



PN: D0050004NR522WER

DWG #:DB21-023 Rev 0.2

SPECIFICATION

PRODUCT: Loudspeaker

STETRON PART NUMBER: D0050004NR522WER

DESCRIPTION: $\phi 50 \times 23.3$ mm/4 ohms/5W/High Temp/IPX4/RoHS

RFQ: QG21045

STETRON APPROVALS	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	CS	RS	
DATE	10-Jan-2022	10-Jan-2022	

CUSTOMER APPROVAL	SIGNATURE	DATE

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REVISION HISTORY

Rev Level	Date	Description	Page #	Changed By
0.0	12-July-2021	Original (From DB20-023 Rev 0.1)	All Pages	CS
0.1	03-Jan-2022	Updated Drawing, Added Gasket dimensions, Added Production watermark	All Pages	CS
0.2	10-Jan-2022	Updated voltage for 4.5, 5.4, 5.5; FR, Impedance Curves	Pgs. 2, 3, 4	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 at 15-35°C, R. H. 25-75%, Pressure 86-106kPa

3. Electrical Requirements**3.1 Rated Impedance**

4Ω ±15% (1 kHz/1Vrms)

3.2 Rated Power

5.0W (RMS)

3.3 Max Power

6.0W (RMS)

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

82± 3dB (on IEC 268-5 Baffle in anechoic chamber @ 1.0W/1 m @ 1.0 kHz)

4.2 Resonant Frequency (Fo)

240 Hz ± 20% @ 1Vrms constant voltage - free air

4.3 Total Harmonic Distortion (THD)

<5% @1kHz/1.0W/1 m

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4.4 Frequency Range

Fo to 10 KHz (SPL -10dB) @
1W/1 m

4.5 Buzz and Rattle

No audible buzzing shall occur
at 0.3m distance when a rated
power (4.47 Vrms) sine wave
from Fo to 2 kHz is applied to
the speaker.

