

National / Panasonic

PRODUCT LINE

QUALITY SOUND SYSTEM



● AMPLIFIERS ● MIXING AMPLIFIERS ● WIDE-FLEX AMPLIFIER ● AUDIO MIXER ● WIRELESS MICROPHONE SYSTEMS ● CORDLESS MICROPHONES ● WIRELESS MICROPHONE RECEIVER ● MEGAPHONES ● CEILING-MOUNTED SPEAKERS ● WALL-MOUNTED SPEAKERS ● SPEAKERS VOLUME CONTROLLERS ● SONOLINE SERIES ● CLEARHORN SPEAKERS ● HORN SPEAKERS ● MICROPHONES ● RACK AMPLIFIER SYSTEMS ● RACK AMPLIFIER SYSTEM COMPONENTS



The history of Public Address (PA) dates back to ancient Greece. It is said that the sound of the turning of pages by an orator on the stage of the great amphitheater in Greece was heard in every seat. These well-planned acoustics, which are thought to be ideal for a total sound system, are the goal for which National has been striving.

National is confident in its fundamental concept of a total sound system creating a well balanced "Audio Environment" based on a well-balanced and consistent combination of selected components including amplifiers (the heart of PA systems), microphones (the entrance for sound), and speakers (the exit for sound), plus a wide selection of accessories which complete the ideal professional sound system.

This concept is also applied by National to the matching of sound systems to their environments in terms of their exterior designs.

National, a familiar name as one of Japan's foremost total sound system manufacturers among acoustic professionals as well as among sound system users, has been maintaining consistent leadership in acoustic engineering for forty years or more.

This means National has been combining superb and unique technologies developed in its internally separate divisions in the creation of innovative new products in the sound system equipment field.

Supported by the development of such topnotch audio engineering know-how, National now introduces a wide range of superb PA systems to best meet the varying needs of today's customers, as well as tomorrow's.



QUALITY
SOUND
SYSTEM



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AMPLIFIERS

MIXING AMPLIFIER WA-H60N

90W (MAX) . 60W (RMS)

90w
MAX

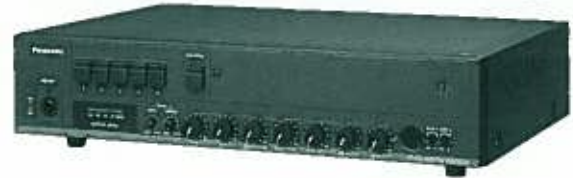


NEW

MIXING AMPLIFIER WA-H120N

180W (MAX) . 120W (RMS)

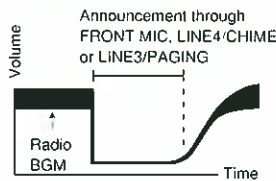
180w
MAX



NEW

- There are a lot of input jacks: 3 for mikes, 6 for lines, paging and chime
- 5-station speaker selector: selectable up to 5 announcement locations. All announcement is possible with the ALL switch, whether the speaker selector is ON/OFF.
- Bargraph 5-point level meter makes to check the sound level easy.
- Smooth and clear announcement call is possible, since the FRONT MIC input and LINE4/CHIME and LINE3/PAGING input are incorporated a priority circuit.

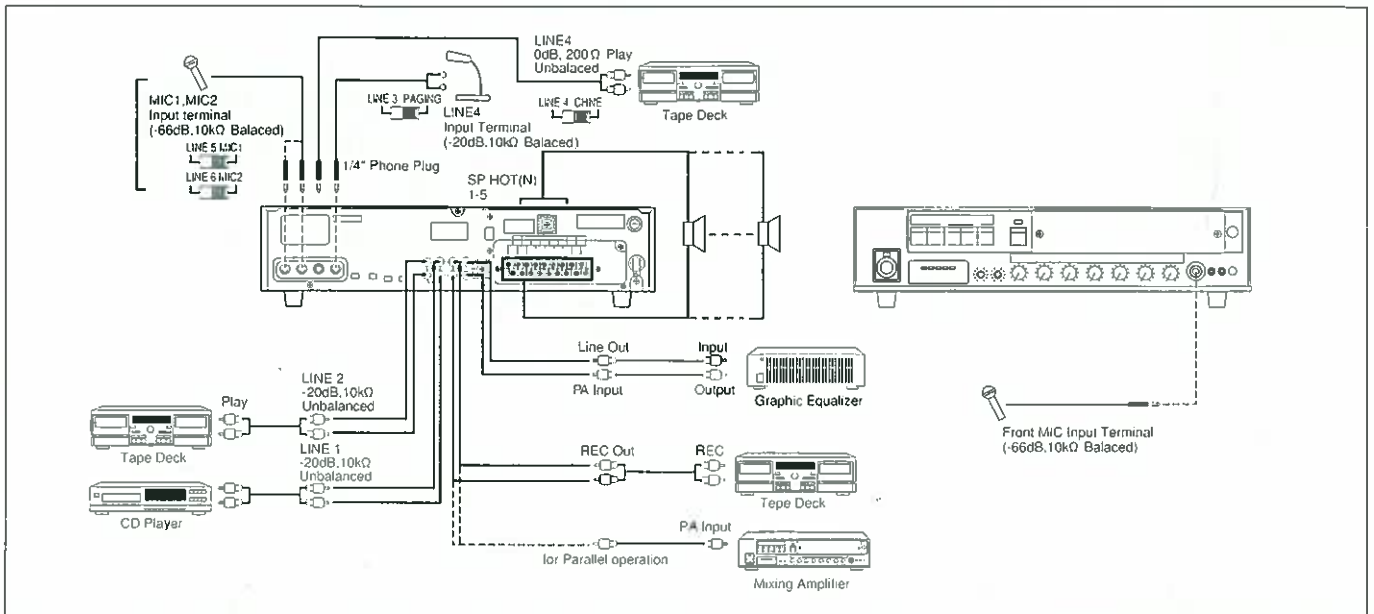
MUTING FUNCTION: effects to the audio signal supplied from FRONT MIC, LINE 4/CHIME and LINE 3 PAGING Jacks.



SPECIFICATIONS

	WA-H60N	WA-H120N		
Power Supply	AC 110 V - 120 V/AC 220 V - 240 V (50/60 Hz)			
Power Consumption/Rated Output	123W	248W		
Rated Output	60W (100V/170Ω Load), 90W (MAX)	120W (100V/83Ω Load), 180W (MAX)		
Frequency Response	50 - 20,000 Hz ±3dB (LINE 2 : 1/3 rated output)			
Distortion Rate	less than 0.5 % (LINE 2 : 1 kHz rated output)			
Tone Response	more than 100, 10,000 Hz ±10dB (1 kHz standard)			
S/N Ratio	more than 75dB (on JIS A-Curve)			
Speaker Switch	5 Station +ALL			
Muting Level	0 - 35dB			
Input Circuit	Input Impedance	Input Level	S/N	Jack
Front MIC	10kΩ Electronically balanced	-66dBV	more than 55dB	Large, multiple
"LINE 5/MIC 1	50kΩ Electronically balanced	-20dBV/-66dBV	more than 60dB	Large, multiple
"LINE 6/MIC 2	100kΩ Electronically balanced	-20dBV/-66dBV	more than 60dB	Large, multiple
"LINE 3/PAGING	20kΩ	-20dBV/0dBV	more than 60dB	Large, multiple
"LINE 4/CHIME	200kΩ	0dBV/-30dBV	more than 60dB	Large, multiple
LINE 1	20kΩ	-20dBV	more than 60dB	Pin (2)
LINE 2	20kΩ	-20dBV	more than 60dB	Pin (2)
PA INPUT	20kΩ	0dBV	more than 75dB	Pin
Output Circuit	Load Impedance	Output Level	Load impedance	Output Level
LINE OUT	more than 10kΩ	0dB	more than 10kΩ	0 dBV
REC OUT	more than 10kΩ	0dB	more than 10kΩ	0 dBV
Speaker Out	170Ω/83Ω/41Ω/4Ω	100V/70V/50V	83Ω/41Ω/21Ω/4Ω	100V/70V/50V
	Screw jack			
Dimensions (W×H×D)	420×88×300 mm			
Weight	approx. 8.4 kg		approx. 9.8 kg	
Finish	Panel: Gun Metallic (ABS Resin) Case: Munsell N2.5 (Colored Steel Plate)			

- * 1. Factory preset LINE IN
- * 2. Speaker selector: 5 station +ALL (100 V LINE)



MIXING AMPLIFIERS

WA-AP105N (AC/DC)

50W (MAX) 30W (RMS)

50w
<MAX>



MIXING AMPLIFIERS

WA-AP155N (AC/DC)

70W (MAX) 40W (RMS)

70w
<MAX>



● 12V DC Battery Operation

Can be operated outdoors with 12V DC battery.

● Mic Input

Possible to attach as many as four microphones, including one built-in condenser microphone (MIC-1).

● Variable Tone Control

Separated bass and treble tone adjustment for high and low tones, giving individual variability.

● LED Display

A five point LED level display allows you to carry out sound level checks.

● Rec Out

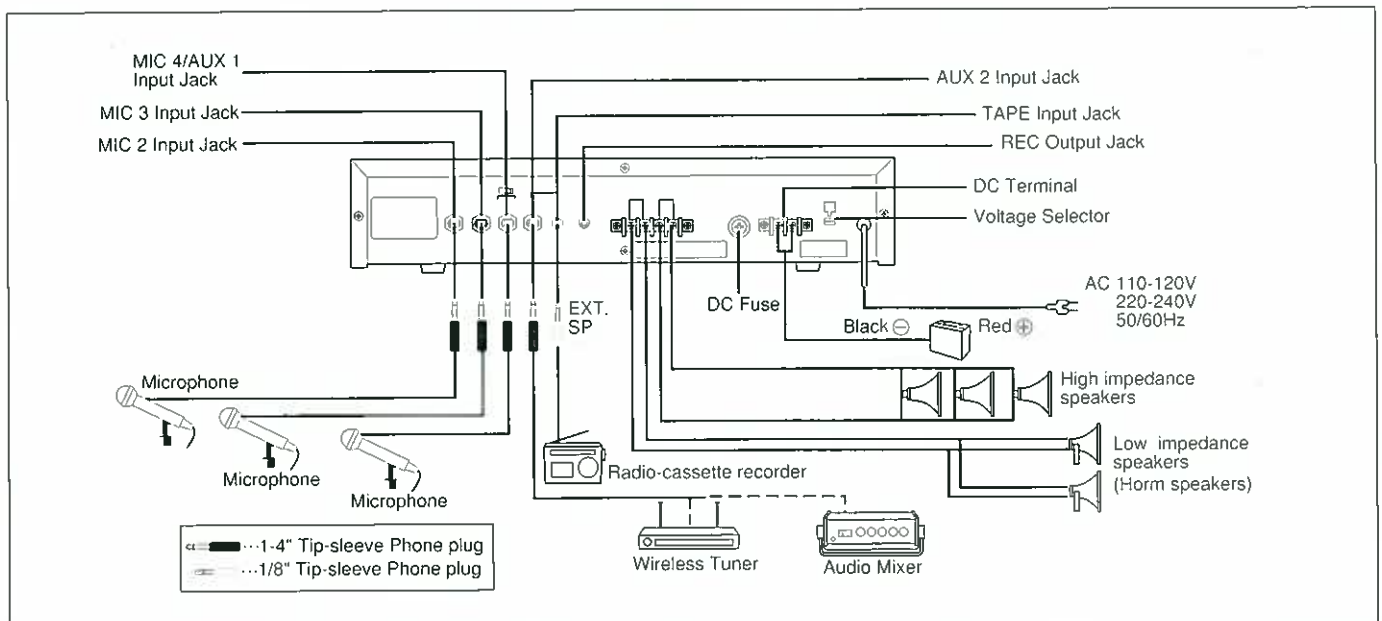
Possible to use Rec Out recording terminal (0dB, 1kΩ)

● Output Terminals

These models include a 100V (line) and 4Ω to 16Ω output terminal to permit connection of a high/low impedance speakers.

