



soberton inc.

SP DYNAMIC
SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020S



Release | Revision: E/2024

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

100±3dB SPL @0.8,1.0,1.2 and 1.5KHz in average
Measuring Condition: 1.0W (Sine wave) 10cm measured with baffler shown in Fig.1

Frequency Response Curve

As shown in Figure 2

Response Frequency

800±20%Hz @ 1V. (Without Baffler)

Input Power (Nominal and Maximum)

Rated Noise Power: 1.0W

Short Term Max Power: 1.5W
must be normal at a white noise for one minute

Operation Test

Must be free audible noise (buzzes and rattles)

(300 ~ 5KHz frequency range, input level up to 2.83Vrms)

Distortion

Less than 10% @1KHz,0.1M,1.0W

General Specifications

Operating Temperature Range

-30°C ~ +70°C

Storage Temperature Range

-40°C ~ +80°C

Standard Test Conditions

Temperature 17°C ~ 25°C

Relative Humidity 45% ~ 80%(RH)

AC Impedance

8±15%Ω (@2KHz 1V) without baffler

Dimension

Ø30.0 x 20.0mm

IP Level

No rating



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Reliability Tests

The sound pressure as specified will neither deviate more than $\pm 3\text{dB}$ from the initial value, nor have any significant damage after any of following testing.

High Temperature Test

High Temperature $+80\pm 2^{\circ}\text{C}$

Duration 96 hours

Low Temperature Test

Low Temperature $-40\pm 2^{\circ}\text{C}$

Duration 96 hours

Heat Shock Test

High Temperature $+80\pm 2^{\circ}\text{C}$

Low Temperature $-40\pm 2^{\circ}\text{C}$

Changeover Time < 30 seconds

Duration 1 hour

Cycle 100

Humidity Test

Temperature $+ 80\pm 2^{\circ}\text{C}$

Relative Humidity 90%~95%

Duration 96 hours

Temperature Cycle Test

Temperature -40°C $+80^{\circ}\text{C}$

Duration 45 minutes 45 minutes

Temperature gradient $1\sim 3^{\circ}\text{C}/\text{min}$

Cycle 25

Drop Test

Mounted with dummy set mass 100 g

Height 1.5 m

Cycle 6 (1 each plain) onto the concrete board

Load Test

Speaker mode: White noise(EIA filter)for 96 hours @1.0W in 1cc box input power



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Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 15 ~ 35℃

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar to 1060mbar

Standard Test Fixture

Input Power 1.0W (2.83V)

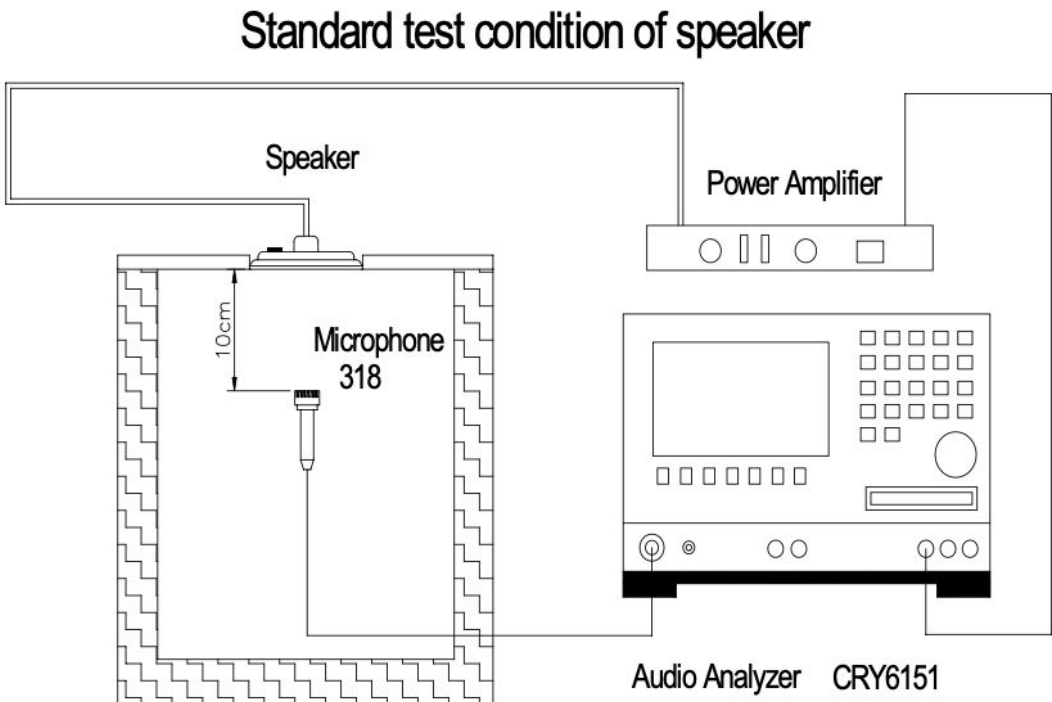
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)





