

MESSRS.**SPECIFICATION FOR APPROVAL****承 认 书**

Product	DYNAMIC SPEAKER BOX
Part No.	HDK-55281708-001
Customer Approval	

Approved By	Checked By	Made By
<i>Eric</i> May-29-2025	<i>Emily</i> May-29-2025	<i>Lily</i> May-29-2025

常 州 华 龙 电 子 有 限 公 司

Changzhou Dragon State Electronic Co.,Ltd

中国江苏省常州市新区电子园新四路 36 号

Tel: +86-519-85110078. 86-519-85106698, Fax: +86-519-85101081

EDITION:1.1

1. Specification

HDK-55281708-001(RoHS)

ITEM		SPECIFICATIONS
01	Type	Dynamic Speaker BOX
02	Rated Input Power	2.0W/4.0Vrms (in box)
03	Max. Input Power	2.5W/4.47Vrms (in box)
04	Impedance	8Ω±15%
05	Resonance Frequency	1250Hz ± 20% (in box)
06	Sensitivity (S.P.L)	95±3dB (2.0W / 0.1m) at 1.0KHz (in box)
07	Frequency Range	F0 – 20KHz
08	Total Harmonics Distortion	Max 10% (2.0W/0.1m) at 500~8.0KHz (in box)
09	Weight	~8.2g ± 5%
10	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.
11	Operation Test	Must be normal at program source – 2.0W
12	Buzz & Rattle	Must be normal at 4.0Vrms (in box) sine-wave from 300 -5KHz sweep 2-3 cycles, 1 sec for each cycle
13	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.
14	Terminal Strength	Capable of withstand 0.5kg load for 10 seconds without resulting in any damage or rejection.
15	Temperature	Operating temperature: -20°C to +70°C Storing temperature: -25°C to +80°C