SPECIFICATIONS

	WA-AP105N	WA-AP155N
Power Supply	AC 110 to 120/220 to 240V AC, 50/60Hz (Set at 220 to 240V) 12V DC (13.2V DC)	
Frequency Response	50Hz to 20,000Hz	
Tone Control	Bass -10dB at 100Hz, Treble -10dB at 10,000Hz	
Maximum output	50W	70W
Input circuit		
Mic 1 to 4	-54dB 600Ω Balanced 1/4" Tip-sleeve phone jack	
Aux 1 to 2	-20dB 20kΩ Balanced 1/4" Tip-sleeve phone jack	
Tape	-20dB 8Ω Unbalanced 1/8" Tip-sleeve phone jack	
Output circuit		
Low impedance	4 to 16Ω	
High impedance	360Ω (100V Line)	260Ω (100V Line)
Dimensions	420(W) x 90(H) x 220(D)mm (Height within rubber foot)	
Weight (Approx.)	4.3kg	5.2kg



WIDE-FLEX AMPLIFIER

WIDE-FLEX AMPLIFIER

180w
<MAX>

WA-25N

50W (MAX) 30W (RMS)



●Adjustable Input Sensitivity

It is often said that it's preferable to receive "speech" at -66dB , and music at -46dB . That's so true. And thus, in order to acquire better listening results, input sensitivity can be selected in two stages: -66dB or -46dB (for Mic-1—Mic-3), and -66dB or -22dB (for Mic-4 & Mic-5).

●High & Low Filters

The low-cut filter shuts out all noise under 100Hz . The high-cut filter shuts out noise in higher ranges of more than 10kHz . Each filter has its own separate switch, so either can be operated independently whenever needed.

●Built-in Monitor Speaker

You can easily check outgoing sound.

●5-Point Equalizer

This equalizer is used for correcting frequency response as to match the location in order to improve clarity and acoustic effects. Frequency response can be adjusted with the five equalizer control knobs (100Hz , 330Hz , 1kHz , 3.3kHz and 10kHz) within the range of $+10\text{dB}$ to -10dB .

SPECIFICATIONS

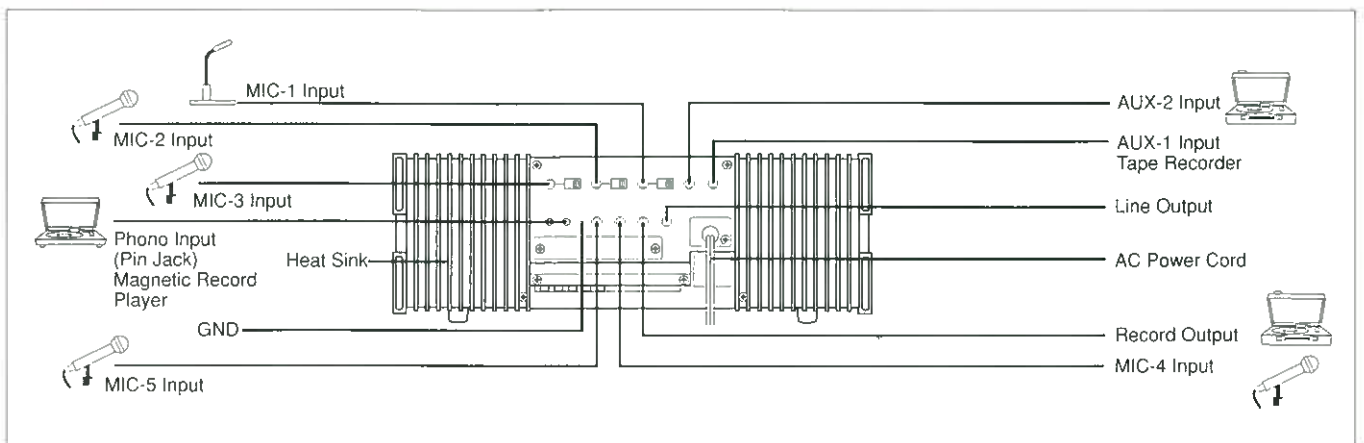
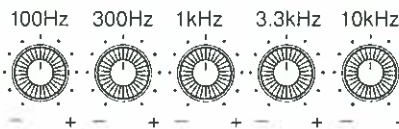
Type	8-input mixer power amplifier
Rated Output	120W RMS, 180W MAX, less than 0.08% THD at 1kHz
Frequency Response	$\pm 2\text{dB}$, 20'20,000Hz
Input Circuits	Mic-1, $-66\text{dB}/-46\text{dB}$ selectable, 600Ω balanced Mic-2, $-66\text{dB}/-46\text{dB}$ selectable, 600Ω balanced Mic-3, $-66\text{dB}/-46\text{dB}$ selectable, 600Ω balanced Mic-4, $-66\text{dB}(600\Omega)/-22\text{dB}(20k\Omega)$ selectable, unbalanced Mic-5, $-66\text{dB}(600\Omega)/-22\text{dB}(20k\Omega)$ selectable, unbalanced Aux-1, $-22\text{dB } 20k\Omega$, unbalanced Aux-2, $0\text{dB } 100k\Omega$, unbalanced Phono, $-50\text{dB } 50k\Omega$, unbalanced
Output Circuits	
Speaker Output	$83\Omega(100\text{V})$, $42\Omega(70\text{V})$ balanced 4Ω unbalanced
Line Output	$0\text{dB } 20k\Omega$ unbalanced
Rec. Out put	$-10\text{dB } 20k\Omega$ unbalanced
Residual Noise	75dB below rated output with Master Volume set to "0"
Low-cut Filter	-8dB at 100Hz
High-cut Filter	-8dB at 10Hz
Equalizer	$\pm 10\text{dB}$ at 100Hz , 330Hz , 1kHz , 3.3kHz and 10kHz
Controls	Mic-1 volume control, Mic-2 volume control, Mic-3 volume control, Mic-4 volume control, Mic-5 volume control, Phono volume control, Aux-1 volume control, Master volume control, Low/High-cut filters, 5-point equalizer, Monitor Speaker volume control, Power ON/OFF Switch, Mic-1/Mic-2/Mic-4/Mic-5 level selector, equalizer ON/OFF Switch, and voltage selector
indicators	Output level meter (VU), Power lamp (LED)
Protection	AC fuse and Output stage protection circuit
Power Supply	AC 110, 120, 220, 240V
Power Consumption	250W at rated output
Dimensions	$420(\text{W}) \times 147(\text{H}) \times 350(\text{D})$ mm
Weight (Approx.)	15kg
Materials & Finish	Front panel: Zinc diecast w/black color Top cover: Vinyl-coated steel w/black color Heat sink: Aluminum diecast w/black color

FILTER EQUALIZER

LOW HIGH



EQUALIZER

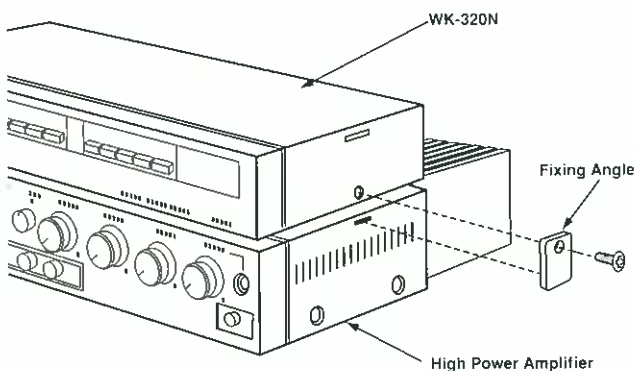


SPEAKER SELECTOR (9 stations and All-Call) **WK-320N**



- When you need speaker area selection for the Hi-Power Amplifier Series, this optional 9-station speaker selector (with built-in monitor speaker) is available.
- This selector is neatly designed to match and stack on top of the Hi-Power Amplifier Series.

STACKING



Speaker selector board can stack on the high power amplifier with supplied fixing angles.

SPECIFICATIONS

Stations	9 stations + all call
Monitor Speaker	Output 0.5w with attenuator (4 steps)
Maximum input for 1 station	360W
Total Maximum input	360W
Dimensions	420(W) x 68(H) x 175(D) mm
Weight (Approx.)	2.2kg

PAGING MICROPHONE (With 2 Tone Chime)

WR-150NL (AC 110/120V) **WR-150NH** (AC 220/240V)



- This microphone plays an important role in an easy-to-use paging system. It has a built-in calling chime (2 tone).
 - Can be switched to either press-to-talk or locked, and is designed for soft finger-tip manipulation.
- ⚠ Remote power ON-OFF switching of the amplifier cannot be made with the WR-150NL/NH.

SPECIFICATIONS

	WR-150NL/NH (Chime Provided)
Power Source	WR-150NL: 110 to 120V AC, 50/60Hz WR-150NH: 220 to 240V AC, 50/60Hz
Power Consumption	1W
Frequency Response	50 to 15,000Hz ± 6dB
Signal to Noise Ratio	50dB
Microphone Input	-52dB 600Ω (unbalanced)
Call Sign Output	-30dB 10kΩ (unbalanced) (880Hz, 700Hz, 2-tone signal)
Output	-22dB 10kΩ (unbalanced)
Dimensions	111(W) x 395.5(H) (including microphone) x 161(D) mm
Weight (Approx.)	840g (including microphone)
Finish	Aluminum, Night black
Panel	Aluminum, Night black
Case	ABS resin, Metallic gray painting

AUDIO MIXER

PORTABLE AUDIO MIXER

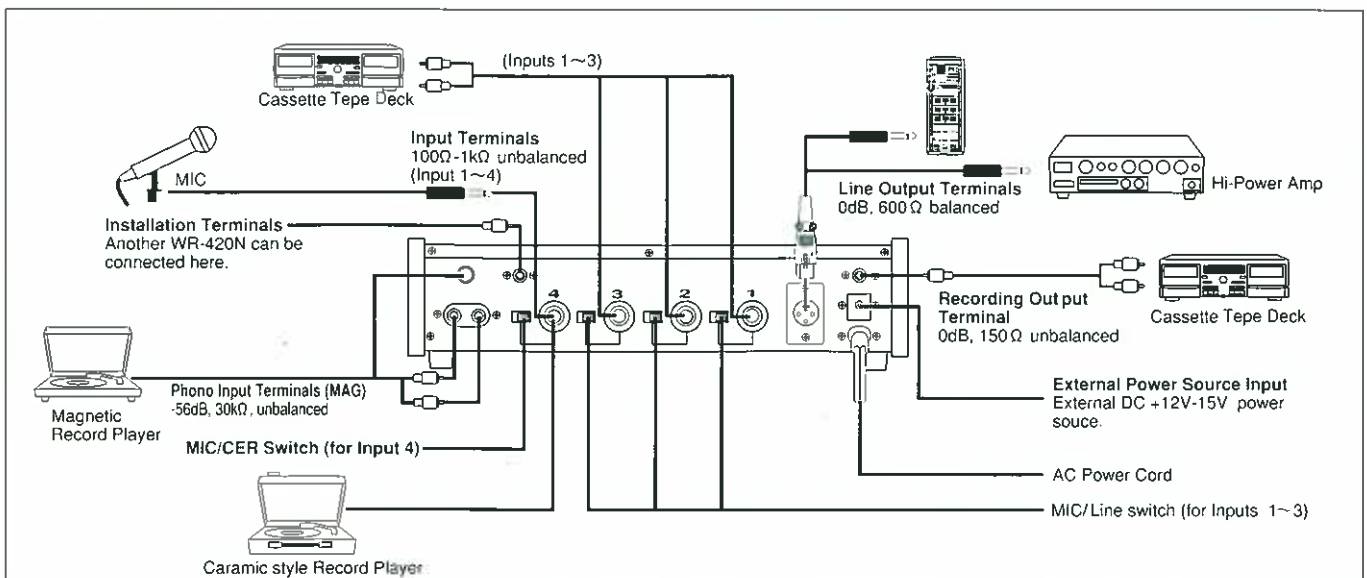
WR-420N



- This unit, with both AC and external power source (12V DC) capability, can be made portable even with a car battery.
- This unit can be used for either microphone (low-impedance) or line inputs by operating the switches on the back panel.
- By connecting one more WR-420N Audio Mixer to the installation terminals, the input circuitry increases twofold and output lineage also doubles.
- This unit is equipped with an automatic limiter control (ALC) which provides leeway against excessive input.
- Both magnetic and ceramic type record players can be used.

