



PN: P4020004NM67WER

DWG #:DB20-038 Rev0.3

SPECIFICATION

PRODUCT: Loudspeaker

STETRON PART NUMBER: P4020004NM67WER

DESCRIPTION: 40 x 20 x 9.0 mm/4 ohms/RoHS/ IPX4

RFQ: QB19152-V2

STETRON APPROVALS	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	CS	RS	
DATE	03-Feb-2021	03-Feb-2021	

CUSTOMER APPROVAL	SIGNATURE	DATE

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REVISION HISTORY

Rev Level	Date	Description	Page #	Changed By
0.0	31-Aug-20	Original – From DB19-010	All Pages	RS
0.1	21-Oct-20	Revised IP rating from IPX7 to IPX4, Updated Frequency Response, Impedance Curve	Description, Page 1,2,3	CS
0.2	27-Jan-2021	Removed Preliminary stamp	All	RS
0.3	03-Feb-2021	Updated drawing to define lead wire	Pg 5	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.

Note: Normal environmental conditions A.T. 15-35°C, H.M 25-75%,
B.P. 86-106 kPa

3. Electrical Requirements**3.1 Rated Impedance**

4Ω ±15% (2.0 kHz)

3.2 Rated Power

2.5W (RMS)

3.3 Max Power

3.0W (RMS)

4. Acoustical Requirements**4.1 Sound Pressure Level**

90 ± 3dB (on IEC 268-5 Baffle in anechoic chamber @ 0.1W/0.1m avg @ 1.0, 1.2, 1.5 and 2.0 kHz)

4.2 Resonant Frequency in free air (F₀)

650 Hz ±20% @ 1V_{rms}

4.3 Total Harmonic Distortion (THD)

< 5% @ 1kHz 0.1W/0.1m

4.4 Frequency Range

F₀ to 10 kHz (0.1W/0.1m SPL-10dB)

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4.5 Buzzes & Rattles

No audible buzzing shall occur at 0.3m distance when a rated power sine wave from 100Hz to 2 kHz is applied to the speaker.

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

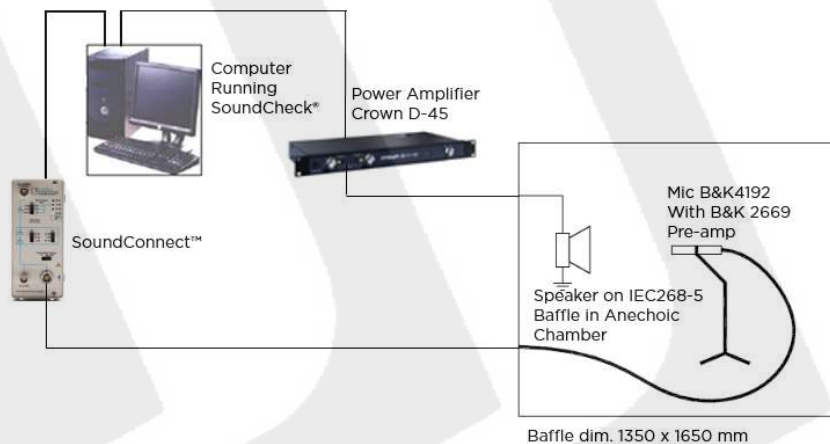


Fig 1. Test set up in Anechoic Chamber

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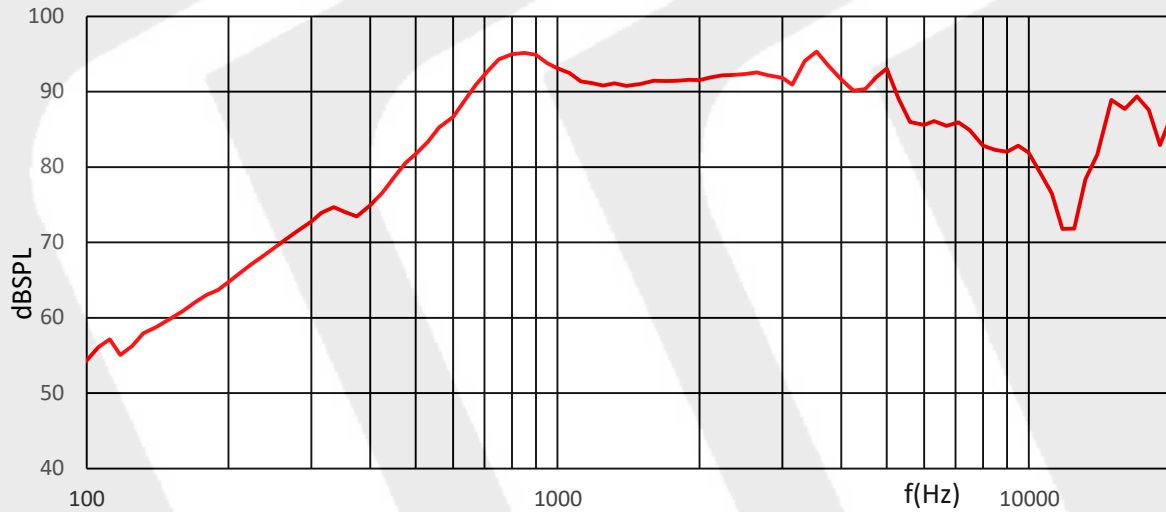


