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Specification

規 格 書

品名 (Product Name)	揚聲器 (Speaker)
料號 (Model No.)	P40-50B-1

Revision History			
Version	Date	Description	Author
00	2014/05/09	Preliminary	LHN
01	2014/09/02	增加膜片顏色標示	LHN

核準 (Approval)	高紅華	2014/09/02
審查 (Check)	曾憲財	2014/09/02
設計 (Designer)	王柳華	2014/09/02
制作 (Author)	劉紅妮	2014/09/02

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1.	MODEL:	P40-50B-1					
2	Type:	Mylar					
3	Dimension & Weight	Outer Diameter	Ø 40 mm				
		Baffle Opening	Ø 39 mm				
		Height	Refer to drawing	Weight	9.3 Grams		
4	Magnet	Materials	NdFeB		Size	φ 12.8*1.8mm	
5.	DC Resistance	50		$\Omega \pm 15 \%$,		On OHM Meter	
6.	Power Rating	Normal	0.5 Watts		Maximum	1.0 Watts Sine	
		Normal	Watts		Maximum	Watts Square	
7.	Resonant Frequency	350 $\pm 20 \%$ Hz.					
8.	Output Sound Pressure Level (S.P.L.)	90 db at 1KHz With 1.0 Watt · 0.5 Meter					
		90 ± 3 db/ 1.0 Watt · 0.5 Meter					
		Average at	800	1000	1200	1500	Hz.
9.	Frequency Range	FO \sim 3600 Hz. Average SPL – 10 db.					
10.	Distortion	3 % Maximum At 1000 Hz. 1.0 Watt . 0.5 Meter					
11	Abnormal Sound test	Must be Normal Tested By 5.0 Volts. Sine Wave.					
12	Load Test	Pink noise with HPF(High Pass Filter 235HZ-3db/Oct) 5.0 Volts. (RMS.) 96 Hours.					
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

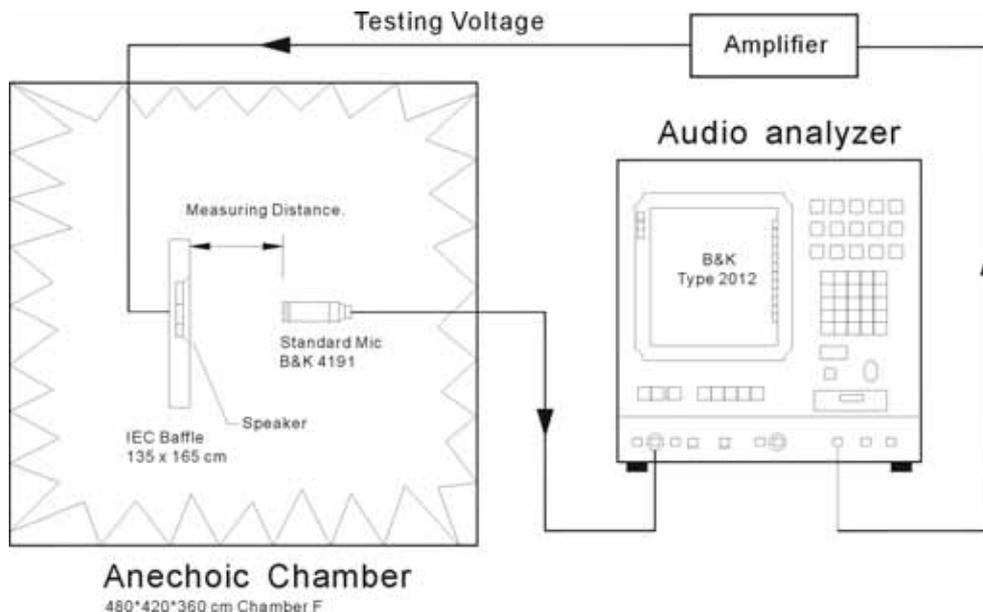
14	High Temperature	+ 85 \pm 2 °C	Humidity Random for 96 Hours. (GB2423.2-81)				
15	Low Temperature	- 40 \pm 2 °C	Humidity Random for 96 Hours. (GB2423.1-81)				
16	Humidity	+ 40 \pm 2 °C	Relative Humidity (RH) 90 ~ 95 % 96 Hours.				
17	Vibration	Frequency 30 \pm 15 Hz, Amplitude 1.5 mm for 3 Hours. (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 ± 3 db from pre-test Measurement, and meet above spec. item 6. 7. 8. 9. 10.							
19	Temperature Cycle test	- 40 ~ + 85 °C	4 Cycles Temperature test. (GB5170.18-87)				

