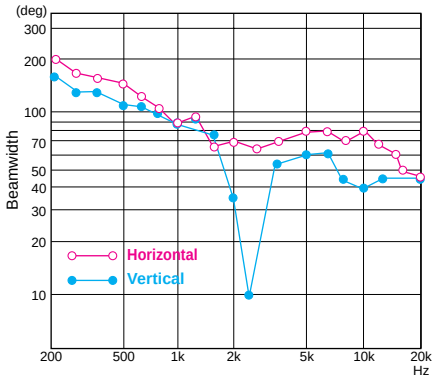
Directivity



Frequency Response



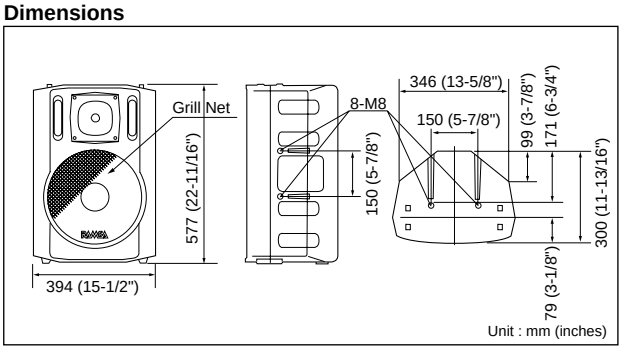
Beamwidth Response



Specifications

Speaker Type	2-way, bass-reflex
Input Impedance	8Ω
Power Handling Capacity	150 W (RMS EIA-RS426A), 300 W (continuous program)
Sensitivity	99 dB (1 m/1 W)
Frequency Response	70 Hz –18 kHz
Crossover Frequency	2,400 Hz
Drivers	LF : 30cm (12") woofer HF : 90˚× 40˚ SCWG horn/compression driver
Dispersion	90˚(horizontal) × 40˚(vertical)
Dimensions (H×W×D)	577×394×300 mm (22-11/16" × 15-1/2"× 11-13/16")
Weight	approx. 15 kg (33lbs)
Input Terminals	1/4 TRS phone connector Neutrik Speakon™ connector
Mounting Hardware	Forged Eye Bolts

Dimensions



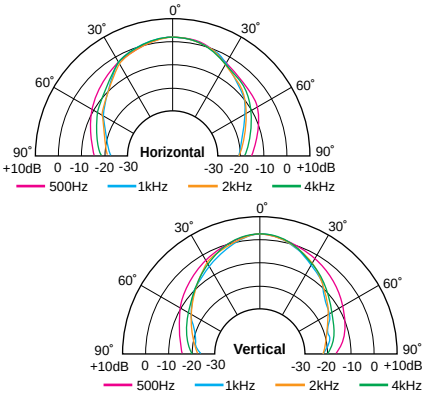
WS-AT300

38cm(15") Compact High-Power Speaker

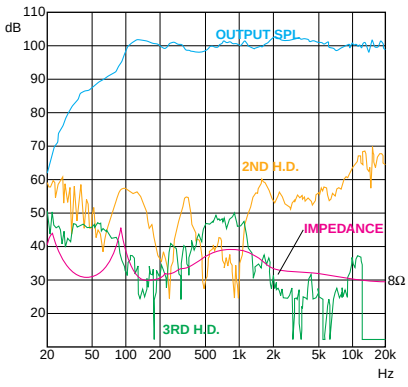
- ●38cm (15") 2-Way bass reflex speaker system
- ●Smooth response with high power handling capacity; 400W(continuous program), 200W(RMS)
- ●High-frequency driver utilizes new SCWG (Square Contour Wave Guide) horn
- ●High impact molded resin enclosure
- ●Six-sided trapezoidal design with built-in handle
- ●Also be used as floor monitor and has built-in stand adapter
- ●Equipped with thermal protection circuit
- ●Optional mounting brackets* are available,WS-AQ6W (for wall) and WS-AQ6C (for ceiling) *available in USA only

