

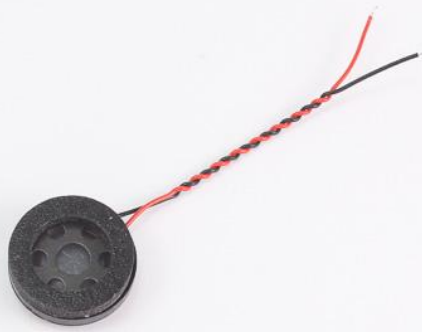


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SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1504L-1



Release | Revision: D/2021

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This document contains the technical specifications for the dynamic speaker unit.

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

92±3dB SPL @0.5W, 10cm
Average at 0.8, 1.1, 1.2 & 1.5KHz

Measuring Condition: 0.5W (Sine wave) 10cm measured with baffle, as shown in Figure 1

Frequency Response Curve

As shown in Figure 2

Frequency Range

F0 ~ 20.0KHz

Response Frequency

1000±20%Hz at 1.0V

Input Power (Nominal and Maximum)

Rated Noise Power: 0.5 Watt

Short Term Max Power: 0.8 Watt

Operation Test

Result must be normal when tested at 2.0 Volts in free air

Total Harmonic Distortion

10% Max @1.0KHz, 0.1 Watt

Polarity

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

General Specifications

Operating Temperature Range

-20°C ~ +65°C

Storage Temperature Range

-30°C ~ +70°C

Standard Test Conditions

Temperature 15°C ~ 35°C

Relative Humidity 45% ~ 85% (RH)

Voice Coil Impedance

DC: 8±15%Ω

Dimension

Ø15.0 x H6.2mm
Wire 45mm (UL1571 / AWG32#)

IP Level

No Rating



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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 $+70\pm 2^\circ\text{C}$
Duration 96 hours

Low Temperature Test

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

Heat Shock Test

High Temperature $+70\pm 2^\circ\text{C}$
Low Temperature $-30\pm 2^\circ\text{C}$
Changeover Time < 30 seconds
Duration 1 hour
Number of Cycles 10

Humidity Test

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

Temperature Cycle Test

Temperature -30°C $+70^\circ\text{C}$
Duration 45 minutes 45 minutes
Temperature gradient $1 \sim 3^\circ\text{C}/\text{min}$
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 0.75 m
Number of Cycles 6

Load Test

Speaker mode: White noise (EIA filter) for 96 hours @0.5W input power

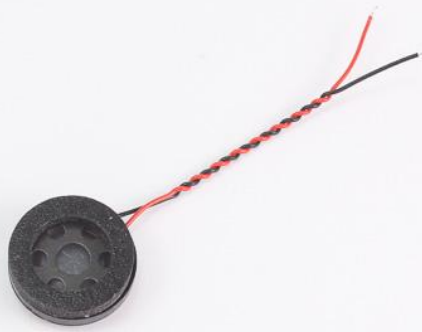


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Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 17 ~ 25°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar ~ 1060mbar

Standard Test Fixture

Input Power 0.5W / 2.0V

Zero Level -dB

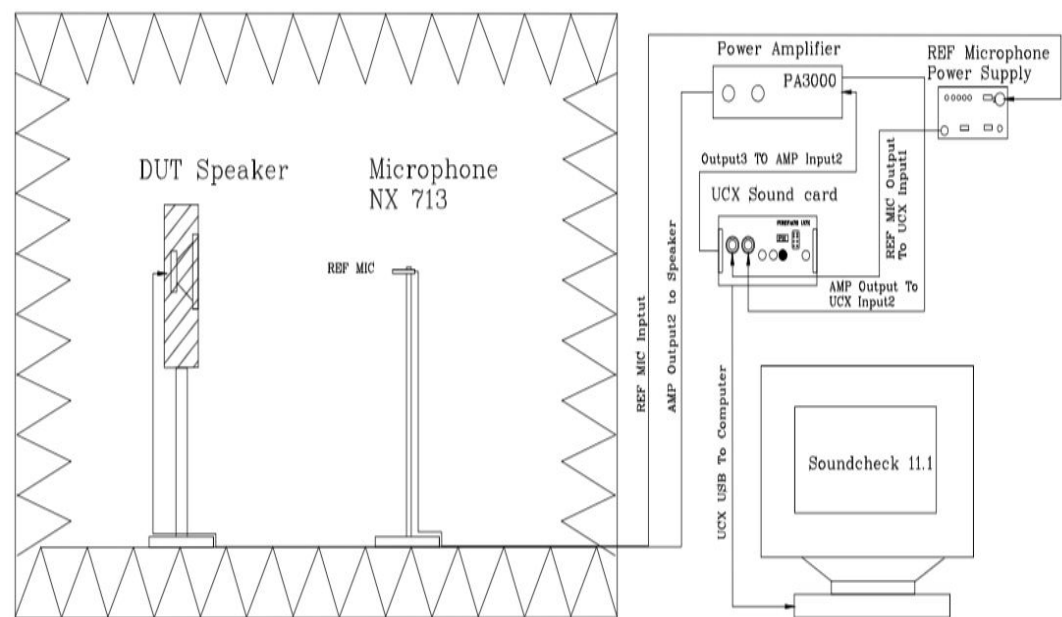
Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)

