



i236L/i236C 1/2” Digital Microphones

Technical Specifications

Confidential

Released for OEMs and Distributors Only

REFERENCES

[1] IEC 61672-1 Electroacoustics – Sound level meters – Part 1: Specifications.

[2] IEC 61094-4 Measurement microphones Part 4: Specifications for working standard microphones.

[2] BSWA MPA436 Technical Specifications

[3] MicW i436 Technical Specifications

Summary

MicW i236L/C is 1/2” prepolarized free-field digital measurement microphone. It has omnidirectional pattern. It is an ideal choice for iPhone, iPad mobile (iOS Lightning or Type C connectors) devices as external microphone. The i236L/C are developed based on BSWA MPA436 array microphone which is widely used in aerospace and automotive industry.

The i236L/C have the following main features

- 1) **Typical Sensitivity Correction** Factor: -5.11 ± 3.0 dB tested with NoiseLab APP in MID Range using BSWA CA114 sound level calibrator. or -17.19 ± 3.0 dBFS). The analog sensitivity of the capsule is -28.0 dB re 1V/Pa, or 39.8mV/Pa.
- 2) **Measurement ranges** from 23.0 dBA to 119.0 dB;
- 3) **Flat Frequency Response- 20 Hz - 20 kHz:** The frequency response complies with IEC 61672 Class 2 tolerances.
- 4) **Signal to Noise Ratio:** 80 dB
- 5) **Mobile Device Connections:** The i236L/C are specially designed for iOS devices (iPhone, iPad Lightning connector) . It does not need additional hardware and power to be connected.

The recommended applications for i236L/C are:

- 1) iPhone, iPAD external microphone for measurements
- 2) It is also a good recording microphone with omni-directional pattern.
- 3) NoiseLab APP is recommended for using with i236L/C for acoustic analysis

Before the factory release, all the microphones are going through solid environmental testing, which includes high temperature ageing and high humidity ageing. It is stable microphone for accuracy acoustical measurements.

Comparison i236L/C and i437L/C

	i236L/C	i437L/C	New i236L/C Notes
Diameter	1/2" (13.2mm)	1/4" (7.0mm)	Large diameter
Sensitivity	-17.19 dBFS	-25.75 dBFS	Higher Sen.
Measurement Range	23 -119 dB	37 – 125 dB	Lower noise floor
Frequency Range	20 – 20kHz	20 – 20kHz	The same
Mechanical Design	Fit iPhone with protection cover on	Remove protection cover to fit i437L	The design changes
Suitable for	iPhone and iPad	iPhone and iPad	Lightening or Type C
For Measurement	Low Noise	General	
For Recording	Studio, Voice	Outdoor/Loud music	
Package	Paper Box	Plastic Box	
Manual	On website	Printed	
Sensitivity Value	On Website	In printed manual	

1. Dimensions

The i236L/C are shown in Figure 1



Figure 1: Dimensions of i236L/C

Table 1 : Dimensions of i236L/C

Models	i236L	i236C
Diameter (Front) (mm)	13.2	13.2
Diameter (Back) (mm)	10.0	11.0
Total Length (mm)	46.6	49.4
Length of housing (mm)	40.0	43.0
Slit depth (mm)	2.0	2.0
Weight (g)	13.9	17.3

2. Materials

- (1) Housing: Stainless Steel
- (2) Labeling: Laser cutting letters. “MicW i236L 606003 ”.

3. Acoustical Properties

- (1) Response: Free field
- (2) Directivity: Omni
- (3) Sensitivity: -17.19 ± 3.0 dBFS .
- (4) The analog sensitivity of the capsule: -28.0 dB re 1V/Pa, or 39.8mV/Pa.
- (5) Correction Factor: -5.11 ± 3.0 dB tested with NoiseLab APP in MID Range
- (6) Equivalent Noise Level: 23.0 dB(A)
- (7) Upper Dynamic Limit: 119.0 dB
- (8) Frequency Range: 20~20,000Hz (complied with IEC 61672 Class 2 requirements at reference conditions)
- (9) Power supplier: From Apple device
- (10) T.H.D.: $< 3\%$ at 119dB SPL
- (11) Operating Temperature Range: -20°C , $\sim 50^{\circ}\text{C}$

(12) Polarization Voltage: 0 V

4. Frequency Response Control

i437L uses the tolerances allowed by IEC61672 Class 2 as shown in Figure 2.

