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## SPECIFICATION FOR APPROVAL Speaker

<b>Part Number</b>	<b>OWR-3052T-32A</b>
<b>Note</b>	<b>This item is in compliance with the following requirements:</b> <b>1. RoHS directive</b> <b>2. Reach</b>
<b>Customer P/N</b>	

<b>Ole Wolff</b>	<b>Signature / Date</b>	<b>Prepared</b>	<b>Checked</b>	<b>Approved</b>
		 <b>2017.10.12</b>		

<b>Customer</b>	<b>Signature / Date</b>	<b>Confirmation</b>		

### REVISION NOTES:

Date	Rev.	Description of Revision
2017.10.12	00	Initial Release

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## 1. SCOPE

THIS SPECIFICATION IS APPLIED FOR RECEIVER UNIT FOR A HEADSET.

## 2. TEST CONDITIONS

TEMPERATURE : 18°C ~ 22°C

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

ATMOSPHERE : 860 ~ 1060 hPa

## 3. GENERAL REQUIREMENTS

OPERATING TEMPERATURE RANGE : -20°C ~ 55° C

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

## 4. MECANICAL LAYOUT & DIMENSIONS

DIMENSIONS : SHOWN IN FIGURE.4

NET WEIGHT: 5.5+/-0.5g

## 5. ELECTRICAL AND ACOUSTICAL CHARACTERISTICS

1	IMPEDANCE	32ohm ±15% (at 1KHz)
2	SOUND PRESSURE LEVEL (SPL)	94dB ±3dB at 1KHz, Input 10mW /test distance=10mm Measurement setup as shown in FIG.1  SPL group: Group 1: 92dB +/-1dB 91 ~ 92.99dB dot marking = YELLOW Group 2: 94dB +/-1dB 93 ~ 94.99dB dot marking = BLUE Group 3: 96dB +/-1dB 95 ~ 97dB dot marking = RED
3	FREQUENCY RESPONSE	100Hz to 20 kHz. As shown in FIG.3
4	RESONANCE FREQUENCY	150 Hz ± 30Hz at 0.56V (10mW) (without baffle)
5	TOTAL HARMONIC DISTORTION (THD)	Upper limit for THD as shown in FIG.3 Input:0.56 V(10mW)
6	RUBB AND BUZZ	MUST BE NORMAL SINE WAVE FROM 50Hz TO 10kHz. Rated input power 10mW Hearing test. Speaker in vertical position. Free air.
7	INPUT POWER	(Nom. / Max.) 10mW/30mW
8.	SWEEP TEST	Input 0.56V from 50Hz-10KHz must be normal with sine wave.

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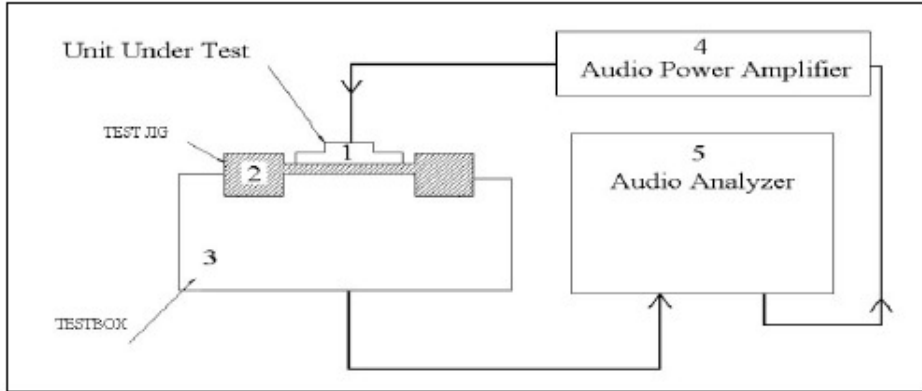
## 6.QUALIFICATION TESTS

