



PN: D0050008NM162AR

DWG #:DB21-035 Rev 0.5

SPECIFICATION

PRODUCT: Loudspeaker

STETRON PART NUMBER: D0050008NM162AR

DESCRIPTION: $\phi 50\text{mm} \times 18.8\text{ mm}$ /8 ohms/RoHS/Mylar Cone

RFQ: QB21162

STETRON APPROVALS	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	<i>RS</i>	<i>CS</i>	
DATE	7-Sept-2023	7-Sept-2023	

CUSTOMER APPROVAL	SIGNATURE	DATE

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REVISION HISTORY

Rev Level	Date	Description	Page #	Changed By
0.0	23-Aug-2021	Original	All Pages	RS
0.1	1-Nov-2021	Updated SPL	Pg. 2	RS
0.2	05-Jul-2022	Added lead wire and connector	Pg. 5	CS
0.3	14-Jul-2022	Updated connector orientation on dwg	Pg. 5	CS
0.4	26-May-2023	Added Packaging info	Pg. 6	CS
0.5	7-Sept-2023	Added speaker marking and removed preliminary stamp	All pages	RS

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**1. Scope**

This document contains the required electrical, acoustic, mechanical and reliability information for a loudspeaker.

2. Environmental Requirements

This loudspeaker including all components, solder joints and glue must be RoHS compliant and meet the customer's known requirements for banned or restricted substances.

3. Test Conditions

	Standard Conditions	Preferred Conditions
Temperature	15 to 35°C	20 ± 2°C
Humidity	25 to 75%	63 to 67%
Air Pressure	86 to 106 kPa	86 to 106 kPa

*Note: Above atmospheric test conditions are for acoustic parameters only

4. Electrical Requirements**4.1 Rated Impedance**

8 ± 20% Ω (1.0kHz/1Vrms)

4.2 Rated Power

2.0 W (RMS)

4.3 Max Power

2.5 W (RMS)

4.4 Polarity

When a positive DC current is applied to the speaker terminal marked "+" the diaphragm shall move forward.

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5. Acoustical Requirements

5.1 Sound Pressure Level

≥ 88 dB (on IEC 268-5 Baffle in anechoic chamber @ 520Hz, 1W/1m)

5.2 Resonant Frequency (Fo)

520 Hz $\pm$ 20% @ 1Vrms constant voltage – free air

5.3 Frequency Range

Fo to 4 kHz (SPL-20dB) @ 1W/1m

5.4 Buzz and Rattle

No audible buzzing shall occur at ≥ 0.3 m distance when 2.83Vrms sine wave from 520 Hz to 4 kHz is applied to the speaker.

*See Test circuit (Fig 1), Typical Frequency Response (Fig 2) and Typical Impedance Curve (Fig 3) below.

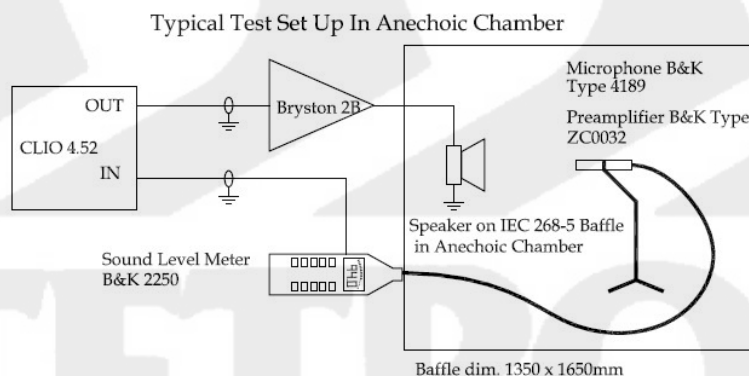


Fig 1. Test set up in Anechoic Chamber

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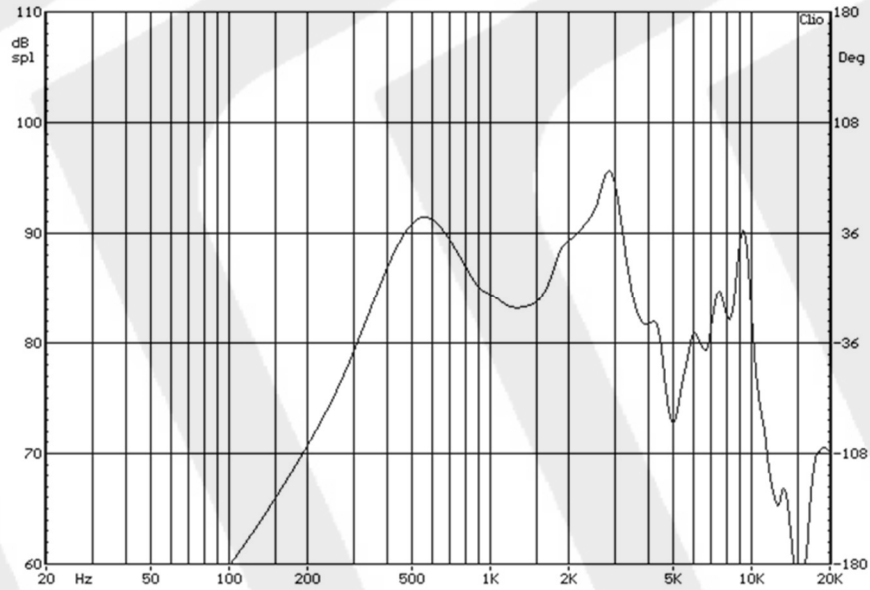


