

**MESSRS.**

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**SPECIFICATION FOR APPROVAL****承 認 书**

<b>Product</b>	<b>DYNAMIC SPEAKER</b>
<b>Part No.</b>	<b>HDK-5008BB-3 (RoHS)</b>
<b>Customer Approval</b>	

<b>Approved By</b>	<b>Checked By</b>	<b>Made By</b>
王台平 JUL-02-2015	曹丽萍 JUL-02-2015	LILY JUL-02-2015

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EDITION:1.2

**1. SPECIFICATION**
**HDK-5008BB-3 (RoHS)**

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 50 mm	
03	Rated Input Power	0.5W	
04	Max. Input Power	1.0W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 1000Hz.	
06	Resonance Frequency (Fo)	350Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	98dB (0.5W / 0.1m) $\pm$ 2dB	at AVE 0.6K, 0.8K, 1.0K, 1.2 KHz
08	Frequency Range	Fo – 20KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz,0.5W.	
10	Voice Coil	Diameter 13.3 mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet $\Phi$ 12.5x2.0 mm	
12	Weight	13.2g $\pm$ 0.5g	
13	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
14	Operation Test	Must be normal at program source – 0.5W	
15	Buzz, Rattle, etc.	Should not be audible at 2.0V sine Wave between Fo to 20KHz	
16	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
17	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.	
18	Temperature	Operating temperature: -20 $^{\circ}$ C to +60 $^{\circ}$ C Storage temperature: -30 $^{\circ}$ C to +70 $^{\circ}$ C	

## Test Condition

### STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

### BASIC

Temperature : 20±3°C

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

## Standard Test Fixture

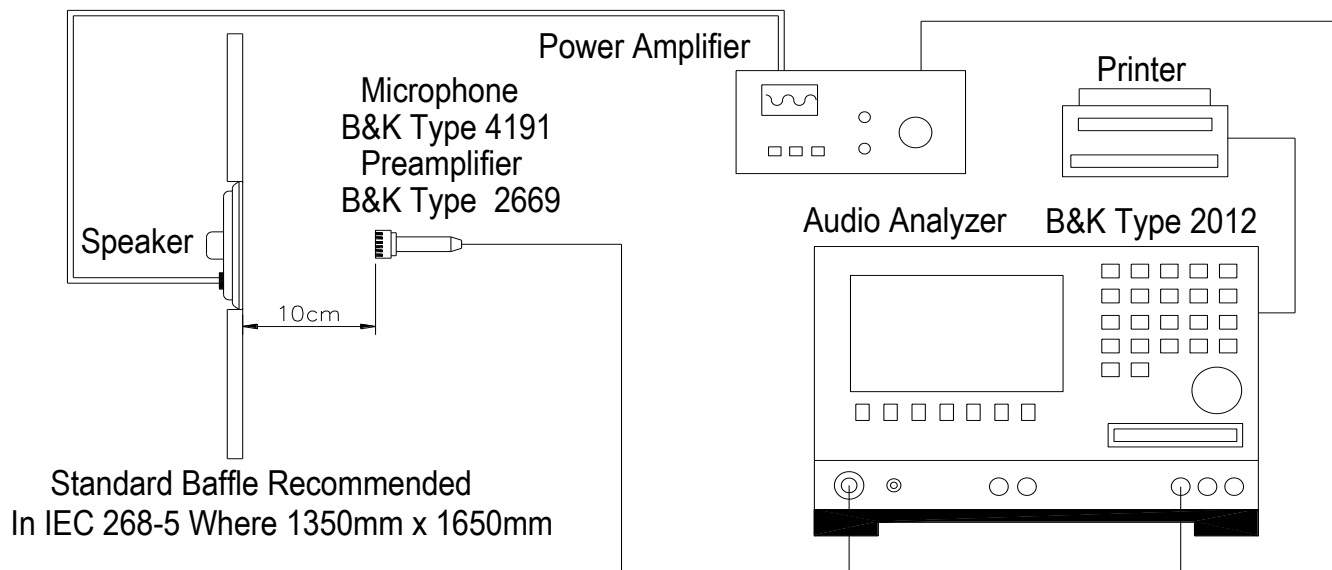
1.Input Power : 0.5W ( 2.0V )

