



soberton inc.

WSP WATERPROOF SPEAKER

Acoustic Product Specification

Product Number: WSPH-1511S



Release | Revision: C/2021

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

83±3dB SPL @0.1 Watt, 10 cm in 1cc Box
Average at 0.8, 1.0, 1.2 & 1.5KHz

Measuring Condition: 0.1W (Sine wave) 10cm measured with baffler shown in Figure.1

Frequency Response Curve

As shown in Figure 2

Response Frequency

800±20%Hz @ 1V in 1cc Box

Response Range

F0 ~ 2.0KHz

Input Power (Nominal and Maximum)

Rated Noise Power 0.7 Watt

Short Term Max Power 1.0 Watt

Operation Test

Result must be normal when tested @2.37 Volts in 1cc Box

Distortion

10% Max @1.0KHz, 0.1 Watt

Polarity

The Diaphragm will move forward when a positive DC current is applied To the '+' or 'marked' Terminal.

General Specifications

Temperature Range

Operating Temperature -20°C ~ +60°C

Storage Temperature -30°C ~ +75°C

Standard Test Conditions

Temperature 15°C ~ 35°C

Relative Humidity 45% ~ 85% (RH)

Voice Coil Impedance

DC: 8±15%Ω

Dimension

15.0 x 11.0 x H6.7mm

IP Level

IP67



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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	$+75\pm 2^\circ\text{C}$
Duration	96 hours

Low Temperature Test

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

Heat Shock Test

High Temperature	$+75\pm 2^\circ\text{C}$
Low Temperature	$-30\pm 2^\circ\text{C}$
Changeover time	<30 seconds
Duration	1 hour
Number of Cycles	100

Humidity Test

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

Temperature Cycle Test

Temperature	-25°C	$+65^\circ\text{C}$
Duration	45 minutes	45 minutes
Temperature gradient	1 ~ 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	0.75m
Number of Cycles	6

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 ~ 1060mbar

Standard Test Fixture

Input Power 0.7W / 2.37V

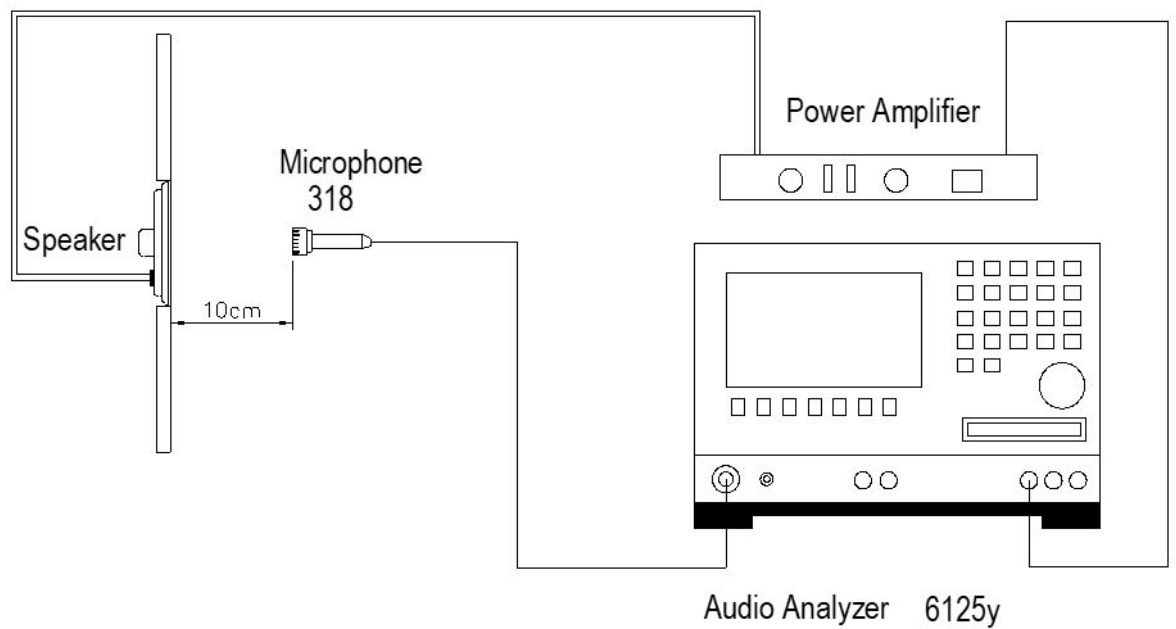
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)





