



soberton inc.

# WSP WATERPROOF SPEAKER

Acoustic Product Specification

Product Number: WSPH-2415



Release | Revision: B/2018

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## Dynamic Speaker Electroacoustic Characteristics

### Sound Pressure Level

89±3dB SPL @0.8, 1.0, 1.2 and 1.5KHz in 0.1W/0.1M  
Measuring Condition: shown in Figure.1 & Figure.2

### Frequency Response Curve

As shown in Figure 3

### Frequency Range

F0 ~ 10KHz

### Response Frequency

1000±20%Hz

### Input Power (Nominal and Maximum)

Rated Noise Power 1.0W  
Short Term Max Power 1.2W

### Buzz, Rattle, Etc.

Must be normal at sine wave between ( F0 ~ 20KHz at 2.83V )

### Distortion

Less than 5% @1KHz, 1W

### Polarity

When a positive DC current is applied, the Diaphragm will engage forward.  
Current is a positive(+). The red wire is positive (+).

## General Specifications

### Temperature Range

Operating Temperature -30°C~+70°C  
Storage Temperature -40°C ~ +80°C

### Standard Test Conditions

Temperature 17°C ~ 25°C  
Relative Humidity 45% ~ 80% (RH)

### AC Impedance

8±15%Ω

### Dimension

24.0 x 15.0 xH4.1 mm  
WIRE 315mm (UL1571 / AWG32#)

### IP Level

IP67



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## Reliability Tests

After any following test, parts should conform to original performance within  $\pm 3$  dB tested with Rated Power, after 6 hours of recovery period.

### High Temperature Test

High Temperature  $+70\pm 3^{\circ}\text{C}$

Duration 96 hours

### Low Temperature Test

Low Temperature  $-30\pm 3^{\circ}\text{C}$

Duration 96 hours

### Humidity Test

Temperature  $+30\pm 3^{\circ}\text{C}$

Relative Humidity 90%~96%

Duration 96 hours

### Vibration Test

Frequency Range: 10Hz ~ 50Hz ~ 10Hz

Amplitude 1.5mm

Duration 2 hours each of 3 perpendicular directions

### Temperature Cycle Test

Temperature  $-25^{\circ}\text{C}$   $+65^{\circ}\text{C}$

Duration 6 hours 6 hours

Temperature gradient  $\pm 2^{\circ}\text{C}$

Cycle 5

### Drop Test

Drop the speaker contained in normal box onto the surface of 40mm thick board 10 times from the height of 75cm

### Operation Life Test

Must Perform normal with program White-Noise source at Rated Power for 96 hours

### Lead Wire Pull Strength

The pull force shall be applied to double lead wire:

Horizontal 3.0N(0.306kg) for 30 seconds.

Vertical 2.0N(0.204kg) for 30 seconds.



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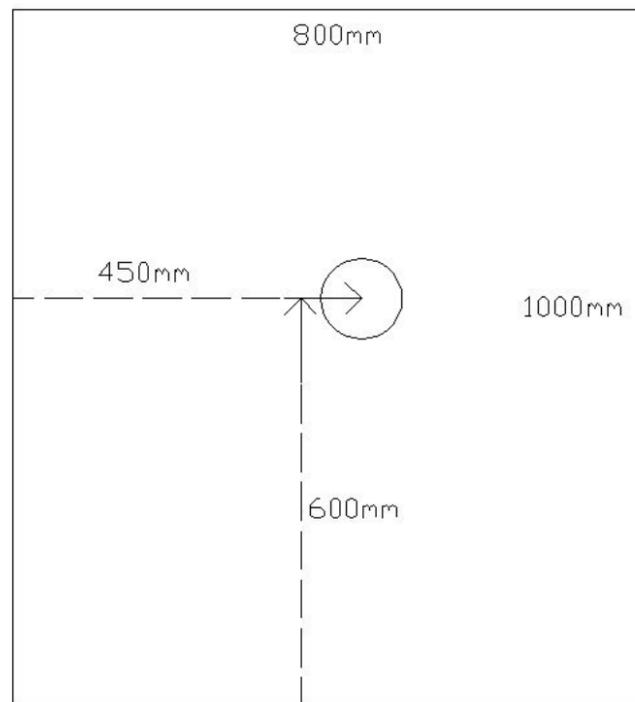
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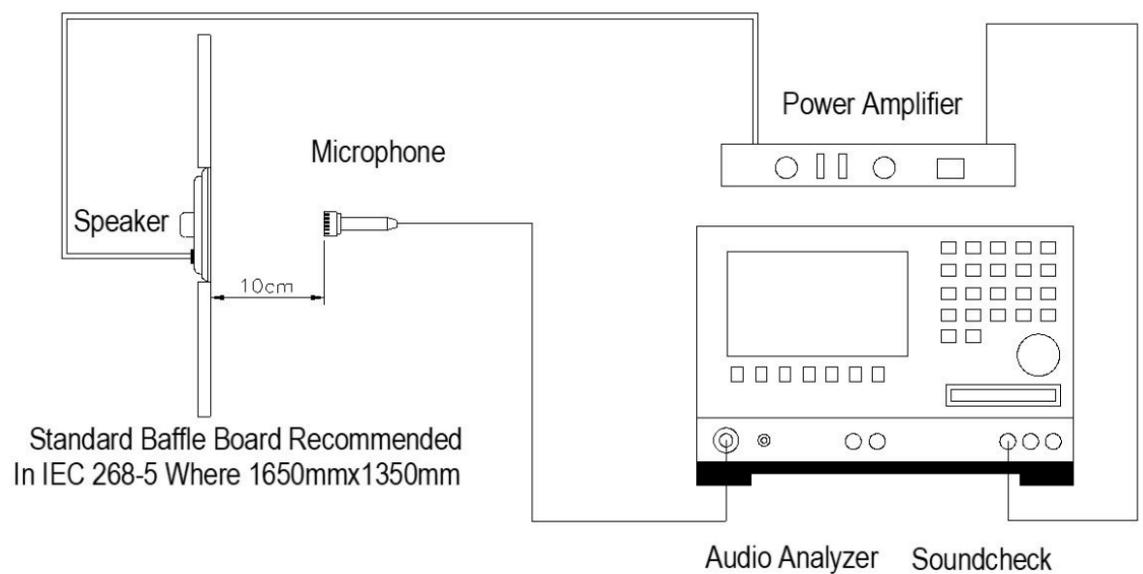
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## Measuring Method (Speaker Mode)