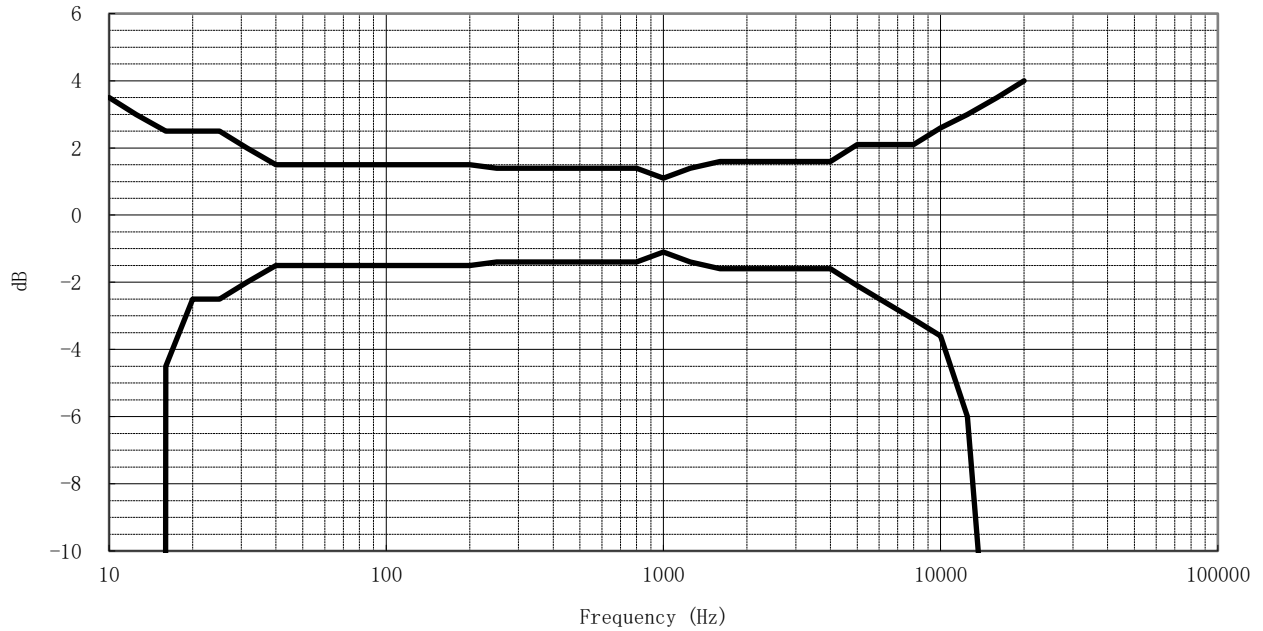


Figure 2: Production Quality Control Limits for i236L/C. (The same as IEC61672 Class 2)

