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| Data Sheet | AS04004MR-N50-WP-R |
|---|---|

Introducing the N50 Mini Speaker Series from PUI Audio. High-grade neodymium magnetic motors are employed in each N50 Series speaker to create the highest output possible, in the smallest form factor.

The 40mm diameter **AS04004MR-N50-WP-R** is the waterproof, high-temperature version of the popular AS04004MR-N50-R and is built with a silver-poly convex-capped-paper diaphragm, rubber surround, and a cupped spider. A Kapton® former reduces moving mass for high sensitivity. The frame encapsulates the magnetic motor for durability and drop resistance.

**Features:**

- Silver poly cone and rubber surround
- High 84 dB output at 1W/50cm
- Frame-encapsulated, high-temperature N50 neodymium motor
- Only 20.5mm thick
- 2.5mm of excursion

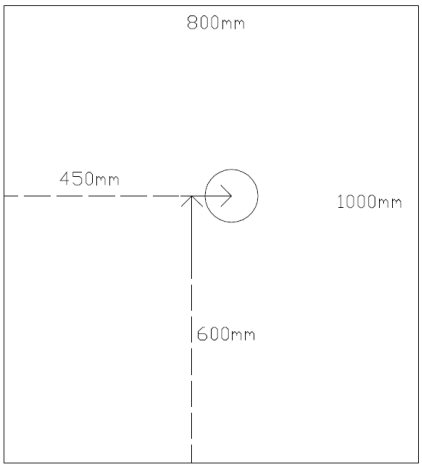
## Specifications

| Parameters | Values | Units |
|---|---|---|
| Rated Input Power | 5 | Watts |
| Max Input Power | 6 | Watts |
| Impedance | 4 ± 15% | Ohms |
| Sensitivity (SPL @ 1W/50cm) (800, 1000, 1200, and 1500 Hz) | 84 ± 3 | dBA |
| Distortion (Max @ 1W, 1 kHz) | <5% | - |
| Resonant Frequency | 160 ± 20% | Hz |
| Frequency Range | 100 ~ 20,000 | Hz |
| Housing Material | PA | - |
| Magnet Material | NdFeB | - |
| Weight | 21.5 | Grams |
| Buzz, Rattle, etc. | Should not be audible with 4.47Vpk sine wave from 150 Hz to 20 kHz | - |
| Polarity | When positive voltage is applied to the positive terminal, the diaphragm will move outward | - |
| Acceptable Soldering Methods | Hand Solder Only | - |
| Ingress Protection Rating | IP65 | - |
| Environmental Compliances | RoHS | - |
| Operating Temperature | -30 ~ +85 | °C |
| Storage Temperature | -30 ~ +85 | °C |

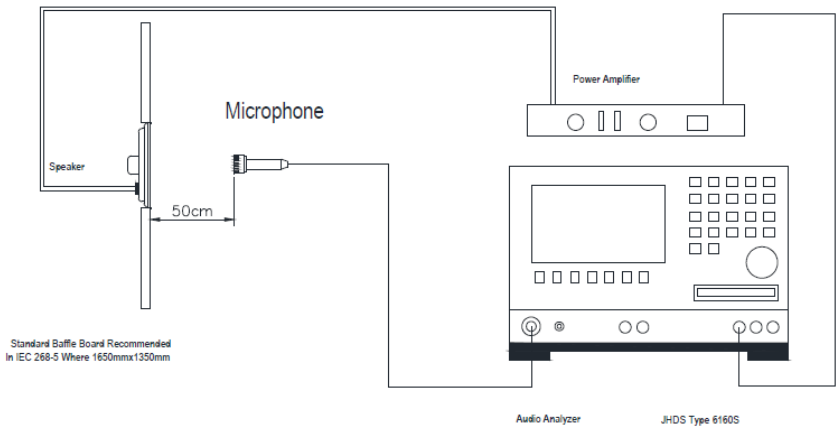
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# Measurement Method