SPECIFICATIONS

Power source	AC 110/120/220/240V 50/60Hz or DC 12V (external source)
Rated output	0dBV
Frequency response	50Hz~20,000Hz ± 3 dB (mic. input) 30Hz~20,000Hz ± 3 dB (line input)
Maximum input voltage	0.1V (-20dBV) mic. input 3.16V (+10dBV) line input
Distortion	within 1% (100Hz~20,000Hz at rated output)
Noise level	within -74dB (A curve) mic. input (with input short) within -78dB (A curve) line input
Input circuit	
Mic. (1~4)	100 Ω ~ 1k Ω (unbalanced) input impedance 4k Ω
Line (1~3)	100 Ω ~ 10k Ω (unbalanced) input impedance 10k Ω
Phono (MAG)	-56dB (unbalanced) 30k Ω
Phono (CER)	-30dB (unbalanced) 100k Ω
Limiter	acting voltage 0dBV (Line output level)
Output circuit	
Line	600 Ω balanced, maximum +4dBV
Recording	150 Ω unbalanced, maximum +4dBV
Input/output phase	all inputs and line outputs, recording output has same phase
Acceptable temp range	-10 $^{\circ}$ C ~ +40 $^{\circ}$ C
Dimensions	306(W) x 78(H) x 245(D) (width and depth does not include handle)
Weight (Approx.)	2.6kg
Finish	Side Panels: ABS black finish Cover: metallic charcoal finish Chassis: flat black finish



WIRELESS MICROPHONE SYSTEMS

PORTABLE SOUND SYSTEMS

WX-220N
WX-220CN



REAR

◁ WX-220N ▷



◁ WX-220CN ▷



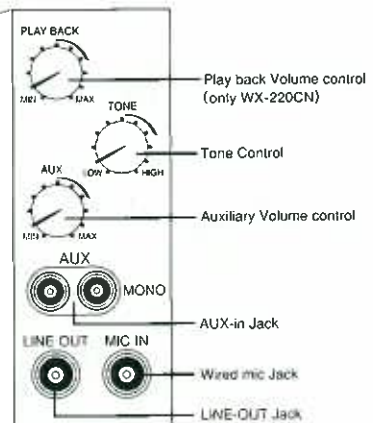
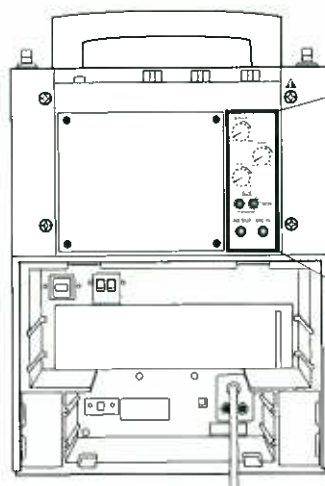
- High quality sound by 2-way speaker system (twin bessel horn tweeter with woofer)
- Connectable with up to 2 optional tuners (WX-D220N). Available to use 2 optional wireless microphones (WX-2100N/2200N) and 1 wired microphone simultaneously.
- Clear sound by space diversity receiving system and low noise compander system.
- High output power: maximum output power 20W, rated output power 16W (DC operation 10W)
- Equipped with volume controller for wired microphone, line and wireless microphones
- Built-in tone control function for wireless microphone and cassette tape recorder (only WX-220CN)
- Equipped with speed controller of cassette tape recorder (only WX-220CN)

SPECIFICATIONS

	WX-220N	WX-220CN	
Power Source	AC 110/120/220/240 V, 56/60 Hz or DC 12 V (dry manganese/alkaline batteries x 8)		
Power Consumption	40 W (at 16 W output) (at 16 W output)	43 W (at 10 W output) 1.8 A (at 10 W output)	
Maximum Output	25 W (AC operation) internal speaker, when external speaker is connected 20 W (AC operation) internal speaker only		
Rated Output	16 W (AC operation), 10W (DC operation)		
Battery	Alkaline Dry	4.5H continuous (speaker only) 2.5H continuous (speaker+cassette deck)	
Life	Manganese Dry	3.0H continuous (speaker only) 2H continuous (speaker+ cassette deck)	
Wireless Section	Receiving Frequency	VHF High band (160 MHz to 200 MHz)	
	Receiving System	Single super heterodyne	
	Antenna System	Telescoping antenna	
	Receiving Sensitivity	20 dB μ V (at 50 dB S/N ratio)	
	Squelch Sensitivity	17 dB μ V	
S/N Ratio	70 dB (line input)		
Distortion	less than 5 %		
Frequency Response	50 Hz to 15 kHz		
Residual Noise	less than 2.5 mV		
Input	MIC IN	-495 dBV, unbalanced, Tip-sleeve phone jack	
Circuit	AUX (MONO)	-20 dBV, 47 k Ω , unbalanced, pin jack	
Cassette Deck	Track System	-	2-track, 1 channel, monaural
	Recording Mechanism	-	AC bias
	Tape Speed	-	4.76 cm/sec.
	Wow/Flutter	-	less than 0.2% WRMS
Rewind/FF Time	-	approx. 120 sec (C-60 tape)	
Output Circuit	EXTERNAL SPEAKER	Rated input more than 20W, Input impedance 8-16 Ω	
	LINE OUT	Switchable between "Internal Speaker + External speaker" or "External Speaker Only"	
		less than 0 dBV, unbalanced, Tip-sleeve phone jack	
Ambient Temperature	-10° C to +50° C		
Dimensions (W×H×D)	320 X 420 X 210 mm (excluding handle and antenna height)		
Weight	approx. 7 kg (excluding batteries) approx. 7.7 kg (excluding batteries)		
Finish	mid-gray coating resembling Munsell N4.5 color (resin mold)		

* Approx. 1.9W of power is consumed when switching OFF the power while operating on AC power supply.

Easily Connects to External Equipment



CORDLESS MICROPHONES

HAND HELD TYPE CORDLESS MICROPHONE WX-2200N/A,B,C,D,H,K



NEW

Only H & K frequencies
are available in Hong Kong

- High-stability sound with Quartz-Controlled Oscillation System
- Built-in antenna
- 15 hours continuous operation on 1 LR6 (Type AA) battery

SPECIFICATIONS

Transmitting Frequency	WX-2200 N/A	192.250 MHz
	WX-2200 N/B	192.750 MHz
	WX-2200 N/C	168.750 MHz
	WX-2200 N/D	169.250 MHz
	WX-2200 N/H	187.550 MHz
	WX-2200 N/K	187.950 MHz
Frequency Stability	±0.005 %	
Type of Emission	F3	
Oscillation System	Quartz-Controlled Oscillation System	
Modulation System	Reactance Modulation	
RF Carrier Power	10mW	
Operating Range	approx. 60 m	
Modulation Sensitivity	±5 kHz FM (at 109 dB SPL, 1 kHz)	
Microphone Unit	Unidirectional electret condenser microphone	
Frequency Response	50 Hz to 15,000 Hz (Ref. 1 kHz 50 μs Emphasis)	
Maximum Input Sound Pressure	128 dB SPL	
Battery	LR6 (type AA) X1, 1.5 V	
Power Consumption	80 mA (at 1.5 V)	
Battery Life	approx. 15 H (Alkaline Dry Battery Continuous Operation)	
Operating Temperature	0 °C to +40 °C	
Dimensions (maximum diameter X L)	φ 54 X 230 mm	
Weight	approx. 180 g (including dry batteries)	
Finish	Similar to Merzell N 2.5 glossy	

LAVALIERE TYPE CORDLESS MICROPHONE WX-2100N/A,B,C,D,H,K



NEW

- High-stability sound with Quartz-Controlled Oscillation System
- 15 hours continuous operation on 1 LR6 (Type AA) battery

SPECIFICATIONS

Transmitting Frequency	WX-2100 N/A	192.250 MHz
	WX-2100 N/B	192.750 MHz
	WX-2100 N/C	168.750 MHz
	WX-2100 N/D	169.250 MHz
	WX-2100 N/H	187.550 MHz
	WX-2100 N/K	187.950 MHz
Frequency Stability	±0.005 %	
Type of Emission	F3	
Oscillation System	Quartz-Controlled Oscillation System	
Modulation System	Reactance Modulation	
RF Carrier Power	10mW	
Operating Range	Note: approx. 60 m 100 m (limiting under ideal conditions, usually somewhat less in virtual conditions)	
Modulation Sensitivity	±5 kHz FM (at 91 dB SPL, 1 kHz)	
Microphone Unit	Unidirectional electret condenser microphone	
Frequency Response	50 Hz to 15 kHz (Ref. 1 kHz 50 μs Emphasis)	
Maximum Input Sound Pressure	110 dB SPL	
Input Noise	less than 40 dB SPL (at ±5 kHz FM 'A' weighted)	
Power Consumption	80 mA (at 1.5 V)	
Battery	LR6 (Type AA) X1, 1.5 V	
Battery Life	approx. 15 H (Alkaline Dry Battery Continuous Operation)	
Operating Temperature	0 °C to +40 °C	
Dimensions	Main Unit (W X L X T)	66 X 103 X 27 mm
	Mic (Maximum diameter X L)	φ 14 X 25.5 mm
	Mic (Line length between main unit)	approx. 80 cm
Weight	approx. 120 g (including dry batteries and clip)	
Finish	Similar to Merzell N 2.5; glossy	

DIVERSITY TUNER UNIT WX-D220N (A,B,C,D,H&Kch)

NEW



- Clear sound by noise reduction system
- Employ a VHF high band that is not affected by computer, tuning control or urban noise.
- Setup for use with WX-220N, 220CN

SPECIFICATIONS

Power Supply	DC 9V (Supplied from Portable Sound System)	
Current Drain	60mA	
Reception Frequency	WX-D220N/A	192.250 MHz
	WX-D220N/B	192.750 MHz
	WX-D220N/C	168.750 MHz
	WX-D220N/D	169.250 MHz
	WX-D220N/H	187.550 MHz
	WX-D220N/K	187.950 MHz
Receiving System	Diversity Super Heterodyne (Quartz-Controlled Oscillation System)	
Receiving Sensitivity	20dB μ V (at 50dB S/N ratio)	
Squelch Sensitivity	17dB μ V	
S/N Ratio	more than 80dB (at 60dB μ V input, ±5kHz FM)	
Distortion	less than 1 %	
Output	-15dB V (±5kHz FM, 1 kHz)	
Peripheral Temperature	0 °C to +40 °C	
Dimensions (W x H x D)	68 X 24 X 171 mm (excluding connection)	
Weight	approx. : 230 g	

WIRELESS MICROPHONE RECEIVER

WIRELESS MICROPHONE RECEIVER

WX-22N/AB/CD/HK



Only H & K frequencies
are available in Hong Kong



● Diversity Receiving System

WX-22N employs a VHF high band that is not affected by urban noise. Stable reception of the wireless microphone signal greatly reduces undesired noise caused by movement of the wireless microphone. Use of an external wireless antenna further improves reception of the wireless microphone signal.

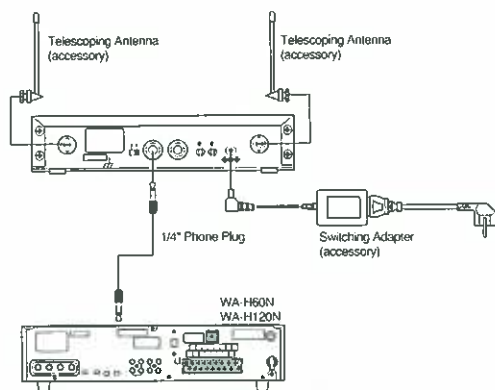
● Wide Range of Input Voltage of AC Adapter

On installing, it is troublesome to set up voltage and exchange the fuse, but WX-22N doesn't have to. The AC Adapter for this diversity wireless receiver has a wide range of input voltage (AC 100V - 240 V) and corresponds to the various countries.

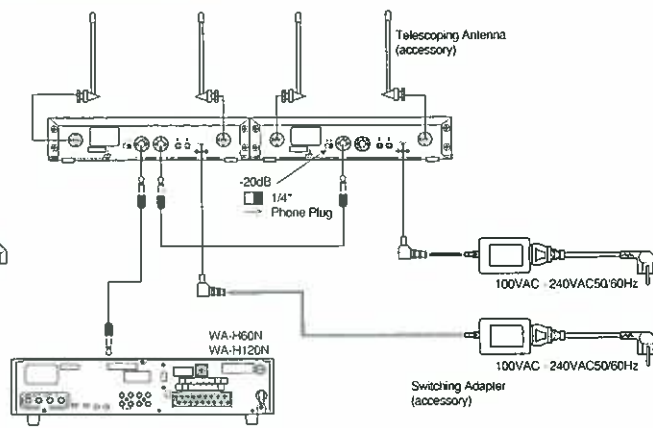
● Installation example

This wireless receiver can be mounted on high-power amplifier WA-H60N/H120N. You can select using single/dual channel.

