



soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1511L-2



Release | Revision: B/2018

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

91±3dB SPL @1.0, 1.2, 1.5 and 1.5KHz in average (0dB SPL=20µPa)
Measuring Condition: 0.7W (Sine wave) 10cm measured with baffler refer to figure.1

Frequency Response Curve

As shown in Figure 2

Response Frequency

650±20%Hz @1V in free air

Input Power (Nominal and Maximum)

Rated Noise Power 0.7W

Short Term Max Power: 1.0W

Operation Test

Must be free audible noise (buzzes and rattles)

(100 ~20KHz frequency range, input level up to 2.36Vrms)

Distortion

Less than 10% @1KHz , 0.1M , 0.7W

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%~80%(RH)

AC Impedance

8±15%Ω (@ 2 KHz 1V) without baffler.

Dimension

15.0 x 11.0 x H3.9mm

WIRE 25mm (UL1571 / AWG 32#)

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 $+70\pm 2^\circ\text{C}$

Duration 96 hours

Low Temperature Test

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

Duration 96 hours

Heat Shock Test

High Temperature $+30\pm 2^\circ\text{C}$

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

Changeover time < 30 seconds

Duration 1 hour

Cycle 100

Humidity Test

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

Relative Humidity 90%~95%

Duration 96 hours

Temperature Cycle Test

Temperature -30°C $+70^\circ\text{C}$

Duration 45 minutes 45 minutes

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

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 @ 0.7W 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 0.7W

Zero Level -dB

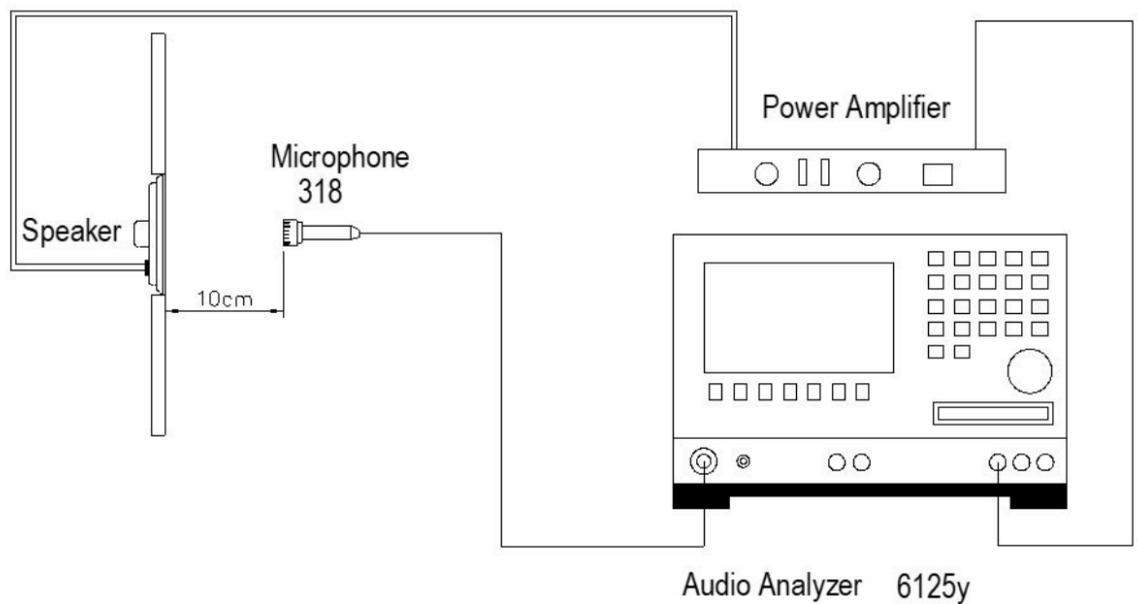
Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)

Standard test condition of speaker





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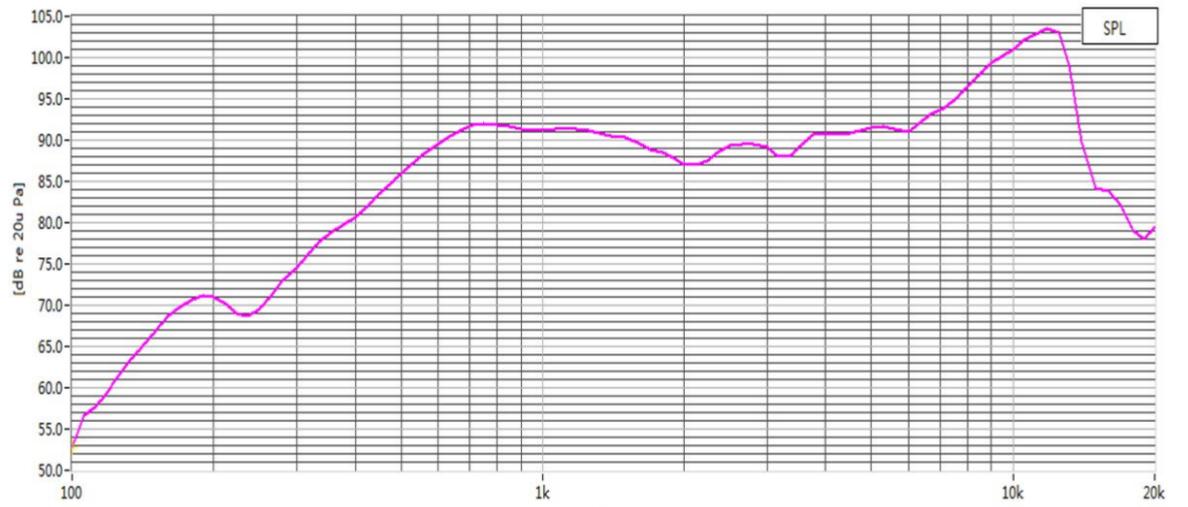
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Frequency Response Curve (Fig. 2)





