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# PRELIMINARY SPECIFICATION

## Receiver

Part Number	OWR-4009T-38E
Note	This item was compliance with the following requirements: 1. RoHS directive 2. REACH
Customer P/N	

Ole Wolff	Signature / Date	Prepared	Checked	Approved
		Ena Wang 2022.03.22	Nathan Chen 2022.03.22	Ryan Li 2022.03.22

Customer	Signature / Date	Confirmation		

### REVISION NOTES:

Date	Rev.	Description of Revision
2021.08.02	00	Initial version
2022.03.22	01	Changed the FR and added parking

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## 1. SCOPE

THIS SPECIFICATION IS APPLIED FOR A DYNAMIC RECEIVER FOR HEADPHONE.

## 2. TEST CONDITIONS

TEMPERATURE : 24°C ~ 27°C

HUMIDITY : 65% +/-5% (R.H.)

ATMOSPHERE : 860 ~ 1060 hPa

## 3. GENERAL REQUIREMENTS

OPERATING TEMPERATURE RANGE: -25° C ~ 60° C

STORAGE TEMPERATUR RANGE: -25° C ~ 60° C

## 4. MECANICAL LAYOUT & DIMENSIONS

DIMENSIONS : SHOWN IN FIGURE.5

NET WEIGHT: 14.0g+/-10%

## 5. ELECTRICAL AND ACOUSTICAL CHARACTERISTICS

1	Impedance on IEC 318	38Ω ± 10% at 100Hz with 0.195V/1mW
2	Sound Pressure Level in free field	83dB at 1000Hz with input 0.62V/10mW/5cm (0dB=20μPa) Measure setup as shown in Fig.6 (for reference)
3	Resonance frequency in free field	80Hz with input 0.62V/10mW (for reference, temperature 24 -27 °C)
4	Frequency response in free field	Typical performance as shown in Fig.6. (Test input 0.62V/10mW) (for reference)
5	Total Harmonic Distortion in free field	THD as shown in Fig.6 (Test input 0.62V/10mW) (for reference)
2	Sound Pressure Level on IEC318 coupler	115.0±3dB at 1000Hz with input 0.195V/1mW (0dB=20μPa) Measure setup as shown in Fig.4 Binning: Bin A: 118.0dB ~ 116.0dB, dot mark =Red; Bin B: 115.99dB ~ 114.0dB, dot mark =Blue; Bin C: 113.99dB ~ 112.0dB, dot mark = Black;
3	Resonance frequency on IEC318 coupler	3k±15%Hz with input 0.195V/1mW
4	Frequency response on IEC318 coupler	Typical performance as shown in Fig.7. (Test input 0.195V/1mW)
5	Total Harmonic Distortion on IEC318 coupler	THD as shown in Fig.7 (Test input 0.195V/1mW)
6	Input Power	(Nom./Max.): 10mW /20mW
7	Rub & Buzz	Speaker must be free of audible noise at 0.62V sine wave between 50Hz-10kHz

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## 6. RELIABILITY TEST REQUIREMENTS

Sensitivity difference at 1000Hz shall be within  $\pm 3$ dB from initial value after each test. The measurement shall be done after minimum 2 hours with conditioning of  $24^{\circ}\text{C} \sim 27^{\circ}\text{C}$ .