Using single channel



Using dual channel



SPECIFICATIONS

	WX-22N/AB	WX-22N/CD	WX-22N/HK
Power Supply	AC 100 V~240V, 50/60 Hz with using AC Adaptor (Receiver DC 12V,100mA)	AC 110 V~240V, 50/60 Hz with using AC Adaptor (Receiver DC 12V,100mA)	AC 110 V~240V, 50/60 Hz with using AC Adaptor (Receiver DC 12V,100mA)
Power consumption	2W	2W	2W
Receiving Frequency	A ch: 192.250MHz / B ch: 192.750MHz	C ch: 168.750MHz / D ch: 169.250MHz	H ch: 187.550MHz / K ch: 187.950MHz
Receiving System	Truth Diversity Receiving System / Super Heterodyne Receiving System / Quartz-controlled Oscillation System	Truth Diversity Receiving System / Super Heterodyne Receiving System / Quartz-controlled Oscillation System	Truth Diversity Receiving System / Super Heterodyne Receiving System / Quartz-controlled Oscillation System
Antenna Input	75 Ω, BNC, Diversity A&B 2 circuits	75 Ω, BNC, Diversity A&B 2 circuits	75 Ω, BNC, Diversity A&B 2 circuits
Sensitivity	20dB μV (0dB μV = 1μV) at 50dB S/N ratio (±5kHz FM input)	20dB μV (0dB μV = 1μV) at 50dB S/N ratio (±5kHz FM input)	20dB μV (0dB μV = 1μV) at 50dB S/N ratio (±5kHz FM input)
Squelch Sensitivity	10dB μV~50dB μV Variable	10dB μV~50dB μV Variable	10dB μV~50dB μV Variable
Squelch System	TONE squelch & carrier squelch system TONE Frequency 32.768kHz (Deviation ±1.2kHz FM)	TONE squelch & carrier squelch system TONE Frequency 32.768kHz (Deviation ±1.2kHz FM)	TONE squelch & carrier squelch system TONE Frequency 32.768kHz (Deviation ±1.2kHz FM)
S/N Ratio	More than 80dB (at 60 dB μV input, ±5 k Hz FM)	More than 80dB (at 60 dB μV input, ±5 k Hz FM)	More than 80dB (at 60 dB μV input, ±5 k Hz FM)
Distortion	Less than 1% (at 60 dB μV input, ±5kHz FM)	Less than 1% (at 60 dB μV input, ±5kHz FM)	Less than 1% (at 60 dB μV input, ±5kHz FM)
Frequency Response	50 Hz to 15 k Hz (50 μsec, emphasis)	50 Hz to 15 k Hz (50 μsec, emphasis)	50 Hz to 15 k Hz (50 μsec, emphasis)
Line Output	-20dB, -60dB (selectable) 600 Ω Balanced, 1/4" phone jack	-20dB, -60dB (selectable) 600 Ω Balanced, 1/4" phone jack	-20dB, -60dB (selectable) 600 Ω Balanced, 1/4" phone jack
Auxiliary Input	-20dB 600 Ω Unbalanced, 1/4" phone jack	-20dB 600 Ω Unbalanced, 1/4" phone jack	-20dB 600 Ω Unbalanced, 1/4" phone jack
Operating Temperature	-10°C~+50°C	-10°C~+50°C	-10°C~+50°C
Dimensions (W x H x D)	210 X 44 X 111 mm	210 X 44 X 111 mm	210 X 44 X 111 mm
Weight	Approx. 1kg	Approx. 1kg	Approx. 1kg

CEILING-MOUNTED SPEAKERS

RESIN PANEL

WS-7030N

3w

WS-7060N

6w



PUNCHED METAL PANEL

WS-7130N

3w

WS-7160N

6w



- Refined appearance to match the ceiling
- Small and simple design
- Resin panel (WS-7030N, WS-7060N)
- Metal grill panel with punched metal (WS-7130N, WS-7160N)
- High cost performance 12cm speaker

Diagram of Installation Hole Size

Bore a similar hole as in the diagram in the ceiling when installing the speakers.

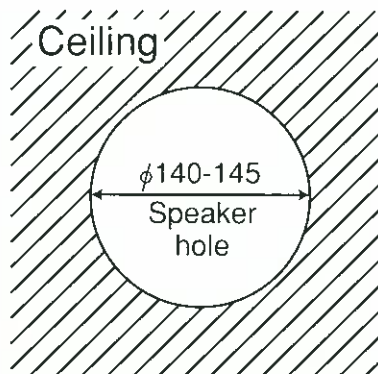
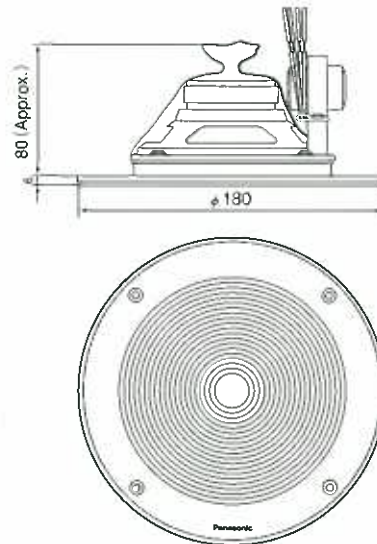


Diagram Dimensions

(WS-7030N/7060N, WS-7130N/7160N)



SPECIFICATIONS

	WS-7030N	WS-7060N	WS-7130N	WS-7160N
Rated Input	3 W	6W	3W	6W
Input Impedance	3.3kΩ, 5kΩ, 10kΩ	1.65kΩ, 3.3kΩ, 10kΩ	3.3kΩ, 10kΩ	1.65kΩ, 3 kΩ, 10 kΩ
Frequency Response	100-12,000 Hz	100-12,000 Hz	100-12,000 Hz	100-12,000 Hz
Output Sound Pressure Level	92dB (1 m/ 1 W)	92dB (1 m/ 1 W)	92dB (1 m/ 1 W)	92dB (1 m/ 1 W)
Speaker	12cm cone speaker	12 cm cone speaker	12 cm cone speaker	12 cm cone speaker
Dimensions	(Exposed height) φ 180 × 6 mm (Internal height) 80mm	(Exposed height) φ 180 × 6mm (Internal height) 80mm	(Exposed height) φ 180×6mm (Internal height) approx.80 mm	(Exposed height) φ 180×6mm (Internal height) 80 mm
Weight	approx. 500 g	approx. 500 g	approx. 500 g	approx. 500 g
Finish	High-impact Polystyrene resin (94-V0 grade) Off-White (similar to Munsell 5 Y 8.5/1)	High impact Polystyrene resin (94-V0 grade) Off-White (similar to Munsell 5 Y 8.5/1)	Aluminum, off-white coating (similar to Munsell 5 Y 8.5/1)	Aluminum, off-white coating (similar to Munsell 5 Y 8.5/1)

*Refer to the speaker color samples on Page 32.

CEILING-MOUNTED SPEAKERS

RESIN PANEL
WS-4430N

3w



PUNCHED METAL PANEL
WS-4600GN

3w



PUNCHED METAL PANEL
WS-4991GN

3w



PUNCHED METAL PANEL
WS-4992GN

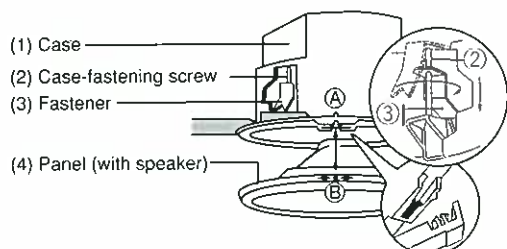
5w
<MAX>



WS-4600GN Mounting Procedure

(1) Insert case (1) into hole in ceiling, and turn case-fastening screws (2) clockwise so that fasteners (3) bite into the ceiling material.

(2) Attach panel (B) to case (A), and turn the panel to lock it.

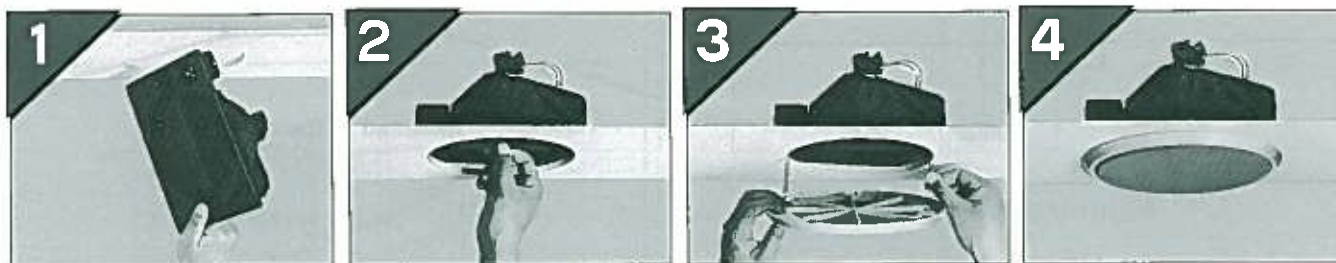


WS-4991GN, WS-4992GN Mounting Procedure

Tools such as screwdrivers are not needed for installation. Fittings are not visible on the face of the panel, offering a refined appearance.

1. Make an opening 190 mm (WS-4991GN) / 240 mm (WS-4992GN) in diameter in the ceiling. Place the speaker above the ceiling from below, and connect the wires.
2. After connecting the wires, position the speaker in the center of the opening.
3. Pull down the two springs from the speaker and the attach speaker panel to complete the installation.

THE INSTALLATION IS THIS SIMPLE! Method of installation. (WS-4991GN, WS-4992GN)



SPECIFICATIONS

	WS-4430N	WS-4600GN	WS-4991GN	WS-4992GN
Rated Input	3W	3W	3W	5W
Input Impedance	3.3k Ω , 10k Ω	3.3k Ω , 10k Ω	3.3k Ω , 10k Ω	2k Ω , 4k Ω
Sound Pressure Level	92dB (1m/1W)	2dB (1m/1W)	92dB (1m/1W)	92dB (1m/1W)
Frequency Response	180~15,000Hz	160~10,000Hz	130~12,000Hz	100~12,000Hz
Speaker	12 cm cone speaker	12 cm cone speaker	16cm cone speaker	20 cm cone speaker
Dimensions	ϕ 250 x 78(D) mm	ϕ 180 x 124(D) mm (Internal height) approx. 80 mm	174(W) x 232(H) x 120(D) mm (Internal height) 80 mm	220(W) x 280(H) x 130(D) mm
Weight	approx. 900g	approx. 800g	approx. 580g	approx. 1,050g
Finish	High-impact Polystyrene resin (94-V0 grade) Similar to Munsell 7.9Y6.8/0.8(AV Ivory)	ABS resin	ABS resin	ABS resin
Aluminum Frame		Aluminum, off-white coating	Aluminum, off-white coating	
Punching Net		(similar to Munsell 5Y8.5/1)	Punching Net. (similar to Munsell 5Y8.5/1)	
Net		Punched metal, Similar to Munsell 5Y8.5/1 (off white)	Punched metal, Similar to Munsell 5Y8.5/1 (off white)	Punched metal, Similar to Munsell 5Y8.5/1 (off white)
Frame		ABS resin	ABS resin, Munsell 5Y8.5/1 (off white)	ABS resin, Munsell 5Y8.5/1 (off white)

*Refer to the speaker color samples on Page 32.

WALL-MOUNTED SPEAKERS

WALL-MOUNTED SPEAKER

WS-2330N 3w

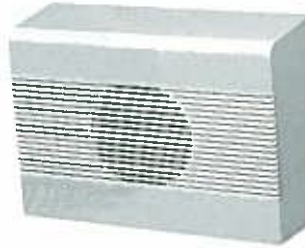
NEW



WALL-MOUNTED SPEAKER

WS-2335N 3w

NEW



WALL-MOUNTED SPEAKER

WS-2360N 6w

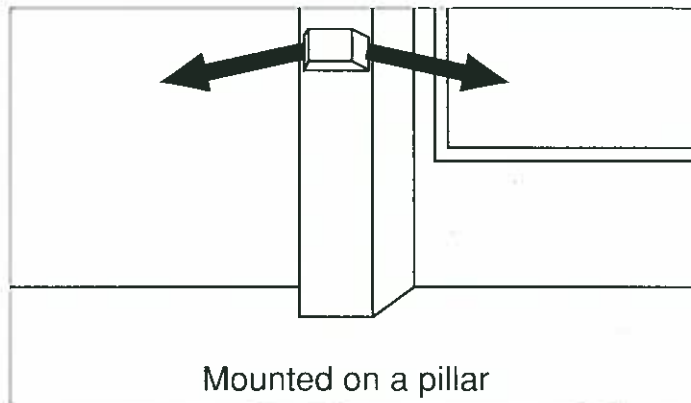
NEW



- Refined appearance to match the wall
- Small and simple design
- High-cost performance 12cm speaker
- Volume Attenuation Level can be controlled between 0, -6dB, -12dB, -∞ by the slide switch. (WS-2335N only)
- Available to deliver sound in two directions at the same time (WS-2360N only)

Installation example for a Bi-Directional Speaker (WS-2360N)

Speaker delivers sound in two directions at the same time and is ideally suited for passageways.