Speaker Testing framework diagram





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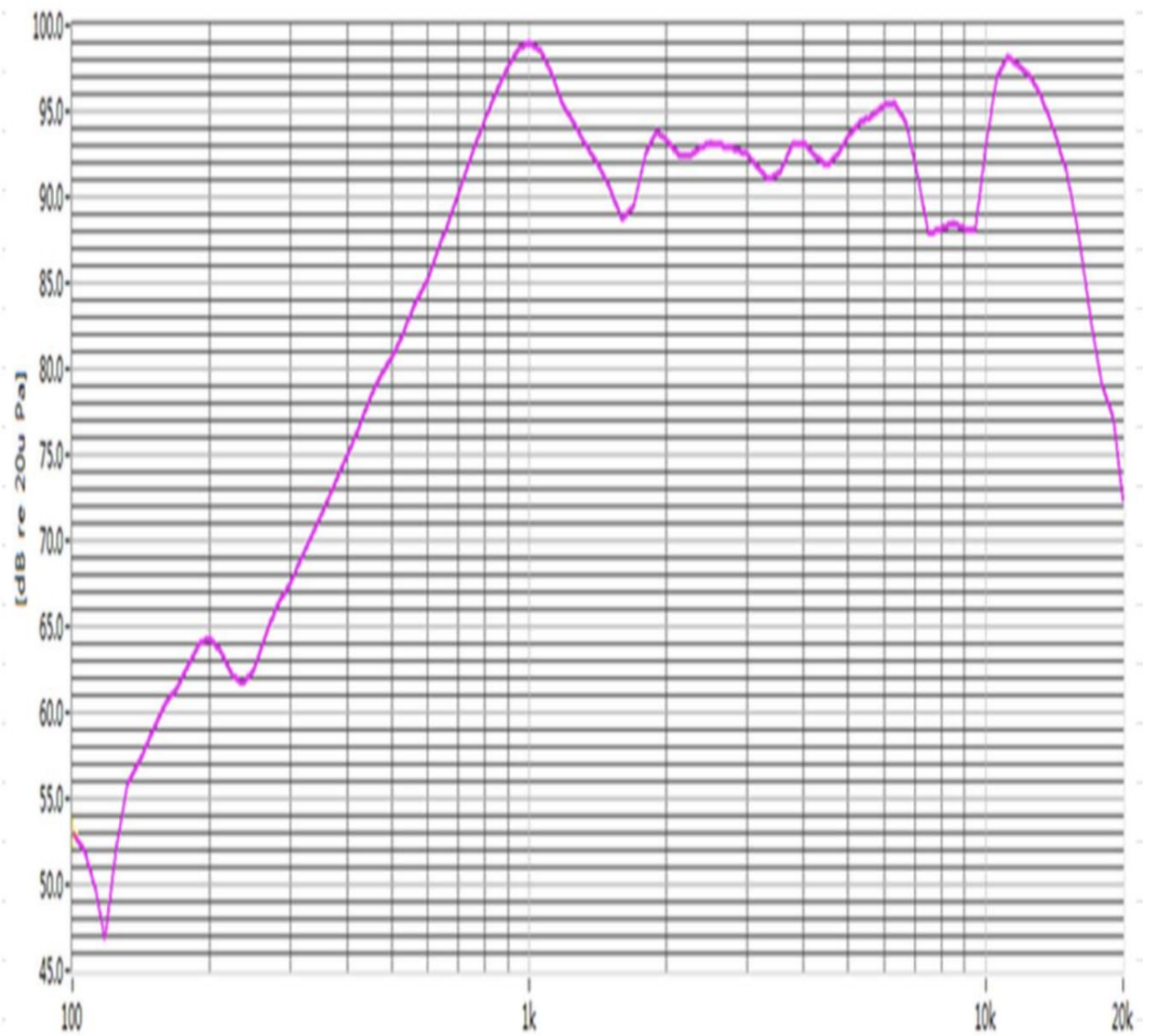
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Frequency Response Curve (Fig. 2)