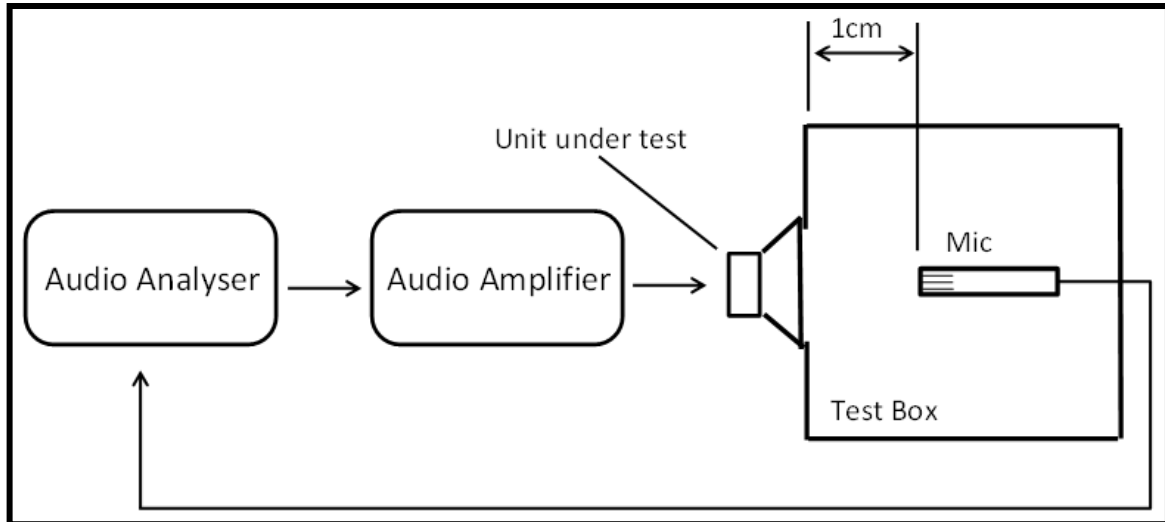
No.	ITEMS	TEST CONDITION	
1	HIGH TEMPERATURE TEST STORAGE	Temperature	$60 \pm 3^{\circ}\text{C}$
		Duration	96hrs
2	LOW TEMPERATURE TEST STORAGE	Temperature	$-25 \pm 3^{\circ}\text{C}$
		Duration	96hrs
3	HIGH TEMPERATURE HUMIDITY TEST	Temperature	$40 \pm 3^{\circ}\text{C}$
		Humidity	90%--95%(RH)
		Duration	96hrs
4	DROP TEST	Height	With protector grill 0.75m to concrete
		Total times	10 times
5	TEMPERATURE CYCLE TEST	Temperature	$-25 \pm 3^{\circ}\text{C} \leftrightarrow 60 \pm 3^{\circ}\text{C}$
		Duration	2hours, 5mins, 2hours
		Cycles	5 cycles
6	SHORT TERM MAX INPUT TEST	Test signal and Temperature	Pink noise / $25^{\circ}\text{C}$
		Test input power	0.02W/0.872Vrms
		Cycles	1sec On, 1min Off, 60cycles
7	LONG TERM MAX INPUT TEST	Test signal and Temperature	Pink noise / $25^{\circ}\text{C}$
		Test input power	0.02W/0.872Vrms
		Cycles	1min On/ 2min Off, 10 cycles
8	RATED POWER TEST	Test signal and Temperature	Pink Noise / $25^{\circ}\text{C}$
		Test input power	0.01W/0.62Vrms
		Duration	96hrs

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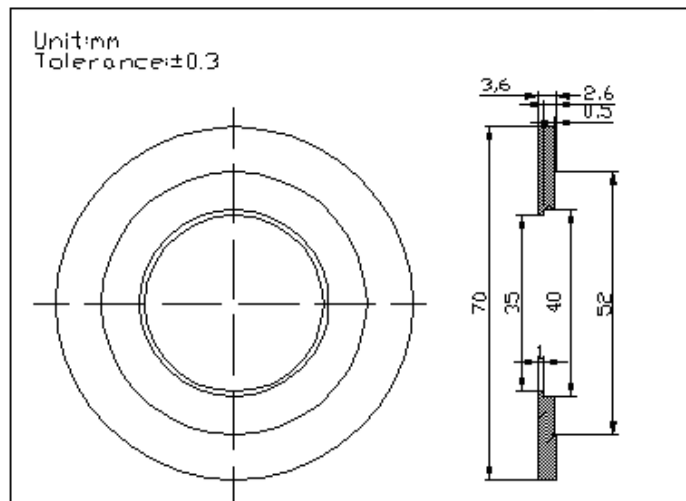
## 7. TEST SET UP AND TEST JIG FOR FREE FIELD

### 7.1 FREE FIELD MEASUREMENT CIRCUIT FOR DYNAMIC SPEAKER(Fig.1)



NO	EQUIPMENT	REMARKS
1	UNIT UNDER TEST	RECEIVER
2	TEST BOX	OLE WOLFF STANDARD BOX
3	AUDIO POWER AMPLIFIER	LEM DPA300
4	ANALYZER	LISTEN SOUNDCHECK

