



PN: D0050008NR522WER

DWG #:DB20-023 Rev0.2

## SPECIFICATION

PRODUCT: Loudspeaker

STETRON PART NUMBER: D0050008NR522WER

DESCRIPTION:  $\phi$ 50 x 23.3 mm/8 ohms/5W/High Temp/IPX4/RoHS

RFQ: QG20049

STETRON APPROVALS	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	CS	RS	
DATE	03-Jan-2022	03-Jan-2022	

CUSTOMER APPROVAL	SIGNATURE	DATE

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**REVISION HISTORY**

Rev Level	Date	Description	Page #	Changed By
0.0	30-July-2020	Original	All Pages	YL
0.1	31-May-2021	Updated Electro-Acoustic Parameters	Pgs. 1-3	CS
0.2	03-Jan-2022	Updated Drawing, Added Gasket dimensions, Added Production watermark	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. Electrical Requirements**

<b>3.1 Rated Impedance</b>	8Ω ±15% (1 kHz/1Vrms)
<b>3.2 Rated Power</b>	5.0W (RMS)
<b>3.3 Max Power</b>	6.0W (RMS)

**4. Acoustical Requirements**

<b>4.1 Sound Pressure Level</b>	82± 3dB (on IEC 268-5 Baffle in anechoic chamber @ 1.0W/1 m @ 1.0 kHz)
<b>4.2 Resonant Frequency (Fo)</b>	240 Hz ± 20% @ 1Vrms constant voltage - free air
<b>4.3 Total Harmonic Distortion (THD)</b>	<5% @1kHz/1.0W/1 m
<b>4.4 Frequency Range</b>	Fo to 10 KHz (SPL -10dB) @ 1W/1 m

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**4.5 Buzz and Rattle**

No audible buzzing shall occur at 0.3m distance when a rated power (6.32 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.

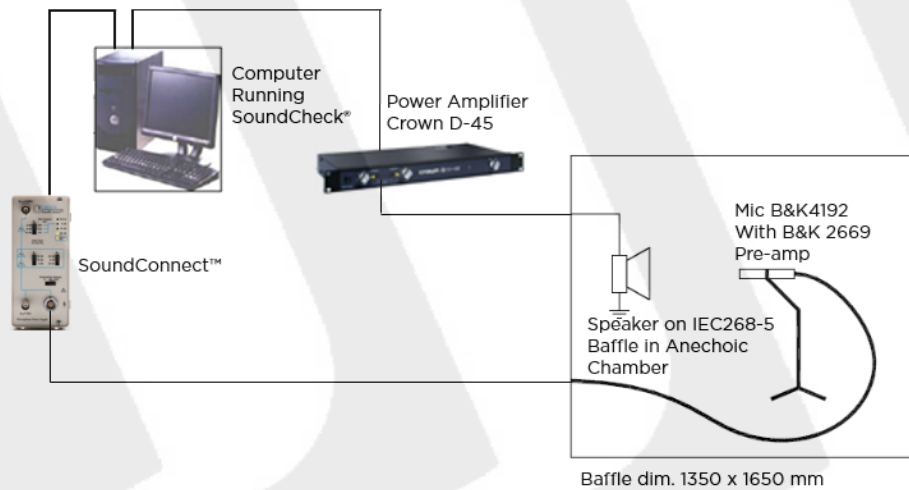


Fig 1. Test set up in Anechoic Chamber

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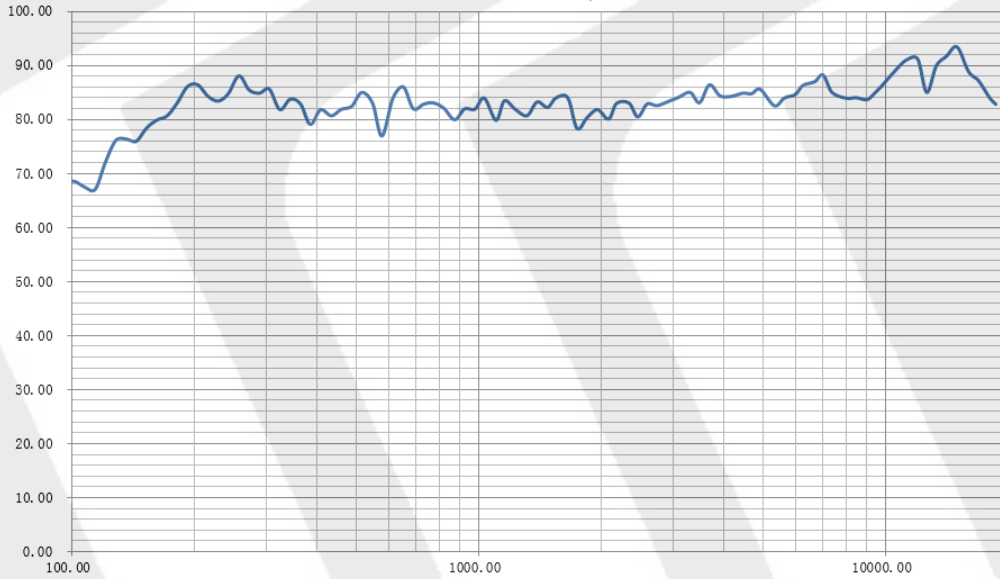


