



soberton inc.

NB SPEAKER

Acoustic Product Specification

Product Number: WSPM-3020W



Release | Revision: A/2021

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General Specifications

Sound Pressure Level

99±3dB SPL @1.5 Watt at 10 cm
Average at 3.0, 4.0, 5.0 & 6.0KHz

Resonance Frequency

1750±20%Hz @1V

Response Range

F0 ~ 20.0KHz

Input Power (Nominal/ Maximum)

Rated Noise Power: 1.5 Watt

Short Term Max Power: 2.0 Watt

Voice Coil Impedance

DC: 8±15%Ω

Distortion

10% Max. at 3.0KHz, 1.5 Watt, 0.1 Meter

Abnormal Sound Test

Result must be normal when tested at 3.46 Volts in free air.

Polarity

Diaphragm shall move forward when a positive DC current is applied to the “+” or ‘Marked’ Terminal.

Operating Temperature

-40°C ~ +70°C

Storage Temperature

-40°C ~ +85°C

Dimension

30.0 x 20.0 x H7.5mm

Wire: 30mm (UL1571 / AWG30#)

Connector: Equivalent to JST SHR-02V-S-B, 2P = 1.25mm

IP Level

IP67



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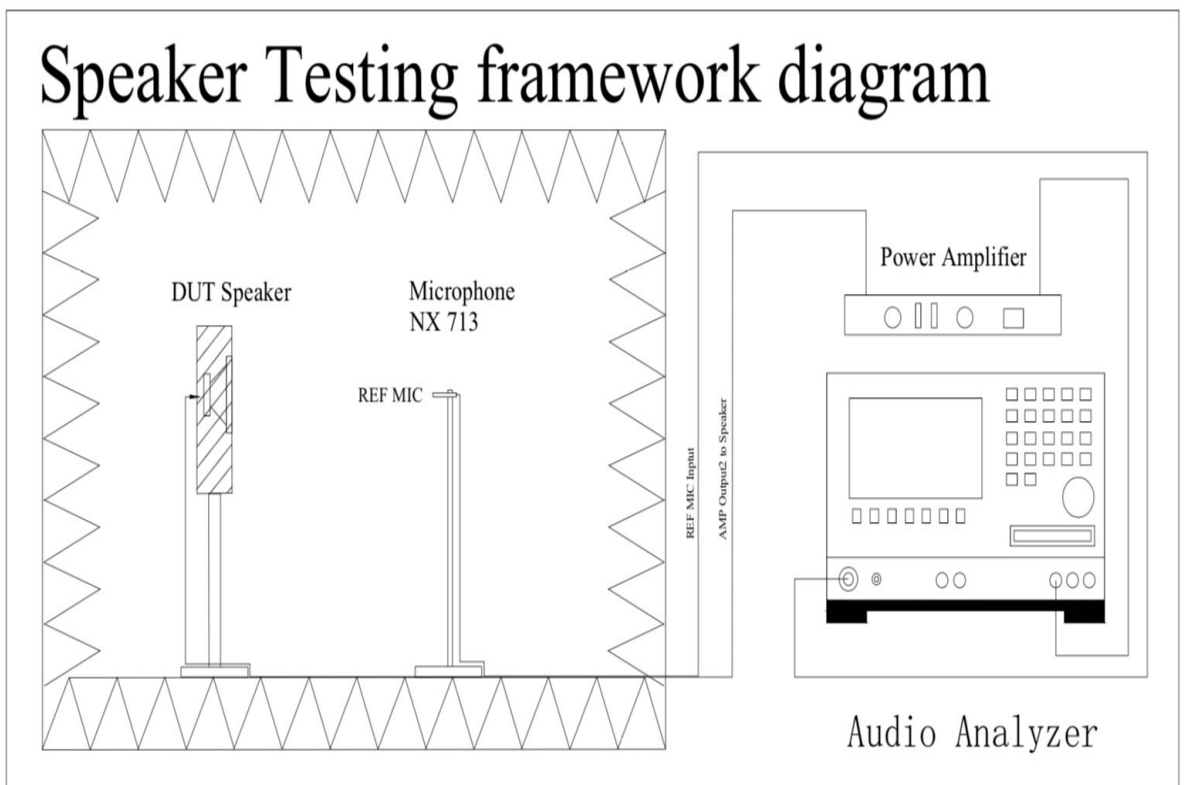
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Standard Test Condition of Speaker



Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 15 ~ 35°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860 ~ 1060 mbar

Standard Test Fixture

Input power: 1.5W / 3.46V

Zero level: -dB

Mode: TSR

Potentiometer Range: 50dB

Sweep time: 0.5sec



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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	$+85\pm 2^\circ\text{C}$
Duration	96 hours

Low Temperature Test

Low Temperature	$-40\pm 2^\circ\text{C}$
Duration	96 hours

Heat Shock Test

High Temperature	$+85\pm 2^\circ\text{C}$
Low Temperature	$-40\pm 2^\circ\text{C}$
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	-40°C	$+85^\circ\text{C}$
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

White Noise (EIA filter) for 96 hours @1.5W input power



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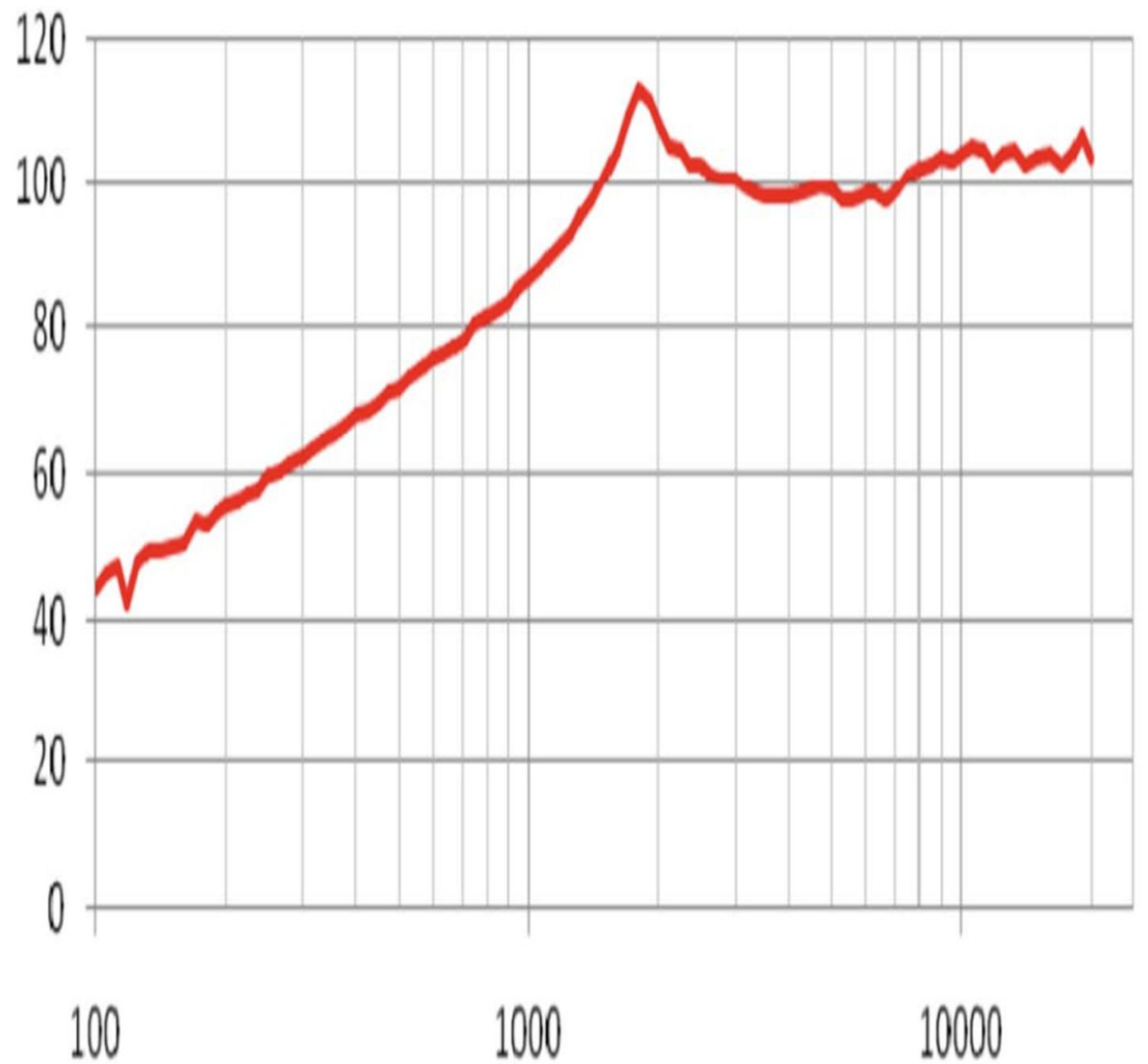
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Frequency Response Curve

