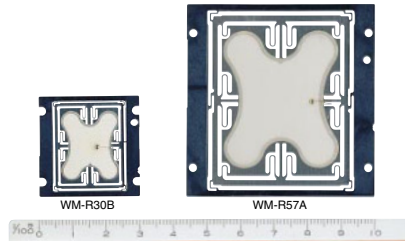


Card Type Speakers

WM-R30B
WM-R57A



■ Features

- Ultra-thin, ultra-light design using a piezo ceramic diaphragm.
WM-R30B: 1.5mm thick, weight 1 gram
WM-R57A: 2.0mm thick, weight 5 grams
- Outstanding broad-spectrum audio reproduction made possible by the two-way mechanical structure of the divided diaphragm, combining one large speaker for low-frequency sounds with four small speakers for high-frequency sounds.
WM-R30B: 400Hz~100kHz WM-R57A: 150Hz~100kHz
- Newly developed double construction damper and high polymer material minimize distortion, ensuring superior reproduction.
- Because no coil or magnet is used, there is no leakage of electromagnetic radiation to interfere with magnetic media.
- The vibrating membrane is covered completely with a high polymer coating, to protect against dampness, dust, and corrosion.

■ Applications

- Mobile Communications
Notebook PCs, PDAs, etc.
- AV Equipment
Portable radios, Camcorders, DVD players, LCD display TVs, etc.
- Home Electronics
Intercoms, Cordless telephones, Fax machine, etc.

Ultra-thin and ultra-light, these new card type speakers deliver a wide frequency range of high-quality sound.

These amazing new *Card Type Speakers* from Panasonic are only 1/5th* the thickness of dynamic speakers. Based on newly developed, original technology, they deliver top-quality, low-distortion reproduction across a wide frequency sound. So small and light, they are ideal for applications that range from notebook PCs, PDAs, and other mobile communications to AV equipment and home electronics.

*comparing the WM-R57A with dynamic speaker which has the same dimensions.

Product Construction

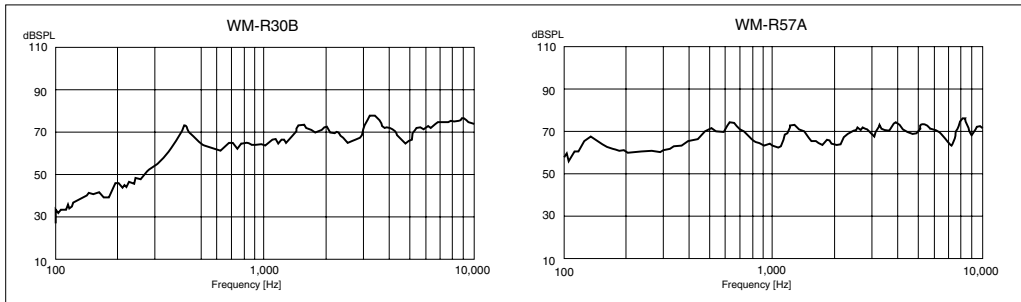
Unit: mm

WM-R30B

WM-R57A

- ① Divided Diaphragm**
 The speaker membrane is divided into four areas that can vibrate independently.
 → ensuring clear reproduction in the mid-to-high frequency range.
- ② Light-weight Resin Frame**
- ③ Double Construction Damper**
 A unique dual-layer structure connects the frame and diaphragm.
- ④ High Polymer Material**
 Use of high polymer materials gives edges outstanding flexibility.
 (③④) → allowing reproduction of lower-frequency sounds, flattening harmonics, and minimizing distortion .
- ⑤ Piezo Ceramic**
 The diaphragm is a unique, new design using a piezo ceramic material.
 → ensuring clear reproduction in both low and high frequency ranges, an ultra-thin and ultra-light designed card type speaker.

Typical Frequency Response Curve



Specifications

Type	Card Type Speakers	
	WM-R30B	WM-R57A
Model No.	WM-R30B	WM-R57A
Dimensions (H x W)	30.0 x 30.0 mm	57.5 x 56.0 mm
Depth	1.5 mm	2.0 mm
Weight (approx.)	1.0 g	5.0 g
Sound Pressure Level	70 dB	70 dB
(distance of mic and speaker)	0.3 m	0.5 m
(average at 4-point)	3V RMS input	3V RMS input
Frequency Response	400 Hz ~ 100 kHz	150 Hz ~ 100 kHz