

# SPECIFICATION

## FOR APPROVAL

Customer : \_\_\_\_\_

Product Name : Dynamic Speaker \_\_\_\_\_

Model Name : VS4028R4F450P2L150 \_\_\_\_\_

Drawing No. : VS20200810017 \_\_\_\_\_

### Signature of Voice

Approved by	Checkde by	Issued by	Date

 福爱斯电子有限公司  
VOISE ELECTRONICS CO.,LTD.

Address:No 96 Mogao Dongqian Lake Industial Area ningbo,China,  
Tel:0086-0574-87773030;Fax:0086-0574-87471600 P.C.315121  
<http://www.nbvoise.com> Email:sales@nbvoise.com

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### 1. Revision

Rev.No.	Date	Page	Description of Revision
1.0	2014/9/23		Preliminary

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## 2. Scope

This document contains required environmental, electrical, acoustic, mechanical, package and reliability test requirement

## 3. General Characteristics

- 2.1 Out-Diameter : 40x28 mm
- 2.2 Height : 12 mm
- 2.3 Weight : 11.5 g
- 2.4 Operating Temperature : -30~+70°C without loss of function
- 2.5 Store Temperature : -30~+70°C without loss of function

## 4. Electrical and Acoustic Characteristics.

Test condition : 15 ~ 35 °C Temp., 25% ~ 75% RH, 86~106 kPa Refer to IEC60268-1

No	Items	Specification
1	Impedance	4 Ω ± 15% (1Vrms at 0.6KHz)
2	Sound Pressure Level	89 dB ± 3dB (0.1m/0.1w at 0.6,0.8,1.0,1.2kHz Average)
3	Resonance Frequency(fo)	450 Hz ± 20% at 1V
4	Frequency Range	fo ~20KHz
5	Input Power	Rated 2 W / Max. 3 W
6	Distortion	Less than 5% at 1kHz 1.0W
7	Buzz and Rattle	Should not be audible buzzes,rattles when the 2.83V sine wave signal swept at frequency range.
8	Polarity	When a positive DC current is applied to the voice coil terminal marked (+) , the diaphragm shall move to forward.

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## 5. Reliability Test

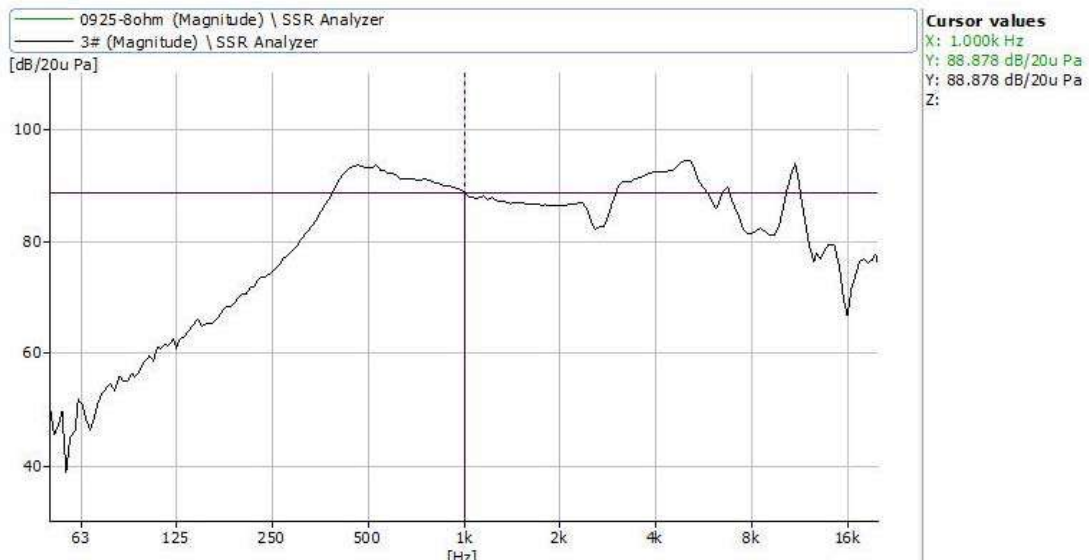
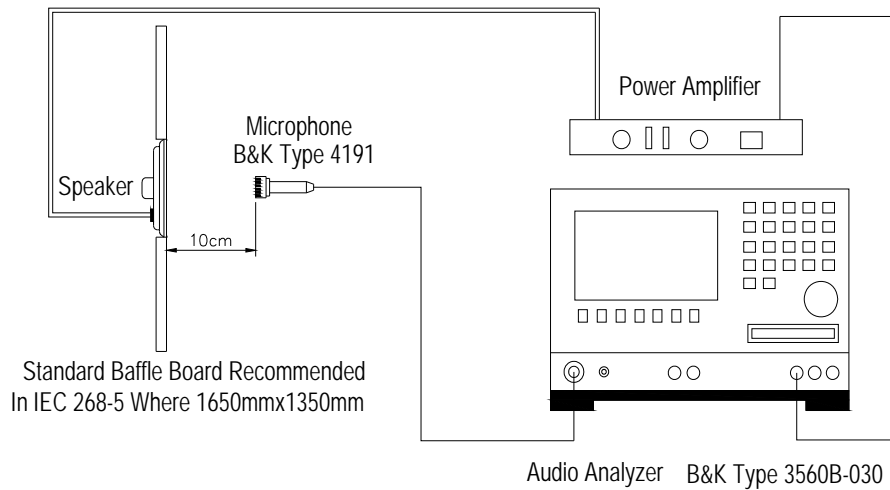
After test(1~7item), the speaker S.P.L . difference shall be within  $\pm 3\text{dB}$ , and the appearance not exist any change to be harmful to normal operation