2. Measuring Method

2.1.Test Climatic Condition

Ambient temperature : 15 ~ 35°C,preferably at 20°C

Relative humidity : 25% ~ 75%,

Air pressure : 86kPa ~ 106kPa

Refer to IEC 268-1

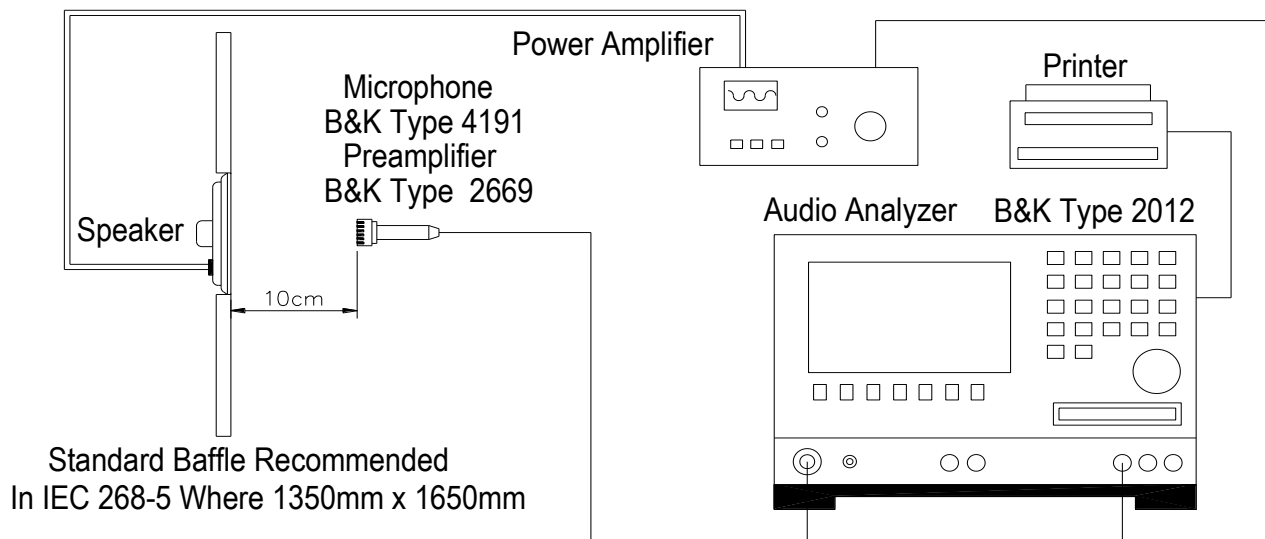
2.2.Test Method

2.2.1 SPL and Frequency Response Curve

The samples shall be mounted in specified baffle,the measuring microphone shall be Free-field microphone and placed at specified distance from DUT.on axis. The drive power is Rated power,and swept sine-wave range is 200Hz-20KHz with a R40 of test sequence.

2.2.2 THD

Tested per Section 2.2.1 and driven at rated power ,sweep at specified frequency Range with R40 test sequence.