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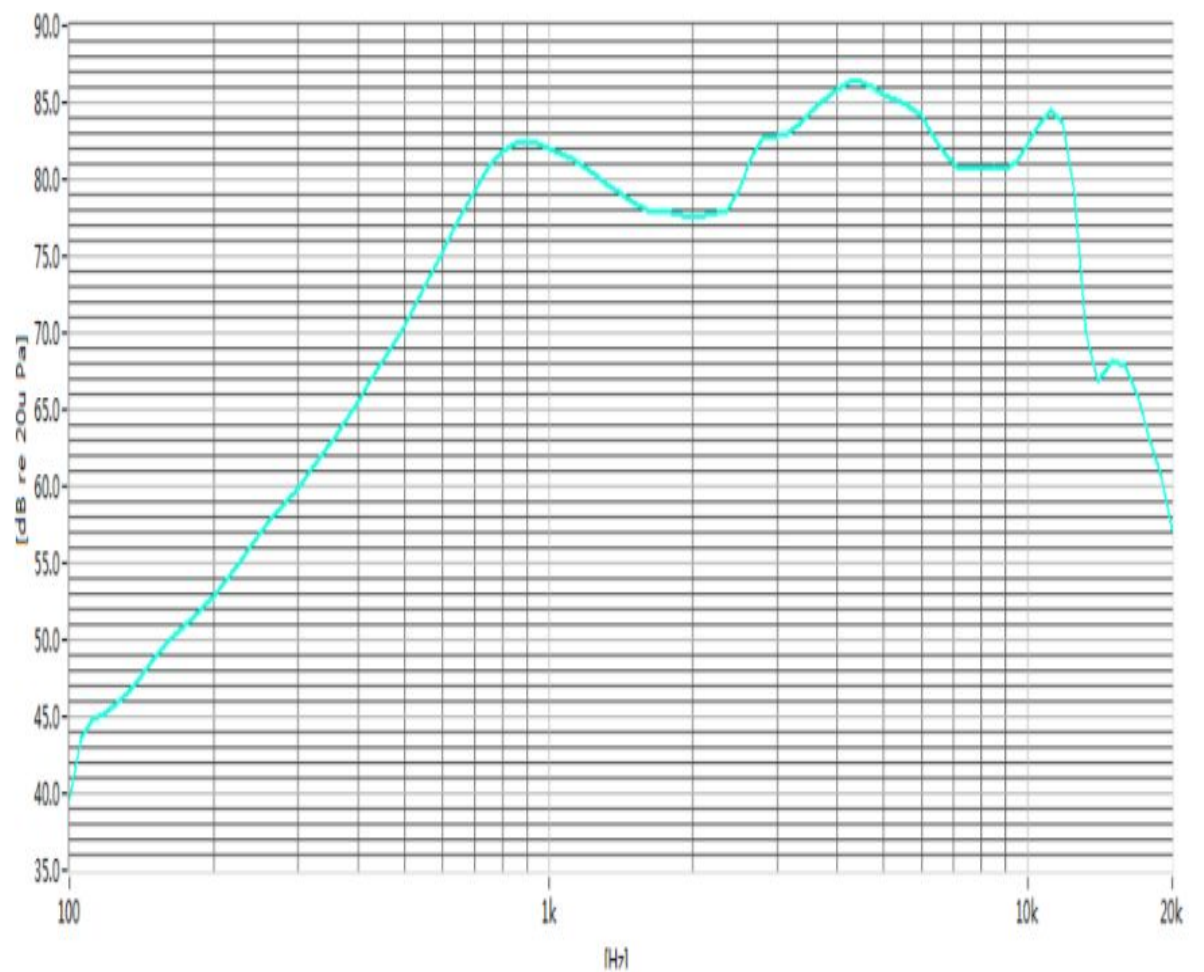
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Frequency Response Curve (Fig. 2)

