

AWA14431 1/4" Prepolarized Free-Field Wideband Measurement Microphone



Features

● Key Parameters

Sensitivity:	4.0 mV/Pa
Frequency range:	3.15 Hz to 80 kHz
Dynamic Range	40 dBA~165 dB

● Applications

High Frequency (Ultrasonic) Testing
Free Field Testing
High Sound Pressure Level Testing

● Standards

IEC 61094-4:1995 Measurement Microphones Part 4:

Brief Description

The AWA14431 prepolarized free-field wideband measurement microphone is designed for free-field acoustic measurement scenarios. It includes an independent calibration certificate and is suitable for acoustic environments with no reflections or only incident sound waves in a specific direction (such as anechoic chambers and semi-anechoic chambers). It features a flat frequency response of 3.15~80 kHz, can withstand sound pressure levels up to 165 dB, and is characterized by its compact size and high stability. The kit supports connection to mainstream acoustic analysis instruments and is widely used in noise source localization, equipment acoustic performance testing, ultrasonic testing, and other fields.

Product Highlights

Applications of Prepolarized Free Field Wideband Measurement Microphones

Free field wideband microphones have an extremely wide measurement frequency range and a high dynamic range, accurately capturing high-frequency sound signals, making them ideal for high-frequency sound signal testing, noise source localization, and equipment acoustic performance testing.

Compatibility

The AWA14431 measuring microphone is compatible with IEPE or conventional preamplifiers from various manufacturers. IEPE is a general-purpose constant current source power supply technology used in preamplifiers. Different manufacturers may use different names, such as ICP (Integrated Circuit Constant Current Source) or CCP (Constant Current Source).

Calibration

Each measurement microphone is calibrated at the factory using traceable calibration equipment and comes with a calibration certificate. Recalibration is recommended at least annually.

Quality and Warranty

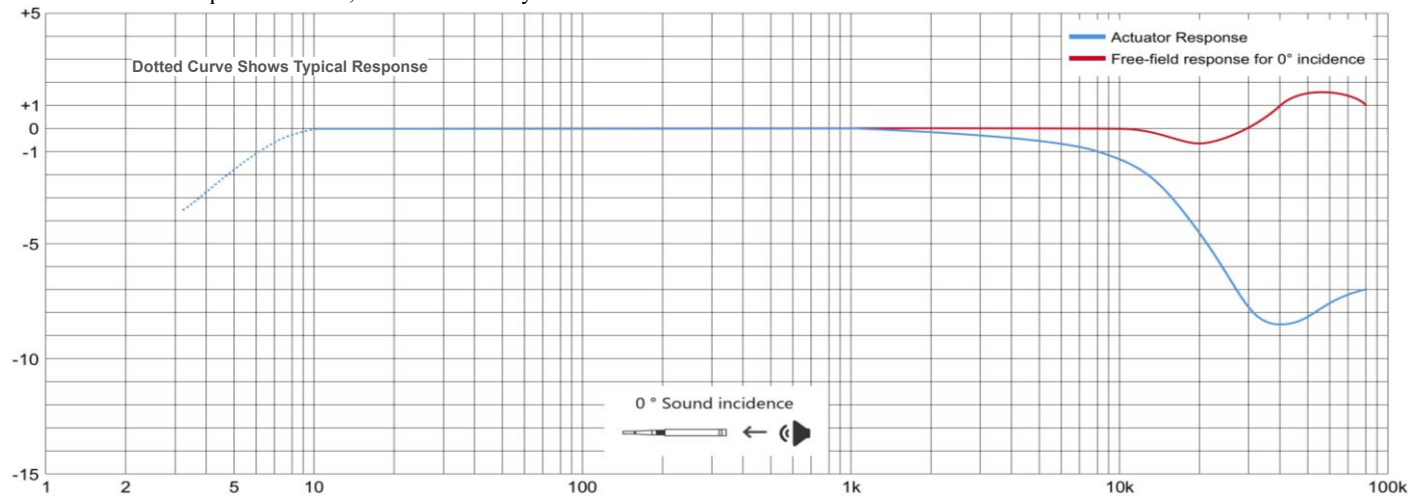
The microphones utilize a second-generation alloy diaphragm, a high-strength protective grille, and synthetic corundum insulators, making them stable and reliable measuring microphones on the market. Compared to traditional nickel and stainless steel, the alloy diaphragm offers superior corrosion resistance, high-temperature stability, shock resistance, and specific strength. All microphones are assembled and tested in a Class 1000 cleanroom to ensure product consistency and stability. The microphones come with a one-year warranty, and we will provide users with comprehensive after-sales support services.

