

Microphones – Technical Notes / Tips / Info

Here are some additional Technical Notes / Tips / and Important Information regarding Microphones:

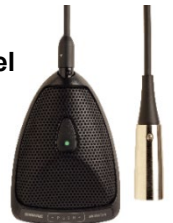
General Technical Notes

- a) Microphones are the most important “link” in the chain.
- b) Even the best microphones can only pick up what’s going into it. If the venue’s sound system is of poor quality, or the singer is singing out of tune, or the guitar player’s tone sounds awful, or the keyboard player is playing in the wrong key – No microphone can fix this!
- c) Use external shock mounts for studio microphones to help eliminate any vibrations.
- d) Recording Studio – Adding a rubber pad under the microphone stand can sometimes help with rumblings and reflections.
- e) The Pre-Amp in a Condenser Microphone is not the same as a Microphone Pre-Amp in a Mixing Board:
 - A Condenser microphone pre-amp “Amplifies” to Microphone Level.
 - The Mixing Board microphone pre-amp “Amplifies” to Line Level.
- f) Dynamic Microphones – Respond to pressure changes on its surface. It uses a moving coil and magnetic principles. The smaller the diameter of the diaphragm the better the high frequency response. Larger diaphragms are more suitable for lower frequencies.
- g) Condenser Microphones – Use capacitive principles, rear plate is fixed, front plate moves, and needs phantom power or a battery source to function properly.
- h) A microphone’s Polar Pattern and Directionality is the area in which a microphone best picks up sound from the sound source (vocals, instruments).
- i) Feedback – Occurs when sound coming out of the loudspeakers gets picked up by the microphones and re-enters the sound system and gets amplified again – creating an annoying wailing / howling sound.

PZM Microphones (Pressure Zone Microphone) - Notes

- a) Non directional – use when you need to pick up the “total” room.
- b) Don’t use on a single instrument – this is not what a PZM is designed for.
- c) If the “Room Acoustics” are bad and has issues, a PZM won’t work as well.
- d) They are very prone to feedback if not used correctly.

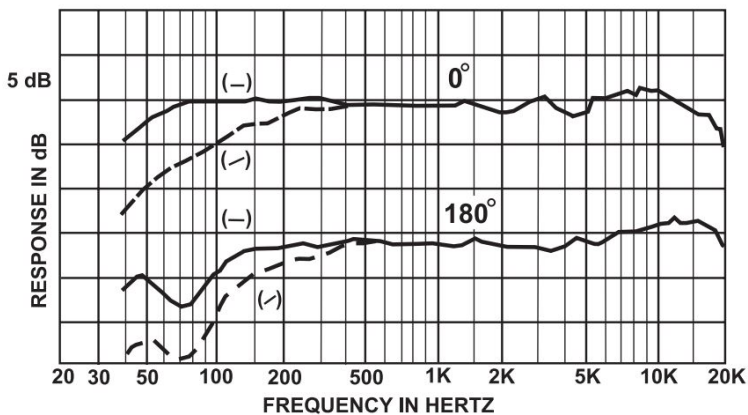
Shure Model
MX393



What is a Response Curve?

A microphone response curve can be described as the range of sound the microphone can reproduce at different frequencies (how it “varies” at different frequencies). Below is the Frequency response curve of the ElectroVoice RE-20 Microphone.

Frequency Response:



Courtesy of ElectroVoice

Technical Note:

So why do you need a Frequency response curve? Vocals and Musical instruments have different frequency ranges. Looking at the Frequency response curve to the left – this microphone seems like it has a wide-range “uniform” frequency response (45-18,000 Hz), making the RE20 ideal for Vocals and any “Challenging” instruments. It is commonly used inside Bass Drums, with Acoustic Guitars, and Recording / Broadcasting Studios everywhere.

As stated previously, trial and error will determine what sounds best to you and what will work best for the sound you are attempting to reproduce.