



PN: D0050008NM14BAR

DWG #:DB04-050 Rev2.4

SPECIFICATION

PRODUCT: Loudspeaker

STETRON PART NUMBER: D0050008NM14BAR

DESCRIPTION: $\phi 50 \times 12.5\text{mm}$ / 8ohms/ Mylar Cone/RoHS

RFQ: QB03100-V2

STETRON APPROVALS	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	RS	gl	
DATE	23-June-20	23-June-20	

CUSTOMER APPROVAL	SIGNATURE	DATE

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REVISION HISTORY

Rev Level	Date	Description	Page #	Changed By
2.1	28-May-2018	Original from DB04-050 Rev2.0 Updated leak test and changed spec format	All Pages	RS
2.2	30-May-2018	Changed "Audiopack" to "Customer"	Pg. 4	RS
2.3	11-Mar-2020	Updated Frequency Response	Pg. 3	RS
2.4	23-June-2020	Removed preliminary stamp	All Pgs.	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 106kPa	86 to 106kPa

Note: Above are for acoustic parameters

4. Electrical Requirements**4.1 Rated Impedance**

8 Ω ± 20% (1.0 kHz/1Vrms)

4.2 Rated Power

0.5W (RMS)

4.3 Max Power

1.0W (RMS)

5. Acoustical Requirements**5.1 Sound Pressure Level**

90 ± 2dB (on IEC 268-5 Baffle in anechoic chamber @ 1W/0.5m avg @ 0.8, 1.0, 1.2 and 1.5 kHz)

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5.2 Resonant Frequency (Fo)

650 Hz $\pm$ 20% @ 1Vrms constant voltage - free air

5.3 Total Harmonic Distortion (THD)

Max 5% @ 1.0 kHz (0.5W/0.5m)

5.4 Frequency Range

Fo to 4 kHz (See typical frequency response Fig 2)

5.5 Buzz and Rattle

No audible buzzing should occur when a rated power (2.0Vrms) sweep sine wave from Fo to 4kHz is applied to the speaker

5.6 Polarity

The diaphragm shall move forward when a positive DC current is applied to the “+” terminal.

*See Test circuit (Fig 1), and Typical Frequency Response (Fig 2).

Typical Test Set Up In Anechoic Chamber

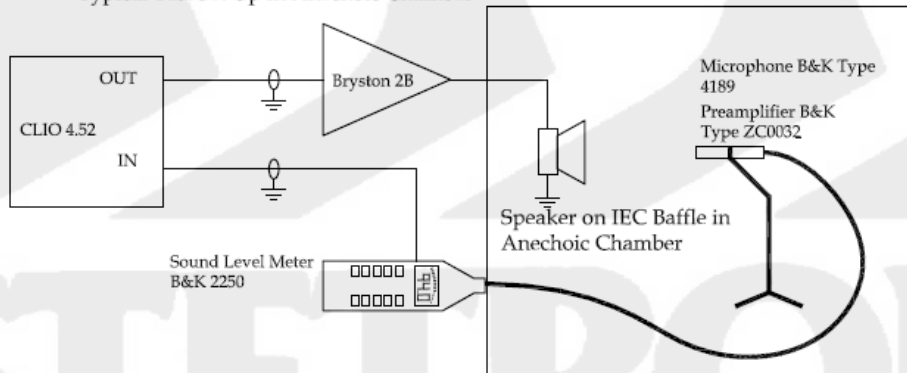


Fig 1. Test set up in Anechoic Chamber

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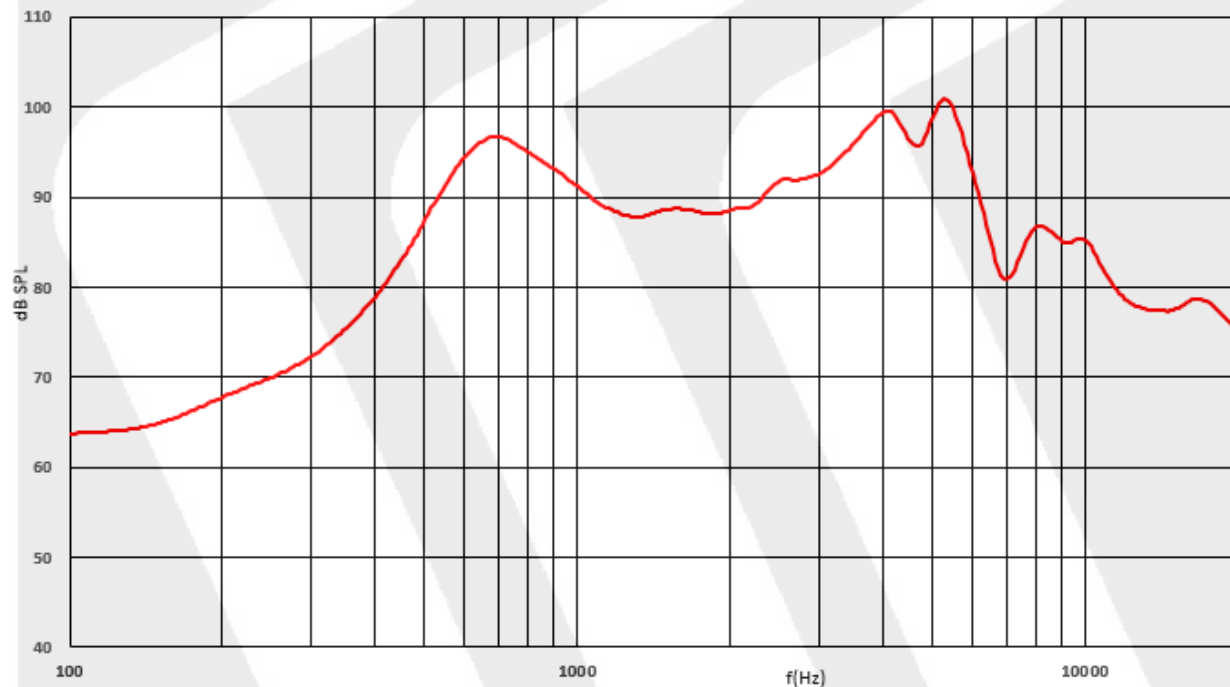