In hearing test process without audible noise after below test. The measurement shall be done after minimum 1 hour and maximum 2 hours of conditioning at 18°C~22°C			
No.	ITEMS	TEST CONDITION	
1	HITH TEMPERATURE TEST	Temperature	55± 3° C
		Duration	96hrs
2	LOW TEMPERATURE TEST	Temperature	-20± 3° C
		Duration	96hrs
3	HIGH TEMPERATURE HUMIDITY TEST	Temperature	40±2° C
		Humidity	90%--95%(RH)
		Duration	96hrs
4	DROP TEST	Height	1.0m
		Total times	10 times each at hardwood floor
5	TEMPERATURE CYCLE TEST	Temperature	-20°C±3 ↔25°C ↔55±3°C
		Test time and cycle	2hour↔ 5min↔2hour 5 Cycles
6	RATED POWER TEST	Test signal and Temperature	white Noise / 25° C
		Test input power	0.01W /0.56Vrms
		Duration	96 hrs
7	VIBRATION TEST	Vibration	10~55 Hz/min
		Amplitude	1.5mm
		Duration	1 hour each plan

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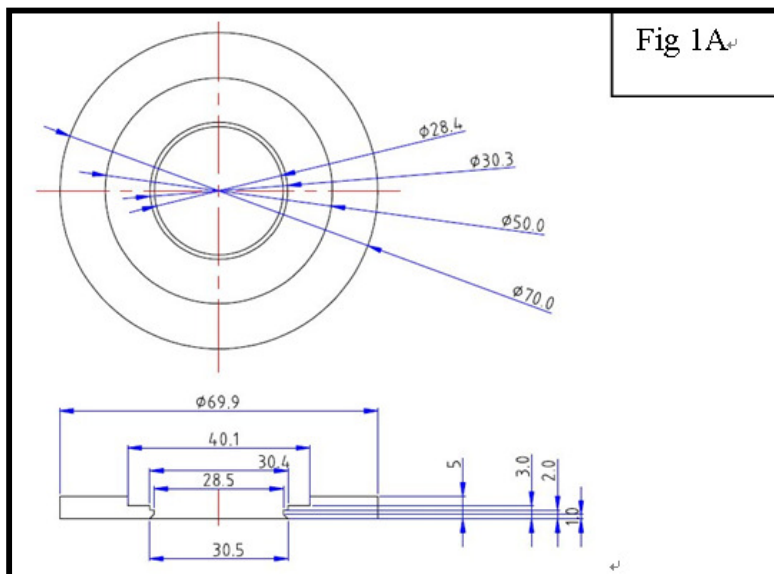
## 7. TEST SET UP (FIG1)




MEASUREMENT CIRCUIT FOR DYNAMIC SPEAKER

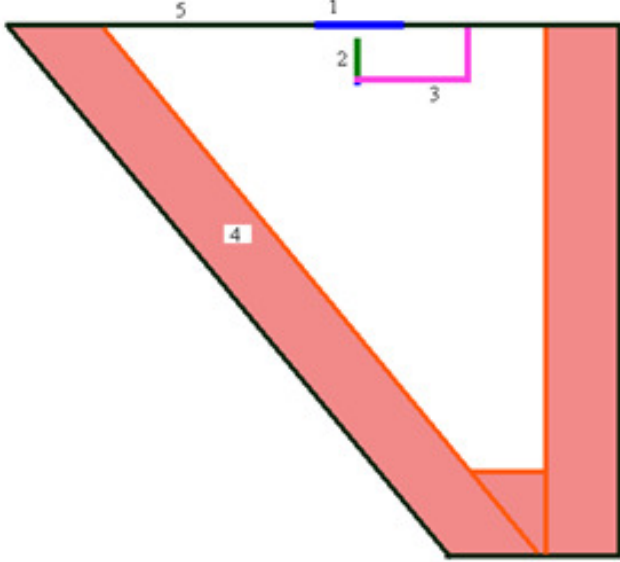
NO	EQUIPMENT	REMARKS
1.0	UNIT UNDER TEST	SPEAKER
2.0	TEST JIG	OW TEST JIG
3.0	TEST BOX	OLE WOLFF STANDARD BOX
4.0	AUDIO POWER AMPLIFIER	CRATE AUDIO SPA300
5.0	ANALYZER	LISTEN SOUNDCHECK

