



soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-4018



Release | Revision: D/2022

CONTENTS

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

Page 1
Speaker Electroacoustic Characteristics

General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

84±3dB SPL @2.0 Watt at 50cm
Average at 0.8, 1.0, 1.2 & 1.5KHz

Measuring Condition: 2.0W (Sine wave) 50cm measured with baffler, as shown in Figure 1

Frequency Response Curve

As shown in Figure 2

Frequency Range

F0 ~ 20.0KHz

Response Frequency

350±20%Hz at 1.0V

Input Power (Nominal and Maximum)

Rated Noise Power: 2.0 Watt

Short Term Max Power: 2.5 Watt

Operation Test

Result must be normal when tested at 4.0 Volts in free air

Total Harmonic Distortion

5% Max @1.0KHz, 2.0 Watt

Polarity

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

General Specifications

Operating Temperature Range

-25°C ~ +60°C

Storage Temperature Range

-25°C ~ +60°C

Standard Test Conditions

Temperature 15°C ~ 35°C

Relative Humidity 45% ~ 85% (RH)

Voice Coil Impedance

DC: 8±15%Ω

Dimension

Ø40.0 x H18.0 mm

IP Level

No Rating



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General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

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 $+60\pm 2^\circ\text{C}$
Duration 96 hours

Low Temperature Test

Low Temperature $-25\pm 2^\circ\text{C}$
Duration 96 hours

Heat Shock Test

High Temperature $+60\pm 2^\circ\text{C}$
Low Temperature $-25\pm 2^\circ\text{C}$
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 -25°C $+60^\circ\text{C}$
Duration 45 minutes 45 minutes
Number of Cycles 5

Drop Test

The speaker is mounted onto the dummy assembly, placed in a standard cardboard box and then dropped onto a concrete surface.

Height 0.75 m
Number of Cycles 6

Load Test

Speaker mode: White noise (EIA filter) for 96 hours @2.0W input power



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Page 1
Speaker Electroacoustic Characteristics

General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 15 ~ 35°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar ~ 1060mbar

Standard Test Fixture

Input Power 2.0W / 4.0V

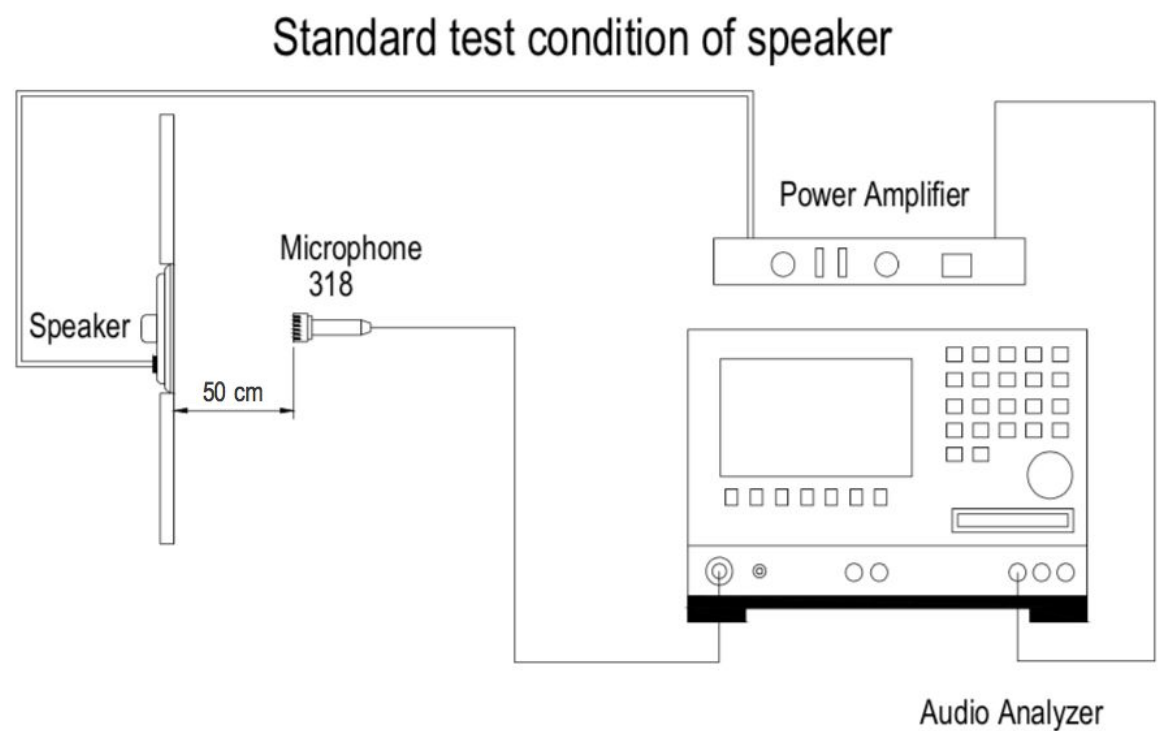
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)