After test leave speakers at room temperature for 1 hour, SPL shall not deviate by ± 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: GB2423.2-81

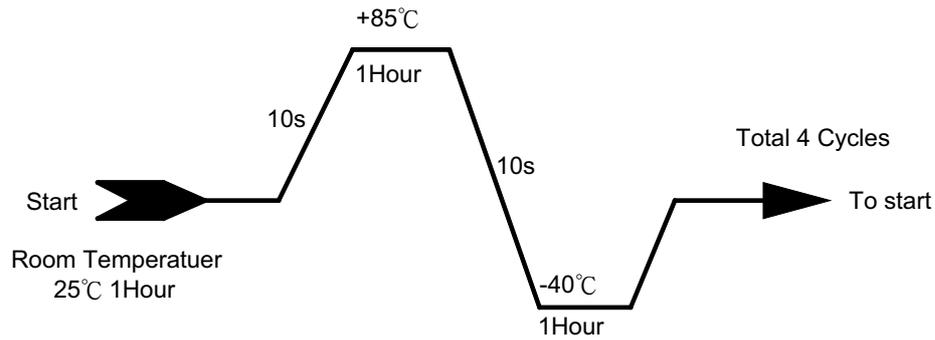
After exposure the speaker in the + 85 ± 2 °C chamber for 96 hours, then leave the speaker at room temperature for 1 hour, the SPL should not deviate by ± 3 db, and resonant frequency should not deviate by ± 50 Hz, compare with pre-test measurement.

3.2 Low Temperature: GB2423.1-81

After exposure the speaker in the -40 ± 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 ± 3 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 96hours, 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

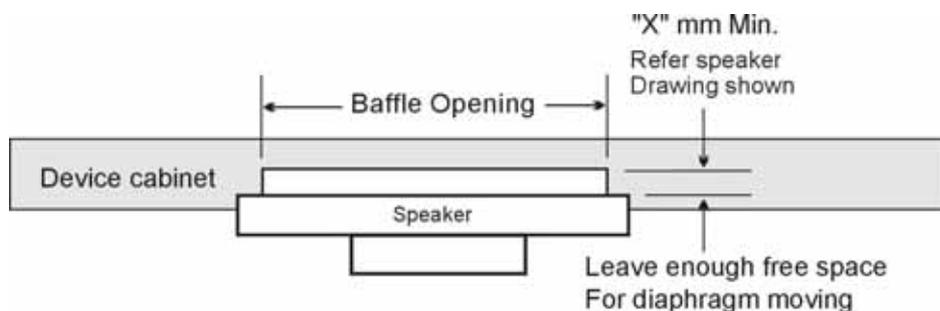
Speaker should not fail after apply 20 ~ 20K Hz Pink noise rated power input (RMS), 96 hours. After test, SPL shall not deviate by ±3 db from pre-test measurement,

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 rated 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 ,