Block Diagram for Measurement method



## Standard Test Condition of Speaker (Fig. 1)





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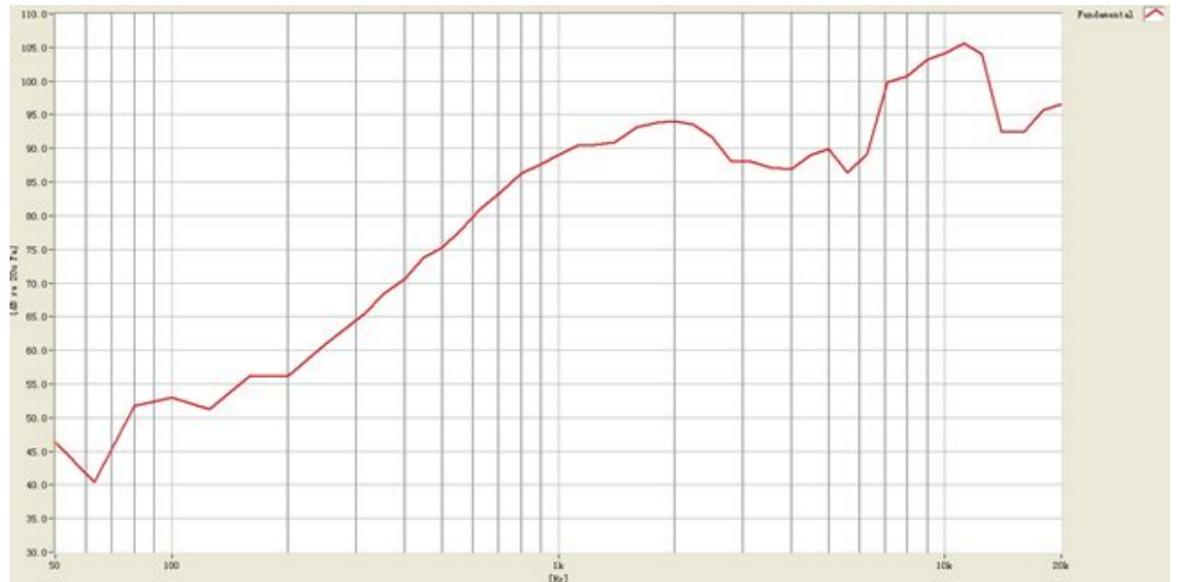
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Frequency Response Curve (Fig. 3)