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Page 1
Speaker Electroacoustic Characteristics

General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method
(Speaker Mode)

Standard Test Condition of Speakers

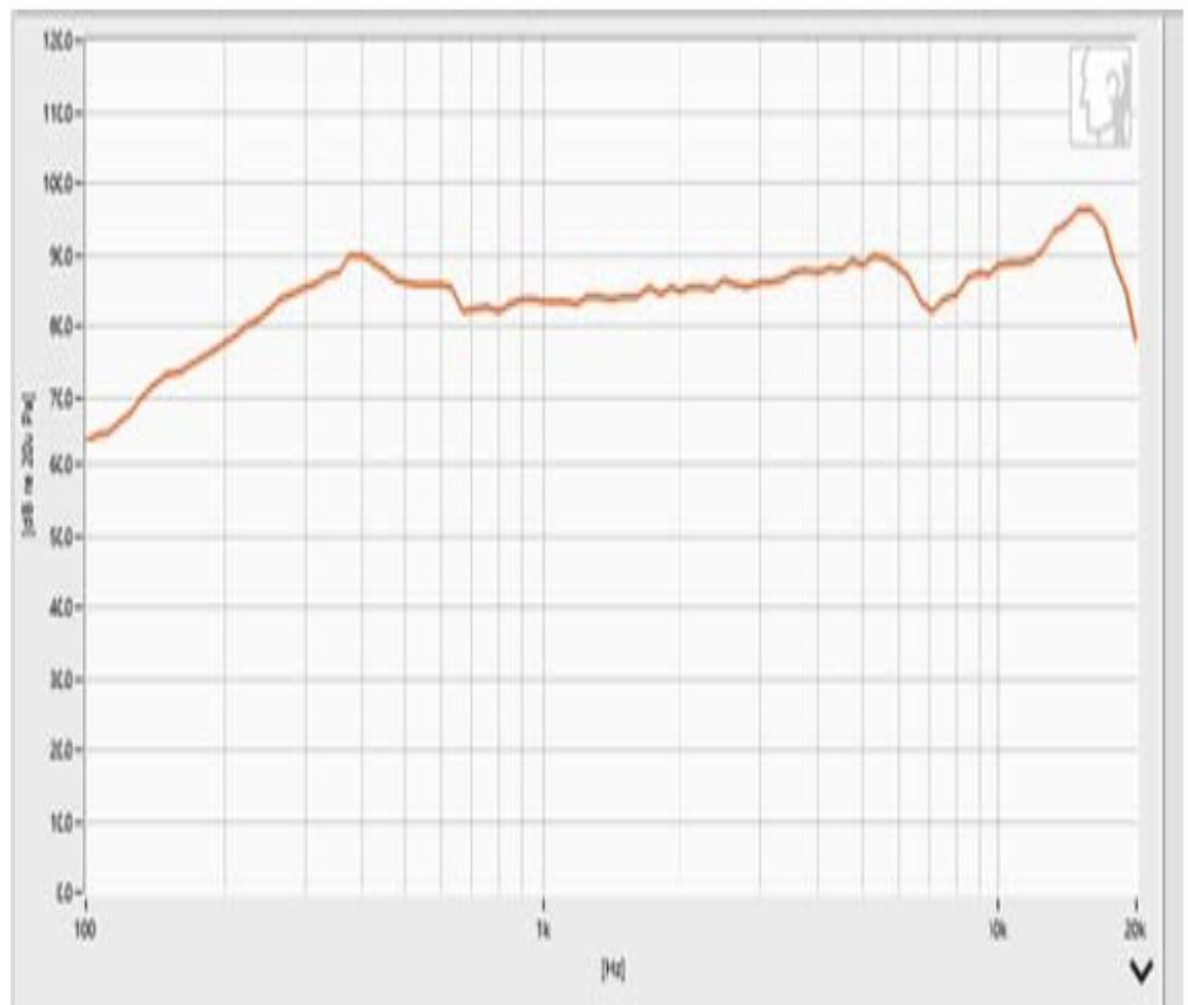
Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

