


**佛山鎡利電子有限公司**  
**Vanson Electronics (NanHai) Co., Ltd.**  
 HTTP:// [www.vecoc.com.cn](http://www.vecoc.com.cn)  
**Luocun Industrial zone Nanhai District Foshan city**  
**Guangdong Province China**    *Eail:vecof@vansonic.net*  
 廣東省佛山市南海區羅村工業區    郵編:528226  
 TEL:+86-757-8853 6828    FAX:+86-757-8853 6826

# Specification

## 規 格 書

品名 ( Product Name)	揚聲器 (Speaker)
料號 ( Model No.)	P20CR08F-1-38ND-W

Revision History			
Version	Date	Description	Author
1.0	2009/07/24	Creation	WHK
1.1	2009/08/05	Modify NO.16	WHK

核準 (Approval)		2009/08/05
審查 (Check)		2009/08/05
制作 (Author)	韋華刊	2009/08/05

# **VECO** Foshan Vanson Electronics Co., Ltd.

168, Industrial Development Zone, Shitou Chun, Lanshi Zhen, Foshan, Guangdong, CHINA

TEL: +86-757- 8381 5788 FAX: +86-757- 8381 8577 E-mail: vecof@fs165.com

1.	<b>MODEL:</b>	<b>20CR08F-1-38ND-W</b>
2	Dimension & Weight	Outer Diameter $\phi$ 20mm
		Baffle Opening $\phi$ 19 mm
		Height <b>Refer to drawing</b> <span style="float: right;">Weight <b>2.5Grams</b></span>
3	Magnet	Materials <b>Rare Earth</b> <span style="float: right;">Size <math>\phi</math> 8.2*1.0 mm</span>
4.	DC Resistance	<b>8</b> $\Omega \pm 15 \%$ , <b>On OHM Meter</b>
5.	Power Rating	Normal <b>1.0</b> Watts <span style="float: right;">Maximum <b>1.5</b> Watts Sine Wave.</span>
		Normal Watts <span style="float: right;">Maximum Watts Square</span>
6.	Resonant Frequency	<b>700</b> $\pm 20 \%$ Hz.
7.	Output Sound Pressure Level (S.P.L.)	<b>81</b> $\pm 3$ db/ <b>1.0</b> Watt $\cdot$ 0.5 Meter
		Average at <b>800, 1000, 1200, 1500</b> Hz.
8.	Frequency Range	<b>450</b> $\sim$ <b>20000</b> Hz. Average SPL – 10 db.
9.	Distortion	<b>5</b> % Maximum At <b>1000</b> Hz. <b>1.0</b> W.
10	Abnormal Sound test	Must be Normal Tested By <b>2.83</b> Volts. Sine Wave.
11	Load Test	Pink noise with HPF(High Pass Filter 235HZ-3db-11db/Oct) <b>2.83</b> Volts(RMS.) <b>96</b> hrs
12.	Waterproof Level	<b>IPx5</b>
13	Polarity	Diaphragm shall move Forward while Apply a Positive DC Signal to the " + " or " Marked " Terminal.

Above Measuring condition under temperature : 15~35°C R.H. 25 ~75%. According to standard GB/T9396-1996