## 8. TEST BOX:OWBOX . (FIG.2)

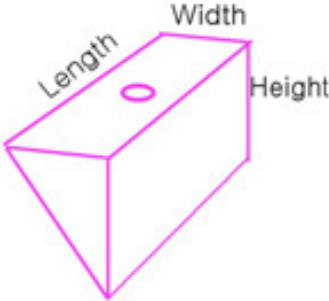


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Dimension of test box:  
Length: 97cm  
Width: 46cm  
Height: 68cm  
Foam thickness : 8cm  
Wood wall are 1.8cm thickness.



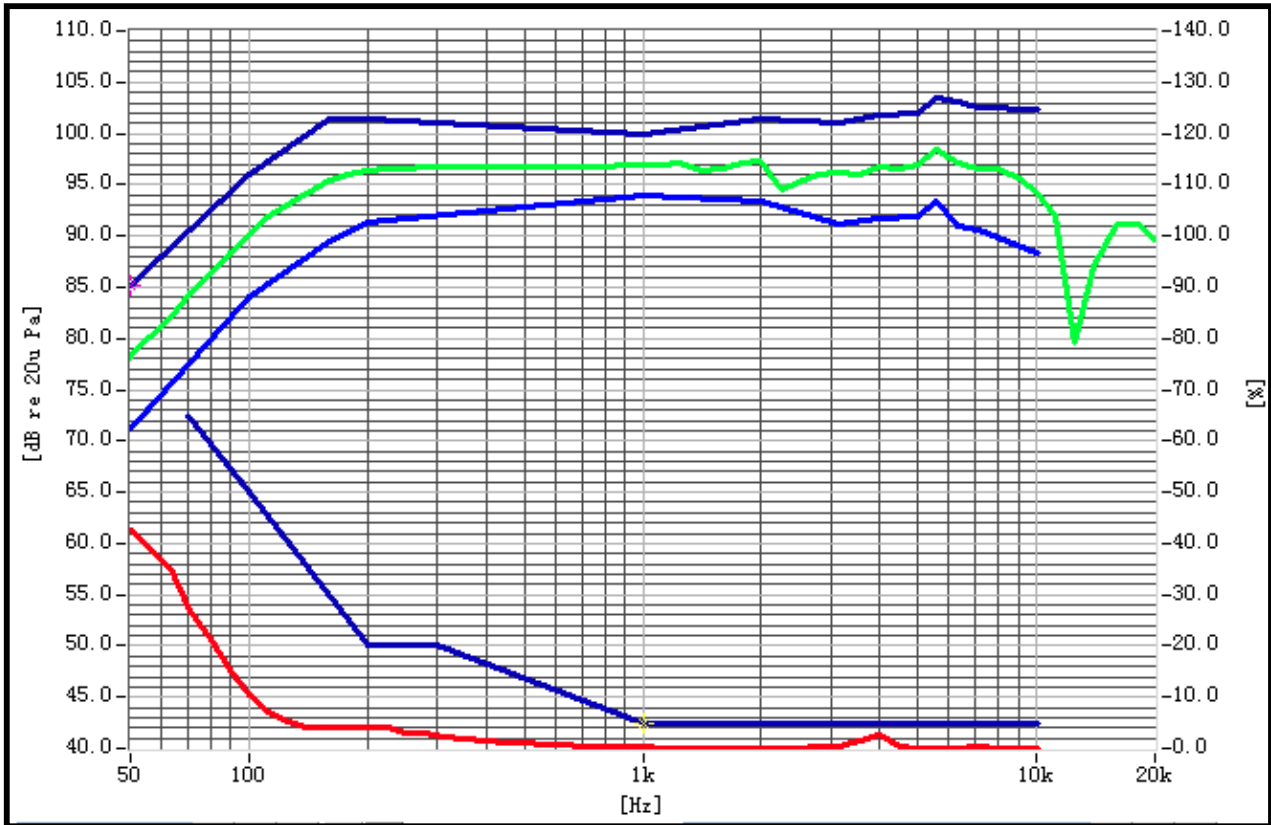
  

NO	EQUIPMENT	REMARKS
1.	TEST JIG	FIG. 1A
2.	MICROPHONE	½ INCH Microphone
3.	MICROPHONE HOLDER	
4.	DAMPING MATERIAL	FOAM RUBBER
5.	BOX	WOOD
6.	Test distance measured from front of speaker frame to front of test microphone	10mm