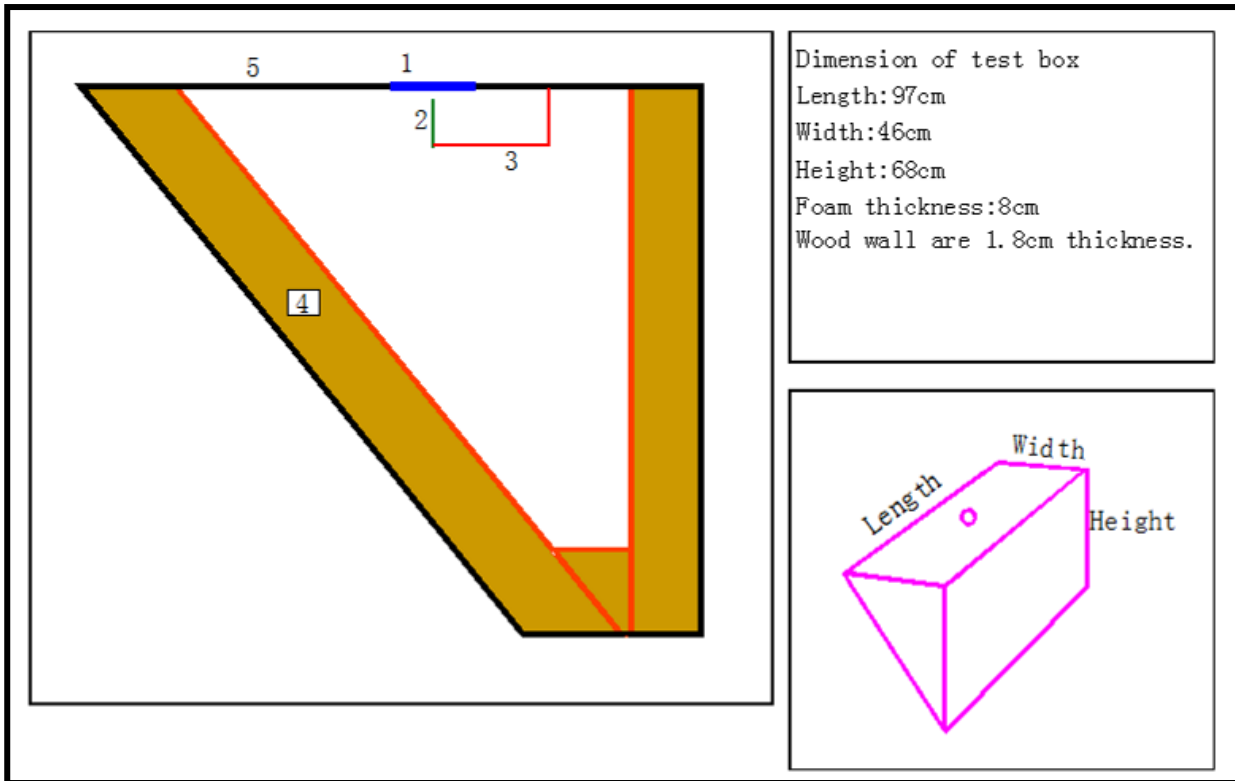
### 7.2 FREE FIELD TEST JIG(Fig.2)



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7.3 FREE FIELD TEST BOX: OWBOX (Fig.3)



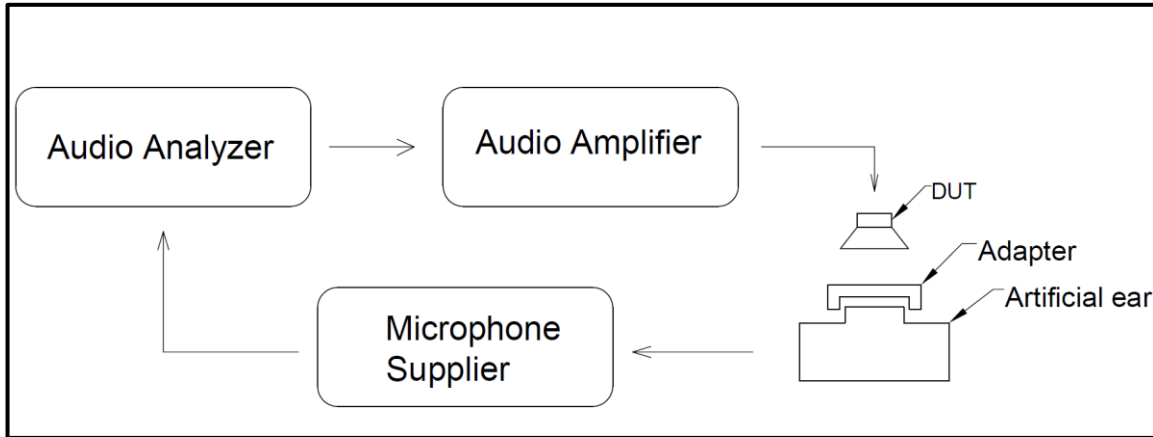
NO.	EQUIPMENT	REMARKS
1	TEST JIG	Fig.2
2	MICROPHONE	1/2 INCH MICROPHONE (46AF)
3	MICROPHONE HOLDER	
4	DAMPING MATERIAL	FOAM RUBBER
5	BOX	WOOD
6	TEST DISTANCE MEASURED FROM FRONT OF SPEAKER FRAME TO FRONT OF TEST MICROPHONE	5cm