### Mechanical and vibration test

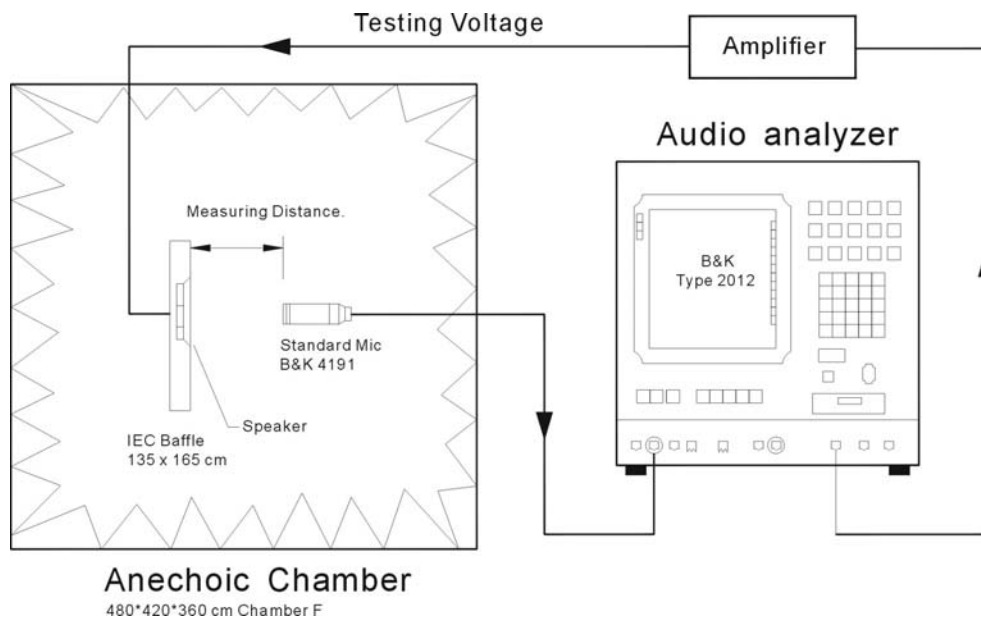
14	High Temperature	+ 60 $\pm$ 2 °C <span style="float: right;">Humidity Random for 96 Hours. (GB2423.1-81)</span>
15	Low Temperature	- 25 $\pm$ 2 °C <span style="float: right;">Humidity Random for 96 Hours. (GB2423.2-81)</span>
16	Humidity	+ 40 $\pm$ 2 °C <span style="float: right;">Relative Humidity (RH) 90 ~ 95 % 96Hours.</span>
17	Vibration	Frequency 30 $\pm$ 15 Hz, Amplitude 1.5 mm for 3 Hours. (GB11606.8-89)
18	Drop test	75 CM free falling on Concrete floor, 10 times. (GB2423. 8-81)
After test leave speakers at room temperature for 1 hour, SPL shall not deviate by $\pm$ 3 db from pre-test		
19	Temperature Cycle test	- 25 ~ + 60 °C <span style="float: right;">4 Cycles Temperature test. (GB5170.18-87)</span>

After test leave speakers at room temperature for 1 hour, SPL shall not deviate by  $\pm$  4 db from pre-test Measurement, and meet above spec. item 6. 7. 8. 9. 10.

Please refer to next pages for more detailed testing method.

## Test method and User precaution.

1. Characteristics measured according to standard GB/T 9396-1996
  - 1.1 Except other specified, measuring are under Temperature 15~35°C R.H. 25 ~75%
  - 1.2 Judgement condition Temperature 20 ±2 R.H. 63~67%
  - 1.3 .Product shelf life is valid for 12 months only.
2. Output Sound Pressure Level (S.P.L.) and distortion testing setup



### 3. Environment & Mechanical test:

#### 3.1 High Temperature: GB2423.1-81

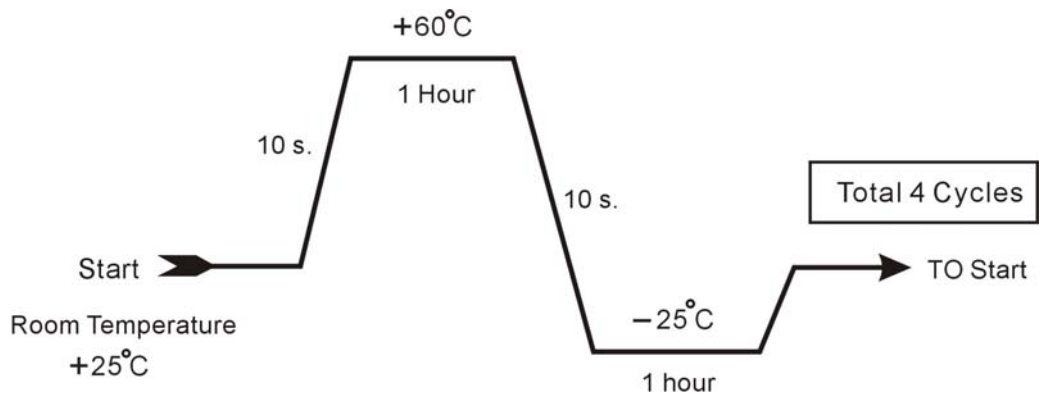
After exposure the speaker in the + 60 ± 2 °C chamber for 96 hours, then leave the speaker at room temperature for 1 hour, the SPL should not deviate by ± 3 db, and resonant frequency should not deviate by ± 50 Hz, compare with pre-test measurement.

