



PN: P0038008NM001AR

DWG #:DB23-001 Rev 0.2

SPECIFICATION

PRODUCT: Loudspeaker

STETRON PART NUMBER: P0038008NM001AR

DESCRIPTION: 38mm x 9.2mm + 2mm front cover with lead wires and JST
connector/8 ohms/Hi-Temp/RoHS

RFQ: QB22126, QB-DK

STETRON APPROVALS	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	CS	RS	RS
DATE	19-Mar-24	19-Mar-2024	19-Mar-2024

CUSTOMER APPROVAL	SIGNATURE	DATE

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REVISION HISTORY

Rev Level	Date	Description	Page #	Changed By
0.0	13-Feb-23	Original	All Pages	CS
0.1	10-Aug-23	Updated Rated Power, THD, FR Curve, Impedance Curve, Reliability (6.3), Added lead wires and connector	All Pages	CS
0.2	19-Mar-24	Added Speaker Markings and Production Stamp	All Pages	CS



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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 106kPa	86 to 106kPa

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

4. Electrical Requirements

4.1 Rated Impedance

8Ω ±20% (1.0 kHz/1Vrms)

4.2 Rated Power

1.2 W (RMS)

4.3 Max Power

1.5 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 ± 3 dB (on IEC 268-5 Baffle in anechoic chamber @ 1W/0.5 m @ 1kHz.

5.2 Resonant Frequency (F₀)

520 Hz ± 20% @ 1V_{rms} constant voltage - free air

5.3 Total Harmonic Distortion (THD)

Max 10% at 1 kHz @ 1W/0.5 m

5.4 Frequency Range

F₀ to 3 kHz (SPL -10dB at 1W/0.5 m)

5.5 Buzz and Rattle

No audible buzzing shall occur at ≥ 0.3m distance when 3.1 V_{rms} sine wave from F₀ to 3 kHz is applied to the speaker.

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

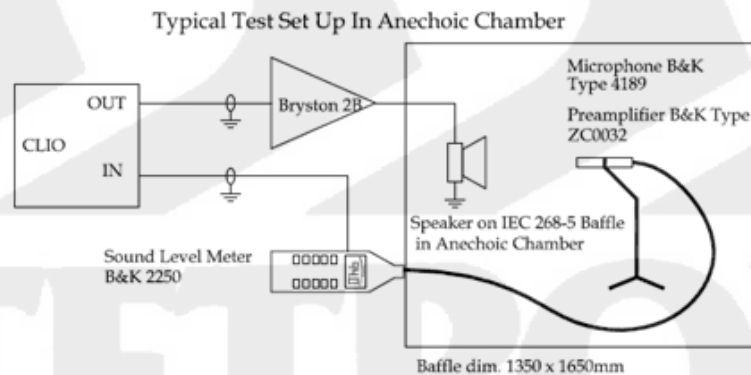


Fig 1. Test set up in Anechoic Chamber

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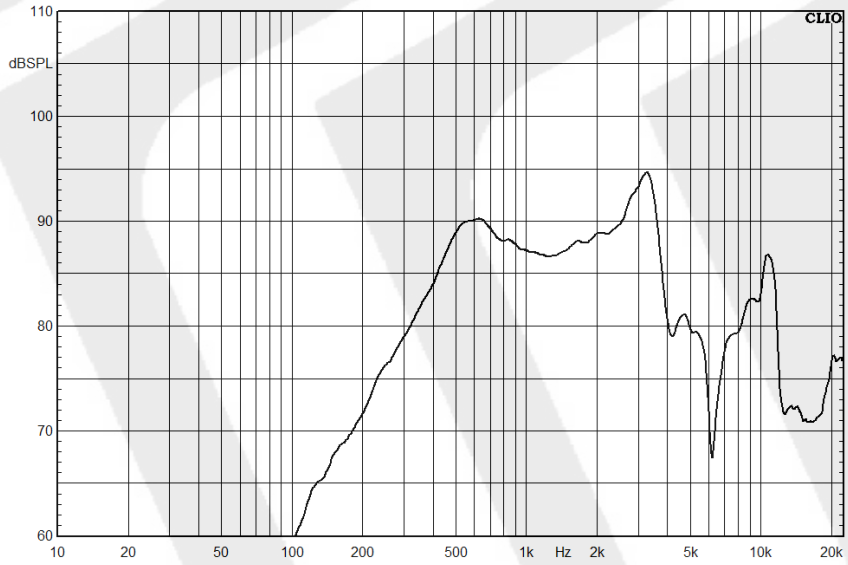