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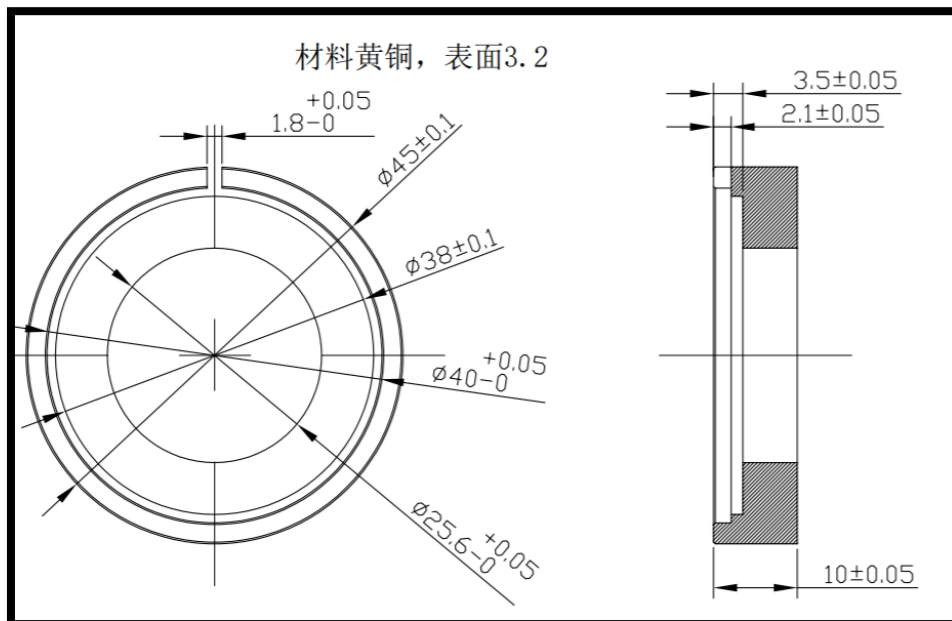
## 8. TEST SETUP AND TEST JIG FOR IEC318 COUPLER

### 8.1 IEC 318 MEASUREMENT CIRCUIT FOR DYNAMIC SPEAKER (Fig.4)



NO	EQUIPMENT	REMARKS
1	DUT	Receiver
2	Adapter	As shown on Fig.4
3	Audio Analyzer	LISTEN SOUNDCHECK
4	Audio Amplifier	LEM DPA300
5	Artificial ear	GRAS 43AA
6	Microphone supplier	GRAS 12AX

