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soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-2509



Release | Revision: C/2018

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

84±3dB SPL @0.6, 0.8, 1.0 and 1.5KHz in average (0dB SPL=20µPa)
Measuring Condition: 0.1W (Sine wave) 10cm measured with baffle shown in Fig.1.

Frequency Response Curve

As shown in Figure 2

Response Frequency

550±20%Hz @ 1V. (Without Baffle)

Input Power (Nominal and Maximum)

Rated Noise Power 1.0W (in 1cc box)

Short Term Max Power: 1.2W (in 1cc box)

Operation Test

Must be free audible noise (buzzes and rattles)

(300 ~ 5KHz frequency range, input level up to 2.53 Vrms)

Distortion

Less than 10% @1KHz, 0.1M, 0.1W frequency range, input level up to 0.1W

General Specifications

Operating Temperature Range

-20°C~+60°C

Storage Temperature Range

-40°C~+85°C

Standard Test Conditions

Temperature 17°C~25°C

Relative Humidity 45%~80%(RH)

AC Impedance

8±15%Ω (@2KHz 1V) without baffle

Dimension

25.0x9.0x3.0mm

IP Level

IP50



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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 $+60\pm 2^\circ\text{C}$

Duration 96 hours

Low Temperature Test

Low Temperature $-20\pm 2^\circ\text{C}$

Duration 96 hours

Heat Shock Test

High Temperature $+60\pm 2^\circ\text{C}$

Low Temperature $-20\pm 2^\circ\text{C}$

Changeover Time < 30 seconds

Duration 1 hour

Cycle 100

Humidity Test

Temperature $+60\pm 2^\circ\text{C}$

Relative Humidity 90%~95%

Duration 96 hours

Temperature Cycle Test

Temperature -20°C $+60^\circ\text{C}$

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 input power.



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Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 15 ~ 35°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar to 1060mbar

Standard Test Fixture

Input Power 0.1W

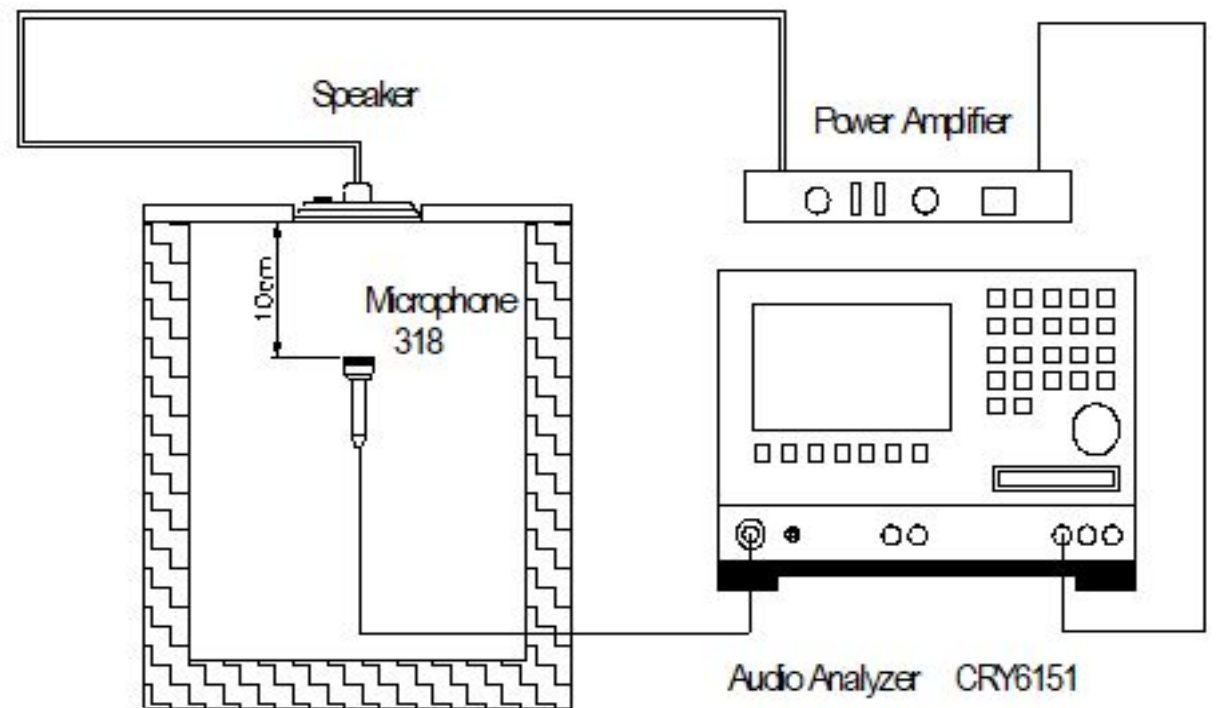
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)