Fig 2. Typical Frequency response @ 1W/0.5m

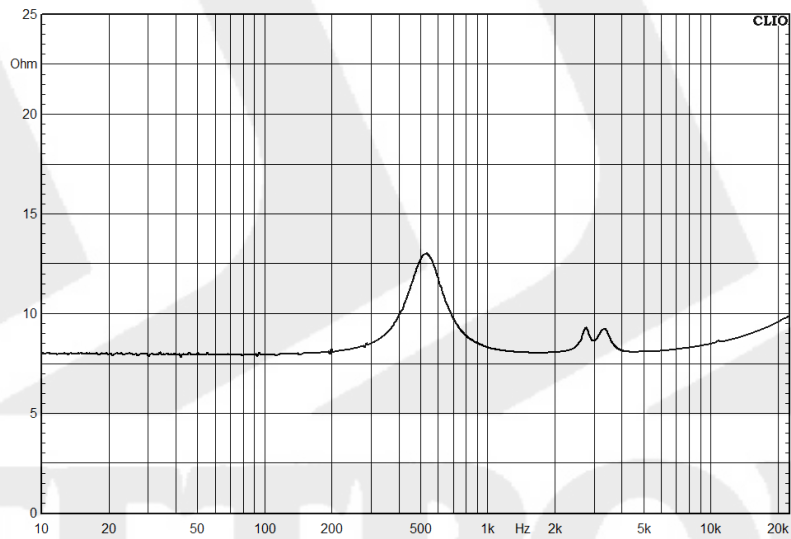


Fig 3. Typical Impedance Curve

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6. Reliability

6.1 High Temperature

The speaker shall be exposed to $176\pm 2^{\circ}\text{C}$, at random RH for 15 min and after 2 hrs. cool down period the speaker is then immersed in 1.5 m water for 2 hrs. Test is to be repeated 6 times. SPL decrease must be less than 6 dBA compared to initial reading.

6.2 Humidity

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

6.3 Low Temperature

Speakers are exposed to $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for 96 hrs.

6.4 Rated Power

Speakers are exposed continuously to 1.2W (RMS) 20-20kHz white noise for 96 hrs.

6.5 Max Power

Speakers are exposed continuously to 1.5W (RMS) 20-20kHz white noise for 1 min.

*After tests 6.2-6.5, leave speakers for 1 hr at room temperature. Tested speakers must meet items 5.1 and 5.4.

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 $\text{GW} \leq 10 \text{ Kg}$) 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.

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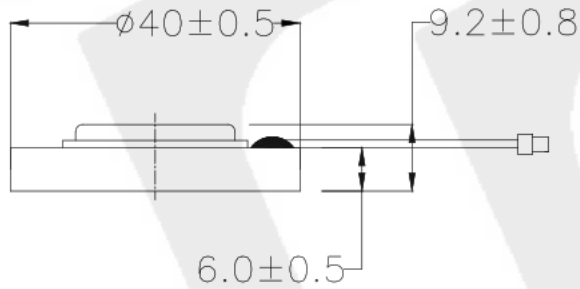
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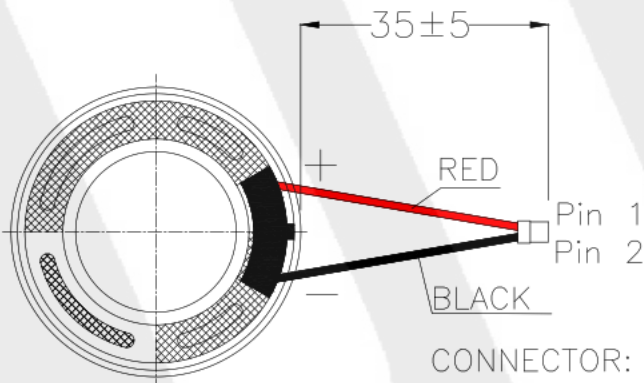
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7. Mechanical Layout and Dimensions



SPEAKER MARKING:
STETRON
DB23-001
YYWWD



CONNECTOR: JST SUHR-02V-S
CABLE: UL3302 AWG32

All dimensions in mm

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