Test Condition: 0.5W /0.1M





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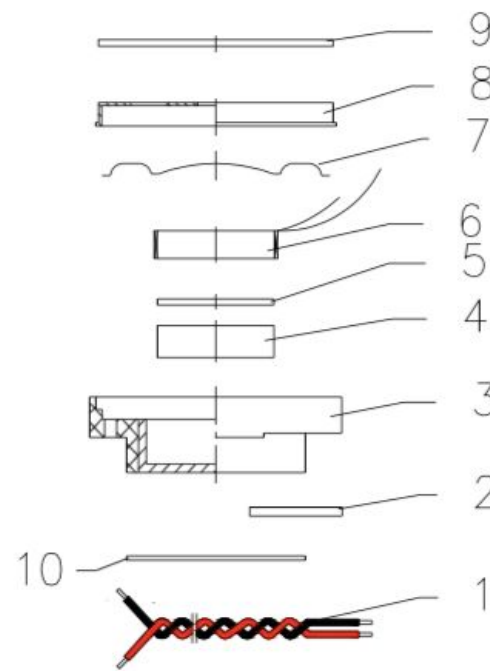
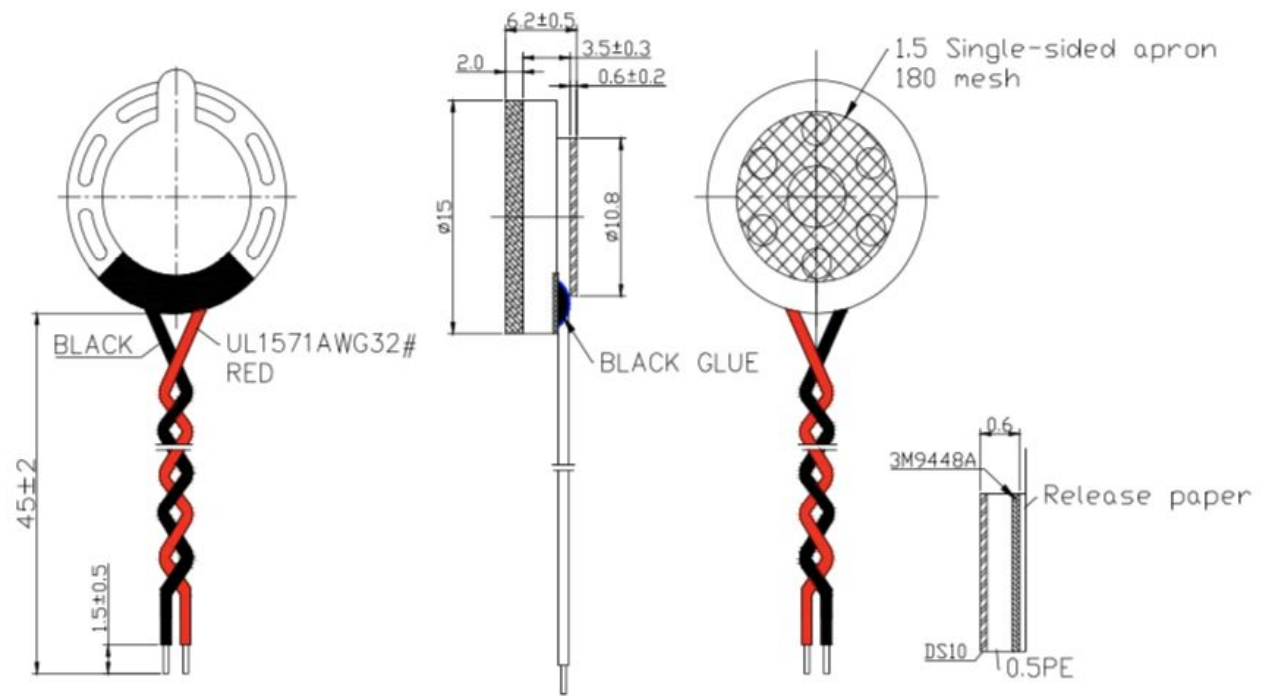
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Dimensions

Tolerance: ± 0.5 (unit: mm)