SPECIFICATIONS

	WS - 2330N	WS - 2335N	WS-2360N
Rated Input	3 W	3 W	6 W
Input Impedance	3.3 kΩ, 5 kΩ, 10 kΩ	3.3 kΩ	1.65 kΩ, 2.5 kΩ, 5 kΩ
Frequency Response	150-15,000 Hz	150-15,000 Hz	150-15,000 Hz
Output Sound Pressure Level	92 dB (1 m/1 W)	92 dB (1 m/1 W)	92dB (1 m,1W)
Speaker	12 cm cone speaker	12 cm cone speaker	Two 12cm cone speakers
Volume Attenuation Level	—	0, -6 dB, -12 dB, -∞	—
Dimensions (W × H × D)	290 × 214 × 100 (long)/74 (short)mm	290 × 214 × 100 (long)/74 (short)mm	290 × 214 × 130mm
Weight	approx. 1kg	approx. 1kg	approx. 1.4kg
Finish	High-impact Polystyrene (94 -V0 grade) (similar to Munsell 5 Y8.5 /1)	High-impact Polystyrene (94 -V0 grade) (similar to Munsell 5 Y8.5 /1)	High impact Polystyrene (94 -V0 grade) (similar to Munsell 5 Y8.5/1)

*Refer to the speaker color samples on Page 32.

SPEAKERS VOLUME CONTROLLERS

SPEAKER VOLUME CONTROLLERS

WZ-550N/1
/2/3-5/6-30



SPEAKER VOLUME CONTROLLER BOX

WZ-598N



SPEAKER CONNECTOR PLATE

WZ-701A



SPEAKER CONNECTOR PLATE

WZ-702A



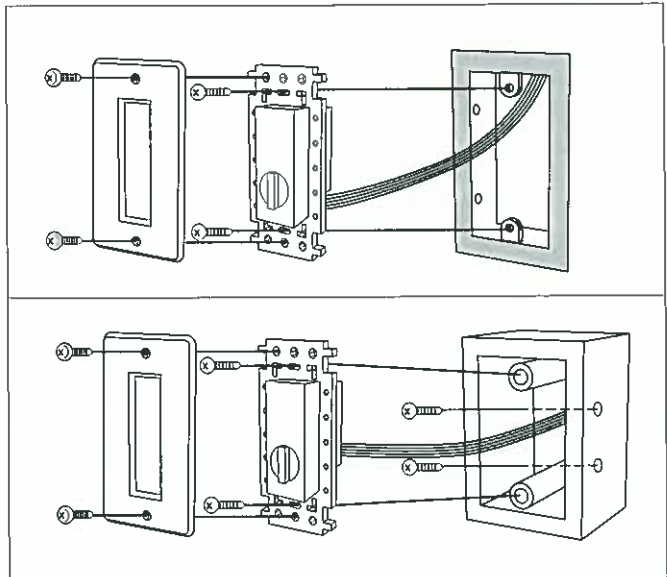
SPEAKER CONNECTOR BOX

WZ-762



Volume controllers are useful in public address systems. Even if the volume of the speaker is changed, the impedance of the circuit is kept constant. Further, they are designed to make a remote controlled emergency announcement possible regardless of the setting position of the controller.

WZ-598N is used for mounting WZ-550N series volume controllers. This is a surface-mounted type housing for a volume controller which can be mounted on walls, partitions, etc.



SPECIFICATIONS

	WZ-550N/1	WZ-550N/2	WZ-550N/3-5	WZ-550N/6-30	WZ-598N
Rated Input	1W	2W	3W~5W	6W~30W	
Impedance	10k Ω	5k Ω	2~3.3k Ω	—	
Dimensions	70(W) x 120(H) x 46.8(D) mm	70(W) x 120(H) x 46.8(D) mm	70(W) x 120(H) x 46.8(D) mm	70(W) x 120(H) x 49.3(D) mm	70.5(W) x 120.5(H) x 40.5(D) mm
Weight	Approx. 106g	Approx. 107g	Approx. 114g	Approx. 189g	Approx. 64g
Finish	Plate: Aluminum brushed finish	Plate: Aluminum brushed finish	Plate: Aluminum brushed finish	Plate: Aluminum brushed finish	ABS resin, Silver painting

SPECIFICATIONS

	WZ-701A	WZ-702A	WZ-762
Unit	1 pcs	2 pcs	2 pcs
Applicable plug	Cannon connector XLR-4-12C or equivalent	Cannon connector XLR-4-12C or equivalent	Cannon connector XLR-4-12C or equivalent
Material	Plate: Aluminum Fitting: Zinc plated Chromate treated	Plate: Aluminum Fitting: Zinc plated Chromate treated	Aluminum die cast
Remarks	W/Plastic cap	W/Plastic cap	Panel colour similar to Munsell N8 painting

SONOLINE SERIES

SONOLINE SPEAKER WS-927N

10w
<MAX>



SONOLINE SPEAKER WS-928N

20w
<MAX>



SONOLINE SPEAKER WS-929N

30w
<MAX>

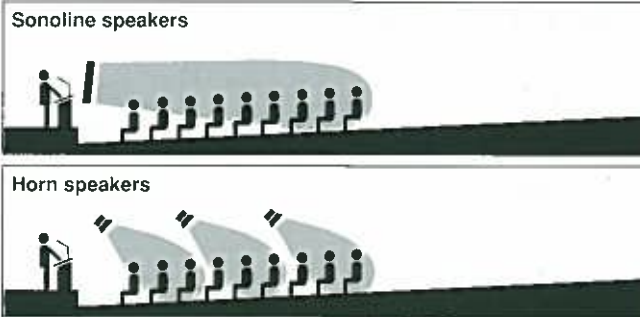


WS-927N, 928N, 929N

Cased in weatherproof aluminum alloy, can be used both indoors and outdoors in places like athletic fields, parks, playgrounds, station platforms, building terraces, gymnasiums, etc.

- Double weatherproof finished speakers with weatherproof cone and cloth.
- Speaker direction can be changed sideways and vertically.

Typical Directionality of a Sonoline Speaker

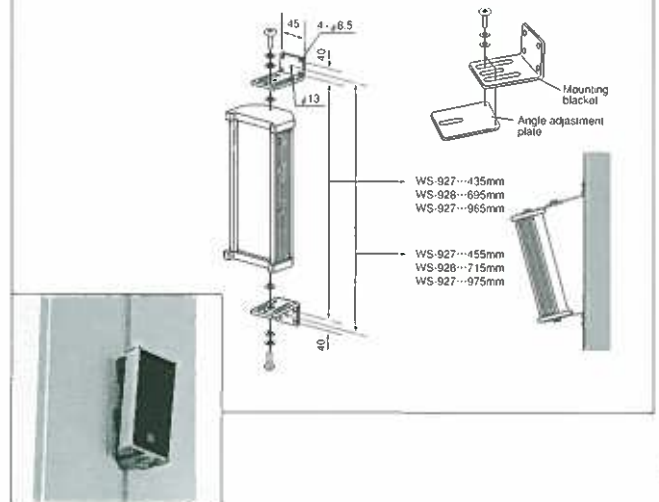


When 2 units at a time at the same place, ensure that + & - polarity of the speaker cables are matched.

Vertical angle adjustment of each model

Model	With mounting bracket	With mounting bracket and angle adjustment plate
WS-927	0° - 5.5°	9.5° - 23°
WS-928	0° - 3.5°	5.5° - 14.5°
WS-929	0° - 2.5°	4° - 10.5°

Angle adjustment of 90° possible horizontally



SPECIFICATIONS

	WS-927N	WS-928N	WS-929N
Rated Input	10W	20W	30W
Input impedance	1kΩ, 2kΩ	500Ω, 1kΩ	330Ω, 670Ω
Frequency Response	170~10,000Hz	150~10,000Hz	150~10,000Hz
Sound Pressure Level	More than 93dB SPL, 1W, 1m	More than 95dB SPL, 1W, 1m	More than 95dB SPL, 1W, 1m
Speaker Used	12 cm cone speaker 2 units	12 cm cone speaker 4 units	12 cm cone speaker 6 units
Dimensions	185(W) x 383(H) x 114(D) mm	185(W) x 643(H) x 114(D) mm	185(W) x 903(H) x 114(D) mm
Weight (Approx.)	3.4kg	5.5kg	7.5kg
Finish			
Case	Munsell N7 Gray Color Metallic Painting	Munsell N7 Gray Color Metallic Painting	Munsell N7 Gray Color Metallic Painting
Front Panel	Punched Panel with Black Semi-glossy Painting	Punched Panel with Black Semi-glossy Painting	Punched Panel with Black Semi-glossy Painting

CLEARHORN SPEAKERS

CLEARHORN SPEAKER

WT-710E

10w
<MAX>



CLEARHORN SPEAKER

WT-720E

20w
<MAX>



These speaker systems include a cone speaker unit in a two-way mechanical horn design. A slant-mouth-shaped horn for low frequencies and a straight horn for medium and high frequencies make it possible to reproduce clear Hi-Fi sound over a wide frequency range. The cone itself is waterproof, strengthened olefin material good for both indoor and outdoor uses. Output sound pressure level is as high as 98dB. Ruggedness is improved by the use of a heat-resistant voice coil. Both high- and low-impedance terminals are provided. The use of ABS resin enhances the weatherproof quality and makes these systems suitable for outdoor use.

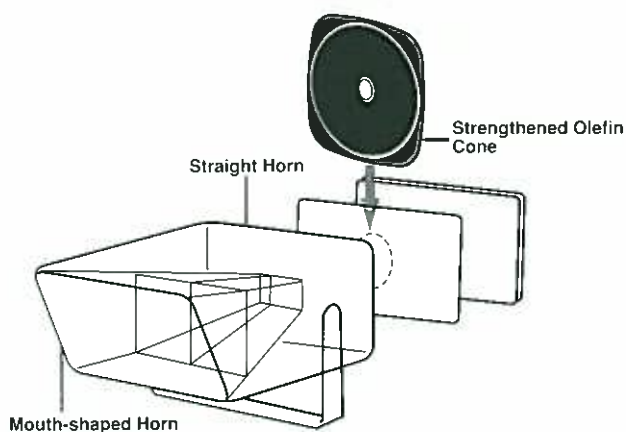
Bolts, etc., for attaching the clearhorns are included, and plug bolts (manufactured by Matsushita) are also available.



Optional Mount Adaptor

WT-Q01N for wall mounting

WT-Q02N for ceiling mounting



SPECIFICATIONS

	WT-710E	WT-720E
Rated Input	10W	20W
Input Impedance	1k Ω , 2k Ω , 8 Ω	500 Ω , 1k Ω , 8 Ω
Sound Pressure Level	More than 98dB (1m, 1W)	More than 101dB (1m, 1W)
Frequency Response	200~12,000Hz	180~15,000Hz
Dimensions (W) x (H) x (L)	366 x 324 x 250 mm	366 x 324 x 250 mm
Weight (Approx.)	3.6kg	4kg
Finish	ABS resin	ABS resin

HORN SPEAKERS

COMBINATION TYPE HORN SPEAKER

WT-108CN 5w <MAX>



COMBINATION TYPE HORN SPEAKER

WT-202BN 10w <MAX>



COMBINATION TYPE HORN SPEAKER

WT-200AN 15w <MAX>



- Horn speakers are very efficient in reproducing sound in noisy places.
According to the level of the surrounding noise, the installation position of the horn speaker varies. These are conveniently designed to be mounted either to walls or ceilings.
The horn is made of ABS resin and it is light and durable against wind and rain when used outdoors.