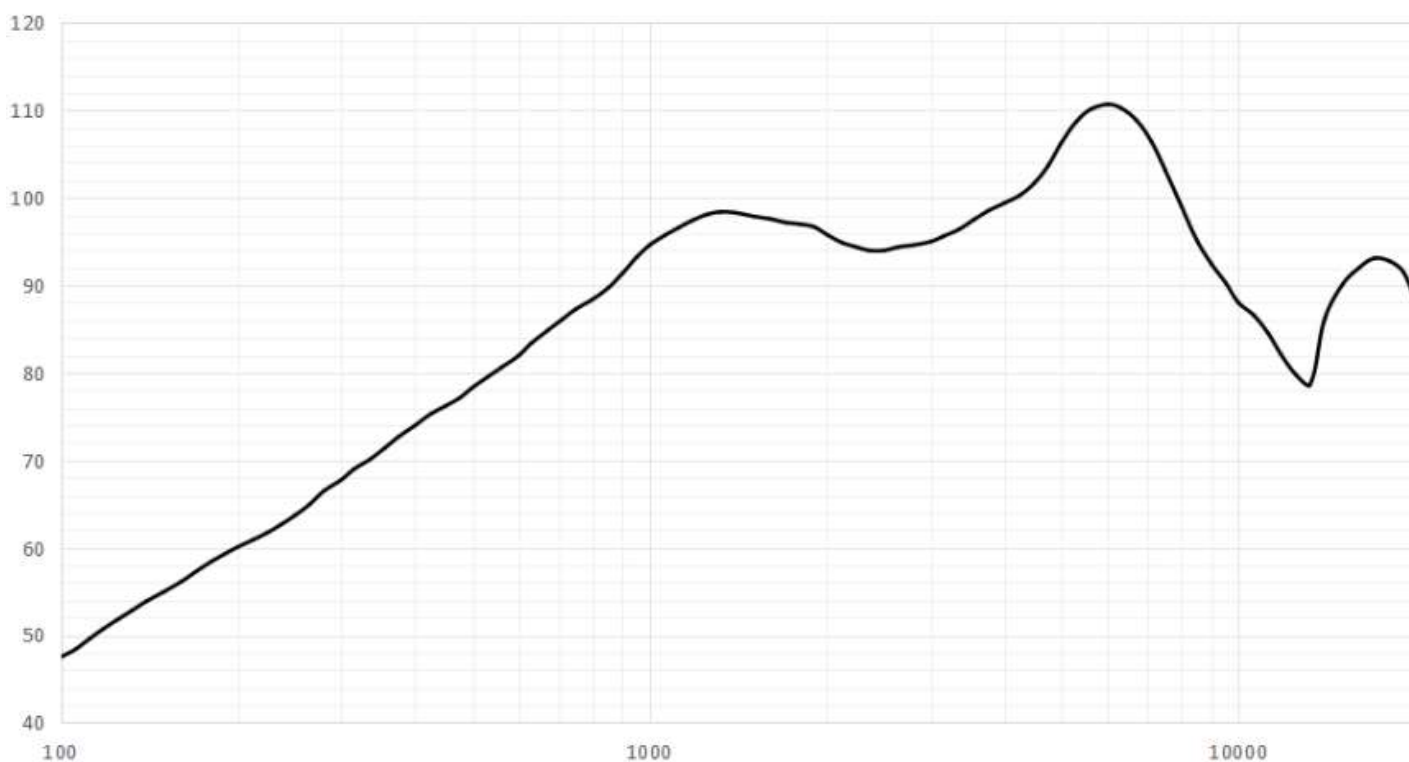
2.3 Frequency Response Curve

Table 1 : Limit Date for Frequency Response

Freq.(Hz)	Upper (dB)	Lower(dB)
300	73	63
500	83	74
800	93	84
1000	97.5	91.5
1320	103	94.5
2000	100	91.5
2500	98	90
4000	103.5	94.5
5000	111	99.5
5500	115	104
7000	115	101
8000	105	90
10000	94	80

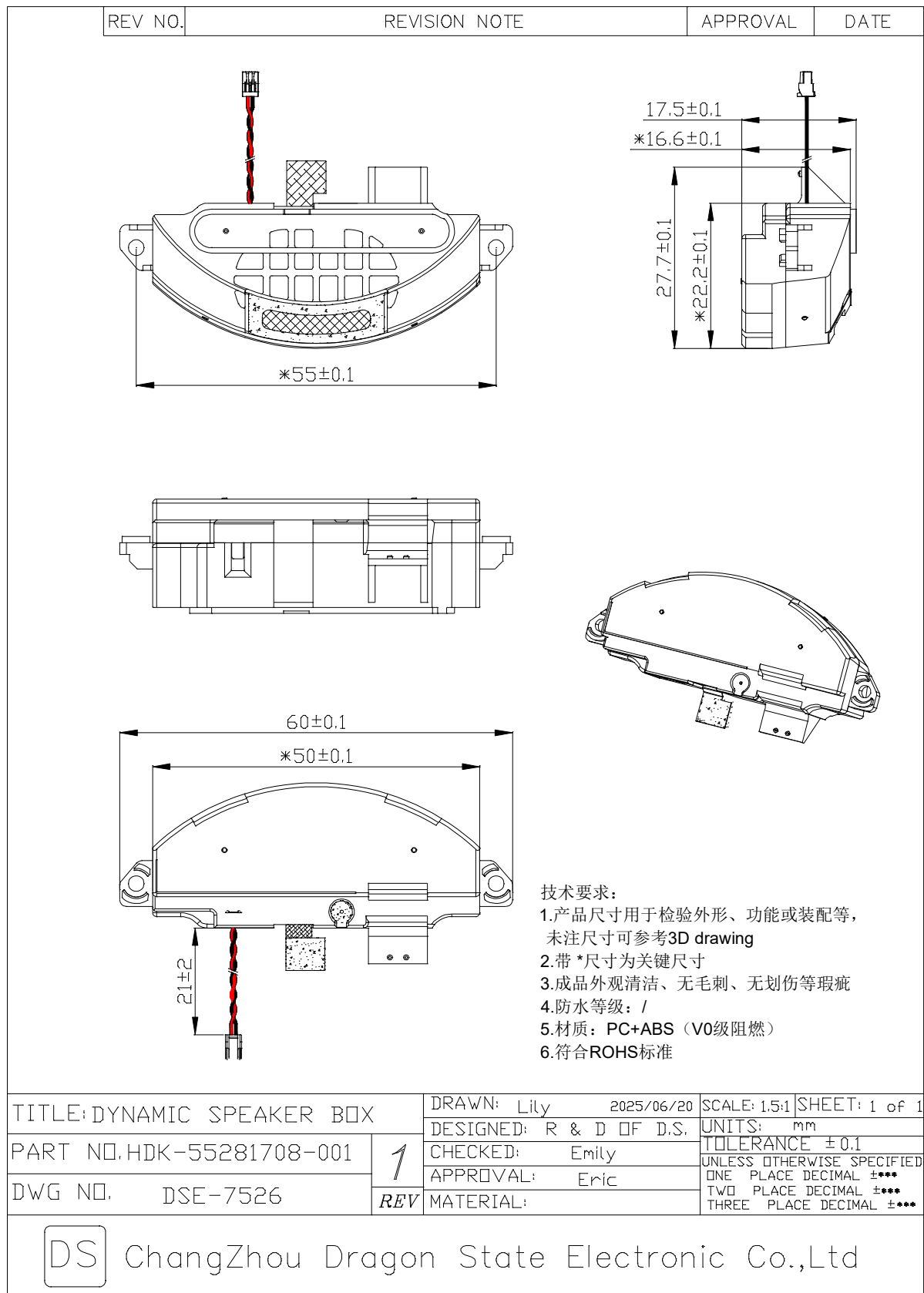
BOX SPL Curve (0.1m/2.0W)