Fig 2. Typical Frequency response @ 1W/0.5m

6. Reliability

6.1 High Temperature

Speakers are exposed to $70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ (R.H. 50%) for 96 hrs. After test leave speakers at room temperature for 1 hr and speakers must meet items 5.1 and 5.4.

6.2 Humidity

Speakers are exposed to $40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, R.H. 90% for 96 hrs. After test leave speakers at room temperature for 1 hr and speakers must meet items 5.1 and 5.4.

6.3 Rated Power

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Speakers are fed continuously with 0.5W EIA white noise for 96 hrs. After test speakers must meet items 5.1 and 5.4.

6.4 Max Power

Speakers are fed with 1.0W EIA white noise for 1 min. After test speakers must meet items 5.1 and 5.4.

6.5 Drop Test (in Box)

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.

6.6 Vibration Test (no Box)

Speakers are exposed to 10 sweeps of 3 minute duration from 10Hz-30Hz-10Hz (Double Amplitude - 0.55mm), and 10 sweeps of 3 minute duration from 30Hz-55Hz-30Hz (Double Amplitude - 0.55mm). After test there shall be no audible buzz or rattle and the speakers shall not exhibit any physical damage.

6.7 Shock/Impact Test (no Box)

Speakers are exposed to an impact force of 100m/s^2 (10G), $1000 \pm 10\text{x}$. After test there shall be no audible buzz or rattle.

6.8 Leakage Test

Speakers are to be 100% tested using customer's leak test fixture to simulate immersion in 60 inches of water for 30 mins.

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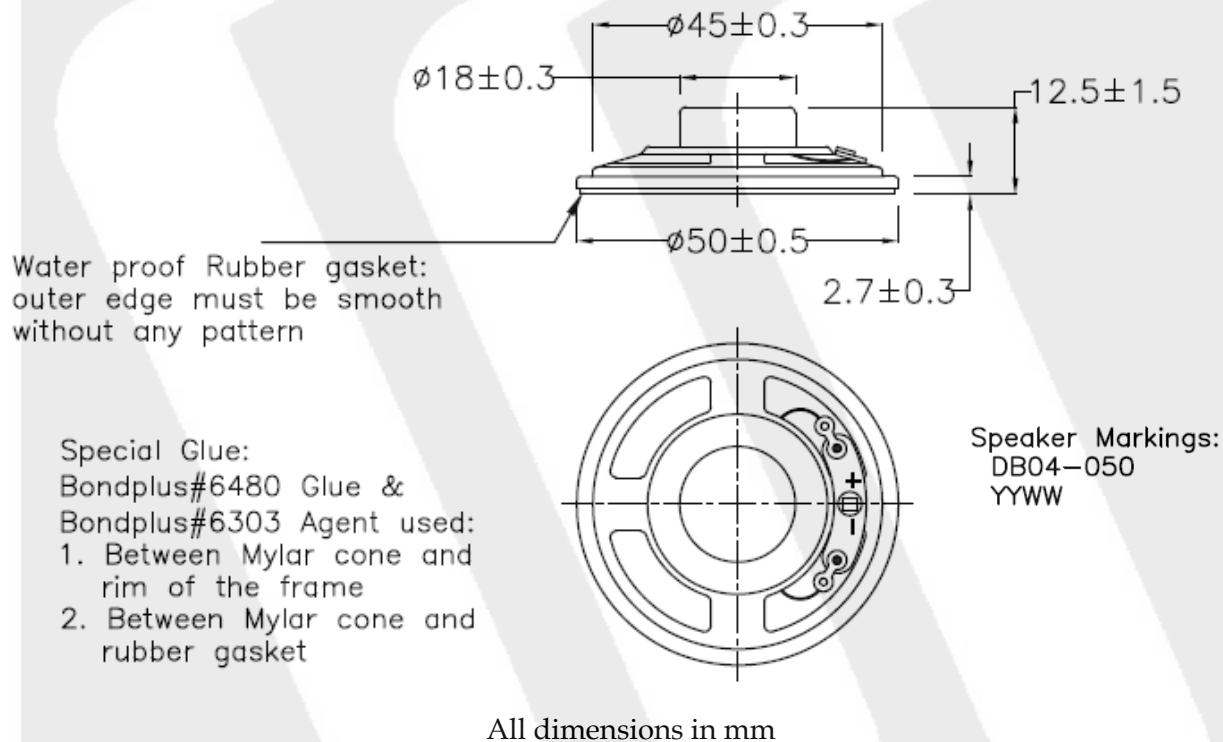
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7. Mechanical Layout and Dimensions



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