SPECIFICATIONS

	WT-108CN	WT-202BN	WT-200AN
Rated Input	5W	10W	15W
Input Impedance	8Ω	1, 2, 4kΩ	670Ω, 1, 1.3, 2kΩ
Frequency Response	400~7,000Hz	320~7,000Hz	250~7,000Hz
Sound Pressure Level	More than 104dB (1m, 1W)	More than 104dB (1m, 1W)	More than 105dB (1m, 1W)
Total Length	166mm	257mm	384mm
Horn	152mm	212mm	380mm
Weight (Approx.)	1.2kg	1.6kg	3.2kg
Materials	ABS resin	ABS resin	Horn Aluminum

SEPARATE TYPE REFLEX HORN

WT-H38N



SEPARATE TYPE REFLEX HORN

WT-H51N



SEPARATE TYPE DRIVER UNIT

WT-D15N/D30N

15w <MAX>

30w <MAX>



SEPARATE TYPE DRIVER UNIT

WT-D51N 50w <MAX>



WT-D15N, WT-D30N

- High frequencies have been extended to 12,000Hz (WT-D15N) and to 9,000Hz (WT-D30N)
- Weatherproof design using ABS resin case



SPECIFICATIONS

	WT-H51N	WT-H38N
Horn Size	510mm, with horn ring removed	380mm, with horn ring removed
Overall Length	398mm, with horn ring removed	292mm, with horn ring removed
Driver Coupling	1-3/8, 18-threads	1-3/8, 18-threads
Finish	Horn: Aluminum, gray painting Angle: Steel plate, gray painting	Horn: Aluminum, gray painting Angle: Steel plate, gray painting

SPECIFICATIONS

	WT-D15N	WT-D30N	WT-D51N
Input impedance	670Ω, 1kΩ, 2kΩ	330Ω, 400Ω, 500Ω	200Ω, 250Ω, 330Ω, 500Ω
Rated Input	15W	30W	50W
Frequency Response	150~12,000Hz	150~9,000Hz	125~7,000Hz
Sound Pressure Level	More than 105dB (1m, 1W)	More than 105dB (1m, 1W)	More than 110dB (1m, 1W)
Input cable	Approx. 30cm with 4-pin connector	Approx. 30cm with 4-pin connector	Approx. 60cm (as an accessories)
Horn Coupling	1-3/8, 18-Threads	1-3/8, 18-Threads	1-3/8, 18-Threads
Weight (Approx.)	1.6kg	1.9kg	3.3kg
Finish			
Horn adaptor	Aluminum die cast	Aluminum die cast	Aluminum die cast
Driver unit	ABS resin	ABS resin	Aluminum

Lightweight, Handy Type

WD-300N (10W maximum)



10w
<MAX>

- Use of a titanium diaphragm in the driver unit helps produce a rich, clear sound. Weight-saving ICs are used for the amplifier and other components. Overall weight with batteries: 980g.

SPECIFICATIONS

Rated Output	6W
Maximum Output	10W
Batteries	Six SUM-3-D (9V)
Battery Life	Approx. 6 hours
Power Consumption	Less than 11W (at rated output)
Frequency Response	800~6,000Hz
Material	ABS resin
Coverage	Approx. 250m
Weight (Approx.)	0.98kg (including batteries)
Dimensions	325mm total length 190mm at aperture

Standard type, with whistle

WD-350N (20W maximum)



20w
<MAX>

- The whistle is useful for getting attention as a part of traffic control, physical training, or construction work. The megaphone light and has a simple design, and may be useful for various purposes.

SPECIFICATIONS

Rated Output	13W
Maximum Output	20W
Batteries	Six SUM-2-D (9V)
Battery Life	Approx. 12 hours
Power Consumption	Less than 22 W (at rated output)
Frequency Response	300~8,000Hz
Material	ABS resin
Coverage	Approx. 350m
Weight (Approx.)	1.6kg (including batteries)
Dimensions	363mm total length 210mm at aperture

Transistor type, with a hand microphone

WD-360AN (25W maximum)



25w
<MAX>

- All controls are on the hand microphone. It can be hung from the shoulder, put on the floor, or attached to a stand. The megaphone is small and handy.

SPECIFICATIONS

Rated Output	15W
Maximum Output	25W
Batteries	Eight SUM-2-D (12V)
Battery Life	Approx. 15 hours
Power Consumption	Less than 25 W (at rated output)
Frequency Response	300~6,000Hz
Material	Aluminum
Coverage	Approx. 400m
Weight (Approx.)	1.8kg (including batteries)
Dimensions	375 mm total length 230 mm at aperture

Handy type, with a siren

WD-340N (20W maximum)



20w
<MAX>

- The siren is useful for guiding people in an emergency. A maximum output of 20W allows clear sound even in noisy places and gives a powerful volume which can be heard 500m away. It is light and handy, and all controls can be operated by one hand.

SPECIFICATIONS

Rated Output	13W
Maximum Output	20W
Batteries	Six SUM-2-D (9V)
Battery Life	Approx. 12 hours
Power Consumption	Less than 22 W (at rated output)
Frequency Response	300~8,000Hz
Material	ABS resin
Coverage	Approx. 350m
Weight (Approx.)	1.6kg (including batteries)
Dimensions	363mm total length 210mm at aperture

Easy-to-use, standard type

WD-330N (20W maximum)



20w
<MAX>

- This transistor megaphone may be useful for various purposes, such as meetings, sales, etc.

SPECIFICATIONS

Rated Output	13W
Maximum Output	20W
Batteries	Six SUM-2-D (9V)
Battery Life	Approx. 12 hours
Power Consumption	Less than 22 W (at rated output)
Frequency Response	300~8,000Hz
Material	ABS resin
Coverage	Approx. 350m
Weight (Approx.)	1.6kg (including batteries)
Dimensions	363mm total length 210mm at aperture

Transistor type, with a hand microphone

WD-370N (45W maximum)



45w
<MAX>


- All controls are on the hand microphone. It can be hung from the shoulder, put on the floor, on attached to a stand.

SPECIFICATIONS

Rated Output	20W
Maximum Output	45W
Batteries	Ten SUM-1-D (15V)
Battery Life	Approx. 30 hours
Power Consumption	Less than 40W (at rated output)
Frequency Response	300~6,000Hz
Material	Aluminum
Coverage	Approx. 450m
Weight (Approx.)	3.1kg (including batteries)
Dimensions	475mm total length 300mm at aperture

MICROPHONES

UNIDIRECTIONAL DYNAMIC MICROPHONE

WM-391N 



UNIDIRECTIONAL DYNAMIC MICROPHONE

WM-392N 



UNIDIRECTIONAL DYNAMIC MICROPHONE

WM-393N 



MUSIC MICROPHONE
WM-330N 



MUSIC MICROPHONE
WM-331N 



MUSIC MICROPHONE
WM-333N 



UNIDIRECTIONAL DYNAMIC MICROPHONE WM-391N/392N

- Available for a wide variety of use: speech, vocal presentation and karaoke
- With ON/OFF talk switch
- Frequency Response: 100 - 10,000 Hz

UNIDIRECTIONAL DYNAMIC MICROPHONE WM-393N

- Available for a wide variety of use: speech, vocal presentation and karaoke
- With ON/OFF talk switch
- Frequency Response: 80 - 10,000 Hz

SPECIFICATIONS

	WM-391N	WM-392N	WM-393N	WM-330N	WM-331N	WM-333N
Type	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic
Directivity	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional
Impedance	600 Ω ± 30 % at 20°C/10,000 Hz	600 Ω ± 30 % at 20°C/10,000 Hz	600 Ω ± 30 % at 20°C/10,000 Hz	600 Ω ± 30%Balanced at 20°C/10,000 Hz	600 Ω ± 30%Balanced at 20°C/10,000 Hz	600 Ω ± 30%Balanced at 20°C/10,000 Hz
Sensitivity	-55dB ± 3dB (at 0dB=1 V/Pa,1000Hz)	-55 dB ± 3 dB (at 0dB=1V/Pa,1000Hz)	-55 dB ± 3 dB (at 0dB=1V/Pa,1000Hz)	-53dB ± 3dB (at 0dB=1V/Pa,1000Hz)	-53dB ± 3dB (at 0dB=1V/Pa,1000Hz)	-54dB ± 3dB (at 0dB=1V/Pa,1000Hz)
Frequency Response	100~10,000 Hz	100~10,000 Hz	80~10,000 Hz	50~13,000 Hz	50~14,000 Hz	50~15,000 Hz
Talk Switch	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF
Output Cable	approx.2.8 m φ 4 single shield cable wire : black	approx.2.8 m φ 4 single shield cable wire : black	approx.5 m φ 4 single shield cable cable : black	approx.5 m φ 6 mm single-conductor shielded cable : black	approx.5 m φ 6 mm 2-conductor shielded cable : black	approx.5 m φ 6 mm 2-conductor shielded cable : black
Output Connector	Large single head plug	Large single head plug	Cannon-type connector Large single head plug	Cannon-type connector Large single head plug	Cannon-type connector Large single head plug	Cannon-type connector Large single head plug
Peripheral Temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C			
Mic Holder				U5/8	U5/8	U5/8
Adaptor				U5/8--W3/8	U5/8--W3/8	U5/8--W3/8
Dimensions	φ 52 X 203 mm	φ 52 X 221 mm	φ 52 X 183 mm	φ 53 (max) X 176 (length) mm	φ 52 (max) X 181 (length) mm	φ 52.5 (max) X 171 (length) mm
Weight	approx. 175 g	approx.230 g	approx.250 g (main unit only)	280 g (main unit only)	290 g (main unit only)	290 g (main unit only)
Finish	ABS resin, dark gray	ABS resin, black coating	Galvanized die-cast, black coating	Galvanized die-cast, gray coating	Galvanized die-cast, gray coating	Galvanized die-cast, dark gray coating

PAGING MICROPHONE
WM-420E



PAGING MICROPHONE
WM-422E



PAGING MICROPHONE
WM-451E



PAGING MICROPHONE
WM-450E



SPEECH MICROPHONE
WM-421E



SPEECH MICROPHONE
WM-432E



SPEECH MICROPHONE
WM-433E



TIE-CLIP MICROPHONE
WM-611N



●WM-422E:

Unique design for desk top application! Automatic "On" switch is equipped on the reverse side of the bottom base for quick "pick and speak" use. When this switch is set on, the sensor on the bottom automatically switches the microphone. Mic on/off switch is also provided on the top of the bottom base to manually control on/off. If you like to keep on, just slide up Lock Lever and the microphone continuously collects sound without touching on/off switch.

SPECIFICATIONS

	WM-420E	WM-422E
Type	Dynamic	Dynamic
Directivity	Unidirectional	Unidirectional
Impedance	600Ω ± 30% Unbalanced	600Ω ± 30% Unbalanced
Sensitivity	-56dB ± 3.5dB	-56dB ± 3.5dB
Frequency Response	70~12,000Hz	70~12,000Hz
Talk Switch	On/Off	On/Off
Power Supply	-	-
Output Cable	φ 5 mm, Single-conductor shielded cable (3m)	φ 4 mm, Single-conductor shielded cable (2m)
Mic Holder	-	-
Adaptor	-	-
Dimensions	φ 41 x 207(W) mm	137(W) x 240(H) x 132(D) mm
Weight (Approx.)	70 g	370 g

Application

		Shopping Center Super-market	School	Government Office	Community Center	Gymnasium/Golf	Amusement Park	Fast Food/Restaurant Store	Hospital/Facility	Department Store
Announcement	WM-420	○	○	○			○	○	○	
	WM-421		○	○	○					
	WM-422					○	○	○	○	○
	WM-451			○						○
Speech	WM-450									
	WM-431									
	WM-432									
	WM-433			○						

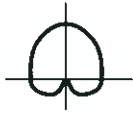
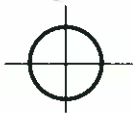
		Banks/ Reception Counter	Airport Station	Conference Room	Training Center	Hotel	Banquet Hall	Outdoor	Event Hall/Ceremony	Vocal
Announcement	WM-420						○			
	WM-421				○		○			○
	WM-422		○	○	○					
	WM-451			○						○
Speech	WM-450	○	○		○					
	WM-431			○						
	WM-432					○	○		○	
	WM-433	○							○	○

	WM-450E	WM-451E	WM-421E	WM-432E	WM-433E	WM-611N
Type	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic	E.C.M
Directivity	Unidirectional	Unidirectional Unidirectional	Unidirectional	Unidirectional	Unidirectional	Omnidirectional
Impedance	600Ω ± 30% Balanced	600Ω ± 30% Unbalanced	600Ω ± 30% Unbalanced	400Ω ± 30% Balanced	600Ω ± 30% Balanced	Unbalanced
Sensitivity	-56dB ± 3.5dB	-56dB ± 3.5dB	-56dB ± 3.5dB	-56dB ± 3.5dB	-54dB ± 3dB	-52dB ± 3dB
Frequency Response	70~12,000Hz	70~12,000Hz	70~12,000Hz	70~15,000Hz	70z~15,000H	20~12,000Hz
Talk Switch	-	On/Off	On/Off	On/Off	-	On/Off
Power Supply	-	-	-	-	-	Battery UM-31.5V x 1
Output Cable	3P metal connector	φ 4 mm, Single-conductor shielded cable (2m)	Cannon type (equivalent to XLR 3-12)	Cannon type (equivalent to XLR 3-12)	Cannon type (equivalent to XLR 3-12)	φ 4 mm single-conductor shielded cable 3 m dark gray
Mic Holder	-	-	U5/8	U5/8	U5/8	-
Adaptor	-	-	U5/8--W3/8	U5/8--W3/8	U5/8--W3/8	-
Dimensions	φ 36 x 430(H) mm	Mic: φ 36 x 415(H) mm Stand: φ 150 x 28(H) mm	φ 39 x 200(W) mm	φ 35 x 234.5(W) mm	φ 43 x 198.5(W) mm	φ 8-dia. x 24(length) mm
Weight (Approx.)	210 g	210g (Mic)500g (Stand)	230 g	220 g	260 g	5 g (mic head)



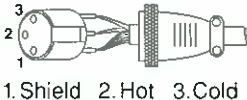
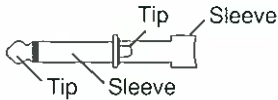
MICROPHONES

Hints in selecting a microphone

Microphones are classified according to mechanism, and selected for the purpose to which they are to be used.