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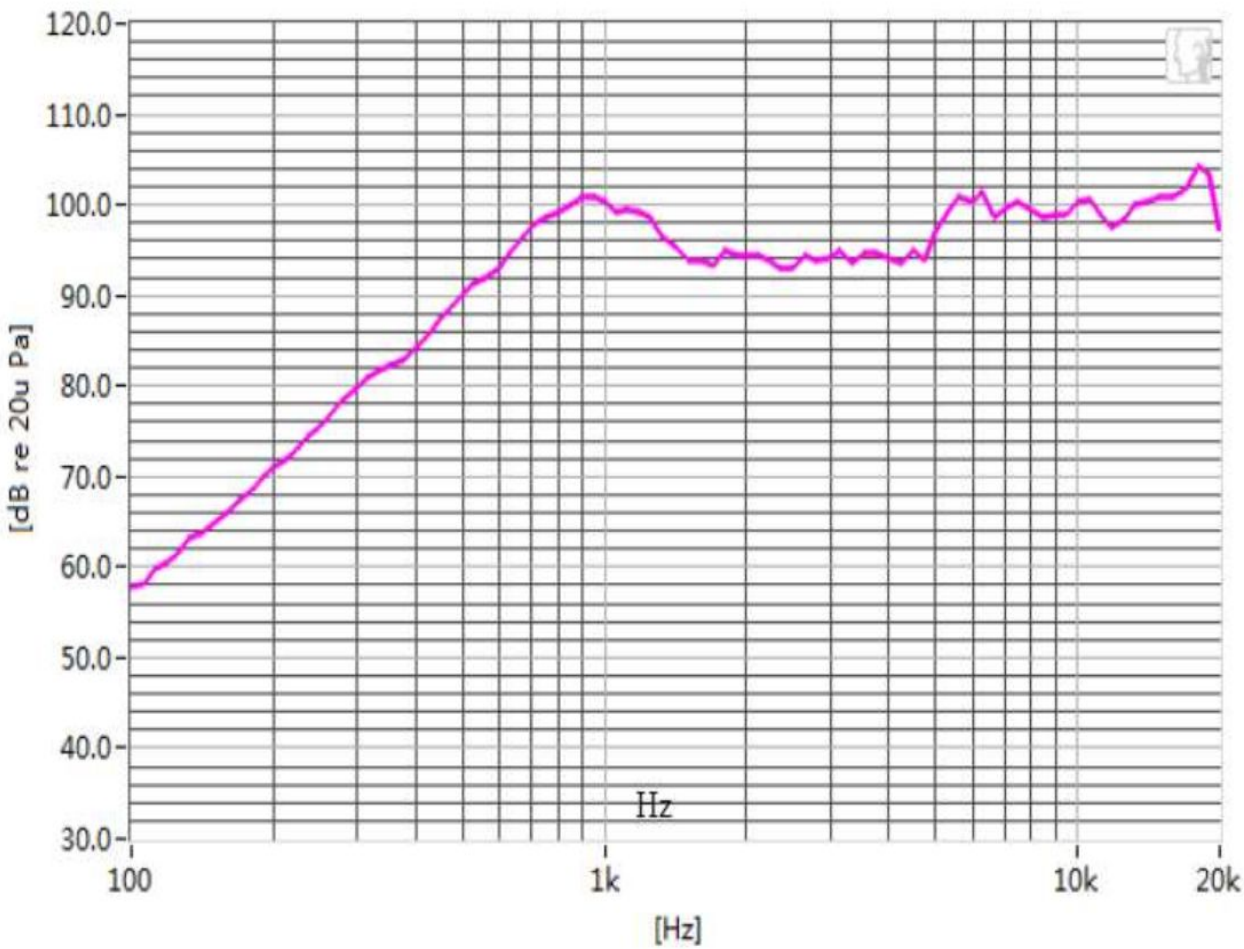
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Frequency Response Curve (Fig. 2)