#### 3.2 Low Temperature: GB2423.2-81

After exposure the speaker in the -25 ± 2 °C chamber for 96 hours, then leave the speaker at room temperature for 1 hour, the SPL should not deviate by ± 3 db, and resonant frequency should not deviate by ± 50 Hz, compare with pre-test measurement.

#### 3.3 Temperature cycle: GB5170.18-87

After exposure the speaker in the chamber, temperature cycle setting as below shows, SPL should not deviate by ± 4 db, and resonant frequency should not deviate by ± 80 Hz, compare with pre-test measurement.



### 3.4 Humidity: GB5170.18-87

After exposure the speaker in the + 40±2 °C, relative humidity 90% ~ 95% chamber for 96 Hours, then leave the speaker at room temperature for 6 hours, the SPL should not deviate by ±3 db, and resonant frequency should not deviate by ±50 Hz, compare with pre-test measurement.

### 3.5 Vibration: GB11606.8-89

Frequency 30±15 Hz, Amplitude 1.5 mm for 3 Hours. After test, SPL shall not deviate by ±3 db from pre-test measurement,

### 3.6 Load test: GB/T 9396-1996

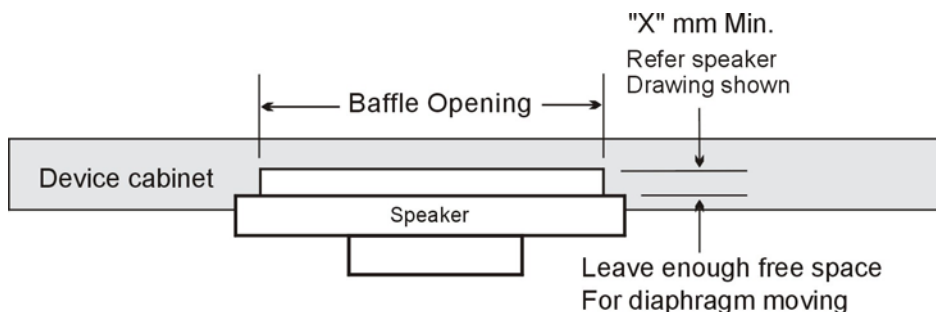
Speaker should not fail after apply 20 ~ 20K Hz pink noise with HPF rated power input (RMS), 96 hours. After test, SPL shall not deviate by ±3 db from pre-test measurement,

### 3.7 Drop test: GB2423. 8-81

75 cm free falling on concrete floor, 10 times. After test, SPL shall not deviate by ±3 db from pre-test measurement,

## 4. Mounting **precaution**

In order to keep speaker work normally, there shall leave enough free space for diaphragm moving, minimum distance required is marked in speaker mechanical drawing.



## 5. Measuring & standard referenced

Abstract from GB/T 9396-1996 and IEC 268-5:1989 methods of measurement for main characteristics of loud speakers.

### 5.1 Rated sine voltage.

It is stipulated by manufacturer, sine signal voltage that make speaker work continuously in rated frequency range, but the speaker wouldn't be damaged heartily or mechanically.

The persist time of the voltage is 1 hour.