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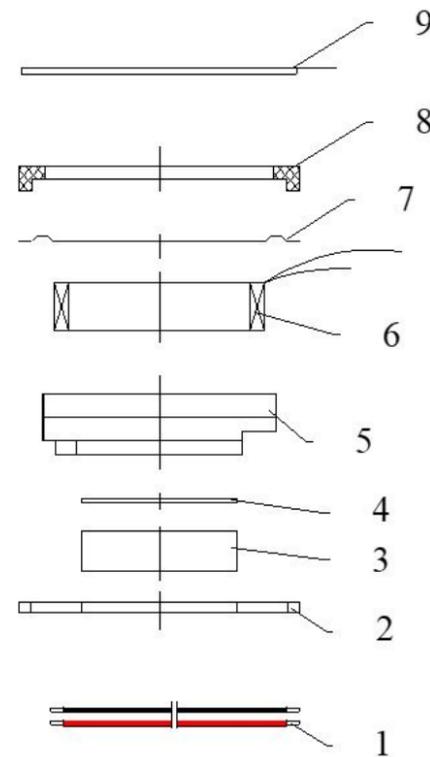
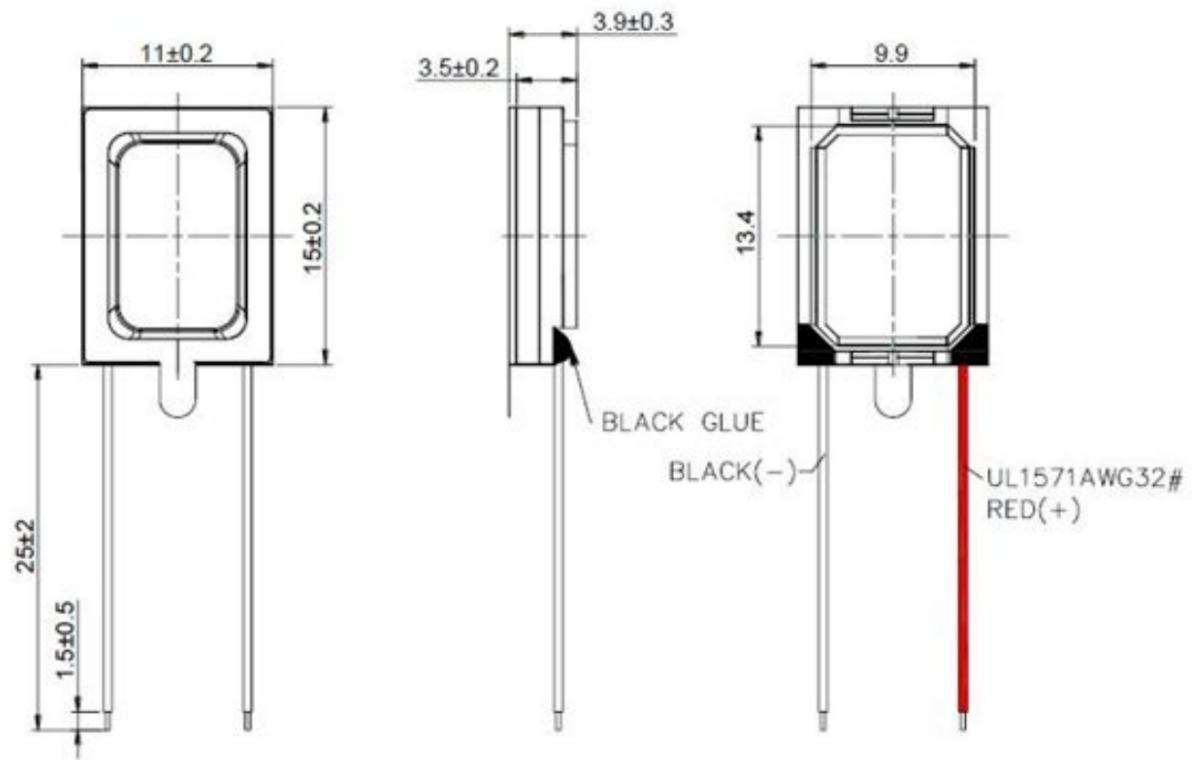
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Dimensions

Tolerance: ± 0.5 (unit: mm)



No.	Part Name	Material	Quantity
1	Wire (25mm)	UL1571 / AWG32#	2
2	U Yoke	SPCC	1
3	Magnet	Nd Fe B	1
4	Plate 3	SPCC	1
5	Frame	Black PPA	1
6	Voice Coil	Copper Wire	1
7	Diaphragm	PEEK	1
8	Cap	Black PPA	1
9	Gasket	1511-0.4	1



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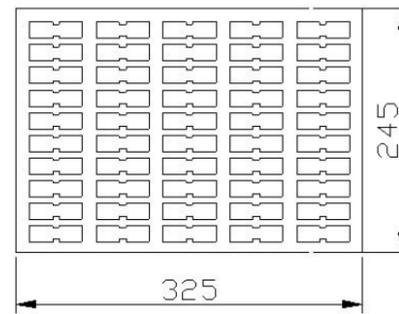
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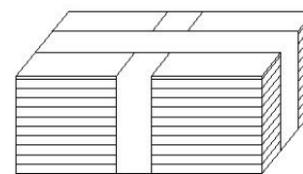
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150PCS



150 ×
10=1500PCS



1500 ×
5=7500PCS