Frequency Response Curve (Fig. 2)

Test Condition: 2.0W /0.5M





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CONTENTS

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

Page 1
Speaker Electroacoustic Characteristics

General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

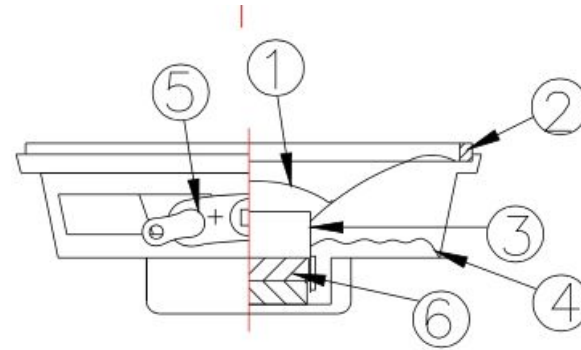
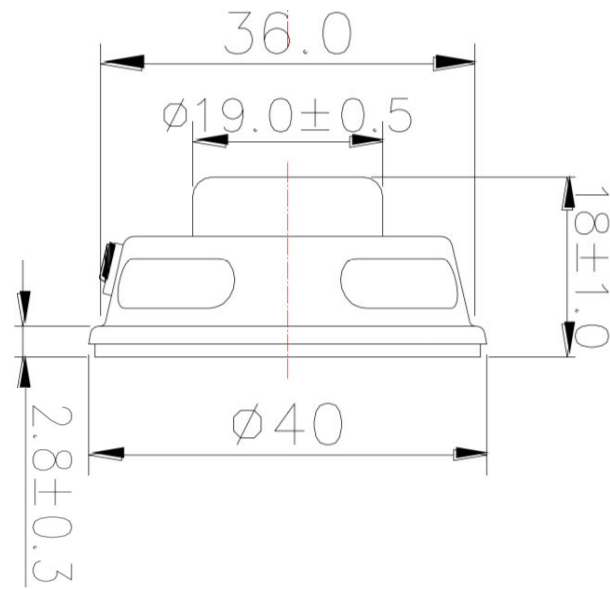
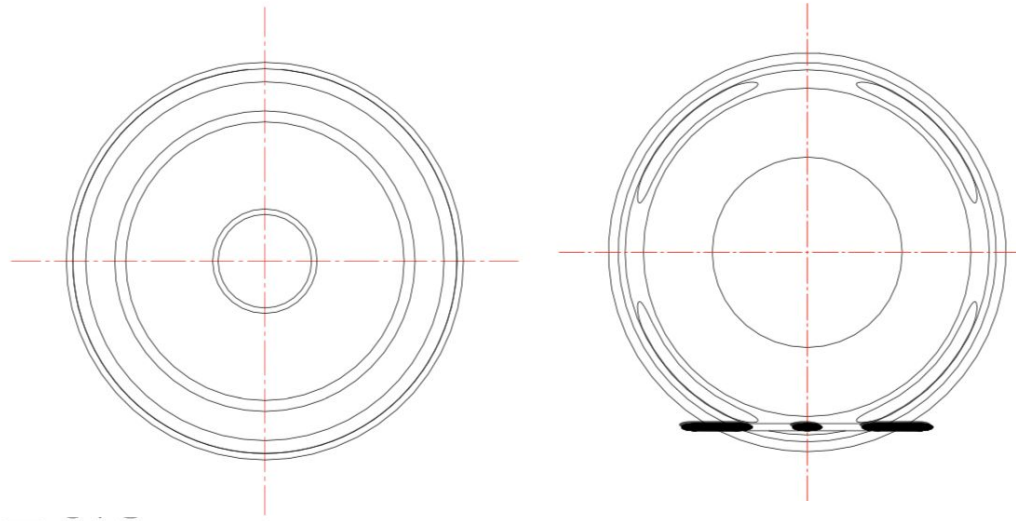
Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