### 5.2 The rated sine power.

The rated sine power is corresponding with the rated sine voltage, its definition is  $U_s^2/R$ ,

$U_s$  indicates the maximum sin voltage,  $R$  indicates the rated impedance.

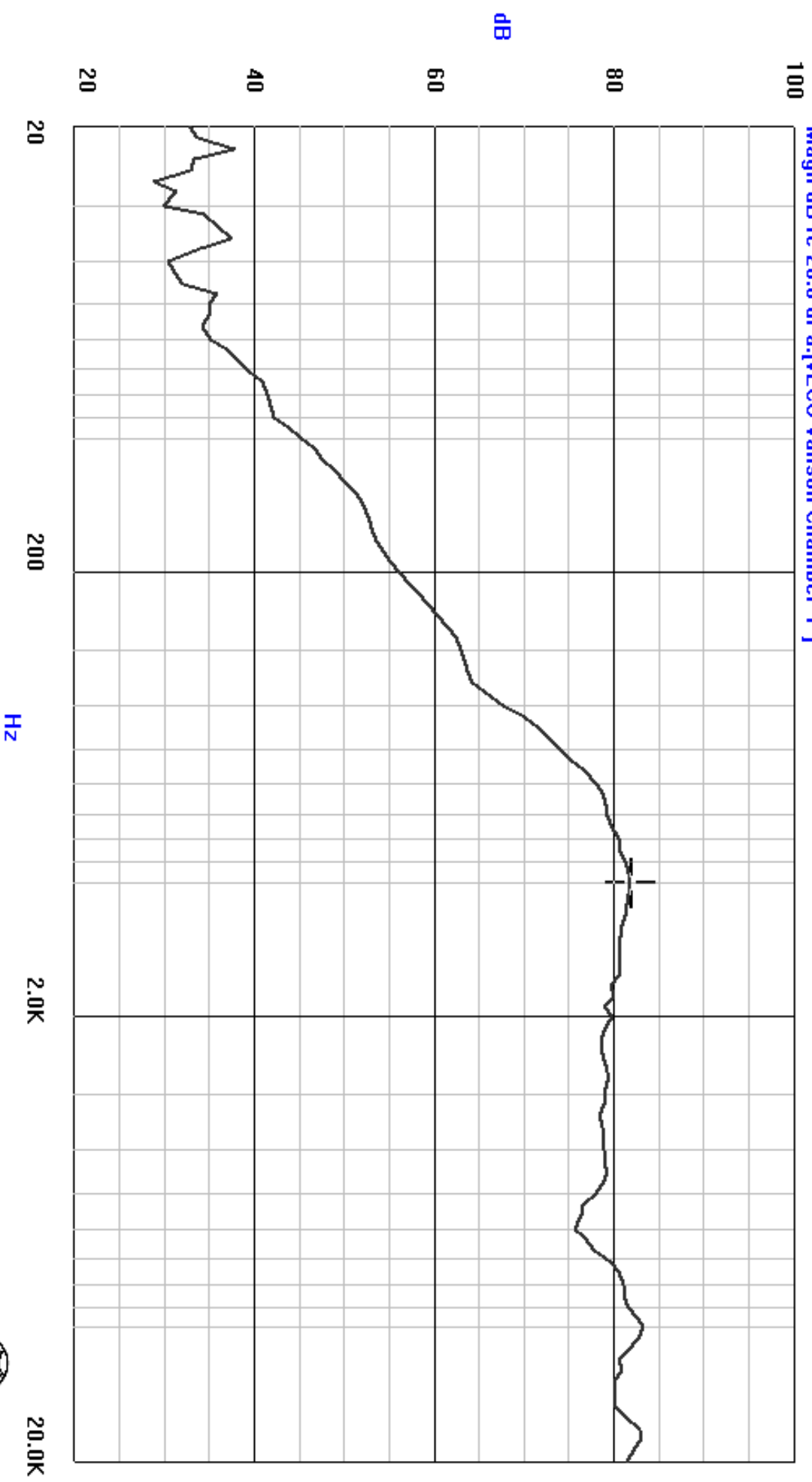
### 5.3 The rated noise power.