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

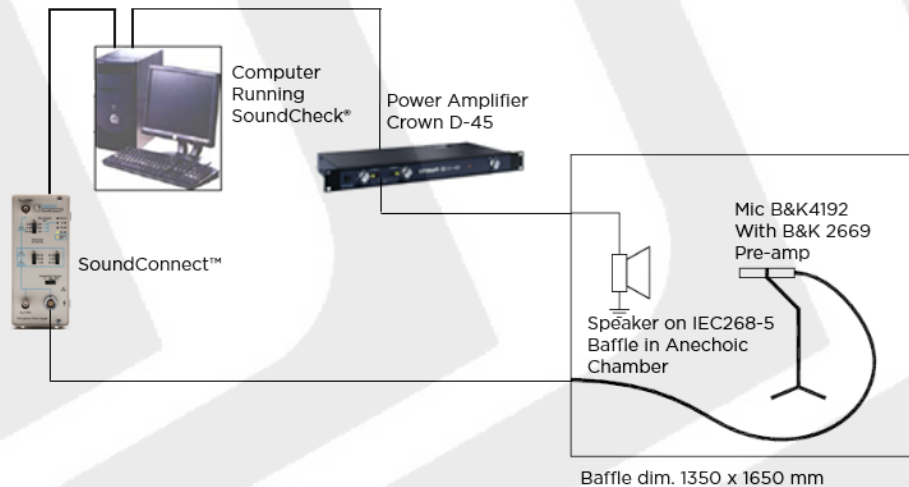


Fig 1. Test set up in Anechoic Chamber

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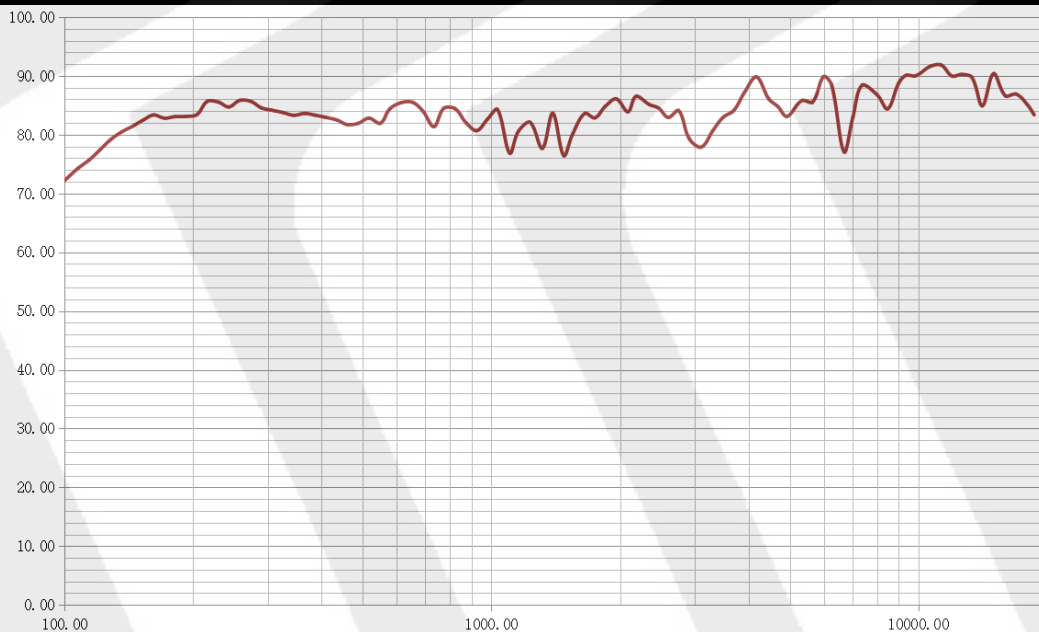


Fig 2. Typical Frequency Response @ 1W/1 m

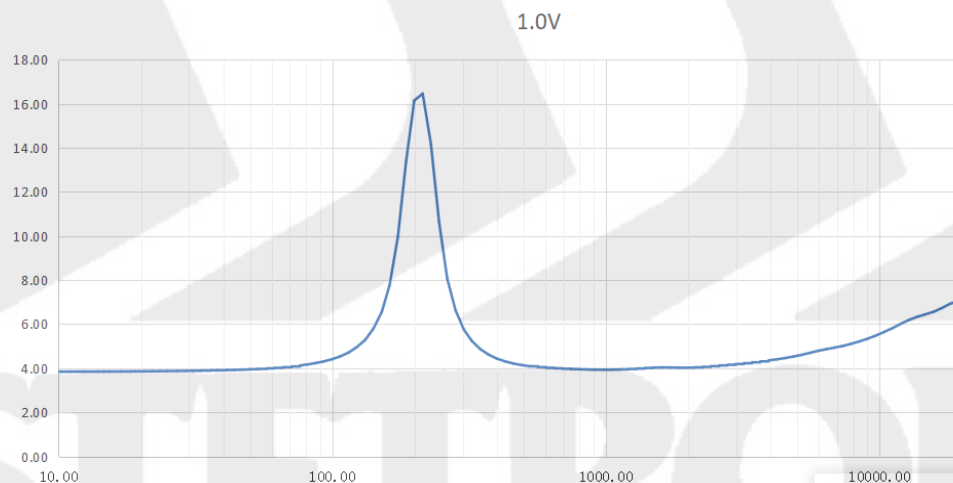


Fig 3. Typical Impedance Curve in Free Air @ 1Vrms input

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5. Reliability

5.1 High Temperature and Storage

Speakers are exposed to $\frac{1}{4}$ rated noise power @ $55 \pm 2^\circ\text{C}$ for 16 hrs. After test leave speakers for 2 hrs at constant temperature. Speakers must meet the requirements of appearance and buzz and rattle. Complete testing within 1 hr after withdrawing.