Figure 1: Typical Frequency Response Curve
Frequency Response

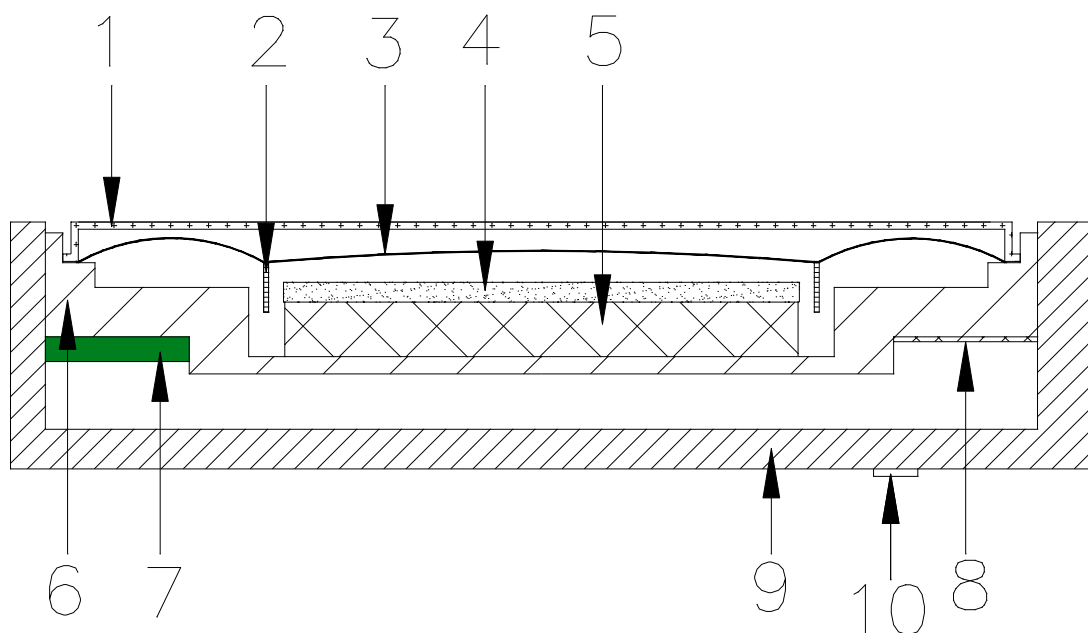


3.Dimension

BOX Dimension (unit:mm)

