



WM-R30B



WM-R57A



#### 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.

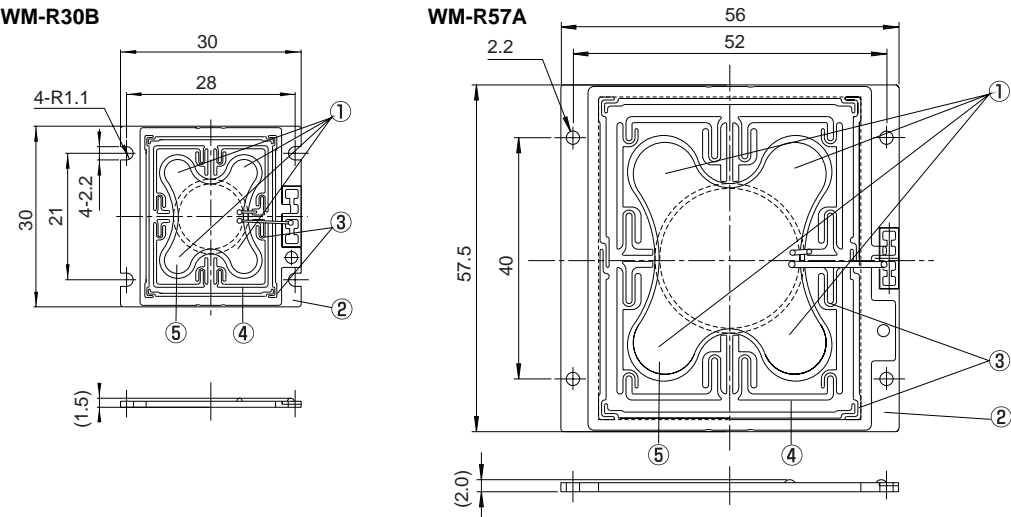
## Ultra-thin and ultra-light, these new card type speakers deliver a wide frequency range of high-quality sound.

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 having the same dimensions.

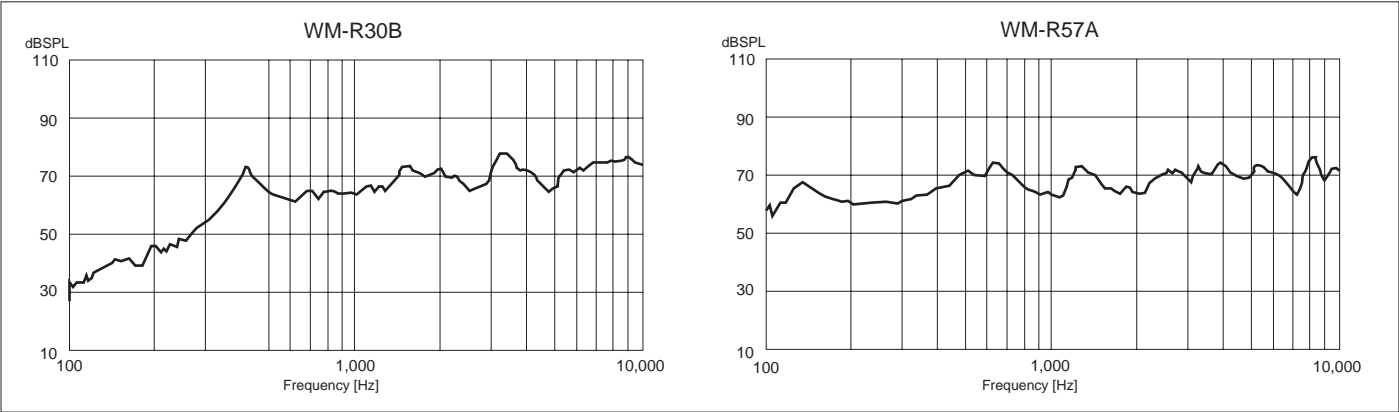
### Key Features

- 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 minimise 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 damp, dust, and corrosion.



- 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.  
(③ ④) → allowing reproduction of lower-frequency sounds, flattening harmonics, and minimising 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 |                  |
|---|--------------------|------------------|
| 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<br>(distance of mic and speaker) | 70 dB<br>0.3 m     | 70 dB<br>0.5 m   |
| (average at 4-point)                                  | 3V RMS input       | 3V RMS input     |
| Frequency Response                                    | 400 Hz ~ 100 kHz   | 150 Hz ~ 100 kHz |

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