No	Items	Specification
1	High Temp.Test	Keep 100 hours at $+70\pm 3\text{ }^\circ\text{C}$ ,and leave 2 houres in normal temperature and then check.
2	Low Temp.Test	Keep 100 hours at $-30\pm 3\text{ }^\circ\text{C}$ ,and leave 2 houres in normal temperature and then check.
3	Humidity Test	Keep 100 hours at $-30\pm 3\text{ }^\circ\text{C}$ ,relative humidity 85 to 90% and leave 2 houres in normal temperature and then check.
4	Thermal Shock Test	Each temperature cycle shall consist of 2 hours at $+25\pm 3\text{ }^\circ\text{C}$ followed by 2hours at $+70\pm 3\text{ }^\circ\text{C}$ ,and followed by 2hours at $-30\pm 3\text{ }^\circ\text{C}$ with a 20 to 40 minutes transition time between each 2 temperature extremes. The test duration is for 10 cycle.
5	Vibration Test	Being applied vibration of amplitude of 1.5mm with 10-55-10Hz band of vibration frequency,X.Y.Z.3 direction.2 hours each, total 6 hours.
6	Drop Test	Free drop fram 1.0 meter height to a board 20mm thick hard wood board. and be nothing mechanical damage. tatol 6 times.
7	Load test	Loading white noise with input rate power for 100 hours, then placed in natural condition for 1 hour and then check.
8	Insulation test	When they are measured with DC 100V the insulation resistance between v.c. terminal and frame must be more than 1 M $\Omega$

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## 6. Measurement Method & Frequency Response curve