Technical Specifications

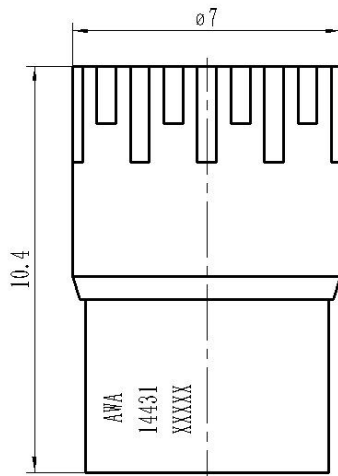
AWA14431 Prepolarized Free-Field Wideband Measuring Microphone			
Field Type	Free Field	Lower limit frequency (-3dB) (Hz)	3.15
Diameter	1.4 inches	Operating Temperature (°C)	-30~+80
IEC 61094	WS3F	Temperature coefficient (dB/°C) (@250 Hz)	-0.01 (-10 °C~50 °C)
Polarization Voltage (V)	0	Static pressure coefficient (dB/kPa)	-0.005
Sensitivity (mV/Pa) (@250 Hz ± 2.0 dB)	4.0	Operating humidity range (%RH)	0~100
Frequency range (Hz)	3.15~80k	Height with grid (mm)	10.4
Capacitance (pF) (@250 Hz)	0	Diameter with grid (mm)	7
Dynamic Range	40 dBA~165 dB	Height without grid (mm)	9.1
Noise floor (dBA)	≤40	Diameter without grid (mm)	6.35
Voltage Equalization Method	Post-Equalization	Preamplifier Fitting Thread	5.7 mm-60 UNS

Frequency Response

Test conditions: Temperature 23 °C, Relative humidity 50 %RH



Dimensions



Ordering Information

Optional Accessories

Preamplifier	AWA14614E 1/4" BNC connector
Connector	AWA14600E 1/2" LEMO connector
Sound Calibrator	AWA6021A

Related Products

AWA14403 1/2" Free-field standard microphone	14.1 mV/Pa, 3.15 Hz~40 kHz, 22 dBA~159 dB
AWA14404 1/2" Pressure field standard microphone	12.6 mV/Pa, 3.15 Hz~20 kHz, 22 dBA~160 dB
AWA14423 1/2" Pre-polarized free-field measurement microphone	50 mV/Pa, 3.15 Hz~20 kHz, 16 dBA~146 dB
AWA14423C 1/2" Pre-polarized free-field infrasound sensor	50 mV/Pa, 0.1 Hz~20 kHz, 16 dBA~146 dB
AWA14523 1/2" Pre-polarized free-field infrasound broadband sensor	31.6 mV/Pa, 0.1 Hz~40 kHz, 20 dBA~153 dB
AWA14426 1/2" Pre-polarized pressure field measurement microphone	12.6 mV/Pa, 3.15 Hz~20 kHz, 25 dBA~161 dB
AWA14436 1/4" Prepolarized Pressure Field Wideband High Sound Pressure Measurement Microphone	1.0 mV/Pa, 3.15 Hz~70 kHz, 53 dBA~176 dB
AWA14411 1" Prepolarized Free Field Low Noise Measurement Microphone	100 mV/Pa, 10 Hz~16 kHz, 6.5 dBA~137 dB
AWA14412 1" Prepolarized Pressure Field Measurement Microphone	50 mV/Pa, 10 Hz~8 kHz, 14.5 dBA~146 dB