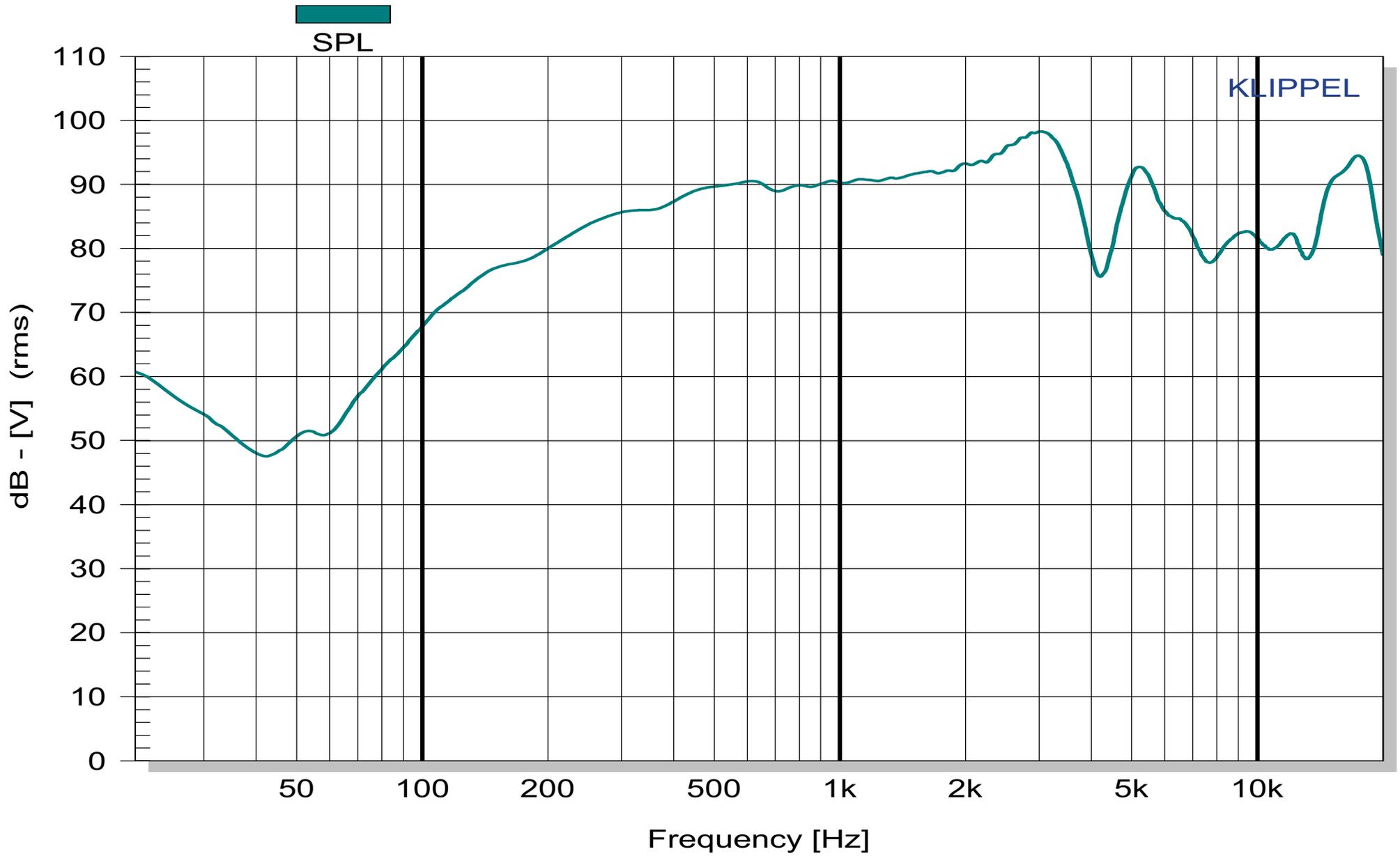
U_n indicates the rated noise voltage, R indicates the rated impedance.

VECO Part NO:

P40-50B-1

Measurement Condition:

VOL : 7.07V [1.0W] DIS : 0.5M

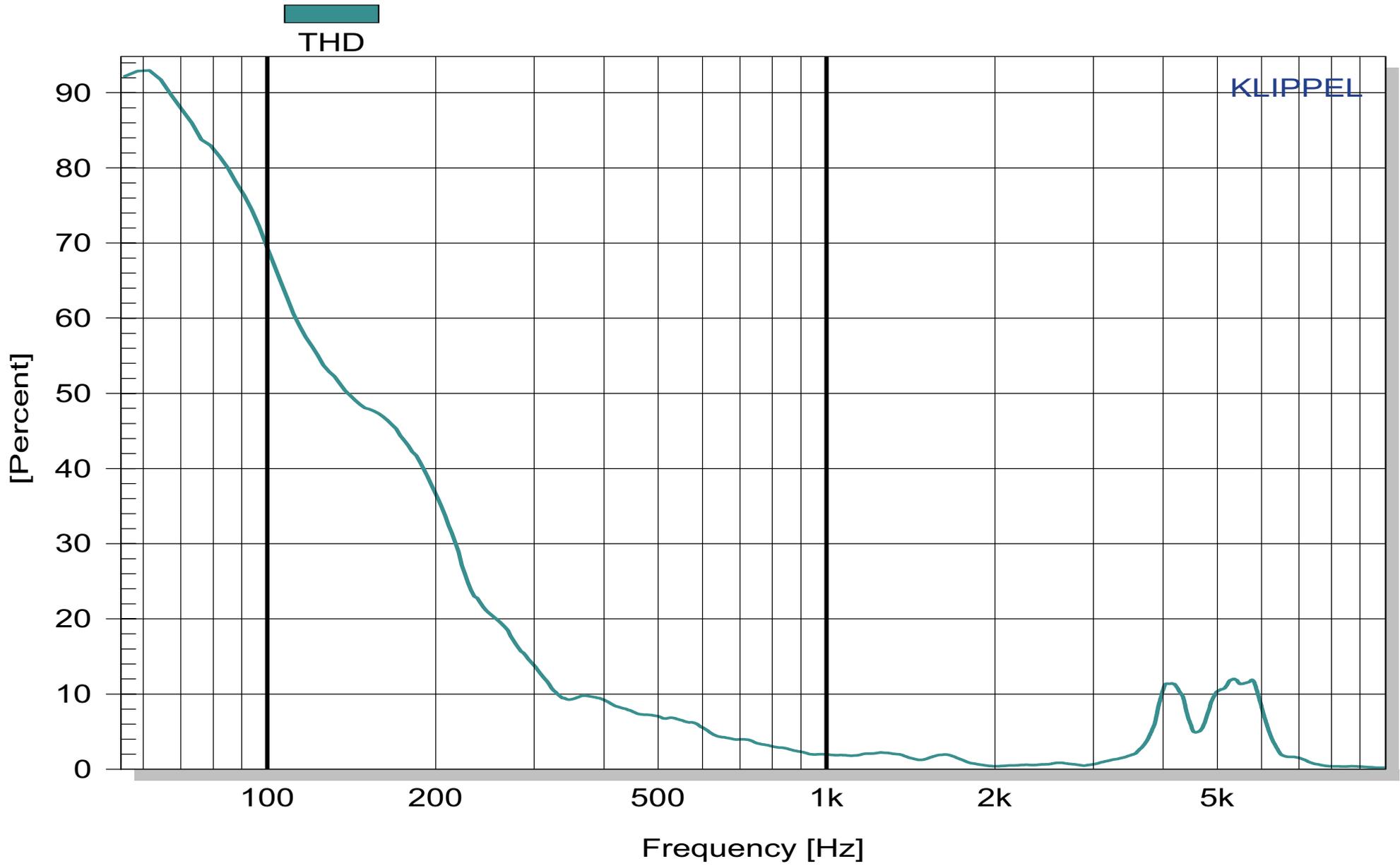


VECO Part NO:

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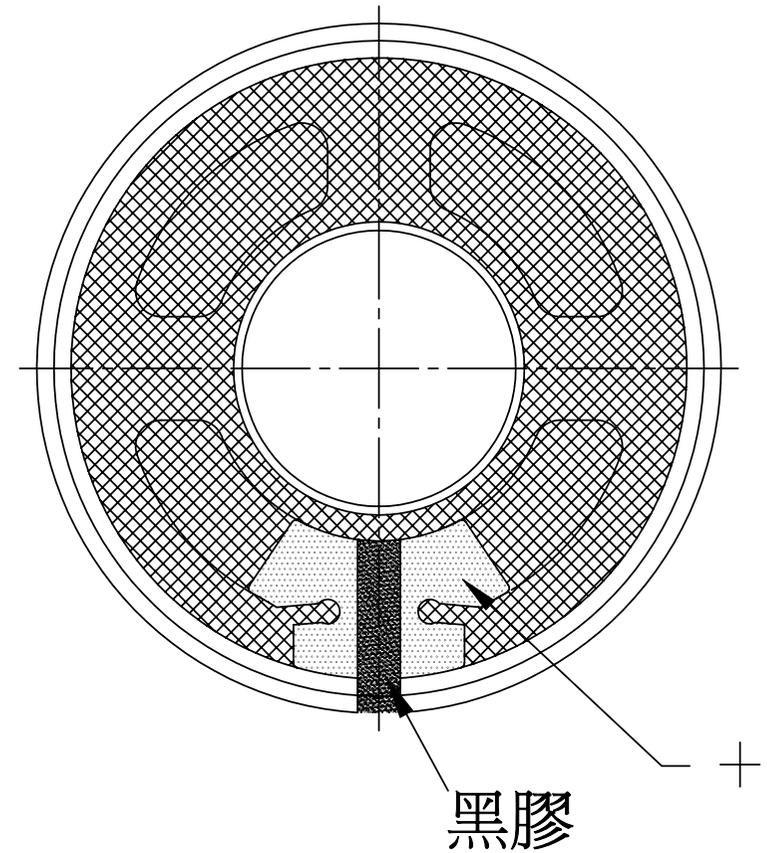
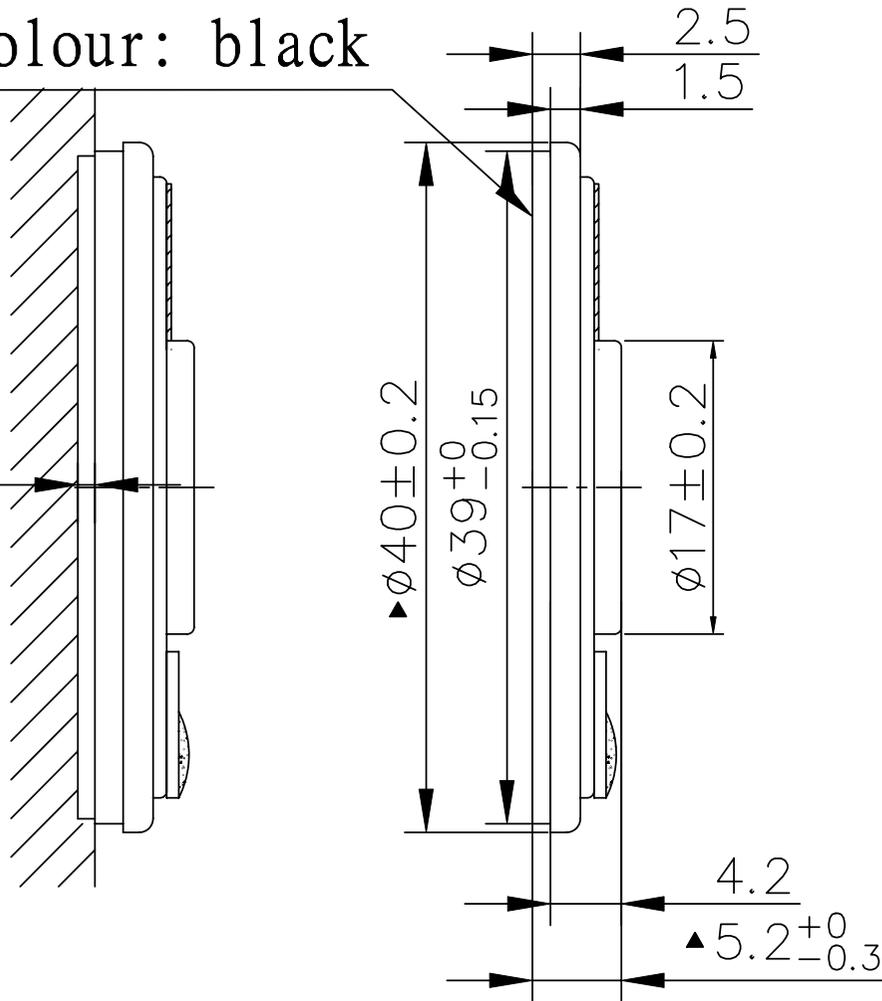
Measurement Condition:

VOL : 7.07V [1.0W] DIS : 0.5M



membrane colour: black

AT LEAST
1.0mm
FOR
DIAPHRAGM
MOVING



加▲為重點尺寸

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

01	02/09/14	增加膜片顏色標示	
00	08/05/14		
VERSION	DATE	DESCRIPTION	
Unit: mm	Scale: 01	Appr.:	
Tol.:		CHK.:	Dwg.: 王柳華

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Title: P40-50B-1

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