### 8.2 IEC 318 TEST JIG (Fig.5)



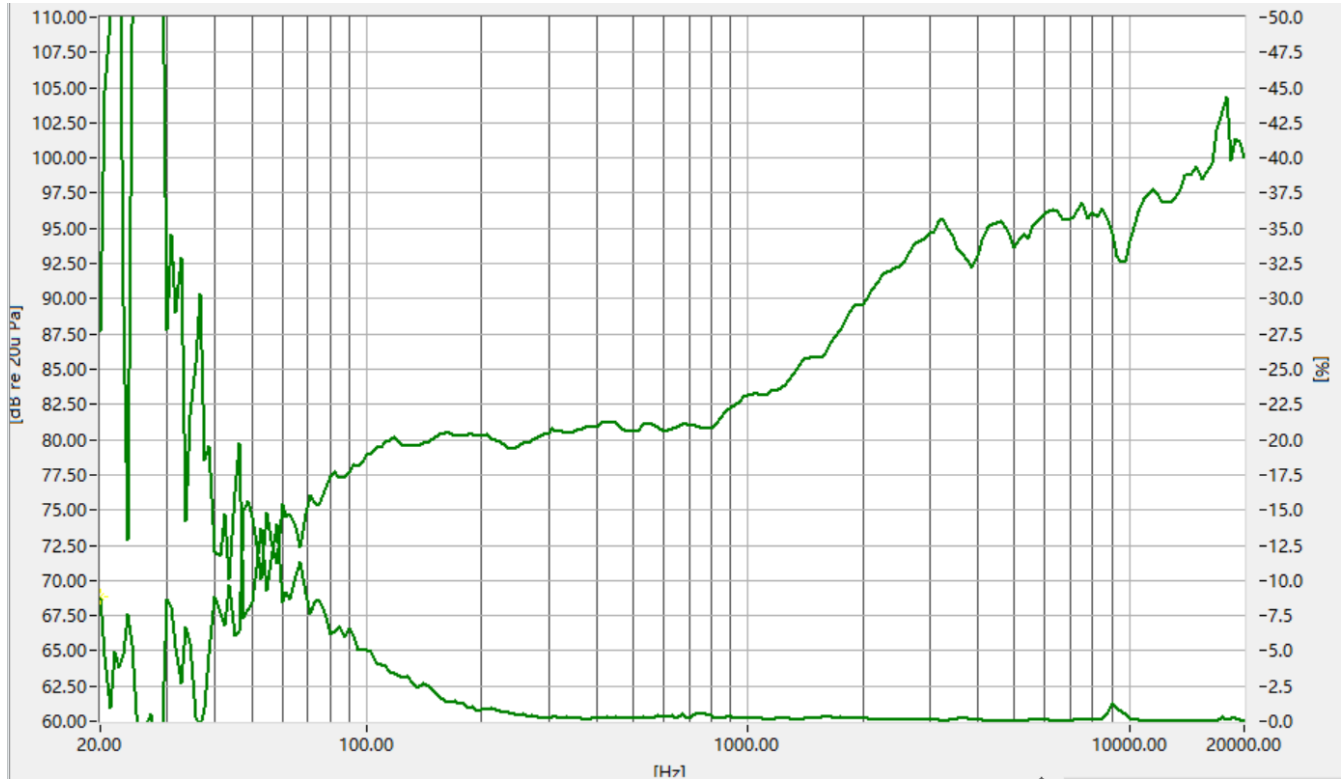
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## 9. STANDARD FREQUENCY RESPONSE CURVE & STANDARD THD

