

MESSRS.

SPECIFICATION FOR APPROVAL

承 認 书

Product	DYNAMIC SPEAKER
Part No.	HDK-4004FB-2C (RoHS)
Customer Approval	

Approved By	Checked By	Made By
王台平 SPE-03-2018	曹丽萍 SPE-03-2018	LILY SPE-03-2018

常 州 华 龙 电 子 有 限 公 司

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EDITION:1. 1

1. Specification

HDK-4004FB-2C (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 40 mm	
03	Rated Input Power	3.0W	
04	Max. Input Power	4.0W for 1 minute	
05	Impedance	4 ohm $\pm$ 15% at 1000Hz.	
06	Resonance Frequency (Fo)	230Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	84dB (0.1W / 0.1m) $\pm$ 3dB	at AVE 0.6K 0.8K 1.0K 1.2KHz
08	Frequency Range	Fo - 20KHz	
09	Total Harmonics Distortion	Max 5% at 1 KHz, 3.0W.	
10	Weight	21.5g $\pm$ 5g	
11	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
12	Operation Test	Must be normal at program source - 3.0W	
13	Buzz, Rattle, etc.	Should not be audible at 3.46V sine Wave between Fo to 20KHz	
14	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
15	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.	
16	Temperature	Operating temperature: -30°C to +75°C Storage temperature: -40°C to +85°C	

2. Measuring Method

2.1 Test Condition

Standard

Temperature : 15 ~ 35℃

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Basic

Temperature : $20 \pm 3^{\circ}\text{C}$

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2.2 Standard Test Fixture

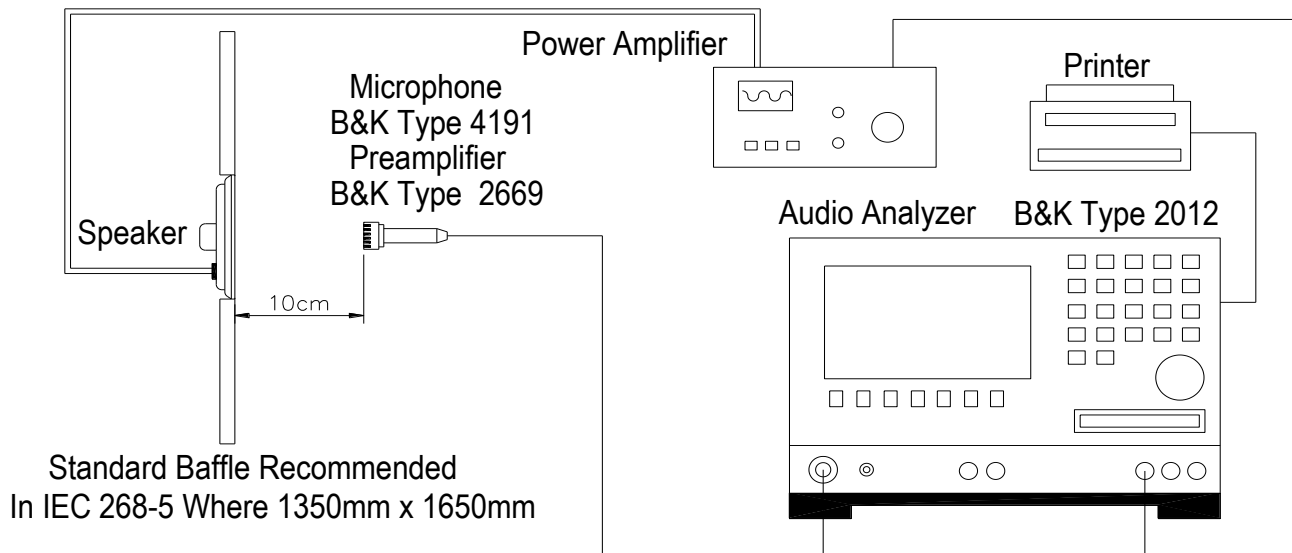
1. Input Power : 0.1W (0.63V)

