



## OM243 / OM263 Permanent Outdoor Microphone

### Features:

- Optimized for 0° and 90° incidence to meet IEC 61672-1
- Delivered with Individual calibration data
- Built-in electric heater can make the microphone working under low temperature and high humidity environment
- The serial port can control the actuator and read out the temperature and humidity
- IP54 enclosure to against wind, rain, snow, dust and perching birds
- The protection kit can be quickly removed for calibration
- Built-in electrostatic actuator and signal source for remote system check
- ICCP power supply, low self-generated noise, typical noise level is ~17 dBA
- It can be installed on the tripod by 1/4-inch thread on the bottom

### Applications:

- Aircraft and airport noise measurement
- Urban, traffic and industrial noise measurement
- Acoustic measurement in severe weathers



### Introduction

**OM243/OM263** permanent outdoor microphone is developed by BSWA Tech for outdoor noise monitor. Compared with semi-permanent outdoor microphone, the main improvement of permanent outdoor microphone is the built-in electrostatic actuator which can be used for remote system check. The internal signal source can be controlled by serial communication to generate actuating signals with 5 frequencies (250 Hz, 500 Hz, 1 kHz, 2 kHz and 4 kHz) and sound pressure level of 90 dB.

In order to avoid frequent acoustic calibration of outdoor microphone, electrostatic actuator can be used for whole system check including microphone, cable and measuring instrument. When the sensitivity and frequency response of the microphone change enough to affect the measurement, the microphone is no longer suitable for noise measurement, and it should be calibrated by sound signal or even replaced.

**OM243/OM263** uses the electrostatic actuator method to apply the known alternating electrostatic force to the metal diaphragm of the condenser microphone through the electrode to push the metal diaphragm to vibrate for calibration. It can also be used to monitor the change of sensitivity. However, electrostatic actuator cannot replace acoustic calibration, and periodic sound calibration is still necessary.

The frequency response of **OM243** is optimized for 0° incidence, primarily for aircraft and airport noise measurement. The **OM263** is optimized for 90° incidence, primarily for urban, traffic and industrial noise measurement. Both of two types of microphones have been specially designed to achieve the free-field frequency response in specified direction of incidence within the limits of IEC 61672-1. Each microphone is supplied with an individual calibration certificate that contains the actual sensitivity and free-field frequency response data for the complete set of outdoor microphones. Users can use the calibration data to correct the measurement data for more accurate results.

**OM243/OM263** meets the IP54 ingress protection rating. The windscreen, internal rain hood and dust mesh can fully protect microphone to against wind, rain, snow, dust and other severe weathers. Built-in electric heater can automatically work in low temperature and high humidity environment to avoid exceeding the working temperature range of microphone and prevent condensation. The bird spike prevents impact of perching birds to the measurement.