Test condition: 0.1W / 0.1M





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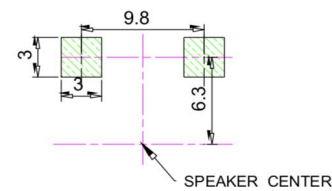
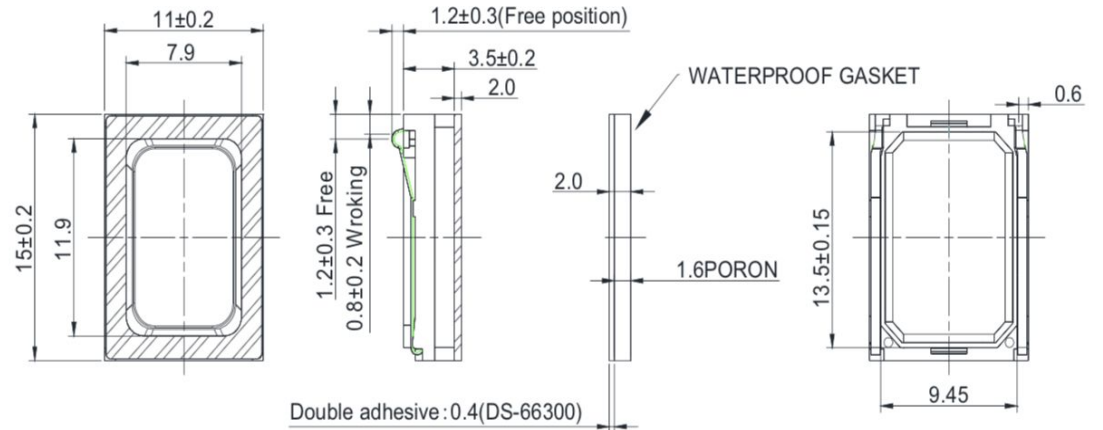
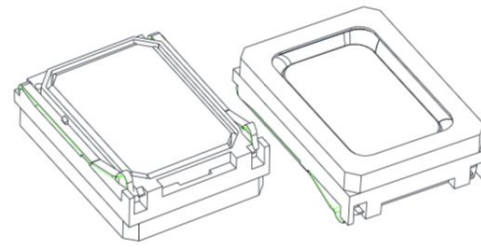
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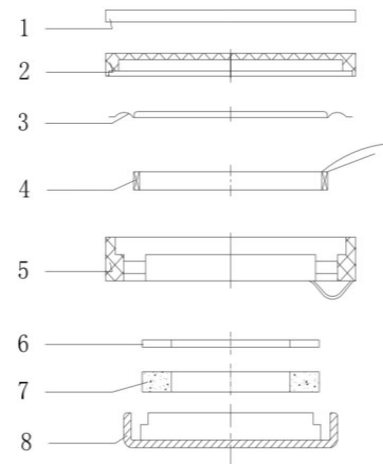
Packing

Dimensions

Tolerance: ± 0.5 (unit: mm)



Pad Layout



No.	Part Name	Material	Quantity
1	Gasket	Poron + DS10	1
2	Cap	PPA	1
3	Diaphragm	PEEK	1
4	Voice Coil	Cu	1
5	Frame	Black PBT + SUS	1
6	Plate 3	SPCC	1
7	Magnet	Nd Fe B	1
8	Yoke	SPCC	1