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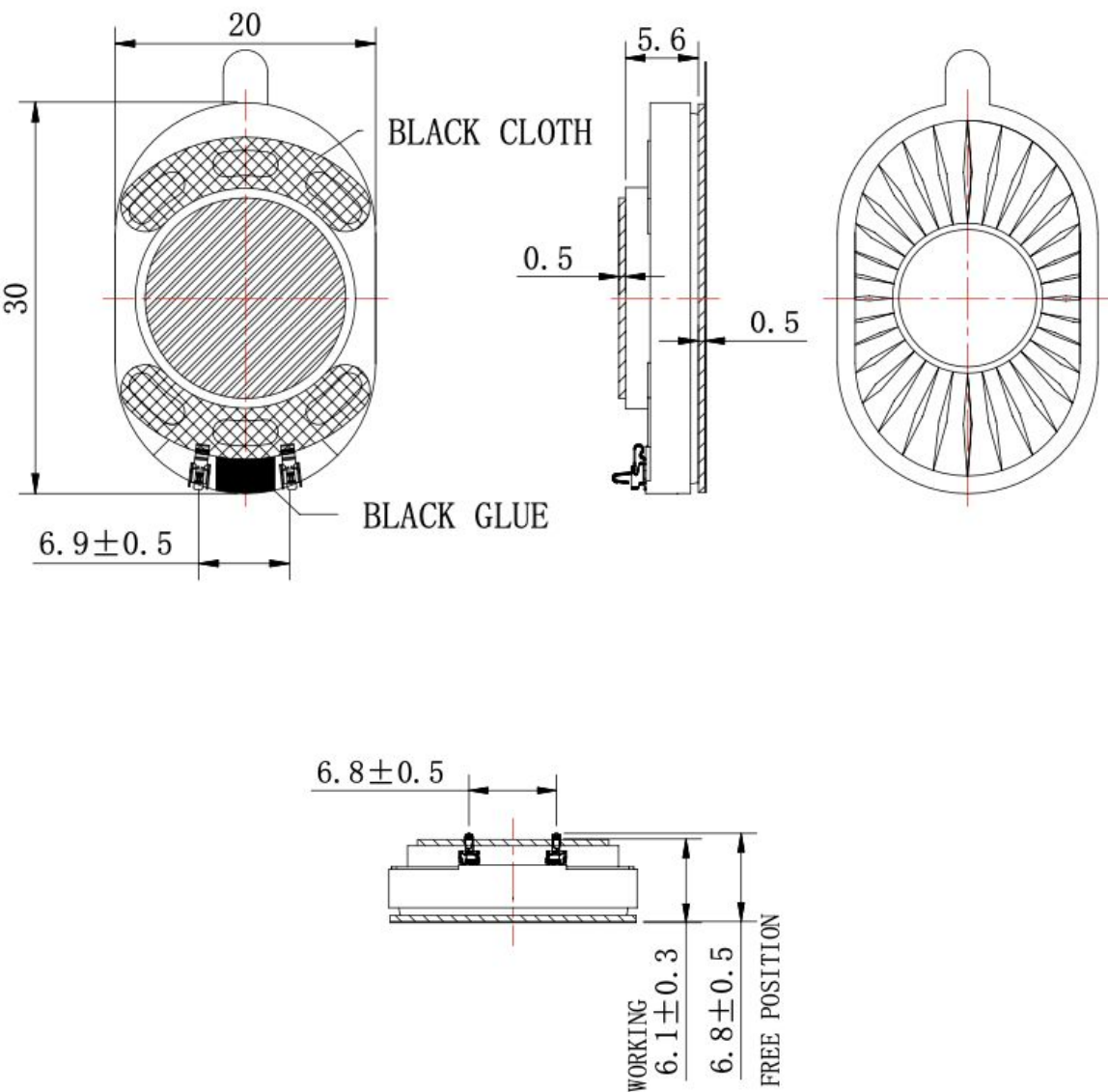
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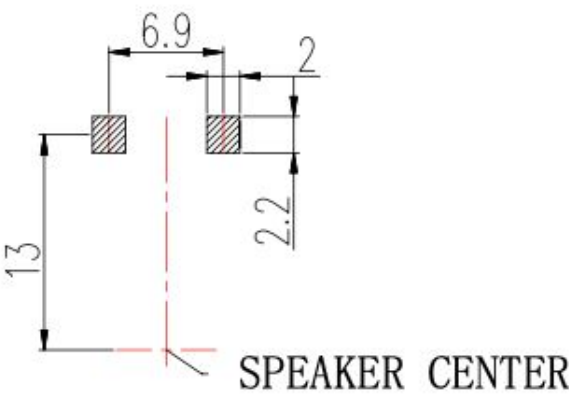
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Dimensions

Tolerance: ± 0.5 (unit: mm)