Fig 2. Typical Frequency response @ 1W/1m

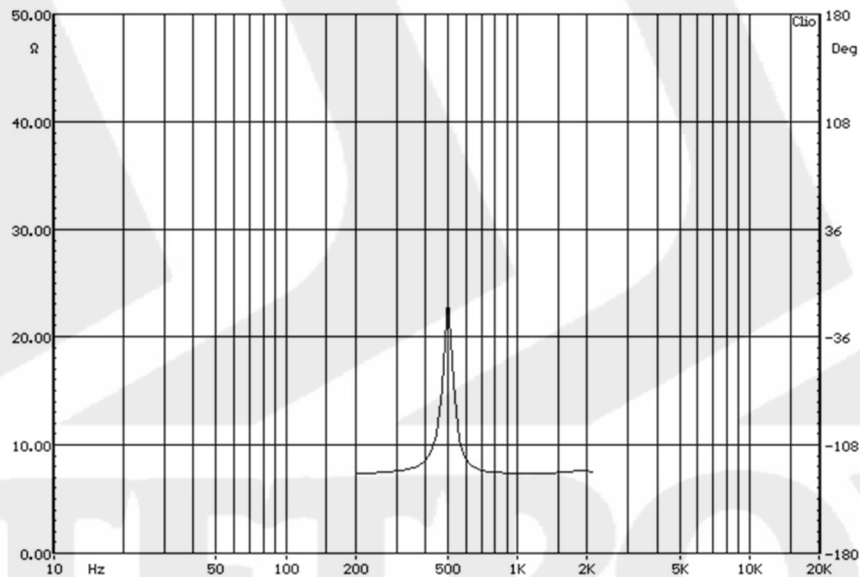


Fig 3. Typical Impedance Curve in Free Air @ 1Vrms input

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**6. Reliability****6.1 High Temperature**

Speakers are exposed to $60^{\circ}\text{C} \pm 3^{\circ}\text{C}$, R.H. random for 96 hrs.

6.2 Humidity

Speakers are exposed to $40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, R.H. 90 – 95% for 96 hrs.

6.3 Low Temperature

Speakers are exposed to $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$, R.H. random for 96 hrs.

6.4 Rated Power

Speakers are exposed continuously to rated power (2 W RMS) white noise (20 Hz to 20kHz) for 96 hrs.

6.5 Max Power

Speakers are fed with 2.5W rms white noise (20 Hz to 20kHz) for 1min.

*Note: After any of the above tests (6.1 to 6.5) leave speakers for 1 hr at room temperature and speakers must meet items 5.1 and 5.3.

6.6 Drop Test

Speakers properly packaged in their shipping carton are dropped on each side of the carton except the top from a height of 80cm (Carton GW $\leq$ 10 kg) or 60 cm ($10\text{ kg} < \text{Carton GW} \leq 25\text{ kg}$). After test there shall be no audible buzz or rattle and the speakers shall not exhibit any physical damage.

6.7 Transportation and Storage

$T_{\text{max}} = +60^{\circ}\text{C}$, $T_{\text{min}} = -20^{\circ}\text{C}$

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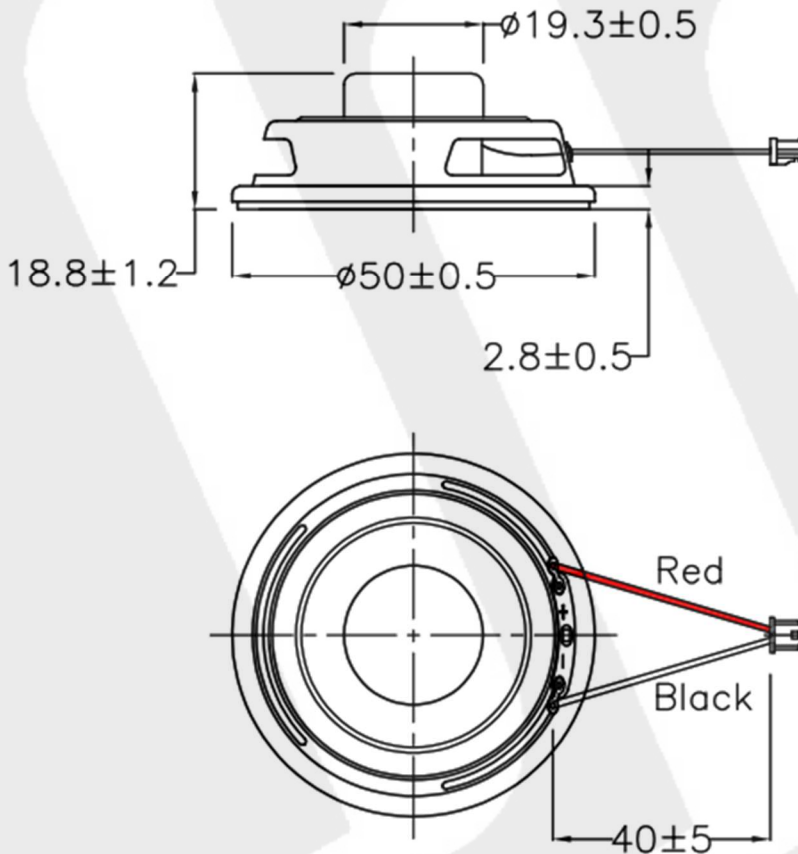
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7. Mechanical Layout and Dimensions