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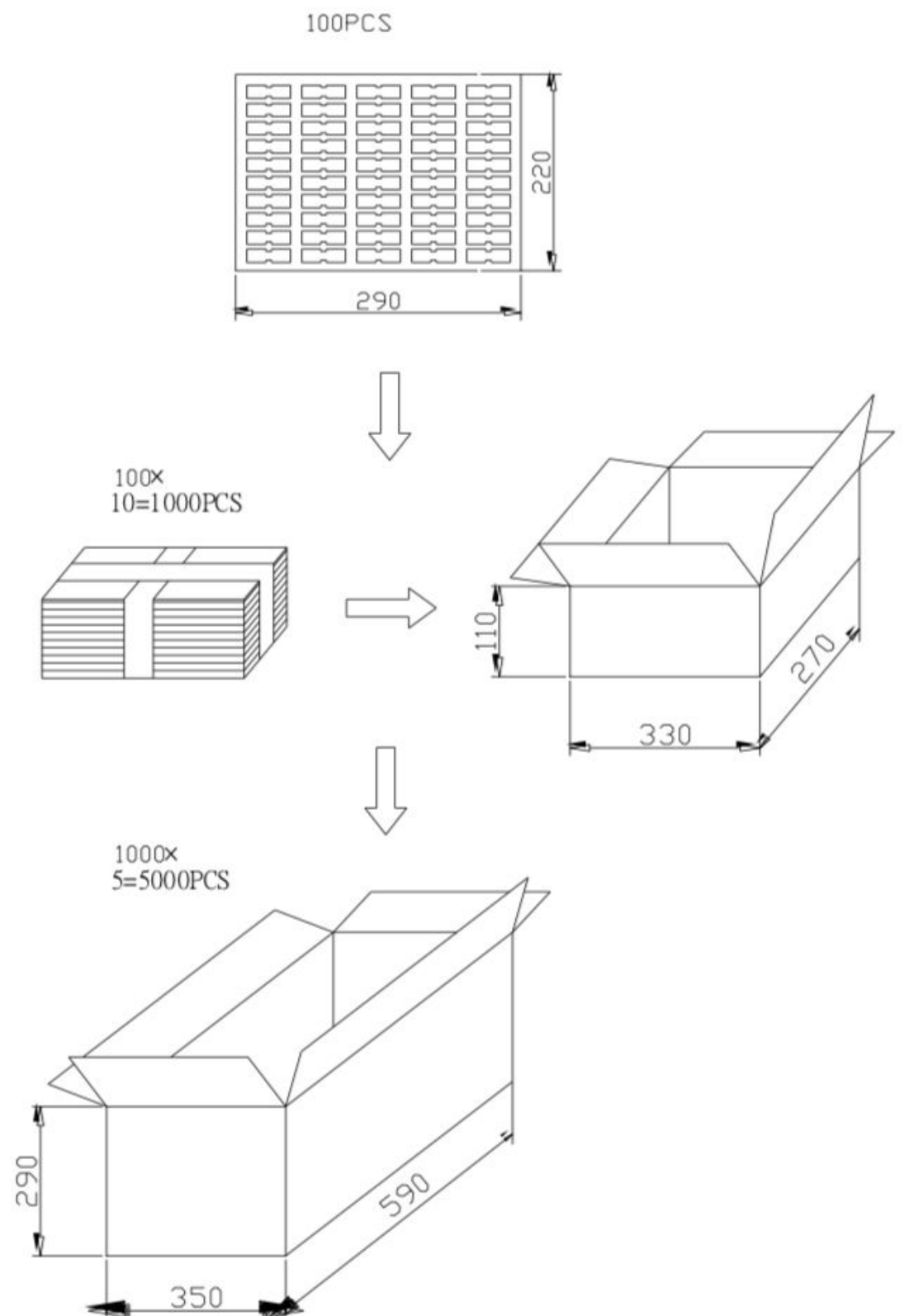
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Per Tray: 100 pcs
 Per Box: 1,000 pcs
 Per Carton: 5,000 pcs
 Carton Size: 590 x 350 x 290 mm