Dimensions

Tolerance: ± 0.5 (unit: mm)



No.	Part Name	Material	Quantity
1	Diaphragm	PU+Paper	1
2	Voice Coil	Paper Cu	1
3	Plate	SPCC	1
4	Magnet	NdFeB	1
5	PCB Terminal	FR4	1
6	Frame	SPCC	1



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Page 2
Reliability Tests

Page 3
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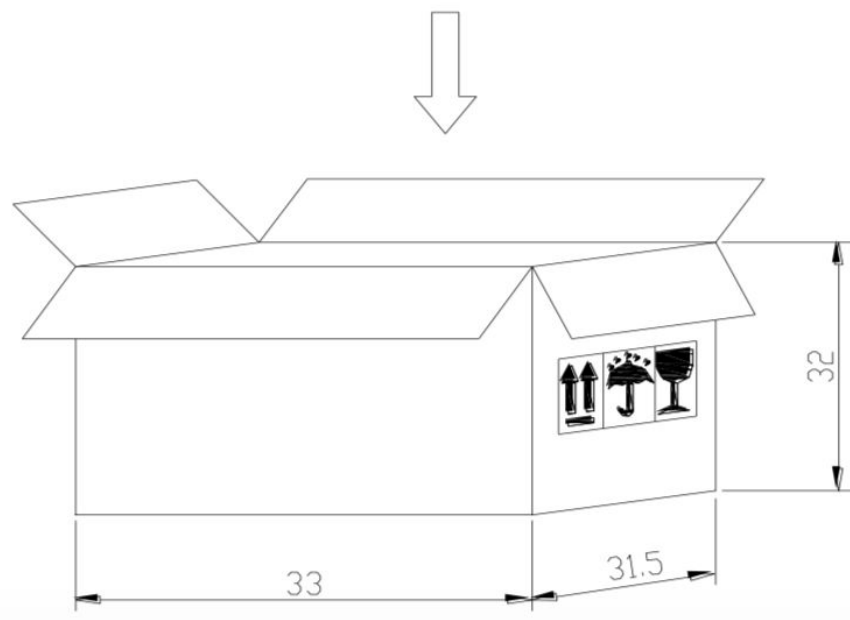
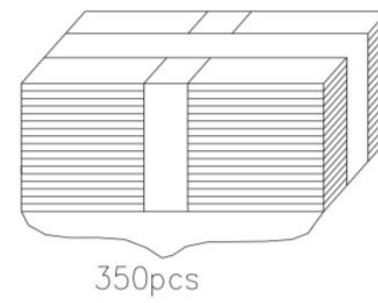
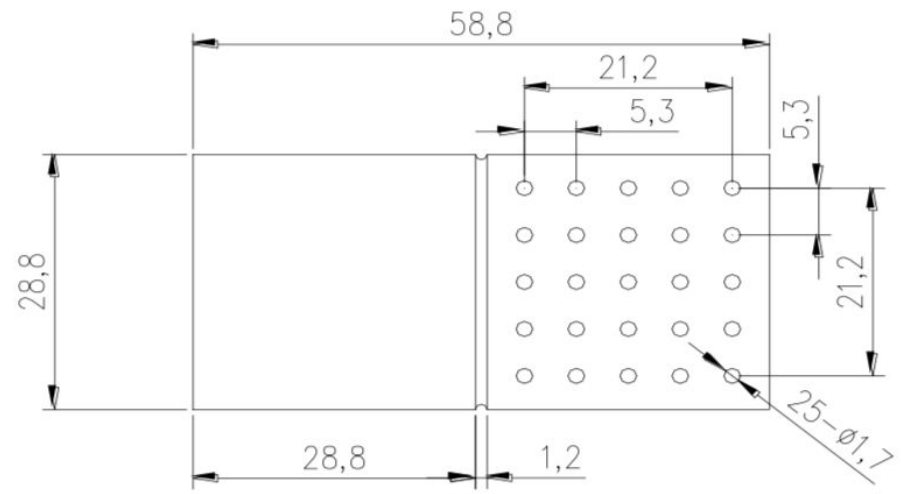
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Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

Packing



Remarks

- Per Tray: 25 pcs
- Per Carton : 14 Trays
- Per Carton: 350pcs
- Carton Size: 330 x 315 x 320mm