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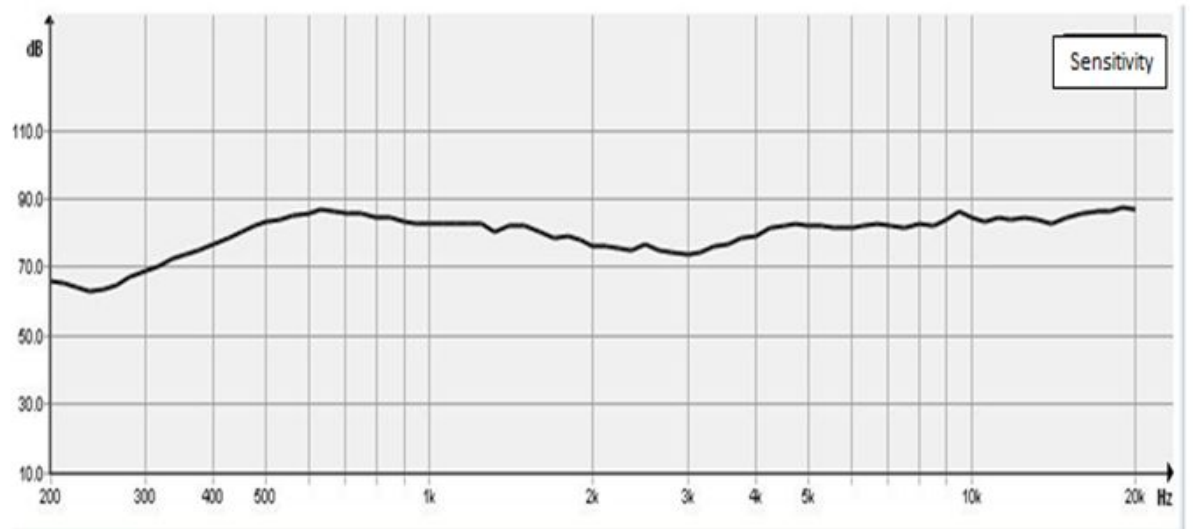
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Frequency Response Curve (Fig. 2)





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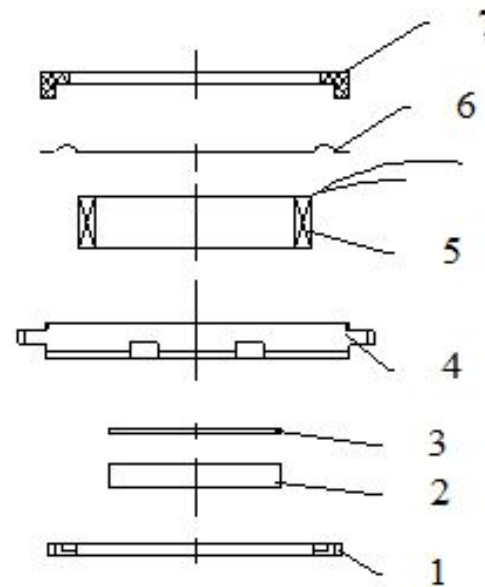
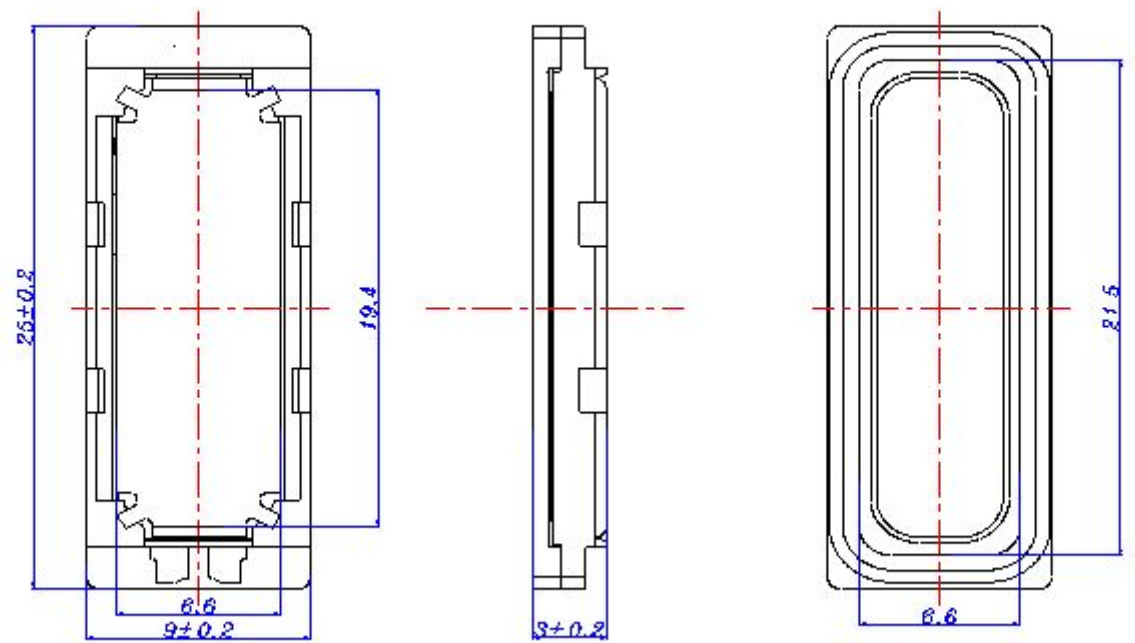
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Dimensions