Test condition: 1.5W/0.1M





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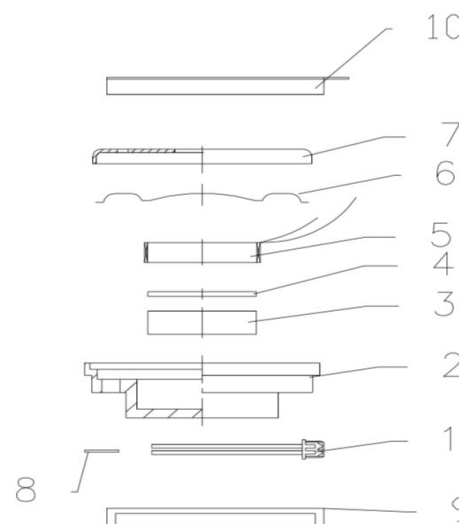
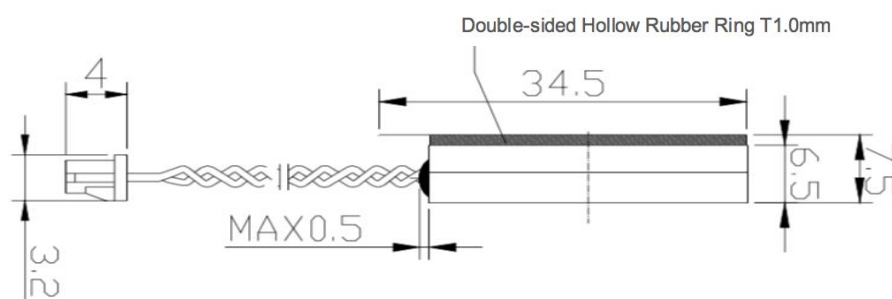
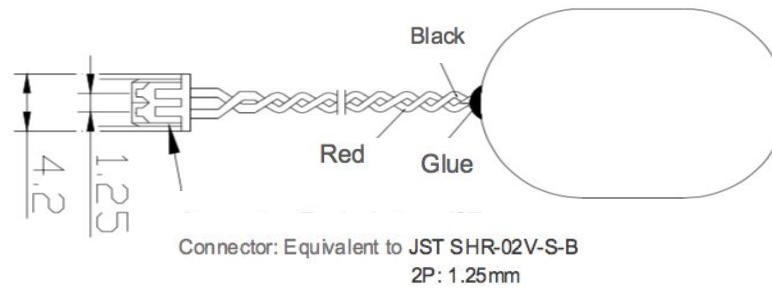
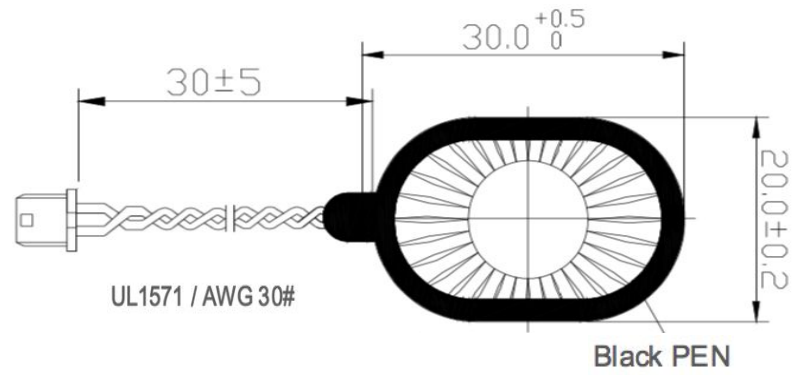
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Dimensions