Fig 2. Typical Frequency Response @ 1W/1 m

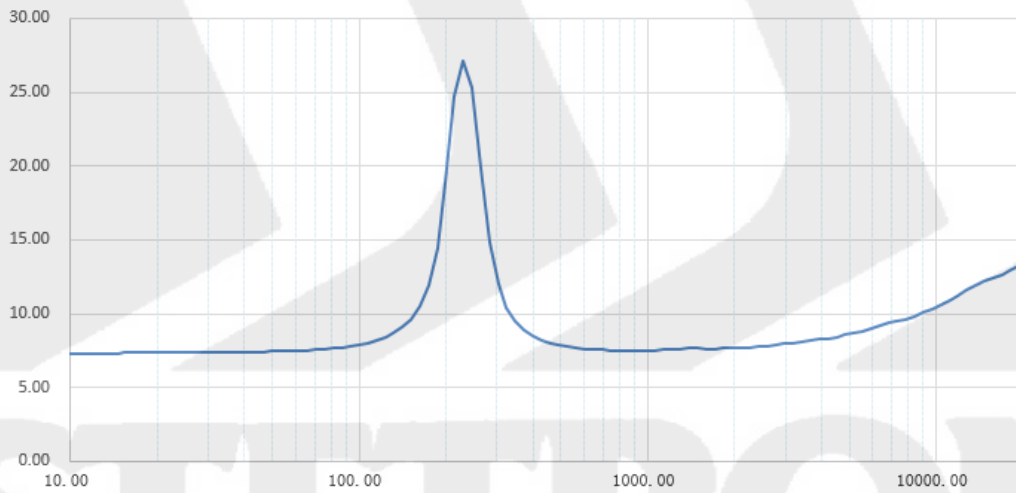


Fig 3. Typical Impedance Curve

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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 (6.32V) 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 (6.92V) 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:

$-20^\circ\text{C}$  to  $+70^\circ\text{C}$

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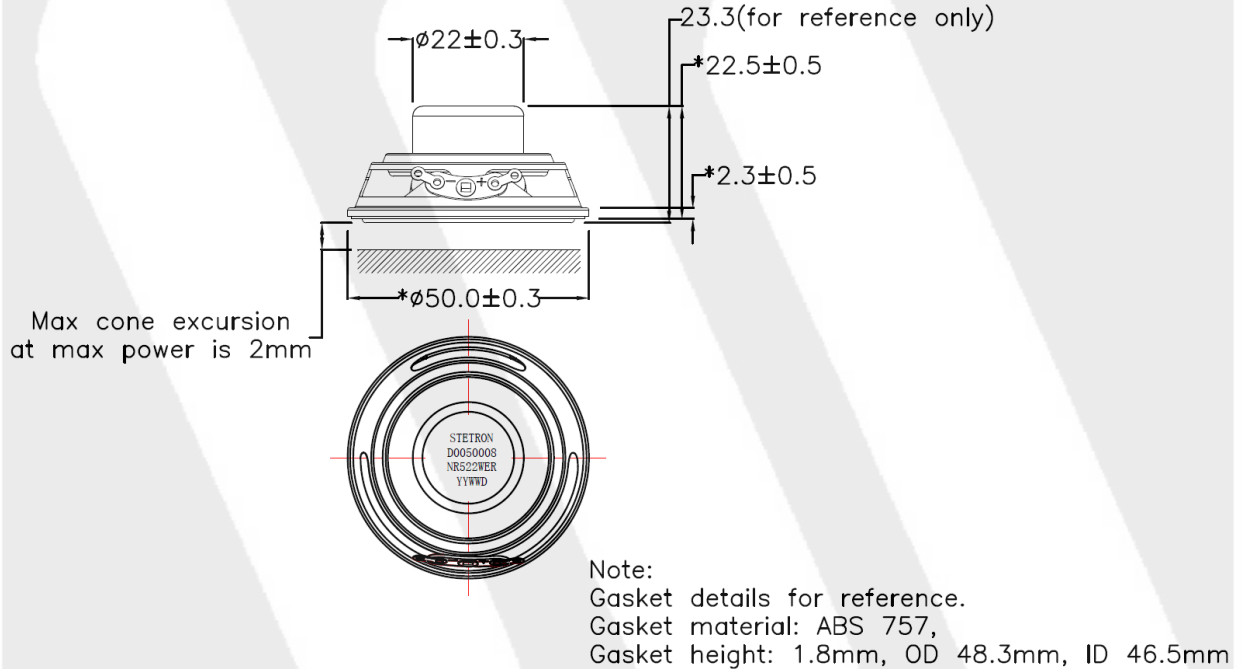
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5.7 Water Resistance Level: IPX4

6. Mechanical Layout and Dimensions



All dimensions in mm



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