### 9.1 Free field TEST (Fig.6)

Test input 0.62V, 50mm in free filed

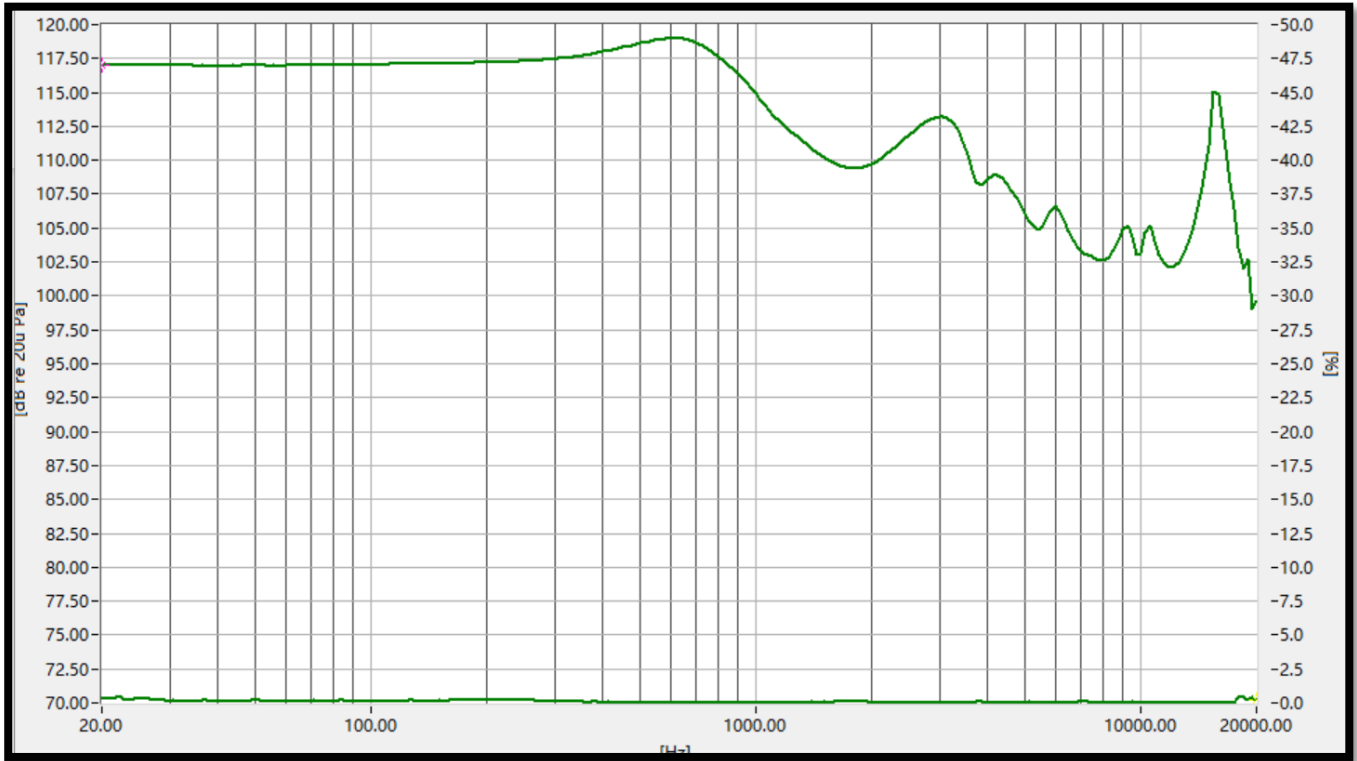


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## 9.2 IEC 318 TEST (Fig.7)

Test input 0.195V on IEC318 coupler, 1/6 oct.



**FR mask**  
**THD mask**

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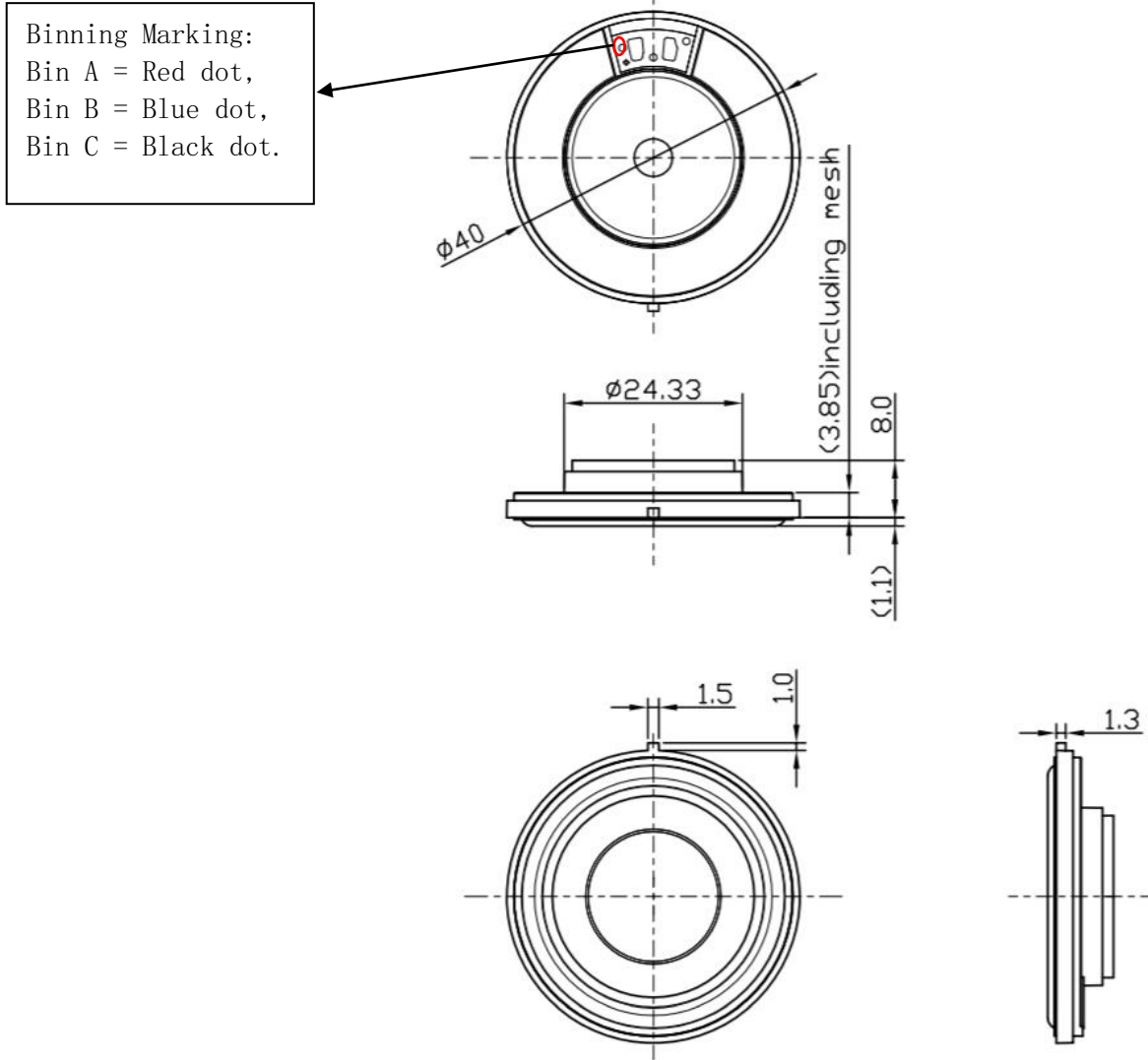