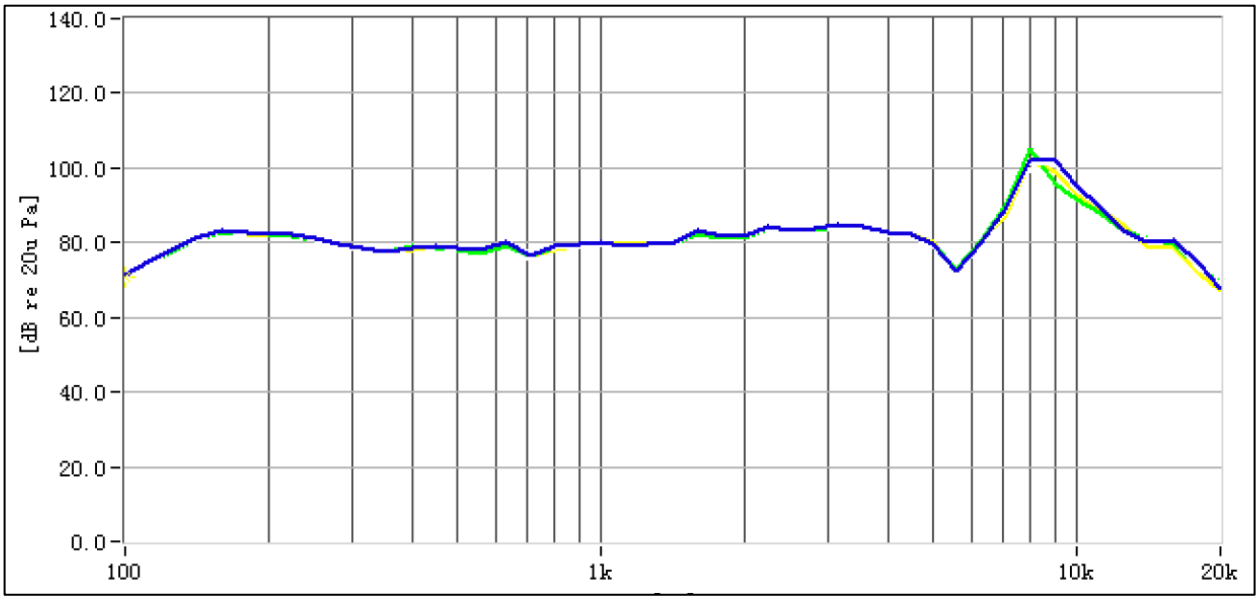



Test Baffle (speaker mounted in circle)

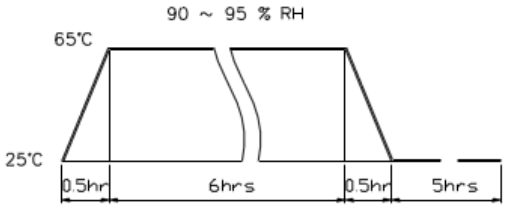


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## Frequency Response (measured at 50cm with 1W input power)




## Reliability Testing

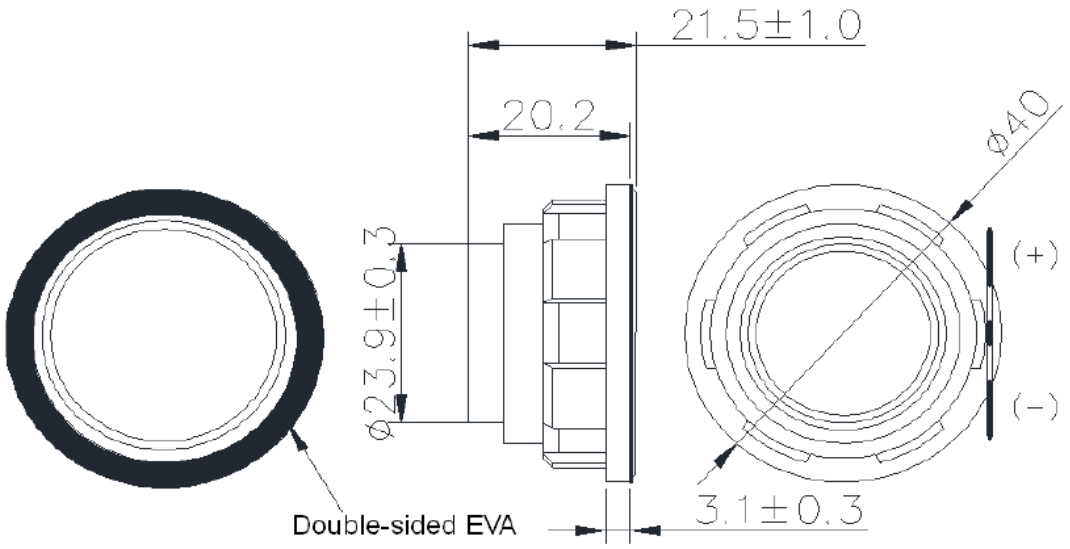
| Type of Test | Test Specifications |
|---|---|
| High Temperature Test | 96 hours at +85°C ± 3°C followed by six hours in normal room temperature |
| Low Temperature Test | 96 hours at -30°C ± 3°C followed by six hours in normal room temperature |
| Humidity Test | 96 hours at +30°C ± 3°C with relative humidity at 92% to 95% followed by 3 hours in normal room temperature |
| Temperature Cycle Testing | The part shall be subjected to 5 cycles using the following procedure:   |
| Vibration Test | 10 to 55 to 10 Hz cycles, 15 minutes per cycle.<br>2 hours in each axis X, Y, and Z. |
| Drop Test | Drop the speakers onto a 40mm thick board 10 times from a height of 75cm. |
| Load Test | Pink noise is applied at the speakers rated power for 96 hours at room temperature |