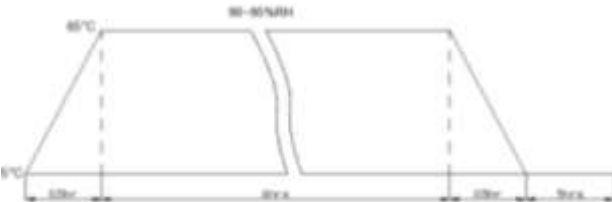


4. Material and Structure

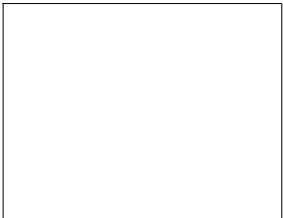
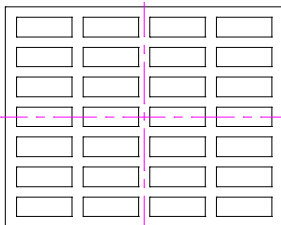
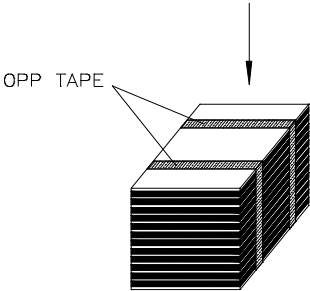
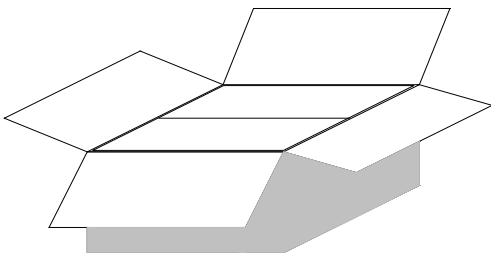


NO	PART NAME	MATERIAL	MANUFACTURER	Q'TY
1	钢片	SUS304	JIQIAN	1
2	音圈	COPPER	DONGLI	1
3	音膜	MYLAR	YUNZHIYUAN	1
4	塑盆	SPCC	JIQIAN	1
5	磁铁	Nd-Fe-B	QIANGYIN	1
6	支架	PBT	JIQIAN	1
7	连接器	2P-1.25 带卡扣 UL1571 AWG30	SHUOHUI	1
8	调音纸	proof net	XINQIANJING	1
9	BOX	PC+ABS	JIQIAN	1
10	调音网	Teflon	JIERUI	1

5. 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 $-20^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	High temp/Humidity test	Keep 96 hours at $+55^{\circ}\text{C}\pm 3^{\circ}\text{C}$ relative humidity 95% and leave 3 hours in normal temperature and then checked.
04	Temp./Humidity cycle	The part shall be subjected 4 cycles. One cycle shall be 6 hours and consist of; 
05	Thermal cycle test.	Low temperature: $-20^{\circ}\text{C}\pm 3^{\circ}\text{C}$, High temperature: $+70^{\circ}\text{C}\pm 3^{\circ}\text{C}$, cycle: 1 hour/ each cycle , 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 100cm height to the concrete floor x, y, z 6 direction. 3 times each, total 18 times.
08	Free drop test	Free drop from 75cm height to the concrete floor x, y, z 6 direction. 3 times each, total 18 times.
09	Rated Power test	Rated power pink noise is applied for 96 hours
10	Max Power test	Max power 1 min on – 2 min off for 10 cycles.
11	Terminal strength test	Capable of withstand 0.5kg load for 10 seconds without resulting in any damage or rejection.
Criterion: After these test , the change of SPL shall be within ± 3 dB .		

7 .Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
	 Cover(350*285*5mm) Material: Paper		
	 Box(350*285*18mm) 28pcs Material: Paper+Epe		
	 Middle(350*285*144mm) 224pcs(8*28pcs) Material: Paper+Epe		
	 Outer Box(590*390*405mm) 896pcs(4*224pcs) Material: Paper		
单位: mm			
TITLE: packing		DRAWN: Lily 2021/4/11	
PART NO.		DESIGNED: R&D OF D.S.	
		CHECKED: Emily	
DWG NO.		APPROVAL: Eric	
		MATERIAL: ***	
DS ChangZhou Dragon State Electronic Co.,Ltd		SCALE: 2:1	SHEET: 1 of 1
		UNITS: mm	
		TOLERANCE	
		20~11	± 0.3
10~5	± 0.2		
<4	± 0.1		