

**MESSRS.**

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**SPECIFICATION FOR APPROVAL**

**承 认 书**

<b>Product</b>	<b>DYNAMIC SPEAKER</b>
<b>Part No.</b>	<b>HDK-32100BA-1W(RoHS)</b>
<b>Customer Approval</b>	

<b>Approved By</b>	<b>Checked By</b>	<b>Made By</b>
王台平 SEP-15-2014	曹丽萍 SEP-15-2014	LILY SEP-15-2014

**常州华龙电子有限公司**

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**EDITION:1.1**

# 1. SPECIFICATION

HDK-32100BA-1W (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 32 mm	
03	Rated Input Power	5mW (Long Time)	
04	Max. Input Power	8mW for 1 minute	
05	Impedance	100 ohm $\pm$ 15%	
06	Sensitivity (S.P.L.)	127 $\pm$ 3.0dB	at 1.0mW/ 1.0KHz.
07	Frequency Range	20Hz - 20KHz	
08	Total Harmonics Distortion	Max $\leq$ 5.0 % at 1.0mW/ 1.0KHz.	
09	Voice Coil	Diameter $\Phi$ 13.3 mm	
10	Magnet	Rare earth permanent (Nd-Fe-B) magnet $\Phi$ 12.5x2.0mm	
11	Weight	9g $\pm$ 0.1g	
12	Buzz, Rattle, etc.	Should not be audible at 0.70V sine Wave between 20 to 5KHz	
13	Temperature	Operating temperature: -20°C to +60°C Storage temperature: -20°C to +60°C	

