



soberton inc.

SP DYNAMIC
SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3520



Release | Revision: C/2021

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

85±3dB SPL @1.0 Watt, 50cm
Average at 0.8, 1.0, 1.2 & 1.5KHz

Measuring Condition: 1.0W (Sine wave) 50cm measured with baffler, as shown in Figure 1

Frequency Response Curve

As shown in Figure 2

Frequency Range

F0 ~ 20.0KHz

Response Frequency

750±20%Hz at 1.0V

Input Power (Nominal and Maximum)

Rated Noise Power: 1.0 Watt

Short Term Max Power: 1.5 Watt

Operation Test

Result must be normal when tested at 2.83 Volts

Total Harmonic Distortion

10% Max @2.0KHz, 1.0 Watt, 0.5 Meter

Polarity

Diaphragm shall move forward when a positive DC current is applied to the “+” or ‘marked’ Terminal.

General Specifications

Operating Temperature Range

-20°C ~ +60°C

Storage Temperature Range

-30°C ~ +70°C

Standard Test Conditions

Temperature 15°C ~ 35°C

Relative Humidity 45% ~ 85% (RH)

Voice Coil Impedance

DC: 8±15%Ω

Dimension

35.0 x 20.0 x H7.6mm

IP Level

No Rating



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Reliability Tests

The sound pressure as specified shall 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 $+70\pm 2^{\circ}\text{C}$
Duration 96 hours

Low Temperature Test

Low Temperature $-30\pm 2^{\circ}\text{C}$
Duration 96 hours

Heat Shock Test

High Temperature $+70\pm 2^{\circ}\text{C}$
Low Temperature $-30\pm 2^{\circ}\text{C}$
Changeover Time <30 seconds
Duration 1 hour
Number of Cycles 10

Humidity Test

Temperature $+40\pm 2^{\circ}\text{C}$
Relative Humidity 90% ~ 95%
Duration 48 hours

Temperature Cycle Test

Temperature -30°C $+70^{\circ}\text{C}$
Duration 45 minutes 45 minutes
Temperature gradient $1 \sim 3^{\circ}\text{C}/\text{min}$
Number of Cycles 25

Drop Test

The speaker is mounted onto the dummy assembly, placed in a standard cardboard box and then dropped onto a concrete board.

Height 0.75 m
Number of Cycles 6

Load Test

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



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Measuring Method (Speaker Mode)