Tolerance: ± 0.5 (unit: mm)



No.	Part Name	Material	Quantity
1	Frame	PPA	1
2	Magnet	Nd Fe B	1
3	Plate	SPCC	1
4	U Yoke	SPCC	1
5	Diaphragm	PEEK	1
6	Voice Coil	Copper Wire	1
7	Cap	PPA	1



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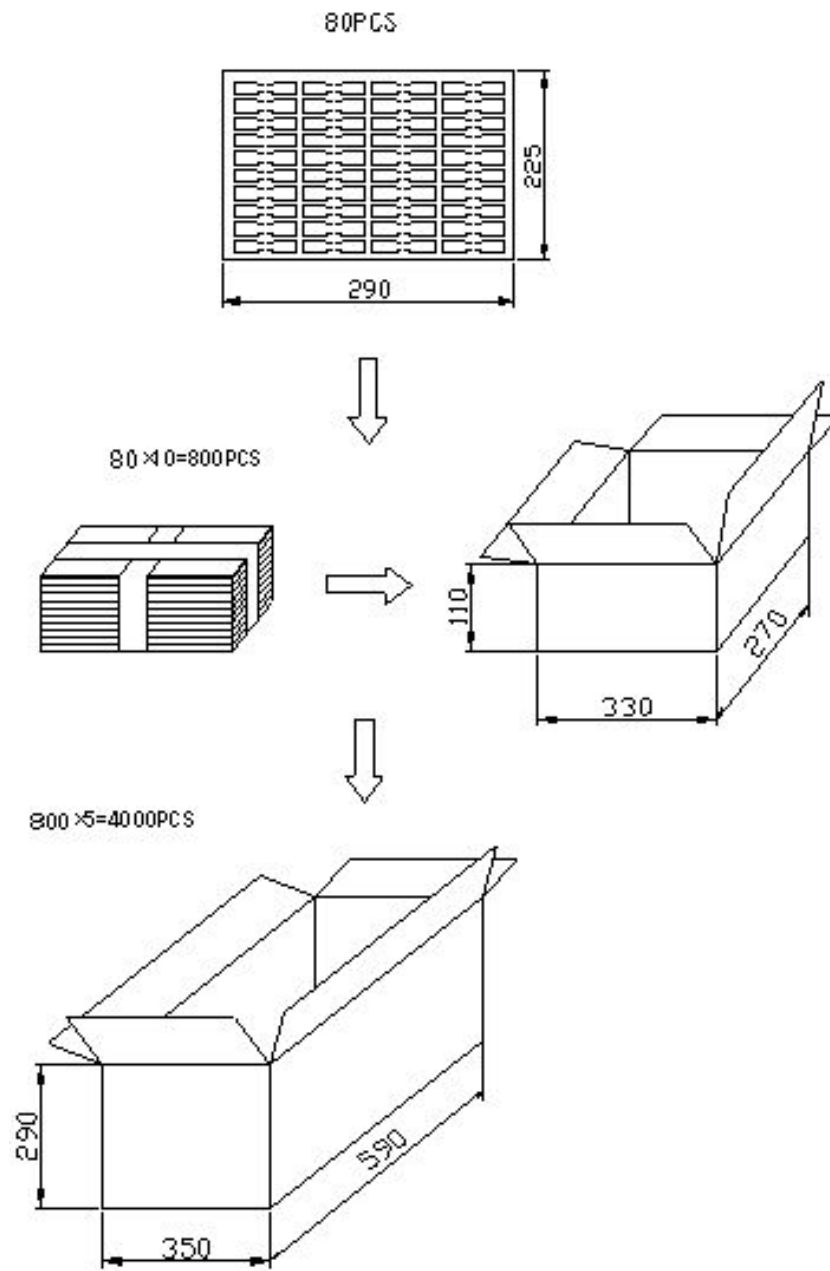
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Details

80 pcs per tray	10 trays for unit	800 pcs per carton	5 cartons per box
Total	Amount 4000 pcs per box	Size 59×35×29 cm	Weight 11.6Kg