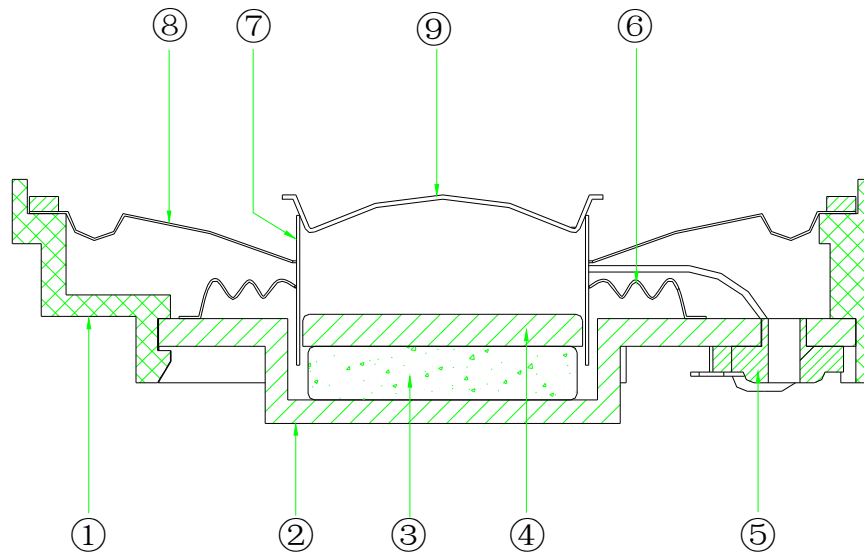
### Standard test condition of speaker



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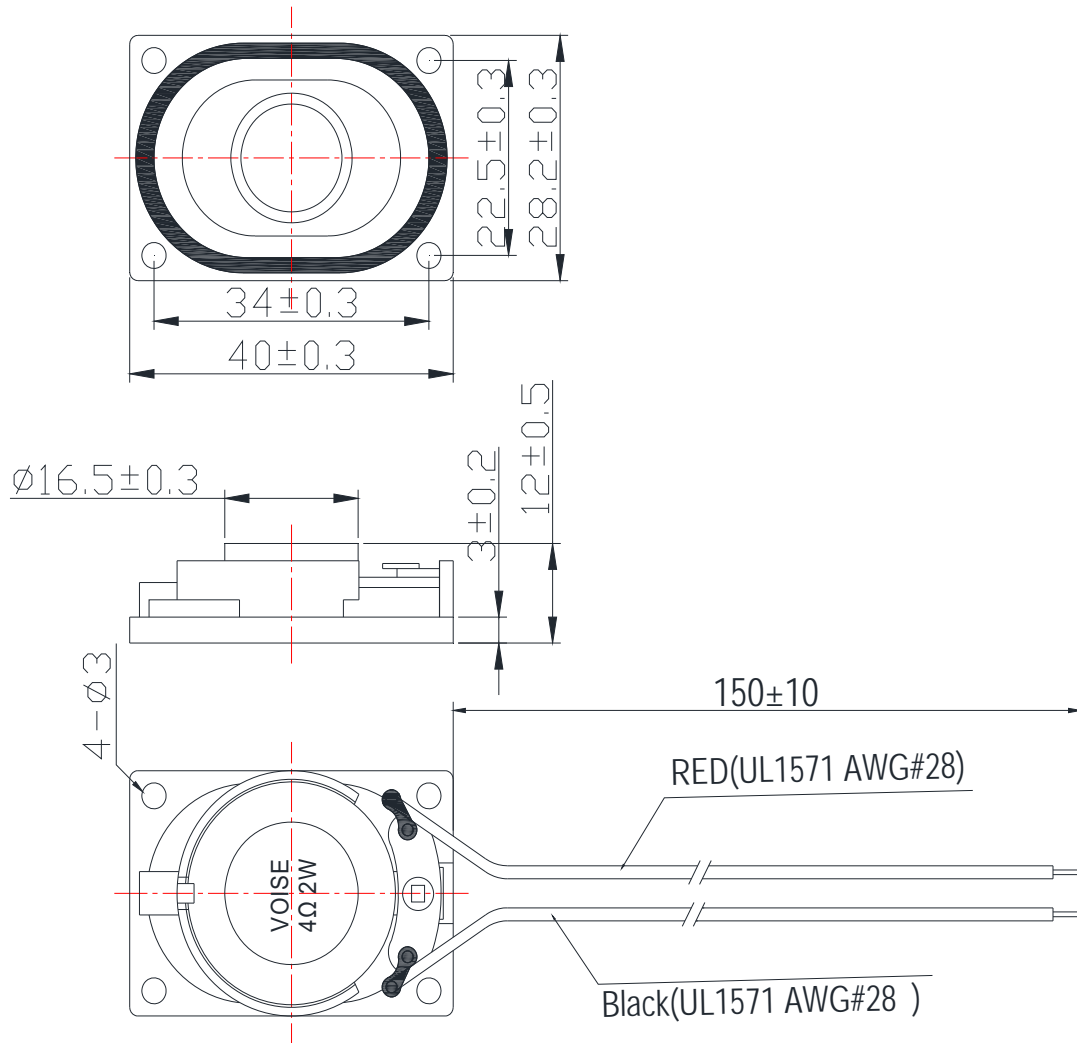
## 7. Mechanical layout



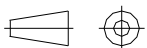
9	Dust cap	1	PAPER	
8	Diaphragm	1	Cloth + PAPER	
7	Voice Coil	1	Paper+Copper	
6	Damper	1	CLOTH	
5	Terminal	1	MylarFe+PAPER	
4	Plate	1+1	SPCC	
3	Magnet	1	Nd-Fe-B	
2	Yoke	1	SPCC	
1	Frame	1	ABS	
No.	Part Name	Q'ty	Material	Remarks

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### 8. Dimensions



FIRST ANGLE PROJECTION

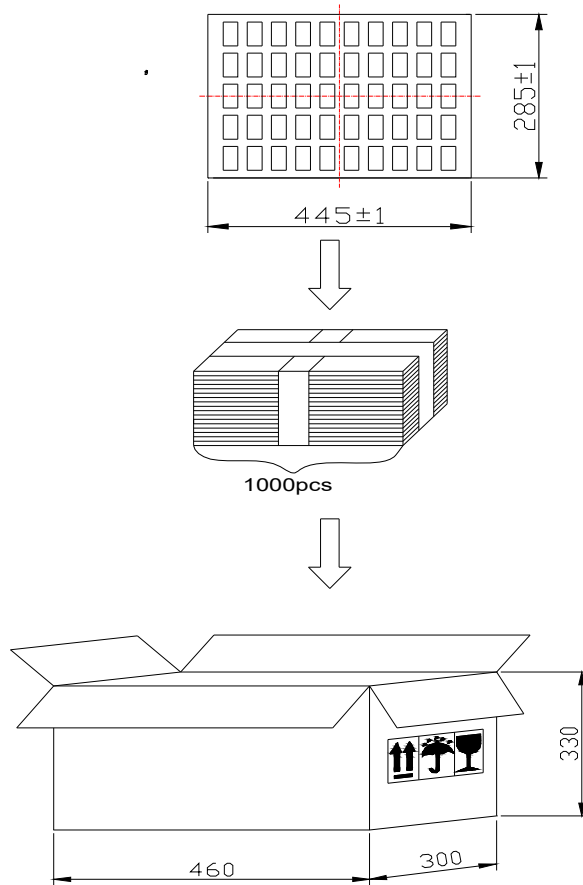


UNIT : mm

Tolerance :  $\pm 0.2$

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## 9. Packing



50 pcs per tray  
 20 trays for unit  
 Total:1000 pcs per carton  
 Size:46×30×33cm