Input terminals
Parallel Neutrik Speakon™ and 1/4 TRS phone input connectors

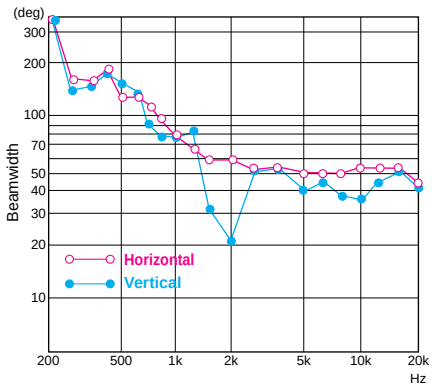
Directivity



Frequency Response



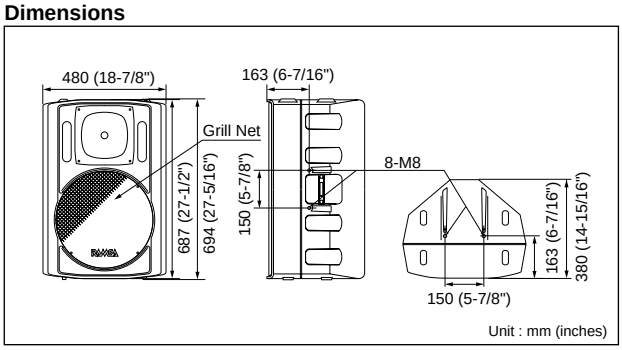
Beamwidth Response



Specifications

Speaker Type	2-way, bass-reflex
Input Impedance	8Ω
Power Handling Capacity	200 W (RMS EIA-RS426A), 400 W (continuous program)
Sensitivity	99 dB (1 m/1 W)
Frequency Response	70 Hz –18 kHz
Crossover Frequency	2,200 Hz
Drivers	LF : 38cm (15") woofer HF : 60°× 40° SCWG horn/compression driver
Dispersion	60°(horizontal) x 40°(vertical)
Dimensions (HxWxD)	694x480x380 mm (27-5/16" x 18-7/8" x 14-15/16")
Weight	approx. 26kg (57.2 lbs)
Input Terminals	1/4 TRS phone connector Neutrik Speakon™ connector
Mounting Hardware	Forged Eye Bolts

Dimensions



World-class technology

Subwoofers

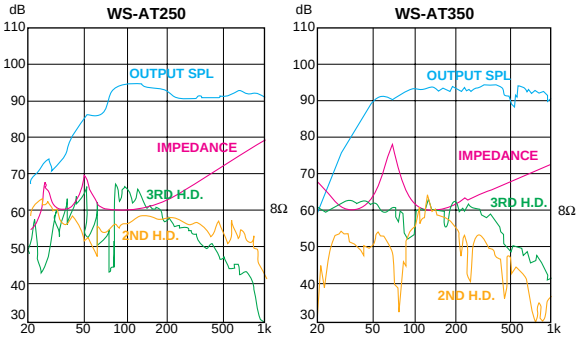
WS-AT250 30cm(12") woofer

WS-AT350 38cm(15") woofer

- High power handling capacity ; 400W RMS
- Response down to 30 Hz
- Designed to compliment WS-AT200 with AT250 and WS-AT300 with AT350 in sound quality and design