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## 10. DIMENSION (Fig.8)

Unit: mm

Tolerance: +/-0.2

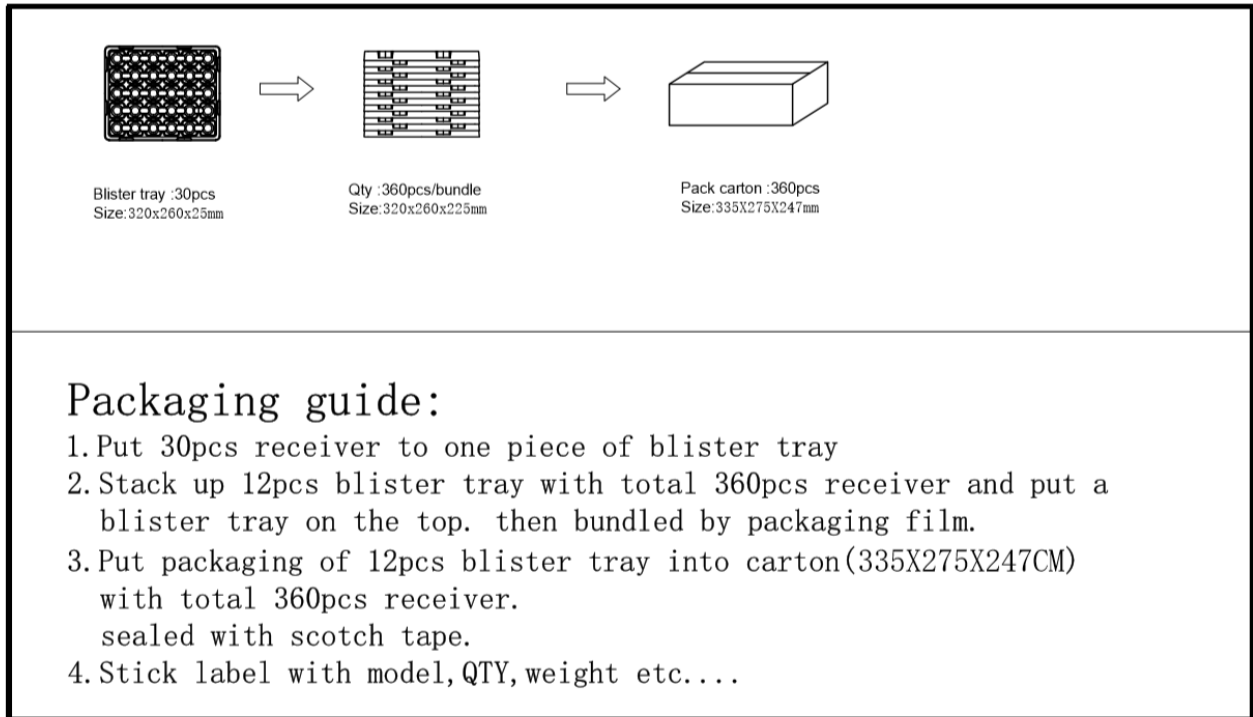


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### 11. Marking (T.B.D)

### 12. Packing (Fig.9)



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