## Test Condition

### STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

### BASIC

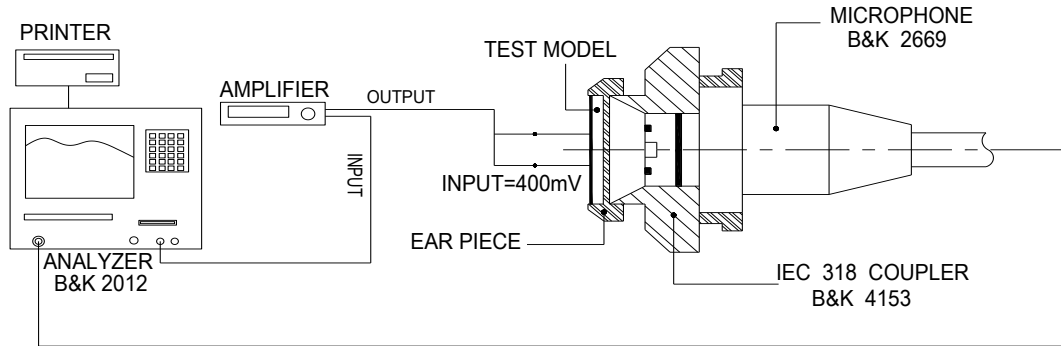
Temperature : 20 $\pm$ 3°C

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

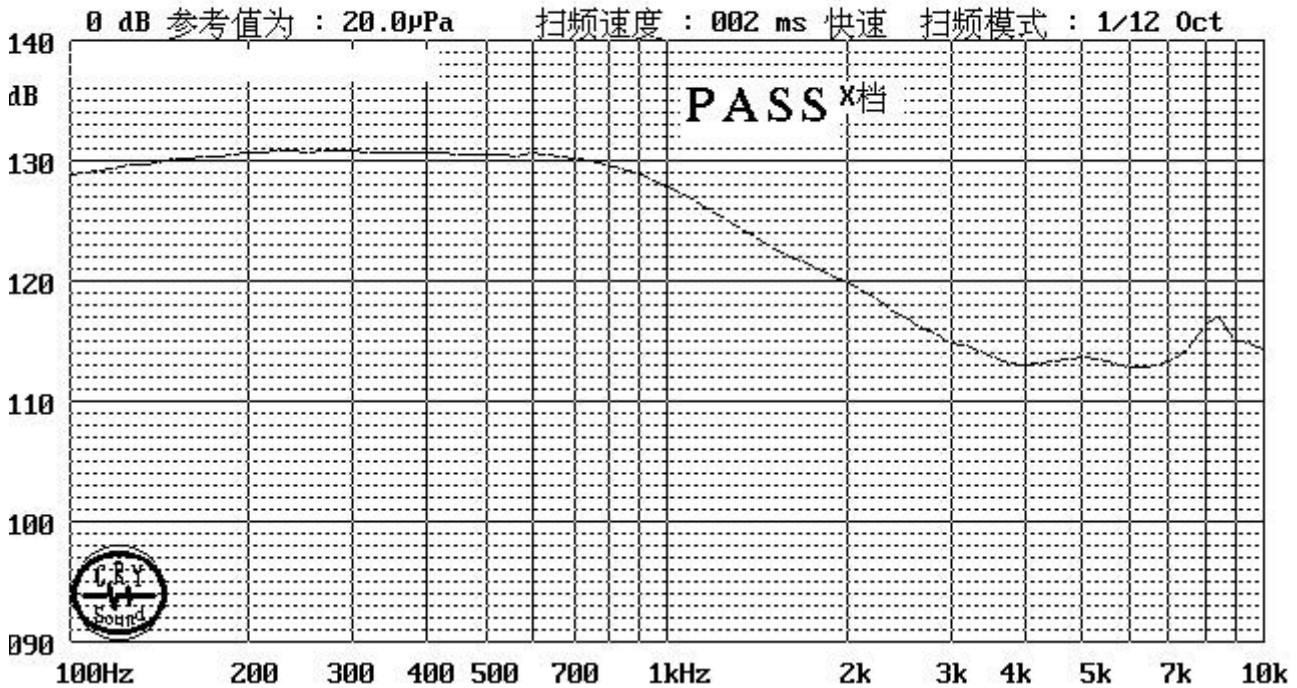
# Standard Test Fixture

Input signal : 400mV



## Frequency Response Curve

型号: \_\_\_\_\_ → 1000Hz灵敏度 : 127.80 dB      1000Hz阻抗 : \_\_\_\_\_ Ω 滤波器无  
 电压: 0400 mV      70Hz灵敏度 : \_\_\_\_\_ dB      Fv= \_\_\_\_\_ Hz : 000.00 dB无框  
 2000Hz灵敏度 : 119.84 dB      4000Hz灵敏度 : 113.00 dB

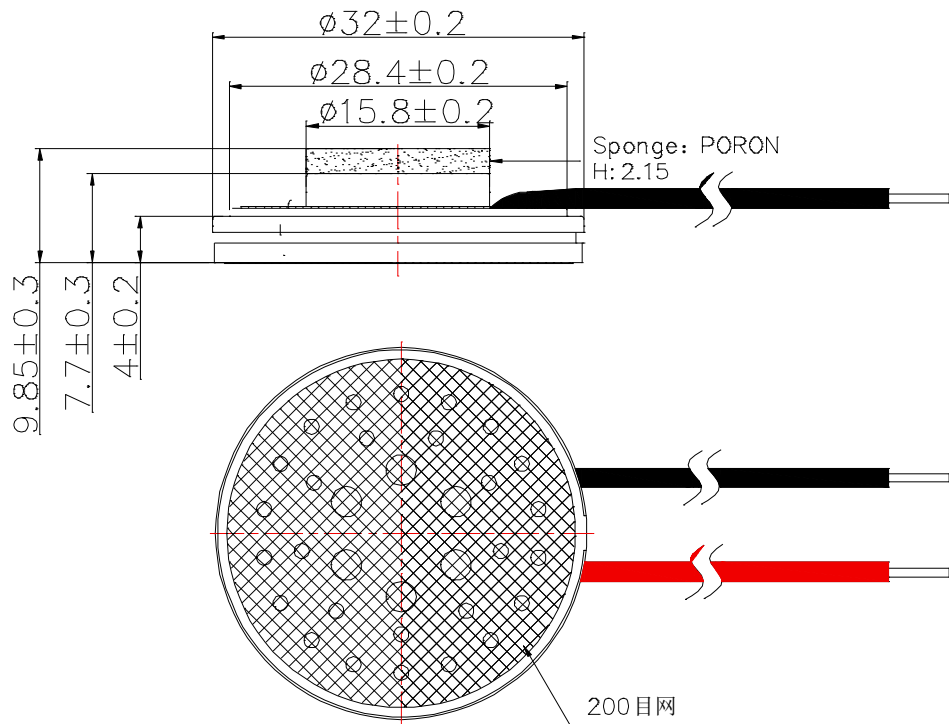
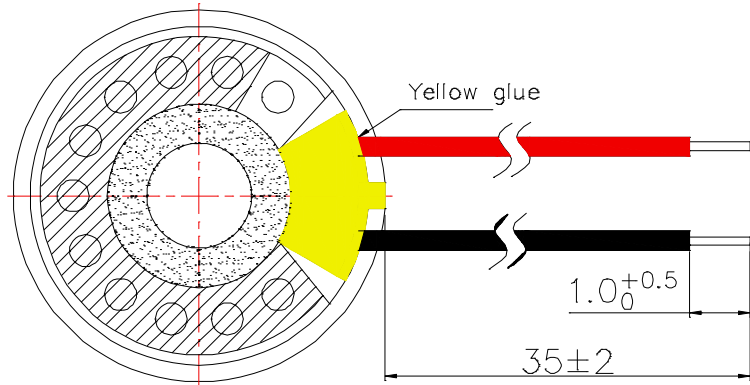


REV NO.

REVISION NOTE

APPROVAL

DATE



Case: Fe Alloy  
Diaphragm: Black Mylar  
Wire: UL3302AWG32

TITLE: DYNAMIC SPEAKER		DRAWN: Lily	2014/09/15	SCALE: 1:1	SHEET: 1 of 1
PART NO. HDK-32100BA-1W		DESIGNED: R&D OF D.S.	UNITS: mm		
DWG NO. DSE-1831	1 REV	CHECKED: Emily	TOLERANCE		
		APPROVAL: Eric	20~11	± 0.3	
		MATERIAL: Fe Alloy	10~5	± 0.2	
			<4	± 0.1	

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## RELIABILITY TESTS

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+60^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-20^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 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> <p style="text-align: center;"> <math>90 \sim 95 \% \text{ RH}</math>  <math>65^{\circ}\text{C}</math>  <math>25^{\circ}\text{C}</math>  <math>0.5\text{hr}</math>   <math>6\text{hrs}</math>   <math>0.5\text{hr}</math>   <math>5\text{hrs}</math> </p>
05	Thermal cycle test.	Low temperature: $-20^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , temperature: $+60^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , 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.

**Criterion:**

**After these test , the change of S.P.L shall be within  $\pm 3 \text{ dB}$  .**

## 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.