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### 9. STANDARD FREQUENCY RESPONSE CURVE & STANDARD THD CURVE (FIG.3)




#### F&R Mask:

F.Point	50	100	160	200	1000	2000	3.15K	4K	5K	5.6k	6.3k	7.1k	10K	Hz
Upper Limit	+7	+6	+6	+5	+3	+4	+5	+5	+5	+5	+6	+6	+8	dB
Lower Limit	-7	-6	-6	-5	-3	-4	-5	-5	-5	-5	-6	-6	-6	dB

#### THD Mask:

F.Point	70	100	200	300	1000	10000	Hz
Upper Limit	65	50	20	20	5	5	%

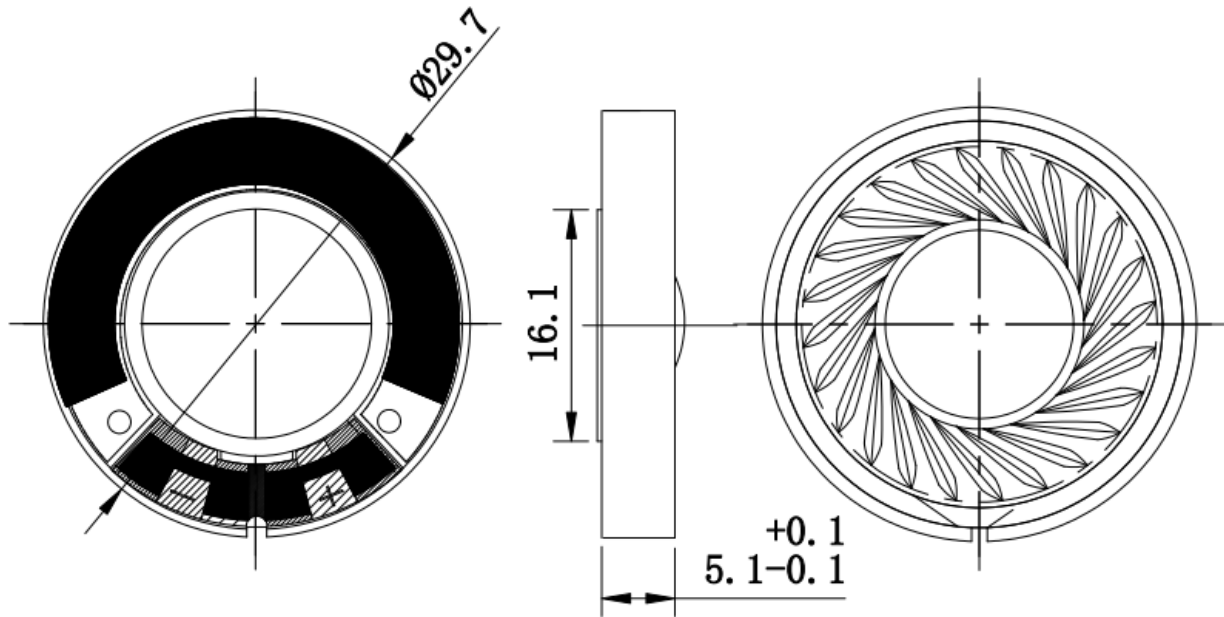
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**10. DIMENSIONS. (FIG.4)**