Direction	Features	Usage
Unidirectional 	<ul style="list-style-type: none"> • This is sensitive to sound from the front, and is less affected by other noises. • Relatively free from howling 	<ul style="list-style-type: none"> • Paging, public address • Speech, meetings • Vocal music
Omnidirectional 	<ul style="list-style-type: none"> • Sound sensitive at all angles, good for conversations, picking up normal multi-directional sounds. 	<ul style="list-style-type: none"> • Interviews • Sound collecting

Item	High-impedance	Low-impedance
Cord length	Within 10 m	70 – 80 m
To extend cord	Combine with mike mixer, mike output balanced	
Sensitivity	Relatively high, approx. -60dB	Relatively low, approx. -80dB
Output impedance	$20\text{k}\Omega \sim 50\text{k}\Omega$	$200\Omega \sim 600\Omega$

Balanced type	Unbalanced type
<ul style="list-style-type: none"> ● Low-impedance mike ● Professional type 	<ul style="list-style-type: none"> ● High-impedance mike ● Low-impedance mike
XLR Type plug 	Tip sleeve (TS) phone plug 
 <p>1. Shield 2. Hot 3. Cold</p>	 <p>Tip Sleeve Tip Sleeve</p>



BOOM STAND
WN-620E



FLOOR STAND
WN-425E



TABLE TOP STAND
WN-272E



TABLE STAND
WN-186N

MICROPHONE CABLES

- WM-830N** (5m)
- WM-831N** (10m)
- WM-832N** (20m)



MICROPHONE CABLES

- WM-869RN** (RED/5m)
- WM-869BN** (BLUE/10m)
- WM-869N** (GRAY/20m)



1/4" Tip-sleeve Phone Plug & jack



Cannon connectors

MICROPHONE CONNECTOR PLATE

WZ-801A



MICROPHONE CONNECTOR PLATE

WZ-802A



MICROPHONE CONNECTOR PLATE

WZ-831A



MICROPHONE CONNECTOR BOX

WZ-862



SPECIFICATIONS

	WN-620E	WN-425E	WN-272E	WN-186N
Dimensions				
Stem (mm)	930 ± 50 ~ 1485 ± 50	890 ± 20 ~ 1532 ± 20	220 ± 10 ~ 375 ± 10	
Stand base (mm)	φ 740 120" x 3	φ 745 120" x 3	φ 150	110 x 42 x 170
Finish				
Stem	Steel (Chromium plating)	Steel (Chromium plating)	Steel (Chromium plating)	ABS resin (Gray)
Stand base	Zinc die casting (Black painting)		Zinc die casting (Metallic painting)	
Mounting screw	W3/8 x 16 threads	W3/8 x 16 threads	US/8 x 27 threads	3-pin metal connector
Weight (Approx.)	4.5kg	2.2kg	1.1kg	46g

SPECIFICATIONS

	WZ-801A	WZ-802A	WZ-831A	WZ-862
Connector used	Cannon connector: XLR-3-13	Cannon connector: XLR-3-13	1/4 TRS Phone Plug	Cannon connector: XLR-3-13
Applicable Plug	Cannon Plug: XLR-3-14	Cannon Plug: XLR-3-14	1/4 TRS Phone Plug	Cannon Plug: XLR-3-12C
Units	1 pce.	2 pcs.	1 pce.	2 pcs.
Dimensions	120 x 70 (mm)	120 x 116 (mm)	120 x 70 (mm)	179 x 179 x 161 (mm)

RACK AMPLIFIER SYSTEMS

BASIC SYSTEM WITH STANDARD RACK



BASIC SYSTEM WITH LONG RACK

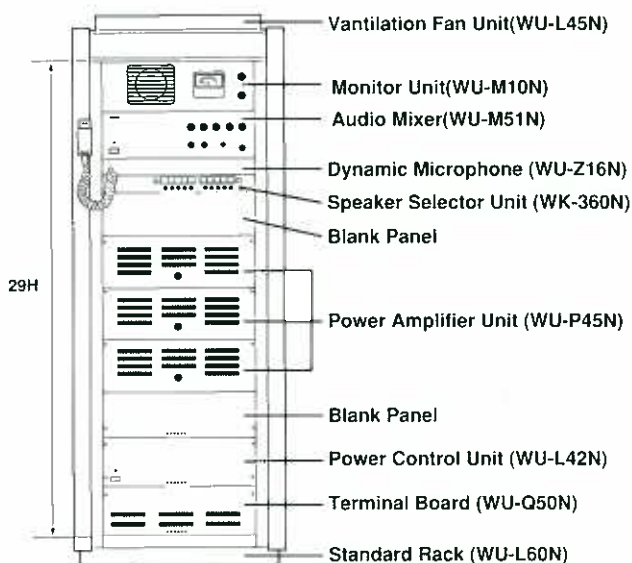


- National Rack Amplifier Systems are highly adaptable to diversified requirements for sound systems.
- High power output and a variety of system operating features enable announcements and broadcast music over wide and large areas such as airports, stadiums, hotels, department stores, supermarkets, hospitals, factories, railway terminals, etc.
- In accordance with the size of the facility, purpose, and budget, users can add optional units including tape players, additional power amplifiers, speaker selectors, etc.
- Two systems available: standard rack and long rack.
- Use of BGM mode units enable these systems to subdivide speaker areas in order to broadcast different programs to different areas.
- Interconnection in the rack between units is done with the ready-made cables of the standard accessories.

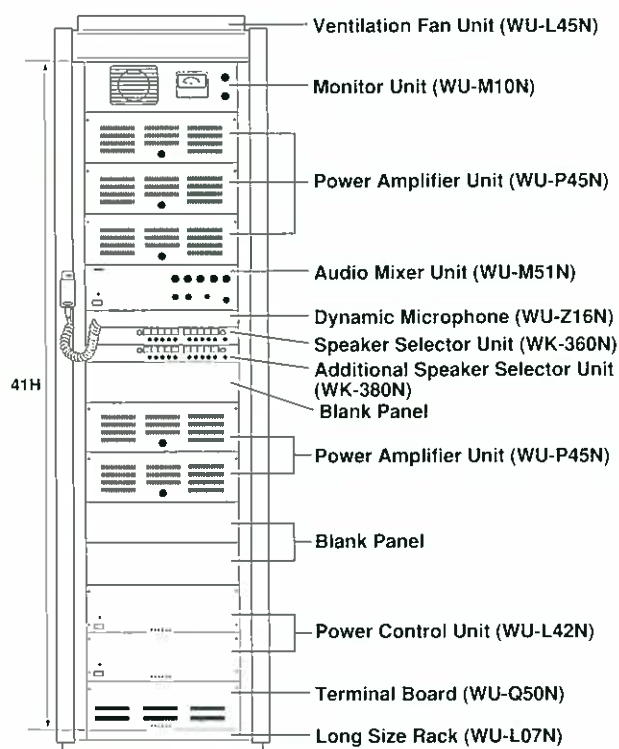
SPECIFICATIONS

Power Supply	AC: 110/120/220/240V 50/60Hz or DC: 24V (from outside)
Power Consumption	Approx. 20W (Excluding Power Amplifier Unit)
Ambient Temperature	0°~40°C
Relative Humidity	35% to 90%
Operating Condition	Continuous
1. Input Circuits	
Microphones	—70dB 600Ω 3 Circuits
Phono	—50dB 10kΩ 1 Circuit
Line	—22dB 10kΩ 3 Circuits
Line	10kΩ 3 Circuits
Remote	20kΩ 1 Circuit
Chime	—30dB 50kΩ 1 Circuit
2. Output Circuits	
Rated Output	Depends on required Power Amplifier Unit
Speaker Circuits	100V or 70V Line 10 Circuits + All Call
Recording Output	0dB High impedance Circuit
3. Control Circuits	
Chime Control	1 Circuit
Power Control	2 Circuits
Call Sign Control	1 Circuit
Announce Control	2 Circuits
Control for Additional Rack	1 Circuit
Call Sign Generator	1 Circuit
4. Electric Characteristic	
Frequency Response	50~15,000Hz ±2dB
Distortion	50~15,000Hz Less than 0.2%
Residual Noise	More than 50dB
Tone Control	100Hz 10dB or more at 1kHz
	10,000Hz 10dB or more at 1kHz
Dimension	
Standard Rack	565(W) x 1,495(H) x 475(D) mm
Long Rack	565(W) x 2,030(H) x 475(D) mm
Weight (Approx.)	
Standard Rack	62kg Excluding Power Amplifier Unit
Long Rack	71kg Excluding Power Amplifier Unit

RACK AMPLIFIER SYSTEMS



1080W Standard Rack System



1800W Long Rack System

SYSTEM CONFIGURATION OF BASIC SYSTEMS

Description	Model	H	1080W Standard Rack System	1800W Long Rack System
Standard Size Rack	WU-L06N	—	1	
Long Size Rack	WU-L07N	—	1	
Ventilation Fan Unit	WU-L45N	—	1	1
Monitor Unit	WU-M10N	3H	1	1
Audio Mixer Unit	WU-M51N	3H	1	1
Dynamic Microphone	WU-Z16N	1H	1	1
Speaker Selector Unit	WK-360N	1H	1	1
Additional Speaker Selector Unit	WK-380N	1H	1	
Power Amplifier Unit	WU-P43N	2H		
	WU-P45N	3H	3	5
Power Control Unit	WU-L42N	3H	1	2
Terminal Board	WU-Q50N	3H	1	1
Remote Control Unit	WU-R33N	2H		
BGM Mode Unit	WK-421N	2H		
Speaker Mode Unit	WK-400	1H		
Shelf Unit	WU-Q11N	3H		
Blank Panel	W2-BPW/44	1H	—	—
	W2-BPW/88	2H	—	1
	W2-BPW/132	3H	2	2
Remote Microphone	WR-110N			
Radio Tuner				
Double Cassette Deck				

RACK AMPLIFIER SYSTEM COMPONENTS

RACK AMPLIFIER SYSTEM COMPONENTS

●Wide choice of components

You can select components in accordance with your own design, size, purpose, and budget.

●Minimum installation space needed

All components are compact and fit into a 19" EIA rack.

●Expanding your system economically

Starting with the basic components, you are free to add more components when needed.

MONITOR UNIT WU-M10N



3H

- Output of power amplifiers can be monitored with both the VU meter and a monitor speaker.
- Four power amplifiers outputs can be individually monitored.

SPECIFICATIONS

Monitor Speaker	1W
Power Meter	Peak level meter
Monitor Input	4 Circuits + 40dB 10k Ω
Dimensions	480(W) x 132(H) x 65(D) mm
Weight	Approx. 1.3kg
Finish	Munsell 5Y7.5/1
Accessories	Monitor Cord x 1 Mounting Screw (M5 x 10) x 4

AUDIO MIXER UNIT WU-M51N



3H

- Ten-input circuits.
- Built-in call sign generator can be operated manually on the front panel or by a remote microphone.

SPECIFICATIONS

Power Supply	AC110/120/220/240V DC24V
Power Consumption	4.2W
Input Mic	3 circuits 72dB 600 Ω
Line	4 circuits -22dB 20k Ω
Phone	1 circuit -56dB 50k Ω
Chime	1 circuit -30dB 50k Ω
Remote	1 circuit 0dB 20k Ω
Output Line	2 circuits 0dB 20k Ω
REC	1 circuit 0dB 20k Ω
Call Sign	370,466,544,740Hz 4-Tone signal
Dimensions	480(W) x 132(H) x 275(D) mm
Weight	Approx. 3.7kg
Finish	Munsell 5Y7.5/1
Accessories	DC Power cord x 1 AC Power cord x 1 Mounting screw (M5 x 10) x 4

DYNAMIC MICROPHONE WU-Z16N



1H

- Dynamic microphone for quick and smooth paging.
- Provided with a panel for installation.