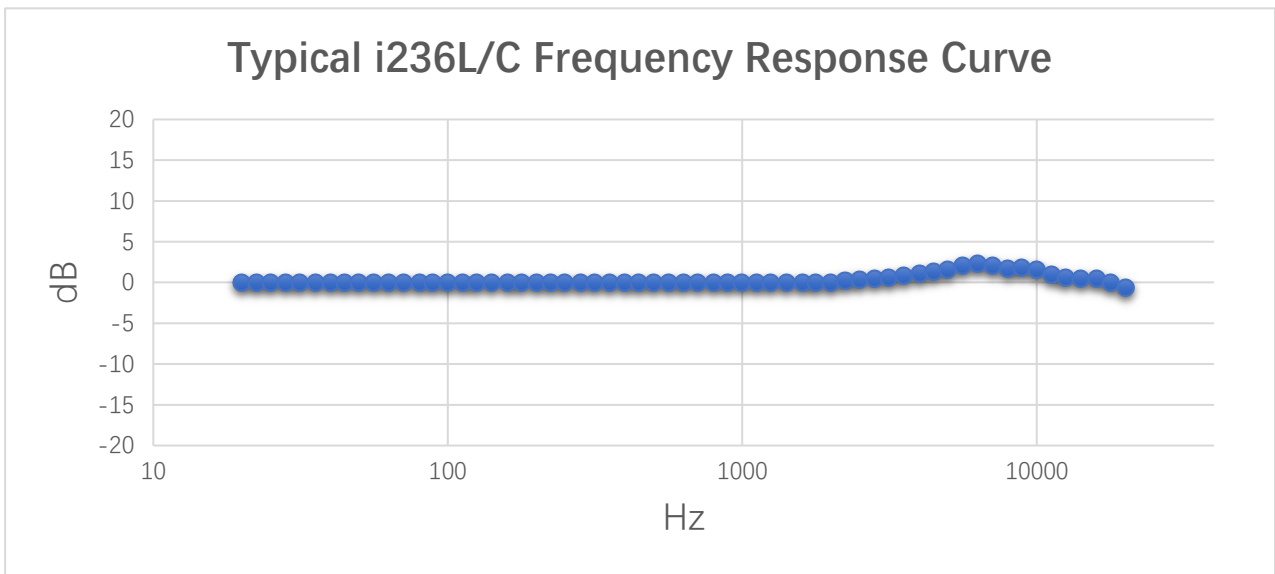
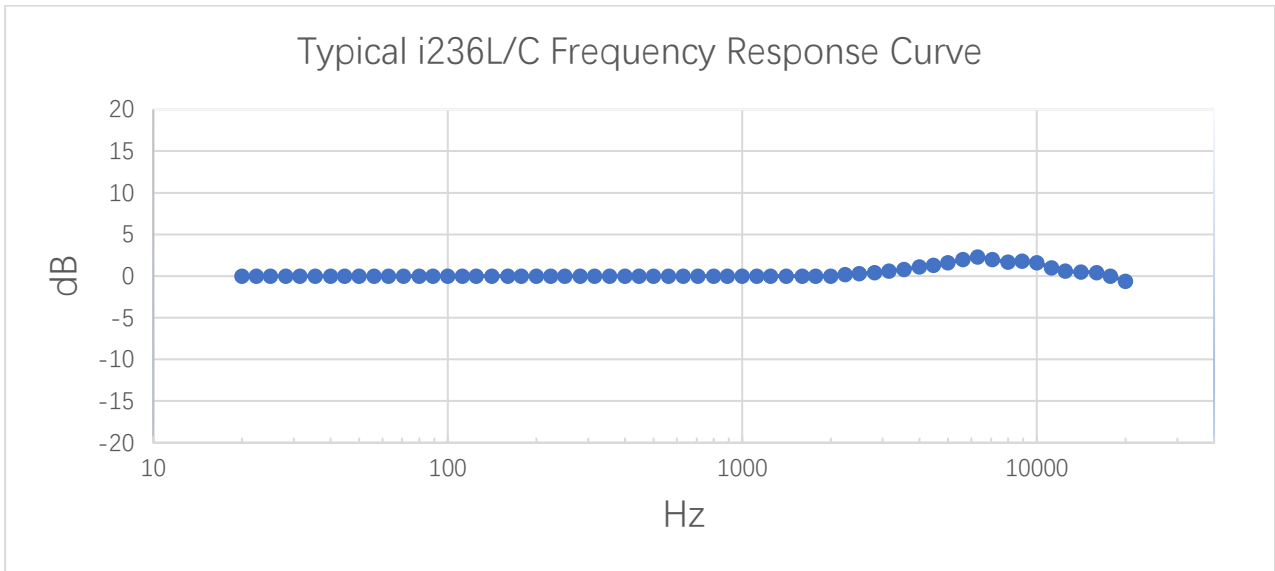
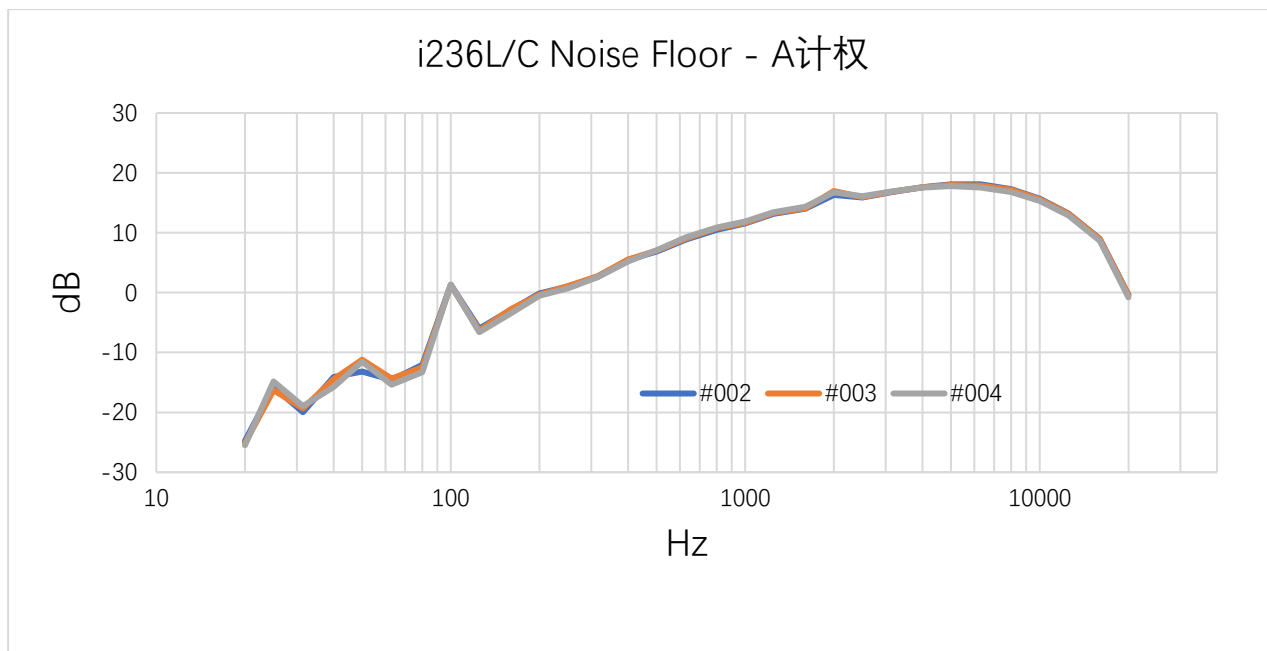


Figure 3 shows the typical frequency response for i236L/C.

5. Noise Floor of i236L/C



5. Packages

i236L/C is delivered in the package. The standard package includes

i236L

1. 1 Microphone i236L
2. 1 Package Box (67x67x26 mm)
3. No printed manual; Please visit <http://manual.bswa.com.cn/>

i236C

1. 1 Microphone i236C
2. 1 Package Box (67x67x26 mm)
3. No printed manual; Please visit <http://manual.bswa.com.cn/>