The rated noise power is corresponding with the rated noise voltage, its definition is  $U_n^2/R$ ,

$U_n$  indicates the rated noise voltage,  $R$  indicates the rated impedance.

P200CR08F-1-38ND VOL:2.83V[1W] DIS:0.5M VANSONIC

Magn dB re 20.0 uPa.[VEECO Vanson Chamber F1]



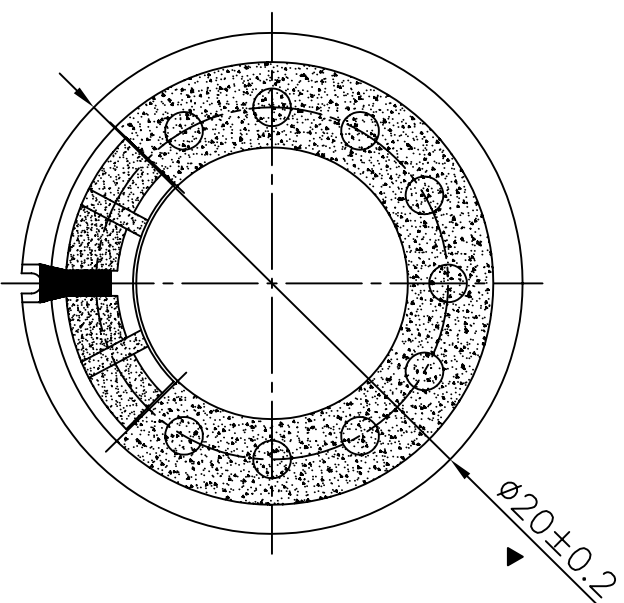
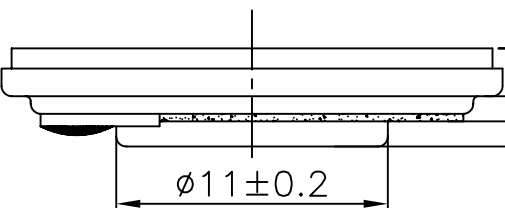
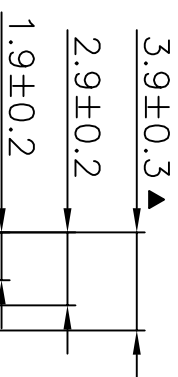
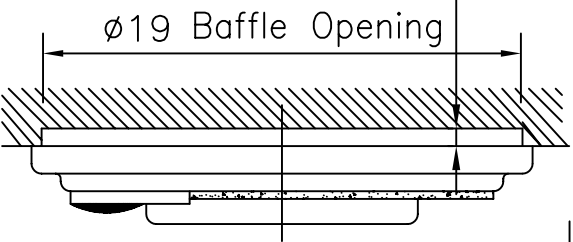
Current Curve: 0 X: 1000 Hz Y: 81.87 dB

Time[Y/M/D H:M:S]: 2009/ 4/ 9 7: 5:29



# MOUNTING NOTICE

At Least  
0.7mm  
For  
Diaphragm  
Moving



RANGE	TOL	✓		
0-8	±0.05	±0.10	±0.20	±0.30
8-16	±0.10	±0.15	±0.25	±0.40
16-24	±0.15	±0.20	±0.30	±0.50
24-50	±0.20	±0.25	±0.40	±1.0
50-100	±0.25	±0.30	±0.50	±2
>100	±0.40	±0.40	±0.80	±3

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Vanson Electronics (Nanhai) Co., Ltd.

Title: P20CR08F-1-38ND-W

銳利電子  
E-MAIL: veeof@vansonc.net  
TEL: +86-757-88536828 FAX: +86-757-88536826

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Unit: mm	Scale:	Appr.:	Dwg.: 韋華利
VERSION	DATE	DESCRIPTION	
V1.0	09.07.24		
Tol.:		CHK.:	