No.	Part Name	Material	Quantity
1	WIRE (45mm)	UL1571 / AWG32#	2
2	PCB	0.4 Tin Plate	1
3	Frame	PBT	1
4	Magnet	Nd Fe B	1
5	Plate	SPCC	1
6	Voice Coil	Cu	1
7	Membrane	PEN	1
8	Cap	SUS 201	1
9	Screen Gasket	PE + Double-sided tape + 180 Mesh	1
10	Gasket	PE + Double-sided tape	1



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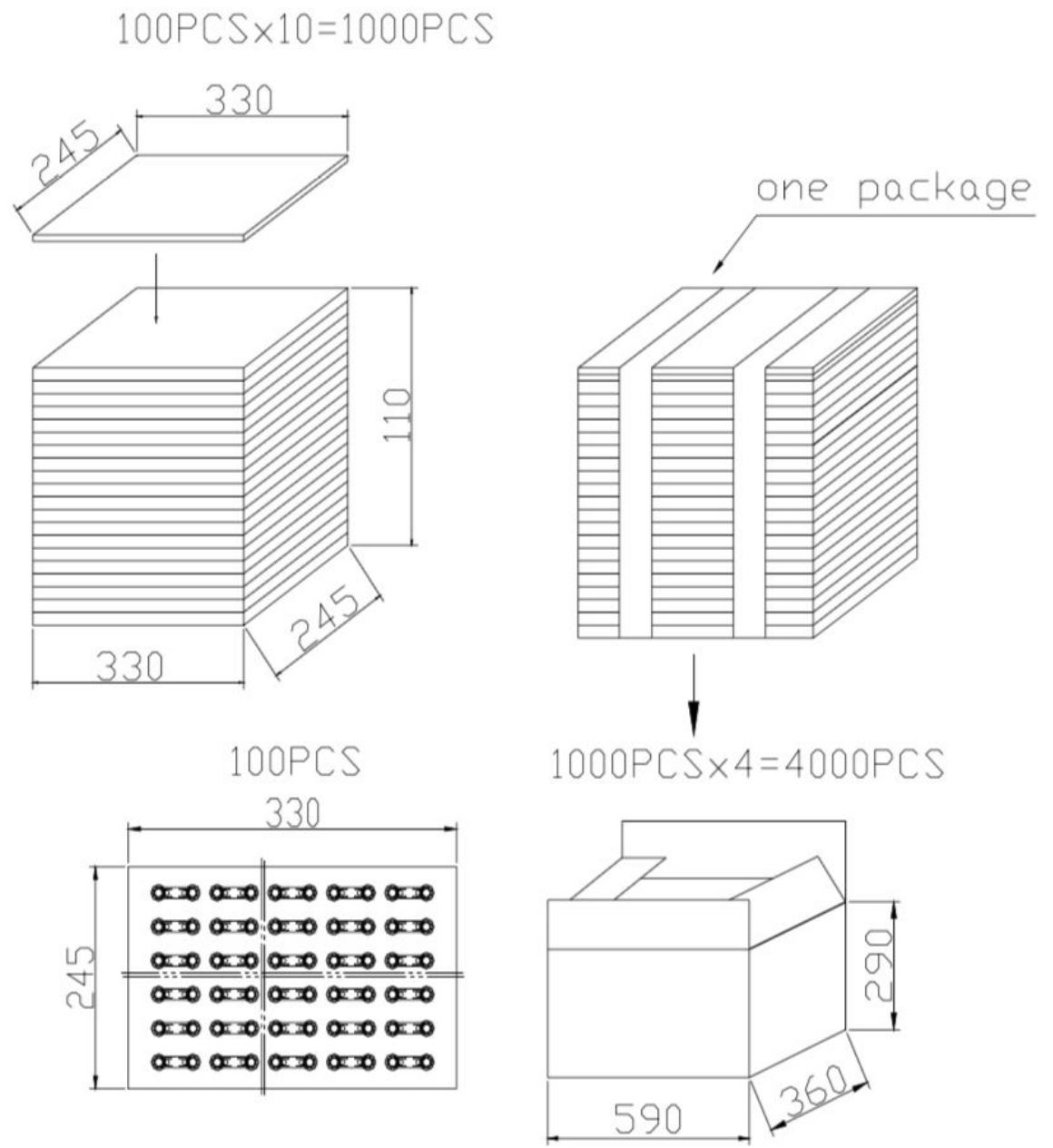
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Remarks

- Per Tray: 100 pcs
- Per Package : 1,000 pcs
- Per Carton: 4 package
- Per Carton: 4,000 pcs
- Carton Size: 590 x 360 x 290mm