Input terminals
Parallel Neutrik Speakon™ and 1/4 TRS phone input connectors

Frequency Response

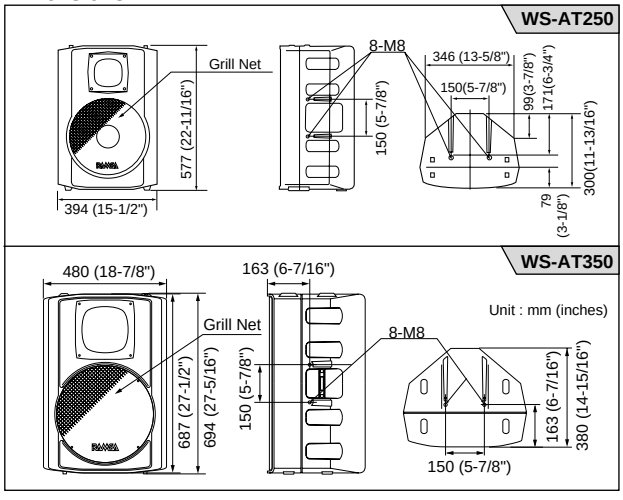


Specifications

	WS-AT250	WS-AT350
Speaker Type	Bass-reflex	
Input Impedance	8Ω	
Power Handling Capacity	400 W (RMS EIA-RS426A)	
Sensitivity	91 dB (1 m/1 W)	92 dB (1 m/1 W)
Frequency Response	30Hz –1400Hz	30Hz –1400Hz
Drivers	LF : 30cm (12") woofer	LF : 38cm (15") woofer
Weight	approx. 15kg (33lbs)	approx. 26.5kg (58.3lbs)
Input Terminals	1/4 TRS phone connector Neutrik Speakon™ connector	
Mounting Hardware	Forged Eye Bolts	

Dimensions

Unit : mm (inches)



world-class reputation

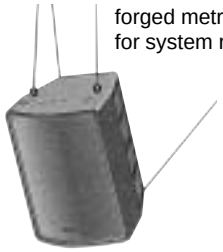
Wide Variety of Applications

Arrays

6 sided trapezoidal shape and system directivity performance

Fly hardware

forged metric eye bolts for system rigging



Wall/ceiling mounting

wide range of applications possible with mounting bracket

Stacking

molded-in ribs on the AT-series make this easy

Stand adapter

the AT-series mount to most speaker stands

Floor monitor

use the AT-series as fold-back monitor application

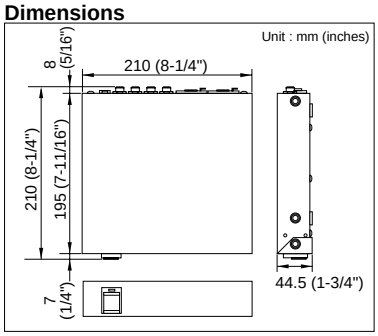
Carrying handle

portable system with recessed handle

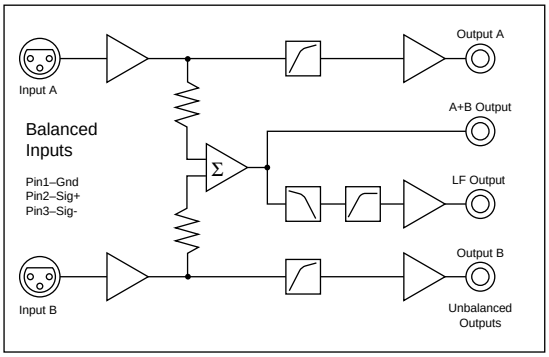
Sub-woofer processor
WS-SP2A

- **Channel divider for WS-AT250/AT350 subwoofers.**
- **Provides very low frequency (VLF) processing with three selectable crossover points of 50 Hz/80 Hz/120 Hz.**

Dimensions



WS-SP2A Signal Flow (Simplified)



Specifications

Type	Line level Subwoofer Processor
Inputs	Two, electrically balanced (female XL type) +4dB, 20kΩ
Outputs	Four, unbalanced : Output A (high pass processed) 1/4 TRS +4dB, Output B (high pass processed) 1/4 TRS +4dB, VLF output (sum of A and B, band pass processed), 1/4 TRS +4dB, A+B output (sum of A and B, all pass processed), 1/4 TRS +4dB,
Maximum input level	+20dB
Minimum load impedance	600Ω
Gain (pink noise)	Unity
Output noise level	-95dB or less, (IHF A WTD)
Distortion	Outputs A, B, A+B ; 0.05% or less (+4dB at 1kHz) VLF Output; 0.05% or less (+4dB at 35Hz)
Turn-on delay	Approx. 3 to 5 seconds
Power requirements	120V AC 60Hz, 126mA (12W)
Dimensions (H×W×D)	44.5 × 210 × 210mm (1-3/4" × 8-5/16" × 8-5/16")
Weight	1.8kg (4lbs)

RMS input : Effective power measured by the test method prescribed by EIA (Electronic Industries Association) RS-426-A (1980). (The test signal is white noise passed through a RC high pass filter with a time constant of 4 msec. and a RC low pass filter with a time constant of 5 msec.)

- Weights and dimensions are approximate.
- Specifications are subject to change without notice.
- These products may be subject to export control regulations.

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