**UNIT: mm**

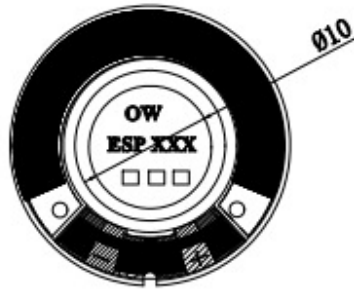
**TOLERANCE: +/-0.2**



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## 11. MARKING METHOD



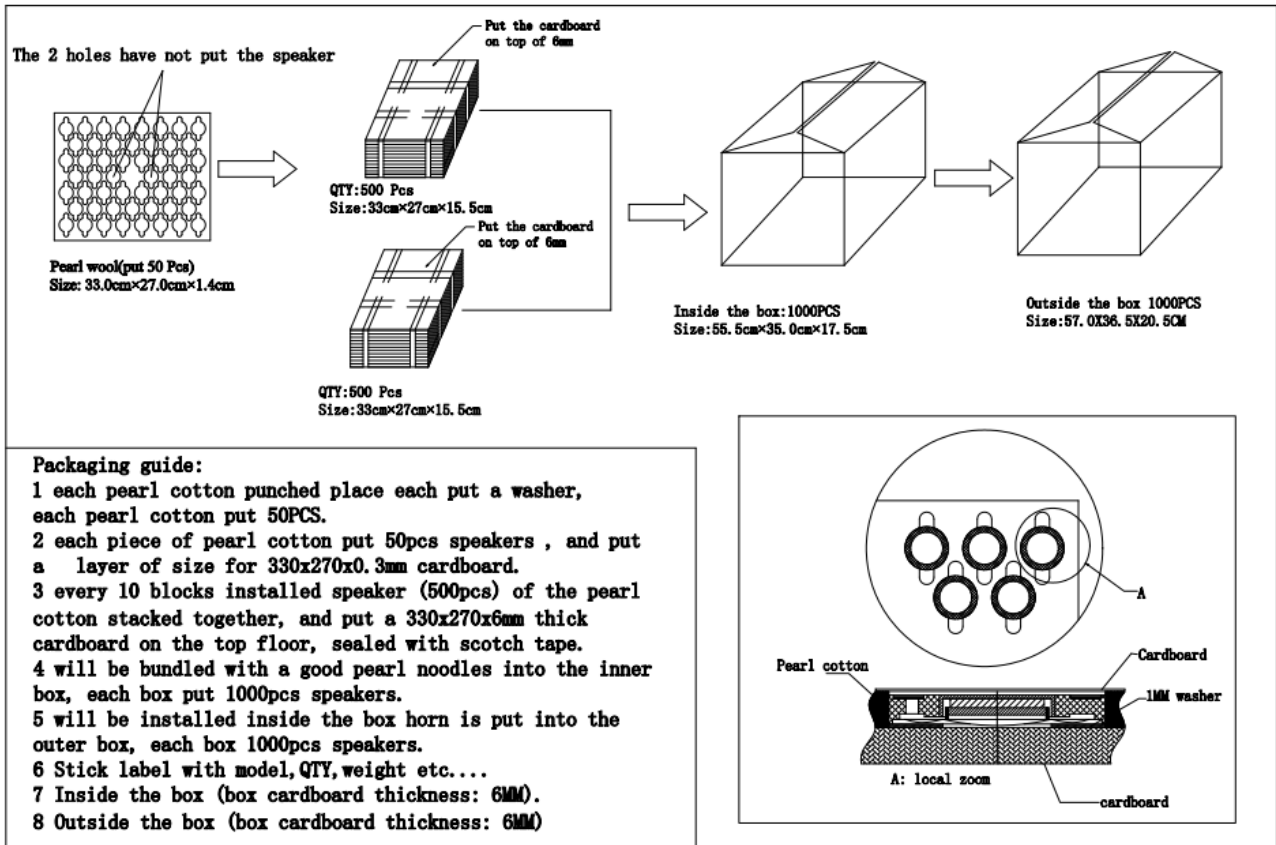
YEAR		WEEK	
year	marking	week	marking
2017	7	1	01
2018	8	2	02
2019	9	3	03
2020	0	4	04
2021	1	5	05
2021	2	↓	↓
		52	52
		53	53
		54	54

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## 12.PACKAGING



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