SPECIFICATIONS

Directivity	Omni-directional
Sensitivity	-70dB ±3dB 700 Ω Unbalanced
Dimensions	54(W) x 95(H) x 45(D) mm
Weight	Approx. 500g
Finish	ABS resin (Gray color)
Accessories	Microphone mounting material x 1 Microphone panel x 1 Mounting screw (M5 x 10) x 2

10-STATION SPEAKER SELECTOR UNIT WK-360N



1H

- Ten speaker areas can be selected individually or all at the same time (all call).

SPECIFICATIONS

Speaker Selection	10 stations and all call
Power Capacity	100W/1 circuit 1,000W/all call
Dimensions	480(W) x 44.45(H) x 275(D) mm
Weight	Approx. 1.8kg
Finish	Munsell 5Y7.5/1
Accessories	15-Conductor W/connector x 1 9-Conductor W/connector x 1 Mounting screw (M5 x 10) x 2

ADDITIONAL SPEAKER SELECTOR UNIT WK-380N



1H

- Another ten speaker areas can be added by combining this unit with speaker selector unit WK-360N

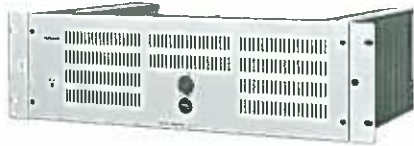
SPECIFICATIONS

Speaker Selection	10 stations
Power Capacity	100W/ circuit
Dimensions	480(W) x 44(H) x 275(D) mm
Weight	Approx. 1.7kg
Finish	Munsell 5Y7.5/1
Accessories	15-Conductor cable x 1 4-Conductor cable x 1 Mounting screw (M5 x 10) x 2

RACK AMPLIFIER SYSTEM COMPONENTS

POWER AMPLIFIER UNIT

WU-P43N 2H
WU-P45NL 3H
WU-P45NH 3H



- Compact and high-power amplifier units with excellent sound quality.
- Provided with transistor protection circuit.

SPECIFICATIONS

	WU-P43N	WU-P45NL	WU-P45NH
Power Supply	110/120/220/240V	110/120V	220/240V
	AC 24V DC 50/60Hz	AC 24V DC 50/60Hz	AC 24V DC 50/60Hz
Power Consumption at rated output	300W		840W
Input Level		0dB, 50k Ω	
Rated output (RMS)	120W		360W
Output Impedance			
70V Line	42 Ω		14 Ω
100V Line	85 Ω		28 Ω
Frequency Response	50~15,000Hz (+2, -1dB)		
Distortion	Less than 1% at rated output		
Residual Noise	75dB below		
Dimensions	480(W) x 88(H) x 325(D) mm (2H)	480(W) x 132(H) x 305(D) mm (3H)	
Weight (Approx.)	10kg	20kg	
Finish	Munsell 5Y7.5/1 (Panel white) Painting		
Accessories			
Power Supply Cord	1	1	1
Input Cord	1	1	1
Output Cord	1	1	1
DC Cord	1	2	2
Mounting Screw M5 x 10	4	4	4
Operating instruction	1	1	1

EMERGENCY POWER SUPPLY UNIT

WP-570/G



2H

- When there is an AC power failure, it is possible to operate a maximum of 10 minutes continuously at the rated output of the power amplifier.

Used with emergency power supply unit WP-560N

Description	NCB-350	NCB-600
Rated Voltage	24V DC	
Rated Capacity	3.5AH/5HR	6AH/5HR
Drivable power	120W	240W
Amplifier Capacity		
Dimensions	328(W) x 67.5(H) x 64.5(D) mm	345(W) x 98(H) x 73(D) mm
Weight (Approx.)	2.6kg	5kg

SPECIFICATIONS

Rated Voltage	110,120,220,240V AC 50/60Hz
Power Consumption	Approx. 19W
Charging current	1/400A
Charging method	Trickle charge
Battery used	Nickel cadmium storage battery
NCB-350 1 pce	DC 24V 3.5AH/5HR (for 120W Power amplifier)
NCB-600 1 pce	DC 24V 6.0AH/5HR (for 240W Power amplifier)
NCB-600 2 pcs	DC 24V 12AH/5HR (for 480W Power amplifier)
Dimensions	480(W) x 88(H) x 275(D) mm
Weight (Approx.)	4kg (without storage battery)
Finish	Munsell 7.9Y6.8/0.8 painting
Accessories	Power cord w/plugs 1
	6-conductor cable w/conductor 1
	Mounting screw (M5 x 10) 4

NICKEL-CADMIUM BATTERY

NCB-350



NICKEL-CADMIUM BATTERY

NCB-600



- Uses a nickel cadmium storage battery according to the power capacity.
- The battery is always automatically charged by the built-in charger and controller.

Relation between output power (RMS) and number of batteries.

Total Power	Used Power Amplifier unit	NCB-350	NCB-600	WP-560N
120W	WU-P43N x 1	1		1
240W	WU-P43N x 2		1	1
360W	WU-P45N x 1		2	1
480W	WU-P43N x 1 WU-P45N x 1		2	1
600W	WU-P43N x 2 WU-P45N x 1	1	2	2
720W	WU-P45N x 2		4	2
840W	WU-P43N x 1 WU-P45N x 2		4	2
960W	WU-P43N x 2 WU-P45N x 2		4	2
1080W	WU-P43N x 3 WU-P45N x 2	1	4	3
1200W	WU-P43N x 1 WU-P45N x 3		6	3

Note: 1. Only the same model batteries can be used together in emergency power supply unit WP-560N, and a maximum of two batteries can be used in one unit.
 2. The battery life is approx. 4 year, but this may vary subject to the usage conditions, environment, etc.

RACK AMPLIFIER SYSTEM COMPONENTS

BGM MODE UNIT WK-421N



2H

- Combine with BGM player (cassette deck) and an exclusive power amplifier for BGM. Paging to sore areas can be made without interrupting BGM broadcast to the other areas by using remote microphones and a speaker selector.

SPECIFICATIONS

Power Supply	AC110/120/220/240V or DC24V
Power Consumption	14W
Paging Input	1 circuit 100V Line
BGM Input	5 circuits 100V or 70V Line
Speaker Output	10 circuits
Output Control	10 circuits + all
Local AMP Cont	10 circuits
SP. Select. SW.	10 circuits + all
Dimensions	480(W) x 88(H) x 275(D) mm
Weight	Approx. 5kg
Finish	Munsell 5Y7.5/1
Accessories	Power supply cord x 1 15-Conductor cable x 4 4-Conductor cable x 7 DC card x 1 Mounting screw (M10 x 5) x 4

REMOTE CONTROL UNIT WU-R33N



2H

- This unit is required if a remote microphone or speaker selector unit is used.
- This unit is also needed in place of a speaker selector unit if the total of the power amplifiers exceeds 1,080W.

SPECIFICATIONS

Power Supply	AC110/120/220/240V or DC24V
Power Consumption	20W
Control	15 circuits + all
Max. Power	500W/1 circuit
Max. Total	2,160W
Dimensions	480(W) x 88(H) x 275(D) mm
Weight	Approx. 3.6kg
Finish	Munsell 5Y7.5/1
Accessories	15-Conductor cable x 6 4-Conductor cable x 2 Power supply cord x 1 DC cord x 1 Mounting screw (M5 x 10) x 4

POWER CONTROL UNIT WU-L42N



3H

- Distributes AC power or DC power (from outside) to all units.
- Power remote control is possible using a remote microphone.

SPECIFICATIONS

Power Supply	AC110/120/220/240V or DC24V
Maximum Power	3kA
Power Consumption	10W
Power Outlet	unswitched 3 circuits switched 12 circuits
Power Control	2 circuits
Chime Control	1 circuit
Announce Control	1 circuit
EMG Control	1 circuit
Call Sign Control	1 circuit
Dimensions	480(W) x 132(H) x 275(D) mm
Weight	Approx. 4.5kg
Finish	Munsell 5Y7.5/1
Accessories	Mounting screw (M5x10) x 4

TERMINAL BOARD WU-Q50N



3H

- 120 terminals are provided for connection of speakers.
- All connections can be made from the front.

SPECIFICATIONS

Output Terminal	120
Dimensions	480(W) x 132(H) x 275(D) mm
Weight	Approx. 4kg
Finish	Munsell 5Y7.5/1
Accessories	Mounting screw (M5x10) x 4

STANDARD RACK WU-L06N



29H

STANDARD RACK WU-L07N



41H

- 19" EIA standard rack with 44 mm (1H) mounting pitch
- Cables/wires outlets are provided at the rear or bottom of rack.

SPECIFICATIONS

Description	Model No.	WU-L06N	WU-L07N
Unit Mounting	Capacity	29H	41H
Maximum Mountable	WU-P43N	5	8
Power Amplifier Unit	WU-P45N	3	5
Dimensions		565(W) x 1,495(H) x 475(D) mm	565(W) x 2,030(H) x 475(D) mm
Weight (Approx.)		50kg	60kg
Finish	Body Base		Munsell 5Y4.5/1.5 Munsell N-1
Accessories	W2-BPW/44 (1H) W2-BPW/88 (2H) W2-BPW/132		1 1 4
Unit Mounting Support	W2-KM10N (2H)	1	1
Mounting Screw	M5 x 10		150

RACK AMPLIFIER SYSTEM COMPONENTS

VENTILATION FAN UNIT WU-L45N



- Mounted on the top of rack for heat dissipation.

SPECIFICATIONS

Power Supply	AC110/120/220/240V
Power Consumption	50W
Fan Operating temperature	40°C
Fan stop temperature	25°C
Dimensions	446(W) x 85(H) x 387(D) mm
Weight	Approx. 4kg
Finish	Munsell N-65
Accessories	Power supply cord x 1 Mounting screw (M5 x 10) x 4

SHELF UNIT WU-Q11N



3H

- For mounting of a cassette deck or tuner.
- If a unit of 3H or more is used, it should be mounted in the lower position.

SPECIFICATIONS

Mountable Unit	440(W) x 44~220(H) x 350(D) mm
Dimensions	480(W) x 132(H) x 350(D) mm
Weight	Approx. 4kg
Finish	Munsell 5Y7.5/1
Accessories	Mounting screw (M5 x 10) x 4

REMOTE MICROPHONE WR-110N



- WR-110N provides remote paging remotely to ten selected areas or to all areas.
- Remote control unit (WU-R33N) or BGM mode unit (WK-421N) is required.
- Condenser microphone and AVC circuit assures clear sound.

SPECIFICATIONS

Power Supply	24V DC (from rack system)
Power Consumption	Approx. 2.5mA
Microphone Input	-64dB 600Ω W/AVC
Aux. Input	-20dB 100kΩ W/AVC
Output	0dB 600Ω
Announce Control	1 circuit
Call Sign Control	1 circuit
All Call Control	1 circuit
Output Control	10 circuits
Microphone	Electret condenser Type W/gooseneck shaft
Dimensions	230(W) x 96(H) x 210(D) mm
Weight	Approx. 2.2kg
Finish	Munsell 5Y7.5/1
Accessories	Gooseneck type microphone x 1 1/4" TS phone plug x 1

COMPACT DISC PLAYER SL-PG340



COMPACT DISC PLAYER SL-PG440



QUARTZ SYNTHESIZER AM/FM TUNER ST-GT350



AUTO-REVERSE CASSETTE DECK RS-TR373



WA

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Colors of Speakers

When choosing speakers, it is important to consider the structure or wood quality of the building or the interior.

As much as possible, National speakers have been designed to harmonize with a variety of interiors.

Because building interiors tend to be predominantly white, we have used it as the standard underlying tone.

To accentuate the mood of your interior, simply choose the most appropriate shade.

Off White (Munsell 5Y8.5/1)	Off White (Munsell 5Y8.5/1)
 <p style="text-align: right;">WS-7030N WS-7060N</p> <p style="text-align: center;">(Punched Metal)</p>	 <p style="text-align: right;">WS-7130N WS-7160N WS-4600GN WS-4992GN WS-4991GN</p>
Panel White (Munsell 5Y8.5/1)	Ivory White (Munsell 2.1Y7.7/1)
 <p style="text-align: right;">WS-2330N WS-2335N WS-2360N</p>	 <p style="text-align: right;">WT-710 WT-720</p>

* Due to printing irregularities, actual shades may vary slightly from the illustration.

●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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