soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-2003-7



Release | Revision: C/2018

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

86±3dB SPL @0.8, 1.0 , 1.5 and 2.0KHz in average (0dB SPL=20μPa)
Measuring Condition: 0.1W (Sine wave) 10cm measured with baffler shown in Fig.1.

Frequency Response Curve

As shown in Figure 2

Response Frequency

1100±20%Hz @ 1V. (Without Baffler)

Input Power (Nominal and Maximum)

Rated Noise Power 0.8W

Short Term Max Power: 1.0W must be normal at a white noise (1W, F0 ~ 20KHz) for one minute

Operation Test

Must be free audible noise (buzzes and rattles)

(300 ~8KHz frequency range, input level up to 2.53 Vrms)

Distortion

Less than 10% @1KHz, 0.1M, 0.1W frequency range, input level up to 2.53Vrms

General Specifications

Operating Temperature Range

-20℃~+60℃

Storage Temperature Range

-25℃~+70℃

Standard Test Conditions

Temperature 17℃~25℃

Relative Humidity 45%~80%(RH)

AC Impedance

8±15%Ω (@2KHz 1V) without baffler

Dimension

Ø20.0x3.3mm

IP Level

IP50

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Reliability Tests

The sound pressure as specified will neither deviate more than ±3dB from the initial value, nor have any significant damage after any of following testing.

High Temperature Test

High Temperature +60±2℃

Duration 96 hours

Low Temperature Test

Low Temperature -20±2℃

Duration 96 hours

Heat Shock Test

High Temperature +60±2℃

Low Temperature -20±2℃

Changeover Time <30 seconds

Duration 1 hour

Cycle 100

Humidity Test

Temperature + 40±2℃

Relative Humidity 90%~95%

Duration 96 hours

Temperature Cycle Test

Temperature -20℃ +60℃

Duration 45 minutes 45 minutes

Temperature gradient 1~3℃/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 @ 0.8W 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 0.1W

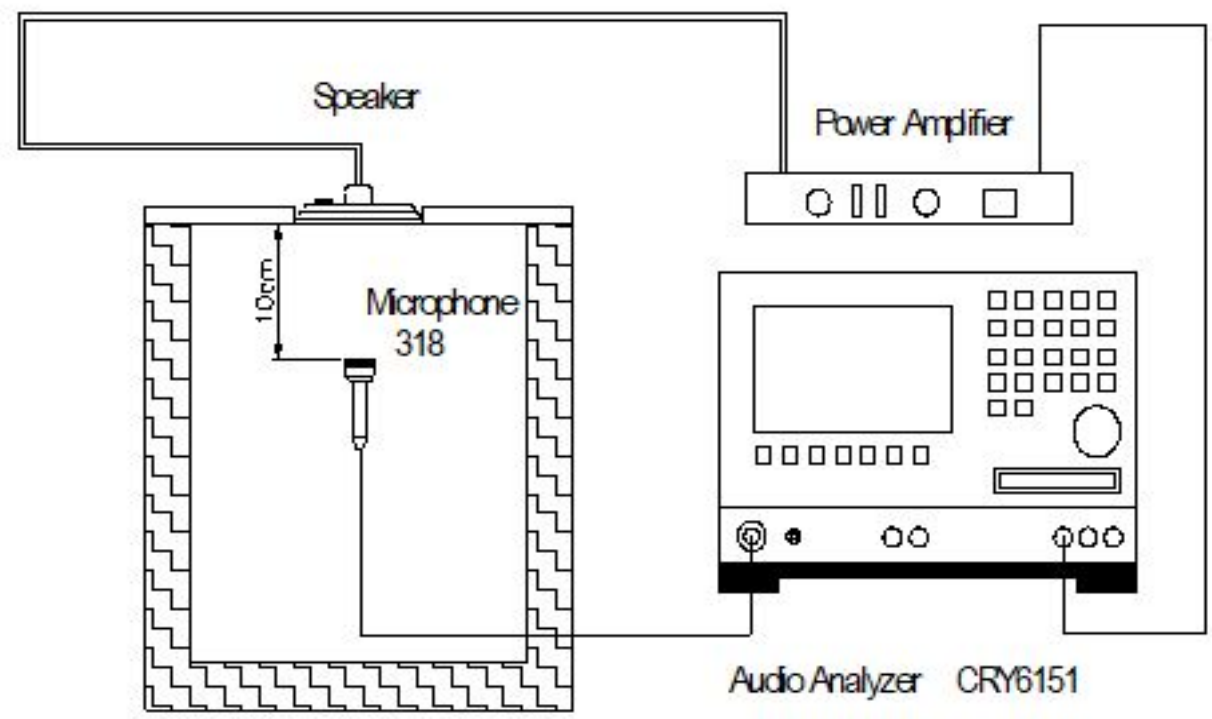
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)