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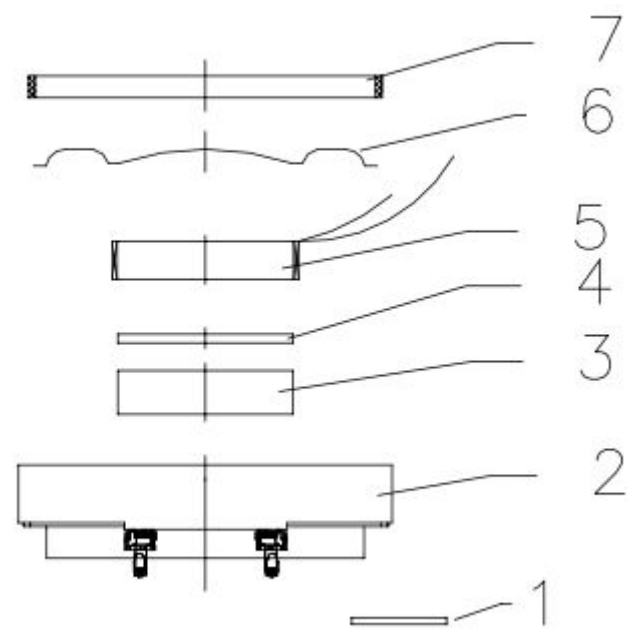
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No.	Part Name	Material	Quantity
1	Silk Screen	Black Cloth	1
2	Frame + PIN	SPCC+PBT	1
3	Main Magnet	Nd Fe B-N40	1
4	Plate 1	SPCC	1
5	Voice Coil	KSV-7.4Ω	1
6	Diaphragm	Black PEN	1
7	Cap	SUS	1



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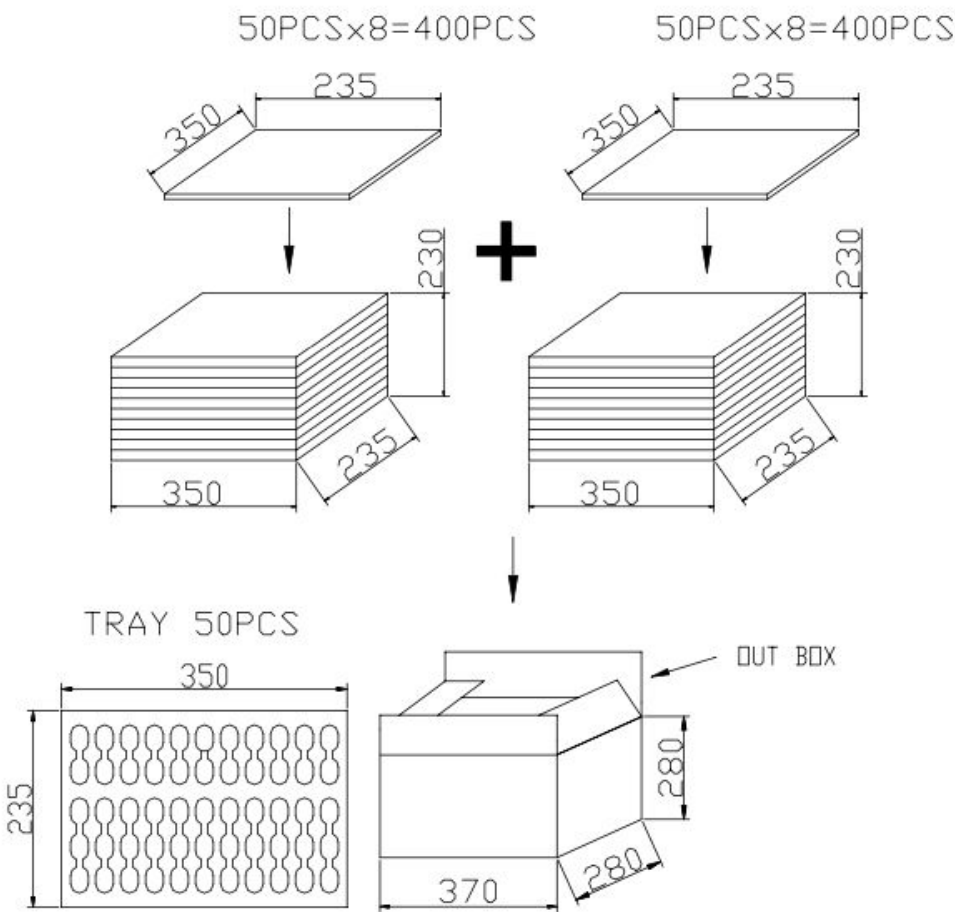
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TRAY	350X235X11mm	1X50PCS=50PCS
CARTON BOX	370X280X280mm	16X50PCS=800PCS