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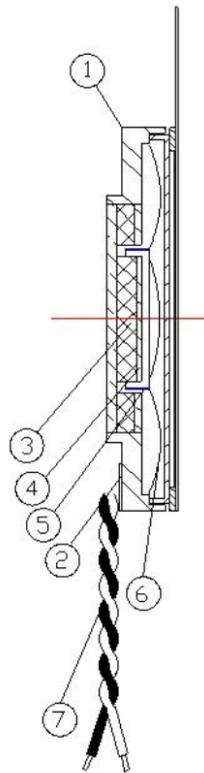
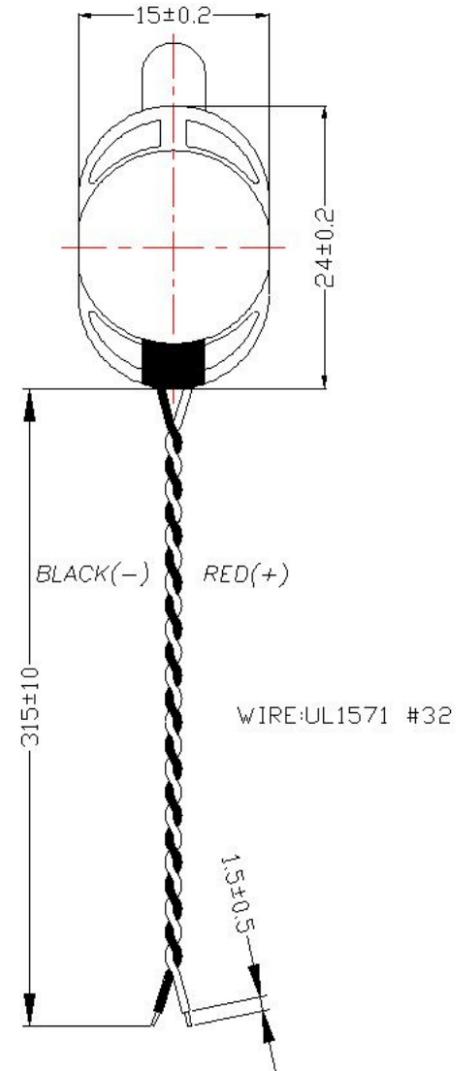
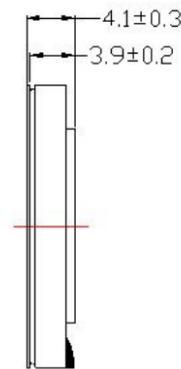
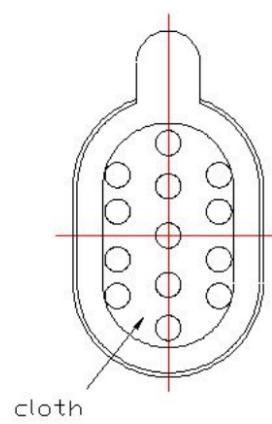
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## Dimensions

Tolerance:  $\pm 0.2$  (unit: mm)



No.	Part Name	Material	Quantity
1	Frame	ABS	1
2	PCB Terminal	FR-4	1
3	Magnet	NdFeB	1
4	Plate	SPCC	1
5	Voice Coil	Cu	1
6	Diaphragm	PEN	1
7	Wire (315mm)	UL1571 / AWG32#	2



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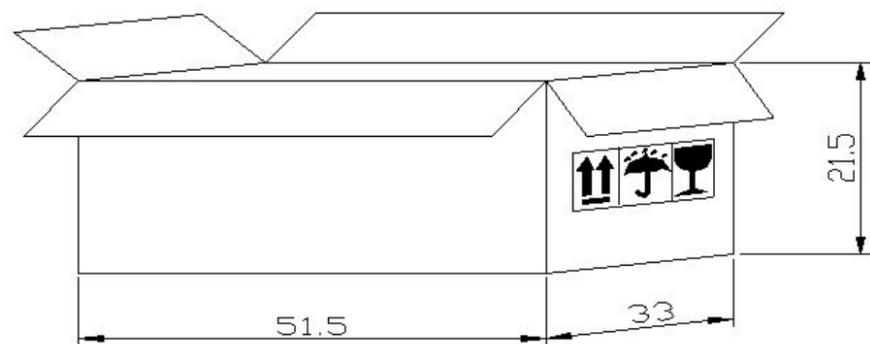
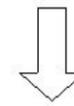
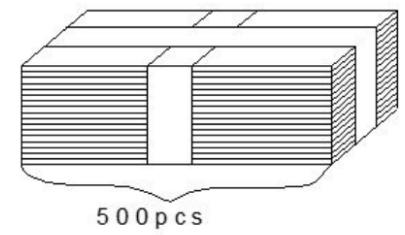
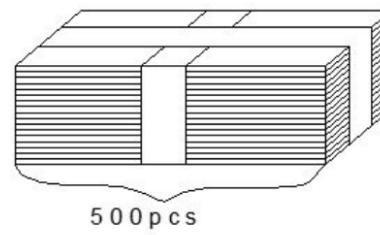
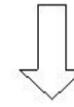
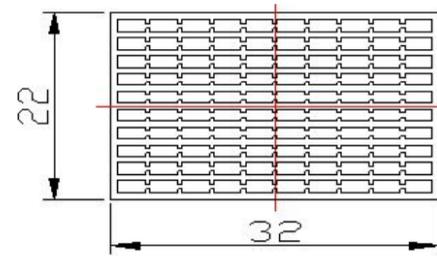
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## Remarks

50pcs per tray

10 trays for unit, 2 units per carton

Total: 1000 pcs per box

Size: 51.5x33x21.5cm