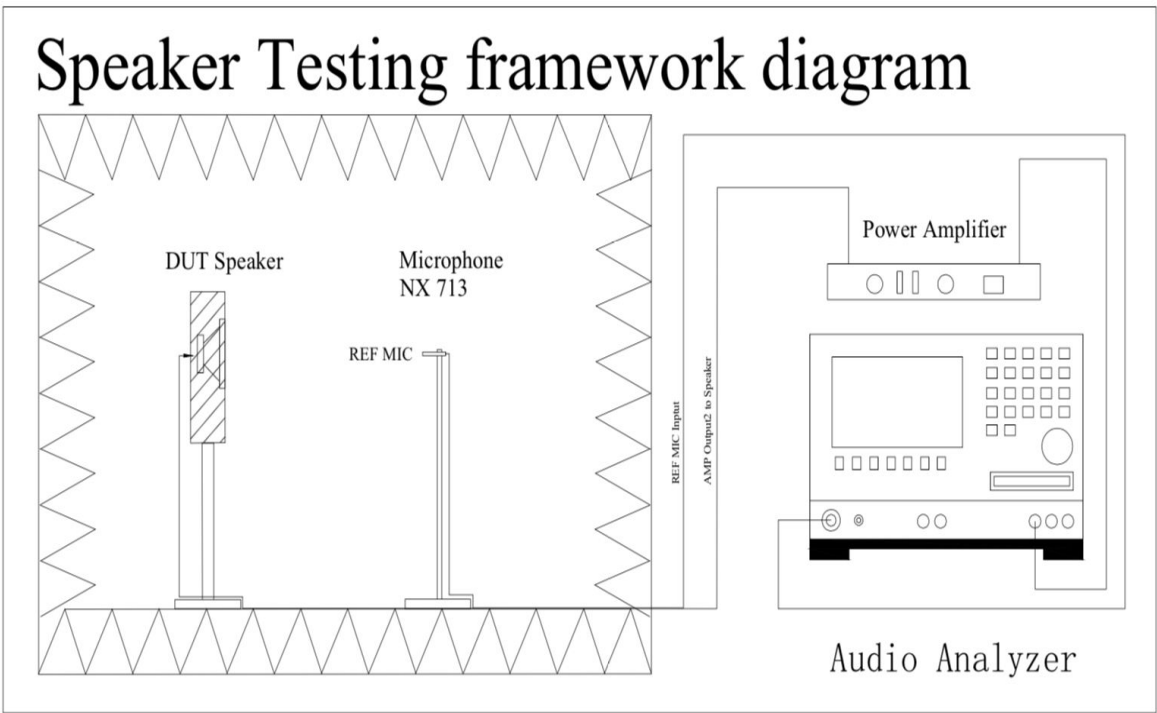
Standard Test Condition

- Temperature 15 ~ 35°C
- Relative humidity 45% ~ 85%
- Atmospheric pressure 860mbar ~ 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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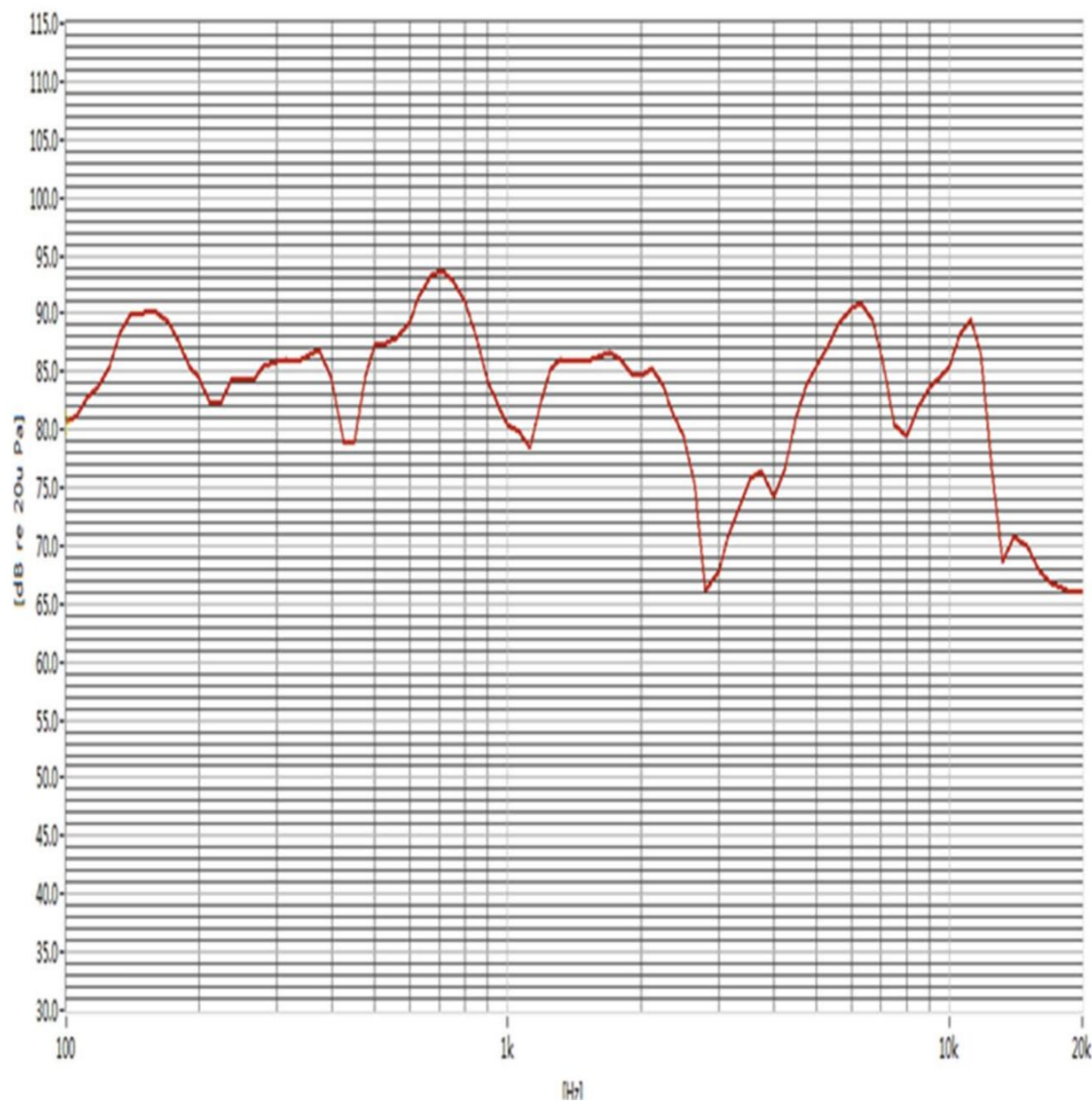
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Frequency Response Curve (Fig. 2)