2. Zero Level : -dB

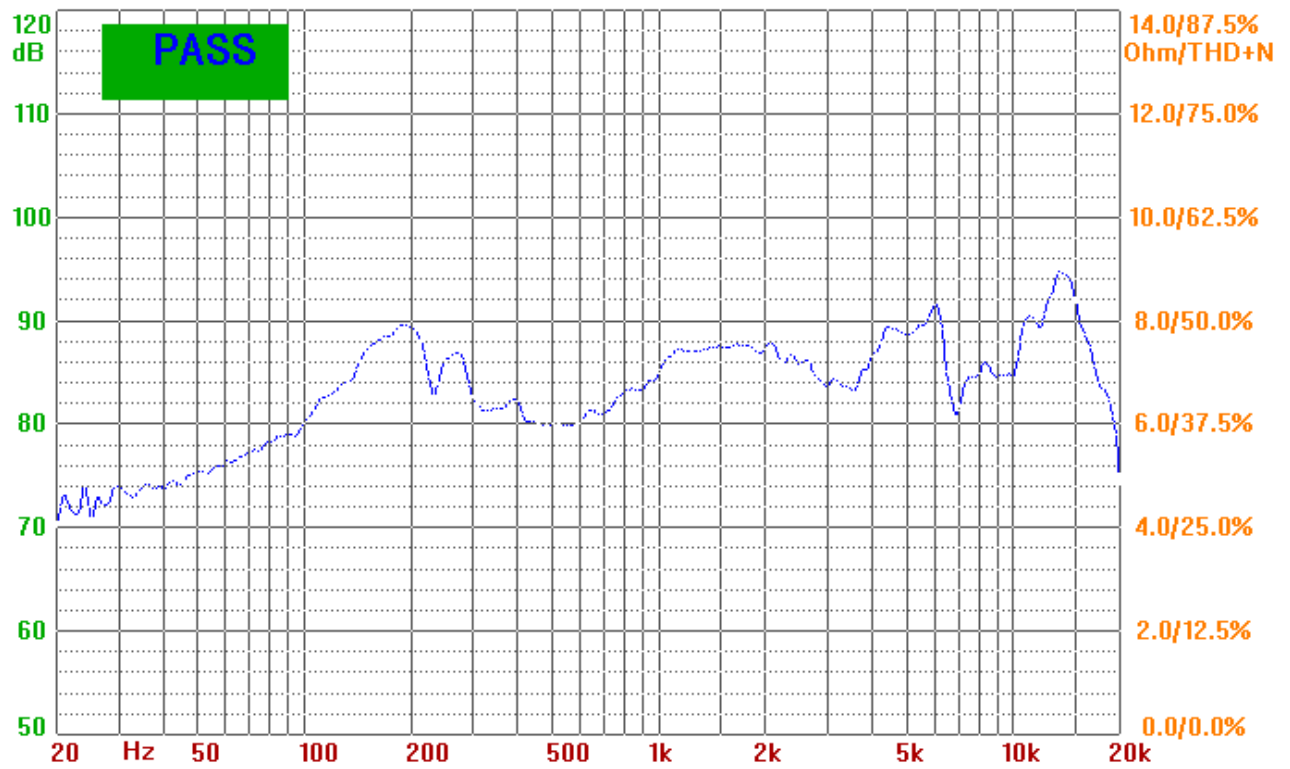
3. Mode : SPEAKER

4. potentiometer Range : 50dB

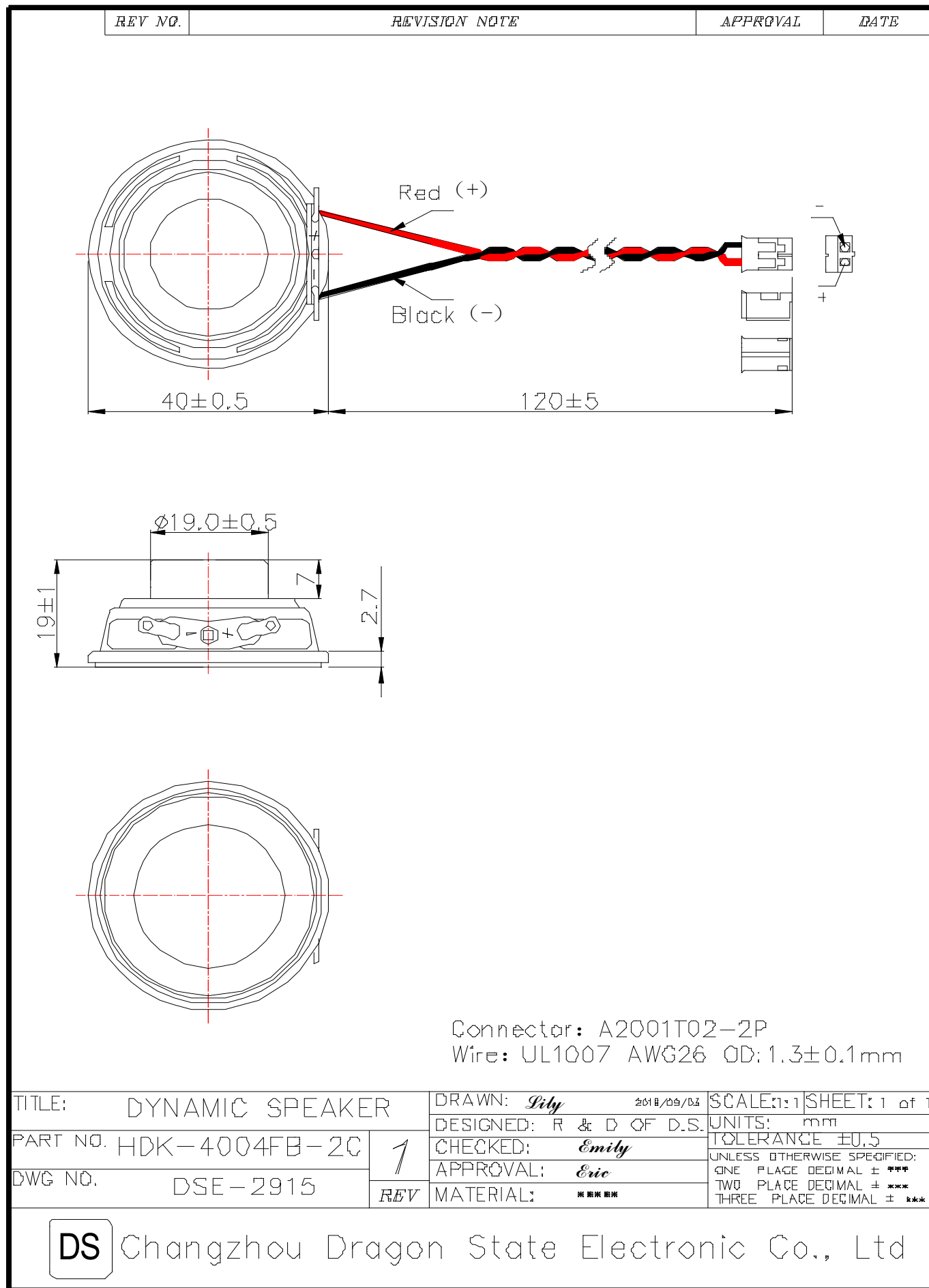
5. Sweep Time : 0.5sec



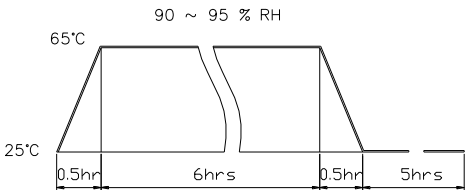
2.3 Frequency response curve



3. Dimension



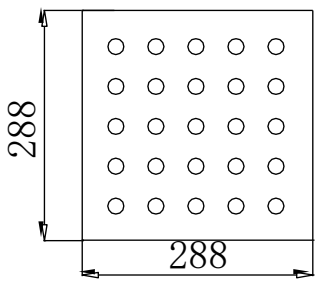
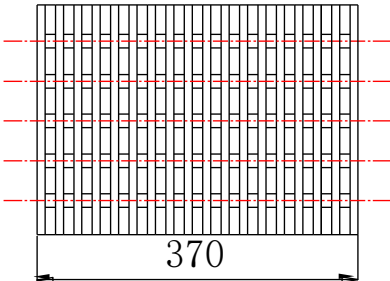
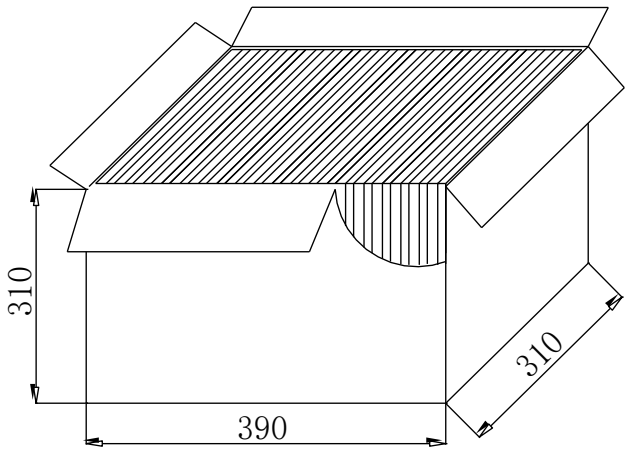
4. Reliability Test

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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	The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of; 
05	Thermal cycle test.	Low temperature: $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, temperature: $+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 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 ± 3 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.

5. Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
 288 288 1. Each clap board 25pcs, each carton 20 pcs clap board 500 pcs/carton 2. N.W: 9.5 KG, G.W:11.5 KG 3. Carton box size: 390*310*310mm 1PCS  370  310 390 310			
TITLE: PACKING		DRAWN: <i>Lily</i> 2016/08/30	
PART NO.		DESIGNED: R & D OF D.S.	
DWG NO.		CHECKED: <i>Emily</i>	
1		APPROVAL: <i>Eric</i>	
REV		MATERIAL: *****	
DS		SCALE: 1:1 SHEET: 1 of 1	
Changzhou Dragon State Electronic Co., Ltd		UNITS: mm TOLERANCE ±0.5 UNLESS OTHERWISE SPECIFIED: ONE PLACE DECIMAL ± *** TWO PLACE DECIMAL ± *** THREE PLACE DECIMAL ± ***	