

# SR20

## Cardioid High Definition Microphone™



**Architectural & Engineering Specifications**

### 20kHz Cardioid

The microphone shall be a back-electret condenser type with a wide-range uniform frequency response of 100 Hz to 20 kHz. The microphone shall have an output level of 20 mV/Pa. The microphone shall be of a single capsule, single membrane design. The microphone shall have an impulse response with the rise time no longer than 25 microseconds, and total settling in 120 microseconds. The microphone shall have polar characteristics uniform in all planes to form a cardioid of revolution. Response on any angular position up to 90° away from the major axis within frequency range from 500 Hz to 16 kHz shall deviate by no more than ±3 dB from the ideal cardioid pattern as described by the following equation:  $SPL(a) = 20 * \log(1/2 + \cos(a)/2)$  (dB), where a is the angle in radians between the measurement source position axis and the major axis. The microphone shall accept sound pressure levels up to 139 dB producing no more than 3% THD. Dimensions shall be .860 in (22mm) body diameter by 8.5 in (210mm) long without the windscreen, and 9.5 in (240mm) long with the windscreen. The maximum head diameter shall be .50 in (12.5mm) without the windscreen, and 1.65 in (42mm) with the windscreen. The microphone shall be terminated with a professional gold-plated 3 pin XLR connector. The microphone shall include a thread-mounted external windscreen. The microphone shall require 24-48V phantom power. The microphone shall be made of metal with black finish. The Earthworks SR20 is specified.

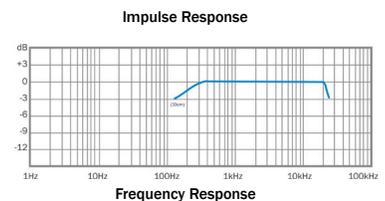
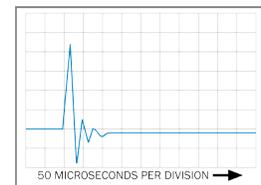
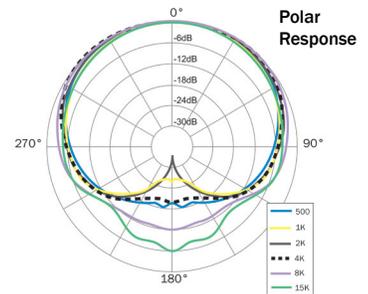
- **Uniform Frequency Response at 45° & 90° off-axis**
- **More Gain Before Feedback**
- **High Rejection of Sounds at the Rear of the Microphone**
- **Highly Intelligible**
- **Low Handling Noise**
- **139dB SPL Max Acoustic Input**
- **Dual Purpose: Vocal & Instrumental**
- **Windscreen Assembly Unscrews**

### A Versatile High Definition Microphone

The SR20 is an exceptional and robust microphone that is ideal for both live sound and recording applications. It comes with an effective screw-on windscreen for use with voice or vocal applications. With the windscreen removed it ideal for use as an instrument mic. With a maximum acoustic input of 139dB SPL it can be used for drums and amplified instruments without fear of overload distortion. The patented near-perfect polar response will not exhibit any severe high frequency losses at the sides of the microphone. With an SR20 or any Earthworks cardioid microphone, you can have three singers using the same microphone, and the singers on the sides of the microphone will have the same pristine frequency response and sound quality as the singer at the front of the microphone.

### About High Definition Microphones™

During the last decade it has become commonplace for sound recording and broadcast equipment to accommodate extended frequency responses up to 100kHz. With few exceptions, even the very best of conventional professional microphones do not offer frequency responses above 20kHz. However, making a High Definition Microphone involves far more than extending the frequency response. Impulse response, diaphragm settling time and pristine electronics are also key elements. Earthworks' founder David Blackmer foresaw the need for higher quality microphones, and Earthworks has been offering High Definition microphones, with extended frequency response beyond 40kHz, since 1996. Earthworks High Definition Microphones™ have an extremely clean, natural on-axis pickup, and smooth, uncolored off-axis response with high front-to-back rejection that makes them superb for a wide range of applications including sound reinforcement, broadcast, in addition to recording voice and musical instruments. You will hear exceptional sound quality that is extremely accurate,



detailed, open and crystal clear even on analog or digital sound systems that are limited to a 15kHz or 20kHz bandwidth. You will notice a remarkable improvement in sound quality on nearly all audio systems when using Earthworks High Definition Microphones™.

### Polar Patterns

David Blackmer also invented a totally new polar technology that provides microphones with near-perfect polar response. When you look at a polar pattern of an Earthworks microphone, the mid frequencies, high frequencies and low frequencies all look very much like a "textbook perfect" polar pattern. In practice this means the polar response of an Earthworks microphone is extremely uniform over its operating frequency range; the frequency response at 90 degrees off-axis is very close to its on-axis response. Such uniform polar response results in less phase problems on the sides of the microphone and there are fewer phase cancellations when using multiple mics placed close together. This new polar technology also provides more rejection of unwanted sounds from the rear of the microphone providing more gain before feedback in live sound applications.

### Specifications

<b>Frequency Response:</b>	100Hz to 20kHz
<b>Polar Pattern:</b>	Cardioid
<b>Sensitivity:</b>	20mV/Pa (-34dBV/Pa)
<b>Power requirements:</b>	24-48V Phantom, 10mA
<b>Max Acoustic Input:</b>	139dB SPL
<b>Output:</b>	Male XLR-3 (PIN 2+)
<b>Output Impedance:</b>	65Ω, balanced
<b>Min Output Load:</b>	600 ohms between pins 2 & 3
<b>Noise:</b>	16dB SPL equivalent (A weighted)
<b>Dimensions L x D:</b>	8.4 x 0.860 in. (213 x 22 mm)
<b>Weight:</b>	0.3 lbs. (135g)