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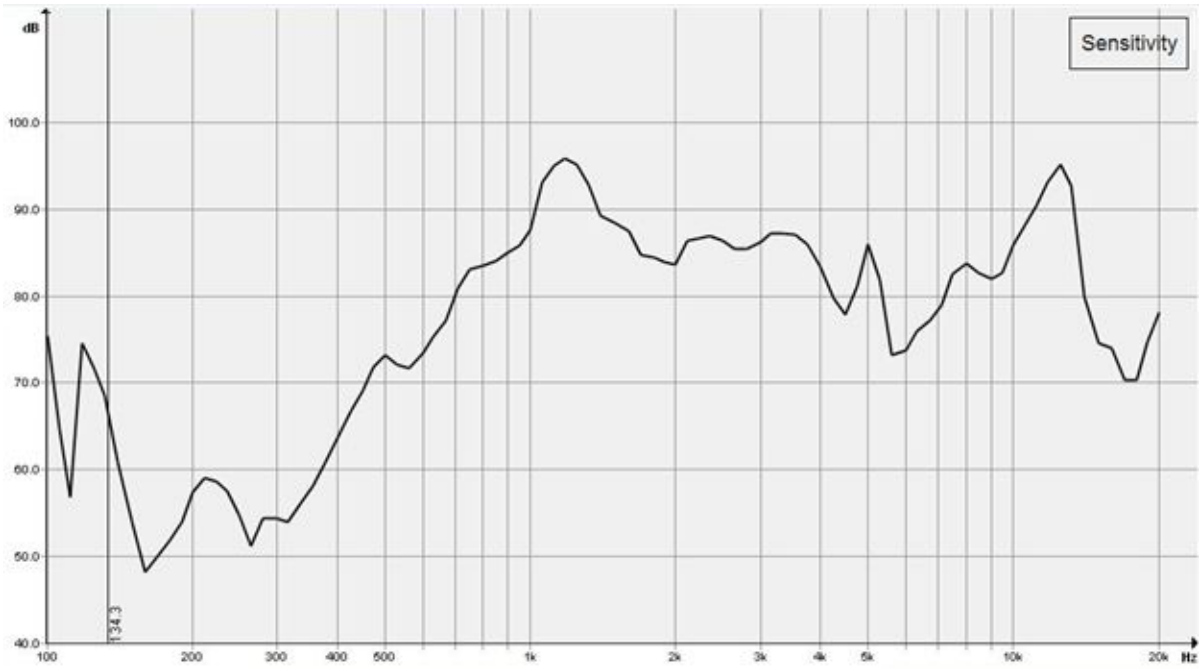
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Frequency Response Curve (Fig. 2)



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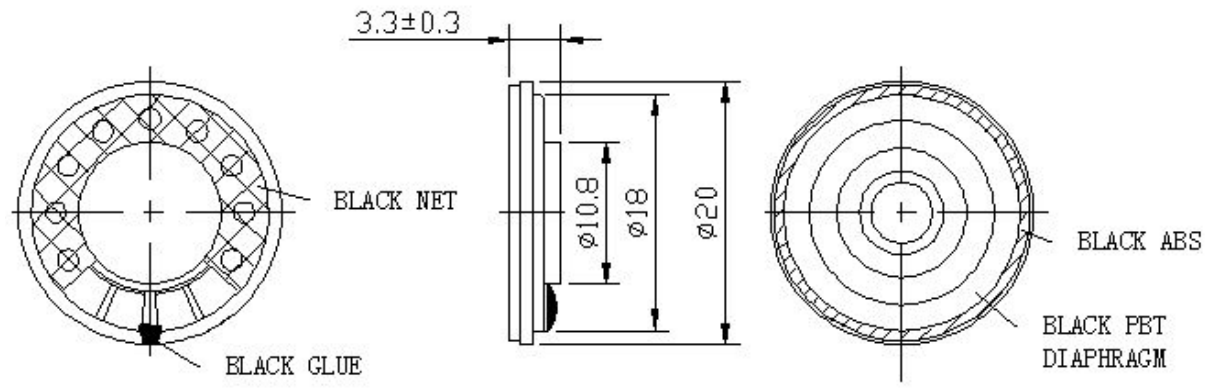
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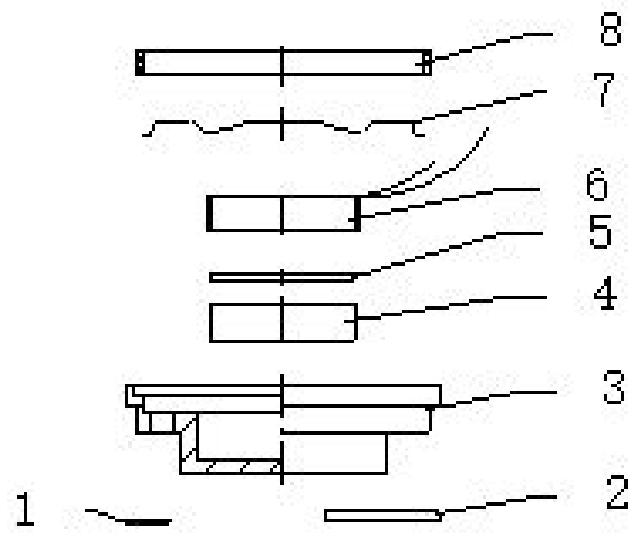
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Dimensions

Tolerance: ±0.5 (unit: mm)





No.	Part Name	Material	Quantity
1	Gasket	Black ABS	1
2	Silk Screen	100 mesh	1
3	Diaphragm	PET	1
4	Magnet	Nd Fe B	1
5	Plate	SPCC	1
6	Voice Coil	Polyurethane Enamelled Wire	1
7	Frame	SPCC	1
8	PCB	FR-4	1

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