Speaker Marking:
DB21-035
YYWWD

Connector:
MOLEX 51021-0200
Pin:
MOLEX:50058-8000

CABLE:
UL1007 AWG28
PIN 1

All dimensions in mm

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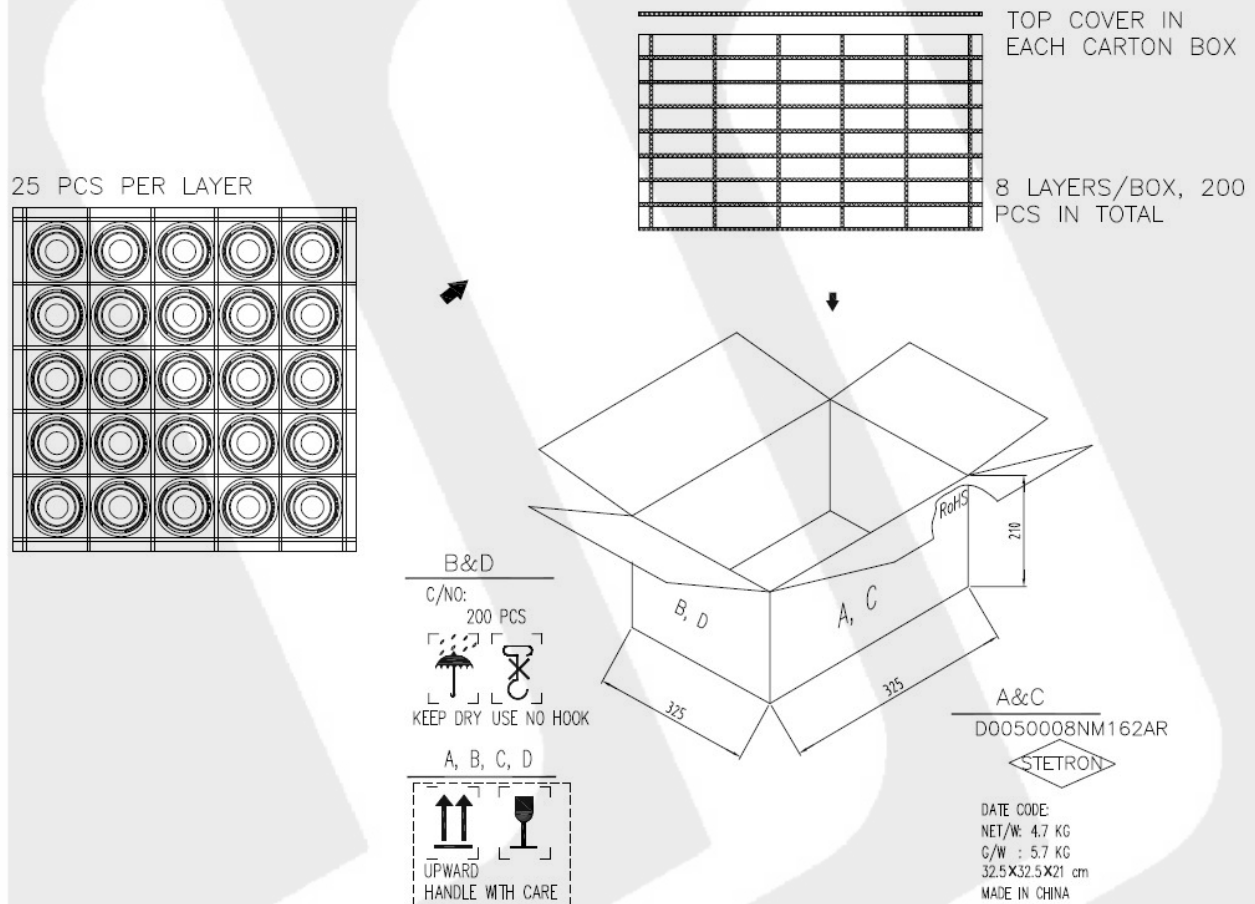
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8. Packaging



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