Test Condition: 1.0W /0.5M





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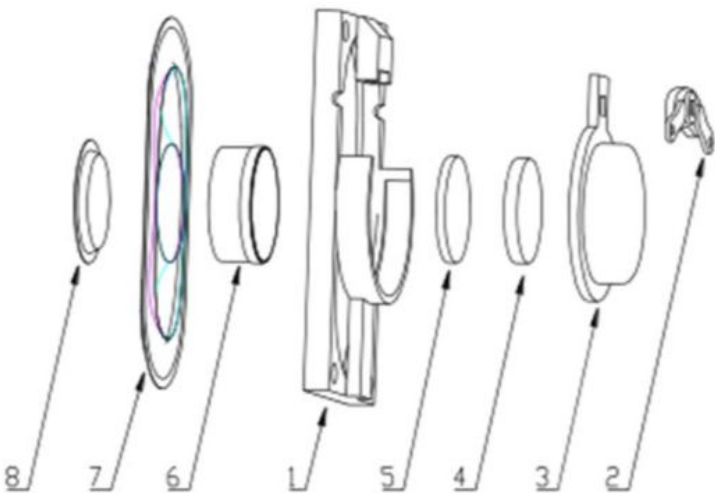
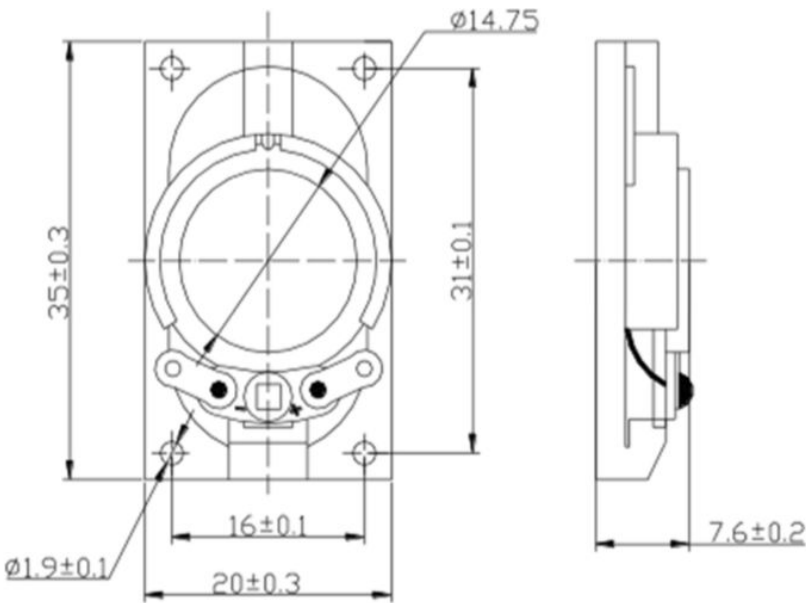
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Dimensions

Tolerance: ±0.5 (unit: mm)



No.	Part Name	Material	Quantity
1	Frame	ABS	1
2	PCB Terminal	Paper Cu	1
3	Yoke	SPCC	1
4	Magnet	Nd Fe B	1
5	Plate	SPCC	1
6	Voice Coil	Paper Cu	1
7	Diaphragm	Cloth	1
8	Cap	Paper	1