Fig 2. Typical Frequency Response on Baffle @ 0.1W/0.1m

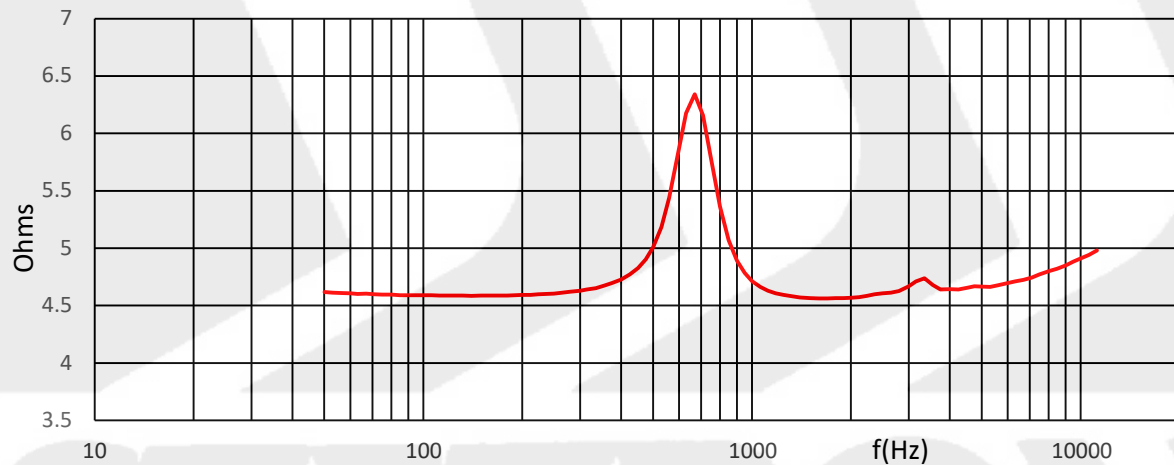


Fig 3. Typical Impedance Curve in free air @ 1 V rms

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5. Reliability

5.1 High Temperature

Speakers are fed with $\frac{1}{4}$ white noise power at $55 \pm 2^\circ\text{C}$ for 16 hrs, then deposited at constant temperature for 2 hrs, completing testing within 1 hour after withdrawing.

5.2 Static Humidity

Speakers are exposed to $+40 \pm 2^\circ\text{C}$, RH 90%-95% environment for 48hrs, then deposited at normal atmosphere conditions for 24 hrs.

5.3 Low Temperature

Speakers are fed with $\frac{1}{4}$ white noise power at $-10 \pm 3^\circ\text{C}$ for 1 hour, deposited at $-25 \pm 3^\circ\text{C}$ for 2 hrs, then resume at normal atmosphere conditions for 4 hours.

*Note: After 5.1-5.3 tests each speaker must meet appearance and Buzzes & Rattles requirement.

5.4 Rated Power

Speakers are exposed continuously to 2.5W white noise for 100 hours.

5.5 Max Power

Speakers are exposed to 3.0W simulant program signal for 1 min on & 2 min off, cycling for 10 times.

*Note: After above test each speaker must meet 3.1, 4.1, 4.2, 4.3 and 4.5.

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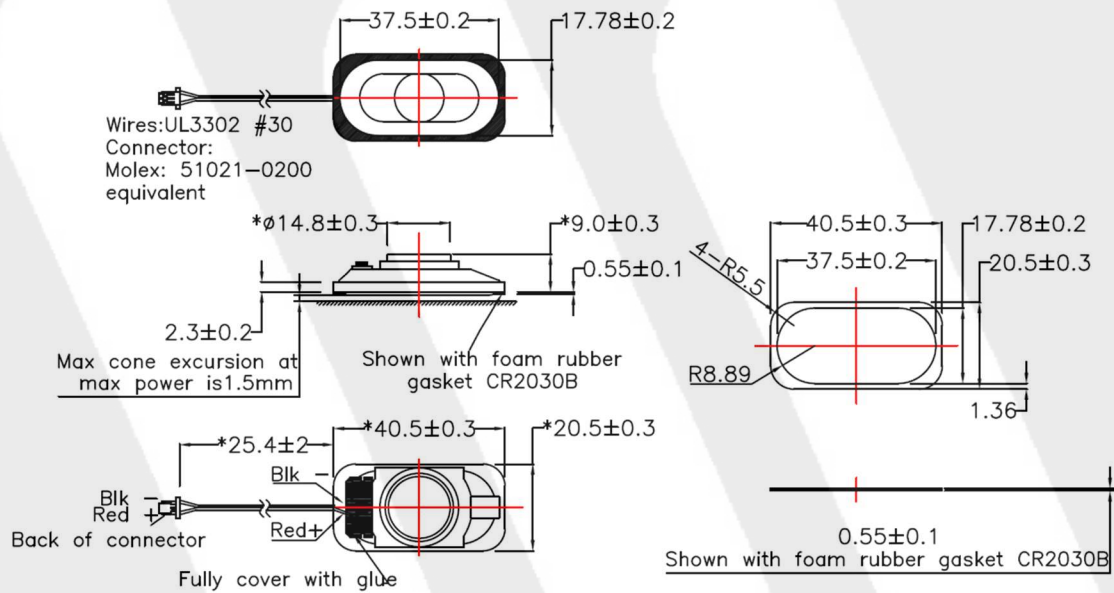
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6. Mechanical Layout and Dimensions



All dimensions in mm

Markings: Stetron

DB20-038

YYWWD

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