

## Earthworks M30

# Earthworks Audio M30 Omnidirectional Measurement Microphone

MODEL: M30

Brand: Earthworks

## 1. OVERVIEW

The Earthworks Audio M30 is a high-quality omnidirectional measurement microphone designed for accurate acoustic measurements. It features a small, precise omnidirectional element, a durable stainless steel body, and advanced circuitry to deliver a flat, time-coherent frequency response from 9 Hz to 30 kHz. The M30 is widely recognized as a standard reference for various audio measurement systems, including Smaart, MLSSA, SIMM, and TEF.

This microphone is engineered for reliability and precision, making it an essential tool for professionals requiring consistent and accurate sound analysis. Its robust construction ensures durability, while its stable performance across temperature variations allows for reliable field calibration.

## 2. WHAT'S IN THE BOX

- Earthworks Omnidirectional Measurement Microphone
- Microphone Clip
- Calibration Adapter
- Protective Case
- Earthworks 15 Year Parts and Labor Warranty Information







Figure 1: Earthworks M30 Omnidirectional Measurement Microphone with its included microphone clip.

The package includes the M30 microphone, a microphone clip for secure mounting, a calibration adapter for field calibration, and a protective case for transport and storage. Detailed warranty information is also provided.

### 3. KEY FEATURES

---

- **Frequency Response:** +1/-3 dB from 5 Hz - 30 kHz
- **Polar Pattern:** Omnidirectional
- **Sensitivity:** 8 mV/Pa (-42 dBV/Pa)
- **Power Requirements:** 48V Phantom Power, 10 mA
- **Output:** XLR, intended to drive a balanced, transformerless input, Pin 2 +

### 4. SETUP

---

1. **Unpack the Microphone:** Carefully remove the M30 microphone and its accessories from the protective case.
2. **Attach the Microphone Clip:** Securely fasten the included microphone clip to a suitable microphone stand or boom arm.
3. **Mount the Microphone:** Insert the M30 microphone into the clip. Ensure it is firmly held but not overtightened.
4. **Connect XLR Cable:** Connect a standard XLR cable to the microphone's output. The M30 requires a balanced, transformerless input, with Pin 2 as the positive signal.
5. **Apply Phantom Power:** Connect the other end of the XLR cable to an audio interface, mixer, or preamplifier that can supply 48V phantom power. The M30 requires 10 mA of current. Ensure phantom power is activated on your device.
6. **Positioning:** For accurate measurements, position the microphone in the desired location within the acoustic space. Due to its omnidirectional pattern, the microphone picks up sound equally from all directions.

### 5. OPERATING

---

The Earthworks M30 is designed for precise acoustic measurements. Its omnidirectional polar pattern means it captures sound from all directions uniformly, which is crucial for room analysis and loudspeaker design. To achieve the most accurate results:

- **Microphone Placement:** Place the microphone at the listening position or at various points within the room to capture a comprehensive acoustic profile. Avoid placing it too close to reflective surfaces unless specifically intended for boundary measurements.
- **Calibration:** Utilize the included calibration adapter with a 1/2-inch calibrator for field calibration. This ensures the microphone's sensitivity is accurately accounted for in your measurement software, providing correct absolute SPL readings.
- **Software Integration:** Use the M30 with your preferred acoustic measurement software (e.g., Smaart, MLSSA, SIMM, TEF) to analyze frequency response, phase, and other acoustic properties of your

sound system or environment.

- **Signal Monitoring:** Monitor the input signal levels to prevent clipping or distortion, ensuring the integrity of your measurements.

## 6. MAINTENANCE

---

- **Cleaning:** Gently wipe the microphone's stainless steel body with a soft, dry cloth. Avoid using harsh chemicals or abrasive materials that could damage the finish or internal components.
- **Storage:** When not in use, store the M30 in its provided protective case to shield it from dust, moisture, and physical impact.
- **Handling:** Handle the microphone with care. While durable, dropping or subjecting it to severe shocks can affect its calibration and performance.
- **Environmental Conditions:** Avoid exposing the microphone to extreme temperatures or high humidity for prolonged periods.

## 7. TROUBLESHOOTING

---

- **No Sound:**
  - Ensure 48V phantom power is enabled on your audio interface or mixer.
  - Check all XLR cable connections for proper seating and integrity.
  - Verify that the input gain on your audio device is set appropriately.
- **Distorted Sound:**
  - Reduce the input gain on your audio device to prevent clipping.
  - Ensure the microphone is not exposed to excessively high sound pressure levels beyond its maximum SPL rating.
- **Inaccurate Readings:**
  - Perform a field calibration using a 1/2-inch calibrator and the provided adapter.
  - Check microphone placement to ensure it is not influenced by unwanted reflections or room modes.
  - Verify that your measurement software is correctly configured for the M30's characteristics.

## 8. SPECIFICATIONS

---

Audio Sensitivity	30 Decibels
Impedance	200 Ohms
Microphone Form Factor	Microphone Only
Item Dimensions (L x W x H)	2 x 4 x 8 inches
Power Source	Corded Electric (48V Phantom Power)
Material	Stainless Steel

Signal-to-Noise Ratio	60 dB
Frequency Response	5 Hz - 30 kHz (+1/-3 dB)
Polar Pattern	Omnidirectional
Connectivity Technology	XLR
Color	Nickel

## 9. WARRANTY AND SUPPORT

The Earthworks Audio M30 Omnidirectional Measurement Microphone comes with a **15-year parts and labor warranty**. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or any questions regarding your M30 microphone, please refer to the contact information provided in your product packaging or visit the official Earthworks Audio website. Ensure you have your purchase receipt and product serial number available when contacting support.

Regularly check the Earthworks Audio website for any updated drivers, firmware, or additional support resources that may enhance your experience with the M30 microphone.