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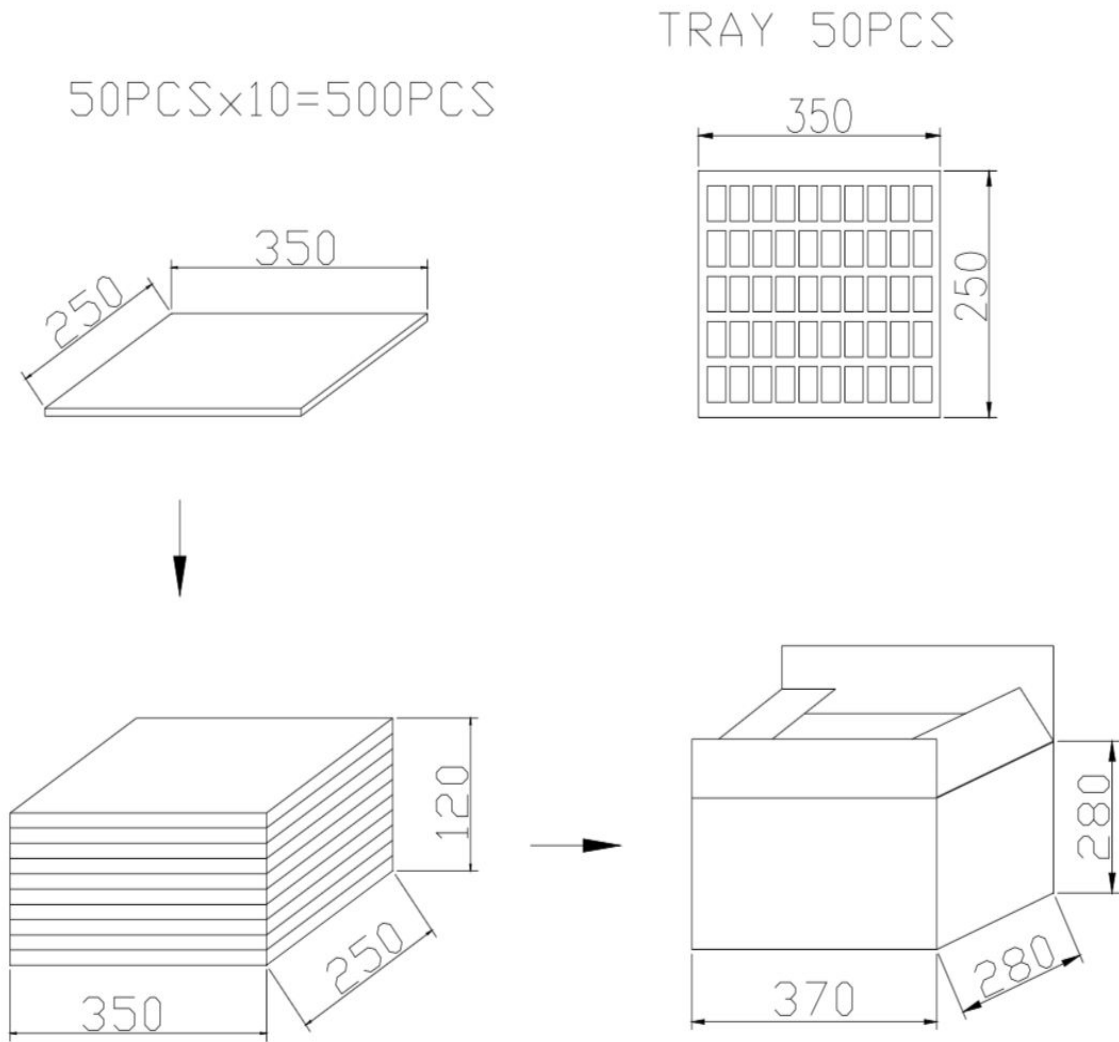
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Remarks

Per Tray: 50 pcs
Per Box : 500 pcs
Per Carton: 2 Boxes
Per Carton: 1,000 pcs
Carton Size: 370 x 280 x 280mm