

**CA915** is a high sound pressure calibrator using the comparison method. The built-in compression driver delivers up to 164 dB at a small cavity. Two 1/2" (or 1/4" with the adaptor) holes where the reference and test microphones are installed were connected to the cavity. The sound pressure levels were measured simultaneously by the reference and test microphones. The comparison was made between two microphones and calibration value was then obtained. The compression driver can handle the frequency from 2 KHz to 10 kHz and it is possible to calibrate the microphone at multi-frequencies.



### SPECIFICATIONS

High Sound Pressure Calibrator CA915	
Working Principles	Comparison Method
Test Objects	1/2" and 1/4"
Build-in Loudspeaker	280W Compression
Max output SPL	> 154 dB SPL @ 2000 ~ 10000 Hz > 164 dB SPL @ 2000 ~ 2500 Hz, 6200 ~ 6600 Hz
Frequency response	2 kHz ~ 8 kHz
Connector for Input	BNC
Net weight	14.5 Kg

The MKV451 (optional item) is recommended as the reference microphone with upper-limit of 167 dB. A power amplifier (SWA100) is also required to drive the CA915.

**CA916** The comparison method plays an important role in frequency response measurement, especially for nonmetal diaphragm transducer which cannot be tested by electrostatic actuator. Nonmetal diaphragm transducer can only be tested in direct method or the comparison method. Since the direct method is more susceptible to the environment, we have to turn to the comparison method which can eliminate the environmental effect.



### SPECIFICATIONS

Full Frequency Coupler CA916	
Working Principles	Comparison Method
Test objects	1/4" or 1/2" microphone
Frequency response	20 ~ 20k Hz
Size	110 × 95 × 90 mm
Net weight	1.2 Kg
Build-in Loudspeaker	0.8 W
Coupler Volume	1.13 cm <sup>3</sup>
Reference Microphone	MPA231

The BSWA full frequency coupler CA916 is designed based on the comparison method. A 1/2" microphone is mounted inside the housing of the coupler as a reference. Properly designed cavity ensures that the sound pressure on the DUT transducer diaphragm is the same as the one on the reference microphone. The measurement frequency range is from 20~20K Hz.



### SPECIFICATIONS

Low Frequency Coupler CA917	
Microphone	1-inch, 1/2-inch and 1/4-inch microphone (AD002-1/4 is option)
Frequency Response	3.15Hz ~ 500Hz
Sound level	>110dB
Speaker	4-inch aluminum-magnesium alloy diaphragm
Rated Impedence	8Ω
Rated Power	15W
Max Input Voltage	1Vrms
Size (mm)	W380 x H173 x D135
Weight	3.1kg

**CA917** low frequency coupler is a sound source design for frequency response measurement of sound level meter and microphone. It meets the requirement of low frequency measurement which described in GB/T 3785.1, JJG 188 and IEC 61672.1. The frequency range can be down to 3.15Hz with less than 1% THD+N. Thanks to the professional acoustic design, the cavity resonant frequency is increase to approx. 800Hz to keeps flat response at low frequency range. 3.15Hz~100Hz flatness is 0.3dB even without calibration, above 100Hz need calibration with standard microphone.

**CA917** use high quality 4-inch aluminum-magnesium alloy diaphragm speaker with internal fix in order to lower the speaker vibration. Signal input connector is BNC. Sound level meter or microphone can be easily fixed with the adjustable support. Adapter AD004 (1-inch to 1/2-inch) is include in the CA917 and AD002-1/4 (1/2-inch to 1/4-inch) is option.

**EA002** is an electrostatic actuator designed and manufactured by BSWA for testing frequency response of microphones. An electrostatic actuator comprises an electric metal plate which can be placed near the microphone diaphragm. A time-various voltage is applied in between the metal plate and the diaphragm and thus an electrostatic force simulating sound pressure can be distributed on the diaphragm surface.



EA002 is especially designed for testing the

frequency response of 1" microphones. It can be placed directly on the diaphragm of a microphone. It also could be used for 1/2" and 1/4" microphones with the corresponding adaptor.

EA002 conforms to IEC 61094-6 standard and can be calibrated periodically with a sound level meter in accordance with IEC 61672-3 standard.

### SPECIFICATIONS

Electrostatic Actuator EA002	
Standards	IEC 61094-6
Microphone Diameter	1"
Dimension	Φ35 x 17.5 mm
Weight	40 g

**AS011** is the electrostatic actuator power supply. It have built-in signal amplifier of 30 dB. It can take the signal directly from a data acquisition card. AS011 can provide an 800V, 200V and 0V DC bias voltage to drive the electrostatic actuator.



### SPECIFICATIONS

Electrostatic Actuator Power AS011	
Max. Input Voltage	1 Vrms
Gain	30 dB
Max. Output Voltage	25 Vrms
DC Bias Voltage	800 V, 200 V, 0 V
Frequency Range	3 Hz ~ 200 kHz
Output Impedance	100 Ω
Power Supply	15 VDC/1A
Dimension	275 x 224 x 85 mm
Weight	3.4 Kg

**CS012** Calibration Stand CS012 is a platform for easy testing the technical specifications of the microphone in various situations.

The hollow pole in the middle of CS012 is used to fix preamplifiers. Square socket under the bottom is designed for cables. Locking devices are of 2 sizes which can be used for both 1/2" and 1/4" microphones.



### SPECIFICATIONS

Calibration Stand CS012	
Matching Diameter of microphone	1/2" , 1/4"
Dimension	Φ150 mm × 15 mm (base) Φ20 mm × 145 mm (pillar)
Weight	400 g