Tolerance: ± 0.5 (unit: mm)



No.	Part Name	Material	Qty
1	Wire (30mm) Connector	UL1571 / AWG30# Equivalent to JST SHR-02V-S-B, 2P=1.25mm	2
2	Plate	PBT + SPCC	1
3	Magnet	Nd Fe B	1
4	Plate	SPCC	1
5	Voice Coil	Cu	1
6	Diaphragm	PEN	1
7	Cap	SPCC	1
8	PCB	FR-4	1
9	Lower Lid	ABS	1
10	Foam	PE + Double-sided Tape	1



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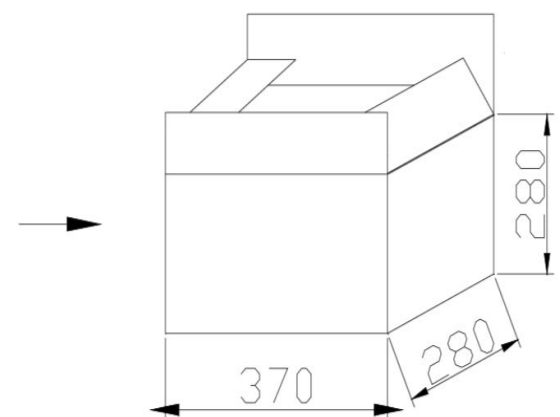
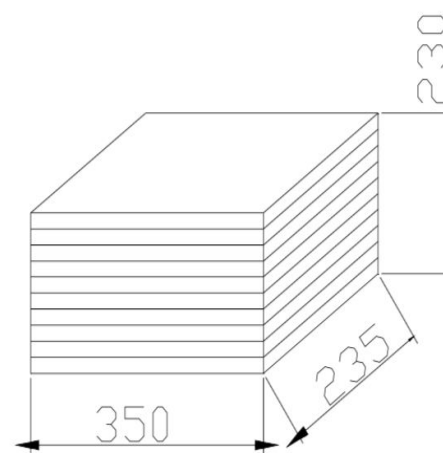
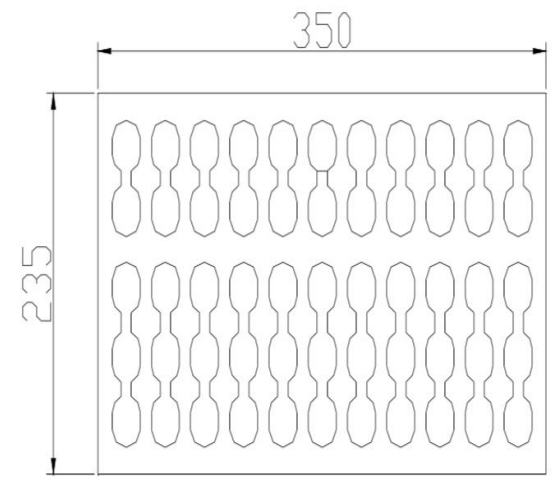
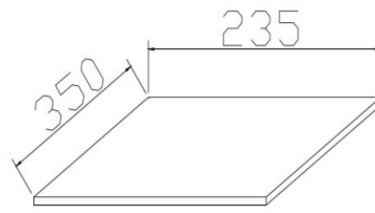
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TRAY 50PCS

50PCS x 16 = 800PCS



Packing Information

Per Tray: 50 pcs

Per Carton: 16 trays

Per Carton: 800 pcs

Carton Size: 370 x 280 x 280mm