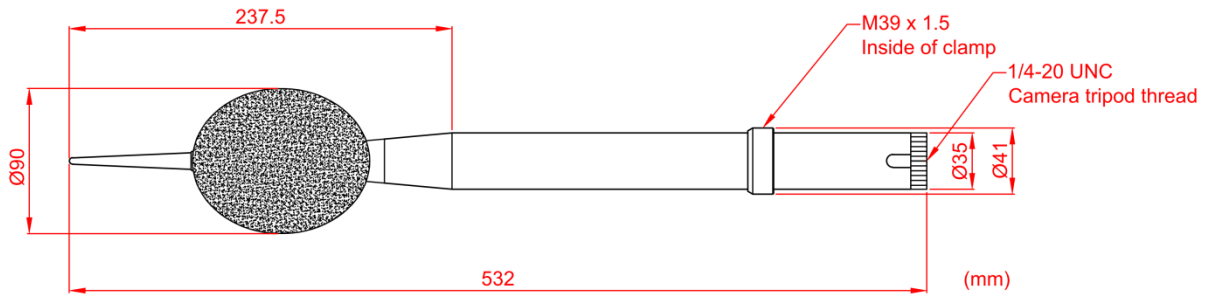
**Specifications**

|                                 |  |                                     |
|---------------------------------|--|-------------------------------------|
| Type                            | OM243  | OM263                               |
| Application                     | Aircraft and airport noise   | Urban, traffic and industrial noise |
| Incidence                       | 0°   | 90°                                 |
| Standard                        | GB/T 3785.1-2010 Class 1, IEC 61672-1:2013 Class 1, ANSI S1.4-1983 Type 1  |                                     |
| Built-in Microphone             | 1/2" Prepolarized Microphone   |                                     |
| Sound Field                     | Free-field   |                                     |
| Sensitivity                     | 40 mV/Pa (-28 dB re 1V/Pa)   |                                     |
| Polarization Voltage            | 0 V (Prepolarized)   |                                     |
| Frequency Response              | 10 Hz~20 kHz (According to IEC 61672-1)  |                                     |
| Dynamic Range                   | 17 dBA~134 dB  |                                     |
| Self-generated Noise            | 17 dBA   |                                     |
| Maximum SPL                     | ≥ 134 dB (3 % distortion)  |                                     |
| Peak SPL                        | 137 dBA  |                                     |
| Electrostatic Actuator          | Built-in electrostatic actuator and signal source can generate signal of 90 dBSPL @ 250 Hz, 500 Hz, 1 kHz, 2 kHz and 4 kHz |                                     |
| Wind Noise Attenuation          | 20 dBA (wind speed 10 m/s)   |                                     |
| Output Impedance                | <30 Ω  |                                     |
| Max. Output Voltage             | ±7.1 Vpeak   |                                     |
| Power Supply                    | Wide range DC power supply: 12 V~32 V  |                                     |
| Output Connector                | 9-pin waterproof socket: SF1212/S9   |                                     |
| TEDS                            | Optional, IEEE 1451.4 compliant (default v0.9, optional v1.0)  |                                     |
| Mounting Thread                 | 1/4" thread  |                                     |
| Enclosure                       | IP54 (Microphone vertical placement only)  |                                     |
| Electric Heater                 | DC heater, power consumption: 4 W  |                                     |
| Temperature and Humidity Sensor | Measure the surface temperature of the preamplifier, tolerance: temperature ±0.3 °C, humidity ±3 %RH                       |                                     |
| Temperature Range               | -30 °C ~ 80 °C   |                                     |
| Humidity Range                  | 0 %RH ~ 95 %RH   |                                     |
| Dimensions (mm)                 | Ø90 x 432 (without support rod), Ø90 x 532 (with support rod)  |                                     |
| Weight                          | 392 g (without support rod), 488 g (with support rod)  |                                     |

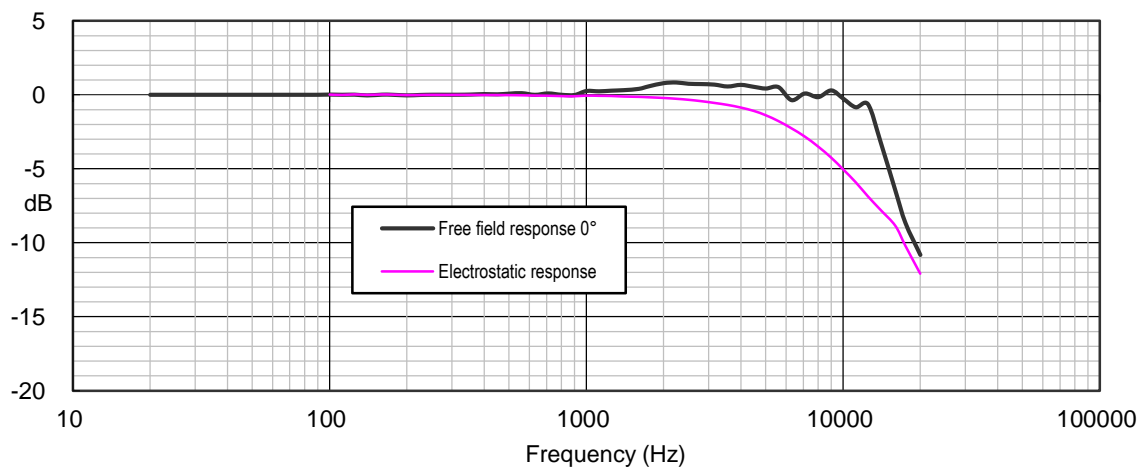
**Product Structure**



## Dimensions



## OM243 Free-filed Frequency Response 0°



## OM263 Free-filed Frequency Response 90°