5.2 Humidity

Speakers are exposed to $40 \pm 2^\circ\text{C}$, 90-95% for 48 hrs. After test leave speakers for 24 hrs at normal atmospheric conditions. Speakers must meet the requirements of appearance and buzz and rattle.

5.3 Low Temperature and Storage

Speakers are exposed to $\frac{1}{4}$ rated noise power @ $-10 \pm 3^\circ\text{C}$ for 1 hr, then to $-25 \pm 3^\circ\text{C}$ for 2 hrs. After test leave speakers for 4 hr at normal atmospheric conditions. Speakers must meet the requirements of appearance, buzz and rattle.

5.4 Rated Power

Speakers are exposed continuously to 5.0W (4.47V) white noise for 100 hrs. After test speakers must meet items 4.1 and 4.2

5.5 Max Power

Speakers are exposed continuously to 6.0W (4.89V) simulant program signal for 1min on and 2 min off/ 10 cycles. After test speakers must meet items 4.1 and 4.2.

5.6 Operational Temperature Range:

-20°C to $+70^\circ\text{C}$

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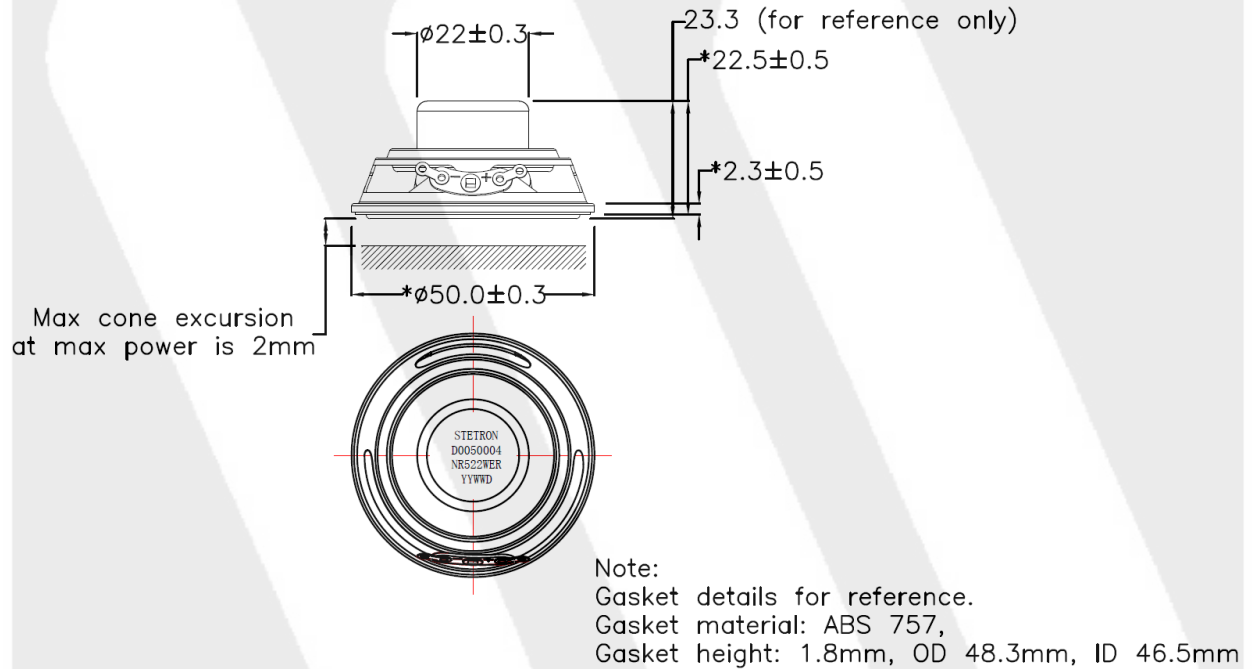
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5.7 Water Resistance Level: IPX4

6. Mechanical Layout and Dimensions



All dimensions in mm

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