**After each test, the speaker's SPL shall be ±3 dB of the original SPL**

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# Dimensions




## CONSTRUCTION DETAIL

| PART NO. | PART NAME | Q'TY | MATERIAL | REMARK |
|---|---|---|---|---|
| 1 | Gasket | 1 | 3M | |
| 2 | Diaphragm | 1 | PU+AL | |
| 3 | VOICE COIL | 1 | Paper Cu | |
| 4 | Plate | 1 | SPCC | |
| 5 | Magnet | 1 | NdFeB | |
| 6 | PCB Terminal | 1 | FR4 | |
| 7 | Frame | 1 | PA | |

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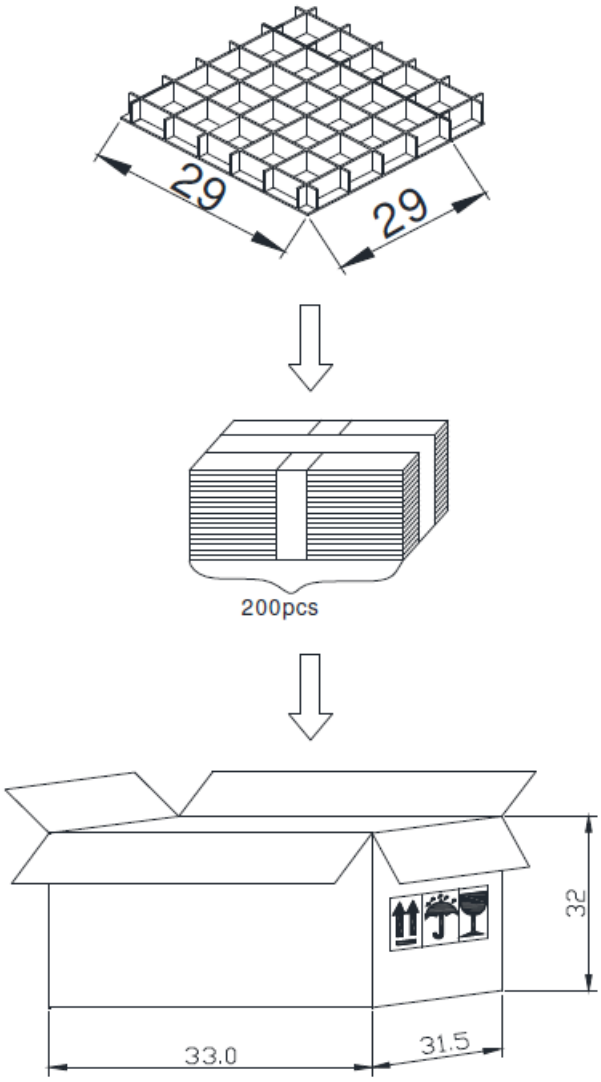
# Packaging

25 pcs per tray

8 units per carton

Total:200 pcs per box

Size:33.0*31.5*32cm



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**Specifications Revisions**

| Revision | Description | Date |
|---|---|---|
| - | Released from Engineering | 10/24/2018 |

Note:

1. Unless otherwise specified:
   A. All dimensions are in millimeters.
   B. Default tolerances are ±0.5mm and angles are ±3°.
2. Specifications subject to change or withdrawal without notice.
3. This part is RoHS 2011/65/EU Compliant.

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