

Which Mic Should I Choose

Dynamic vs. Condenser

There are basically two types of microphones used in churches – dynamic and condenser. The two most noticeable differences between the two are: 1. Condenser mics need an additional power source, such as a battery or phantom power, while dynamic mics do not and 2. Condenser mics more efficiently pick up sounds at a distance while dynamic mics tend to only work well close up.

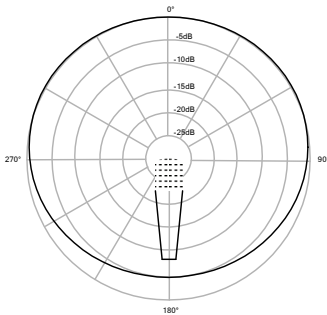
Condenser mics tend to be more expensive and are often more fragile. They usually pick up higher frequencies better and are usually preferred when micing instruments such as piano, strings, etc. Also, because of their ability to pick up sounds from a distance better than dynamic mics, they are used for podium mics and choir mics. Dynamic mics usually have more gain before feedback, they tend to be less expensive and are more rugged. That is why they tend to be more popular in churches for handheld vocal mics. The Shure SM58 is the most well known dynamic mic and it has been a rugged performer for many years in churches and on tour.

Although in our churches we will tend to see a condenser mic hanging over the choir and a dynamic mic in the hand of the worship leader, it doesn't mean this is the best choice for the worship leader. There are condenser mics, such as a Shure Beta 87 or the Sennheiser e965, which are outstanding vocal mics.

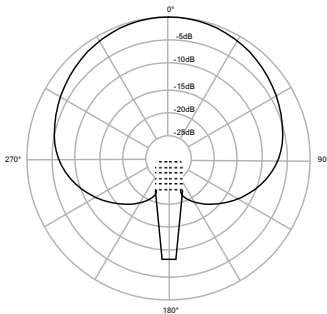
Microphone Patterns

There are 6 or 7 patterns I can think of off the top of my head, I only want to give you the three most popular in churches: Omni, Cardioid and Super or Hyper-cardioid. Although there is a difference between a Super-cardioid and Hyper-cardioid, it is subtle enough that we can treat them the same for the purpose of this article.

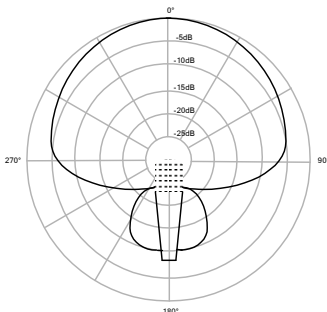
Omni – Picks up equally from any direction. The most common place we use an omni microphone would be a lapel mic or an earset mic such as the Countryman E6. An omni pattern may also be used with a Boundary Microphone. Boundary mics are low profile, condenser mics that may be placed on the stage to pick up those performing a play. They make use of the surface on which they're placed to increase their ability to pick up sound from a distance.



Cardioid – Picks up best from the front and rejects best directly from the rear. The pick-up area in the front tends to be wider than either the super or hyper-cardioid patterns and therefore is more forgiving in where it is positioned in relation to the source. Cardioid mics are often chosen for individual vocalists on stage. Cardioid mics include the well known Shure SM58 and the Sennheiser E835.



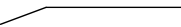
Super and Hyper-Cardioid – Picks up best from the front and rejects best at an angle about 30 degrees off directly from the rear. Podium and overhead choir mics tend to be Hyper-Cardioid microphones.

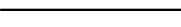



Normally we choose patterns according to what we want to reject vs. what we want to pick up. For instance, the sound from an overhead monitor for a choir usually approaches the microphone from an angle off the rear of the mic instead of coming in directly from the rear. Therefore we would choose a hyper or super-cardioid pattern to have the best chance of the reducing the sound of the monitor entering the microphone.

Controls on the Microphone

Some microphones will have switches (controls) that allow you to customize, to some degree, the microphones. Some will let you switch between the different microphone pickup patterns. There are some that will let you change it's frequency response, i.e., pickup less low frequencies, less high frequencies, etc. The most common symbols used are:

 **Low Cut** – reduces the pick up of the lower frequencies. You could use this, for instance, when micing the high strings on a piano and you do not want to pick up the sound from the low strings.

 **Flat** – Doesn't modify the frequency response of the microphone. It's important to understand that this setting does not mean the frequency response of the microphone itself is flat, that is, it picks up all the frequencies from 20Hz to 20kHz evenly. It just means it doesn't modify the frequency response of the microphones.

 **Hi Cut** – reduces the pick up of the higher frequencies. You could use this when micing a floor tom with a cymbal above it. Although typically we would mic that floor tom with a dynamic mic that may not have this selection available.

How Does the Mic Sound

No matter what you know about what a microphone does and how it does it, that does not tell you how it sounds. The only way you will know is to listen. Choosing a mic is and should be personal. The instrument or voice you are micing, the acoustics of the room and even the type of system you have, all play a part in how the mic will sound. There is not a microphone make and model that is always the right one. One of the mistakes churches make is to buy all the same make and model microphones for all vocalists. This only makes sense if all the vocalists have exactly the same voice. There have been times that no matter how much I EQ'd a mic for a vocalist I could not make it sound right and simply changing to a different mic made it easy to get the sound I was looking for.

There are many good microphone companies to choose from. A partial list would include Shure, Sennheiser, AKG, DPA, Countryman, Rode and Earthworks. Most of these manufacturers even provide model suggestions for different applications.

Of course, at Pro AV we are also willing to help you make the best choice when purchasing a microphone. Just call or email us and we will help you get it right the first time.



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Merry Christmas Anyway

I know for many of you this has been a tough year. Most of us have struggled financially or have family and friends that have lost their jobs. Many of our churches have seen a significant drop in giving and I personally know of many churches around the country that have laid off employees and staff members. In many churches mission giving is down, projects have been put on hold, reserves have been spent and money to help those in need is almost non-existent. Some churches have closed their doors and some are struggling to remain open. In other words, for many this does not seem to be a very "Merry" Christmas.

For most people how "merry" they feel is based on their circumstances. And for most, those circumstances are materially based – how much money is in the bank, how are relationships going, how secure is their job, etc. Even most Christians ride the roller coaster of material circumstances.

I had a friend that was killed in an airplane crash a few years ago. One thing I always think of when I think of "Doc" is his answer to the question, "How are you doing?" No matter what was going on in his life he would always answer, "Super (brief pause) naturally." Doc did some incredible things in his relatively short life because he always believed that God could, at any moment, supernaturally intervene and when He chose not to intervene, He would supernaturally sustain.

During this closing of a rough year we need to remember that "unto us" a Savior was born and that He is Lord of all. He is in control of our circumstances. When things are going tough, prayers seem to get no higher than the ceiling in the room and I'm wondering where is He in all this mess. I just have to remember all He gave up to be born in that lowly manger and how much He must love me to have given His life on the cross. Just to know that we are His and that we are celebrating His birth – Him leaving the splendor of heaven to give himself unto us – should remind us that indeed this is a very merry time of the year.

May you and yours have a blessed and very Merry Christmas.

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