2.Zero Level : -dB

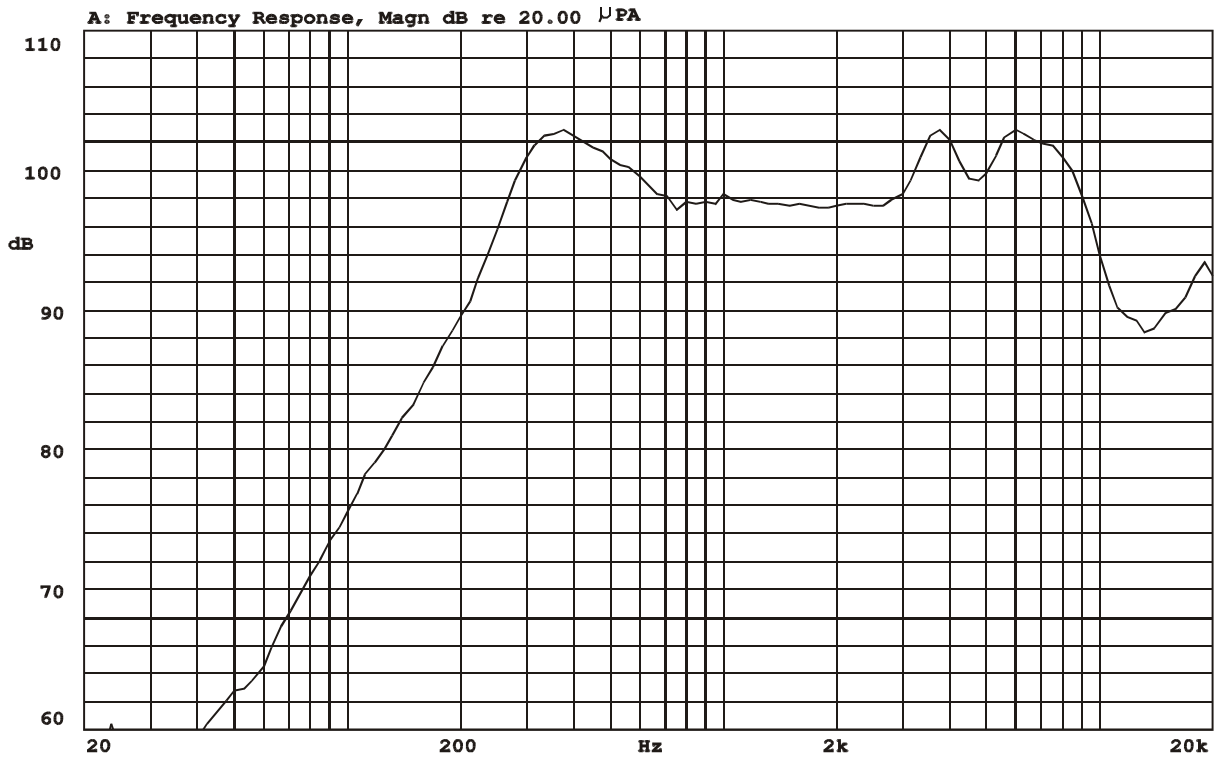
3.Mode : SPEAKER

4.potentiometer Range : 50dB

5.Sweep Time : 0.5sec

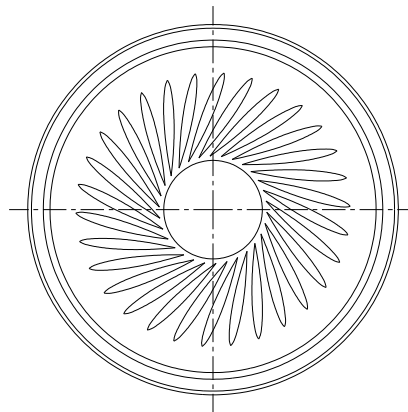
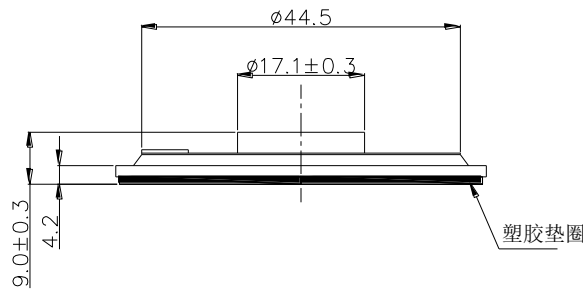
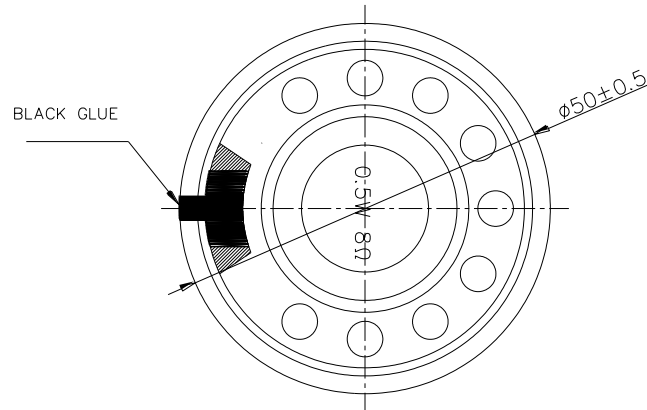


## 2. Frequency Response Curve



Mode: SPEAKER





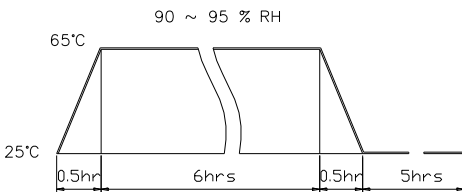
Case: Fe alloy  
Diaphragm: Mylar

TITLE: DYNAMIC SPEAKER		DRAWN: Lily	2015/07/02	SCALE: 1:1	SHEET: 1 of 1
PART NO. HDK-5008BB-3	1	DESIGNED: R&D OF D.S.	UNITS: mm		
DWG NO. DSE-1289		CHECKED: Emily	TOLERANCE $\pm 0.3$		
	REV	APPROVAL: Eric	UNLESS OTHERWISE SPECIFIED:		
		MATERIAL: Fe alloy	ONE PLACE DECIMAL $\pm$ ***		
			TWO PLACE DECIMAL $\pm$ ***		
			THREE PLACE DECIMAL $\pm$ ***		

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#### 4.RELIABILITY TESTS

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity test	Keep 96 hours at $+60^{\circ}\text{C}\pm 3^{\circ}\text{C}$ relative humidity 95% and leave 3 hours in normal temperature and then checked.
04	Temp./Humidity cycle	<p>The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of;</p> 
05	Thermal cycle test.	Low temperature: $-30^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , temperature: $+70^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , cycle: 1 hour/cycle each, and then keep 5 cycles in a room.
06	Vibration	10~200~10Hz sin-wave sweep 15min. 5G(constant) X,Y, Z 3 direction. 2 hours each, total 6 hours.
07	Fix drop test	Fix on jig. Then drop from 152cm height to the concrete floor X, y, z 6 direction. 5 times each, total 30 times.
08	Free drop test	Free drop from 100cm height to the concrete floor X, y, z 6 direction. 1 times each, total 6 times.
09	Rated Power test	Rated Power white noise is applied for 96 hours
10	Max Power test	Max power 1 min on – 2 min off 10 cycles.
11	Terminal strength test	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
<p><b>Criterion:</b></p> <p><b>After these test , the change of S.P.L shall be within <math>\pm 3</math> dB .</b></p>		

#### SOLDERING CONDITION

Recommend using constant branding iron in **15 ~ 30W**, and in temperature range  **$350 \pm 10^{\circ}\text{C}$** .

Soldering time not over **3** seconds.

