

Dynamic Handheld Vocal Microphones

By George Petersen

Condenser vocal microphones continue to rise in popularity, yet you can never have enough dynamic vocal mics. Rugged and dependable, most of these can also double as an instrument mic, while still taking the punishment and keeping on ticking — making them ideal for a wide variety of sound reinforcement applications.

The first commercial dynamic microphone was invented by Bell Laboratory engineers E.C. Wente and Albert Thuras in 1928 and finally released in 1931 as the Western Electric 618A. Although carbon and condenser mics existed at the time, Wente and Thuras sought to make tough, reliable and more affordable mic that could stand up to rough field handling. Their concept for the dynamic mic included a thin duralumin diaphragm and then-new cobalt/steel alloy magnet.

Even today, this basic approach remains largely unchanged. Modern (and early) mics share the same basic principle — the motion of a lightweight diaphragm attached to a voice coil moves within a magnetic field, creating a voltage. (See Fig. 1). In fact, it's almost like a speaker in reverse. And nearly 90 years

later, the dynamic mic is still with us and is an essential part of live, recorded and broadcast communications.

Moving to the present, we surveyed some top-of-the-line entries in this category and found a wealth of models in every price range. Some models can also be ordered with an on/off switch version, but most techs in live situations avoid these, because when a performer unknowingly switches the mic on and then no sound emanates from the P.A., all eyes immediately turn to the FOH engineer who — while not at fault — suddenly has no control over the situation. In this case, no switch = no problem, so we are not covering such models here.

The good news is that microphones — of all types — are widely discounted from the MSRP retail tag, so street pricings are listed here for your convenience. We should also point out that many of these mics are offered in similar versions with different polar pickup patterns, so if you are seeking a supercardioid or hypercardioid model of a cardioid mic listed here, the answer to your preference may be just a few mouse clicks away, with a quick web search from the manufacturer URL's listed here. Happy hunting!

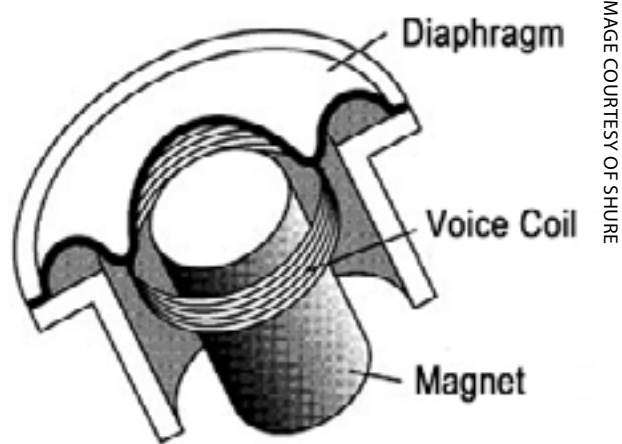







IMAGE COURTESY OF SHURE

Fig. 1: This cutaway diagram of a typical dynamic microphone shows the basic elements used in every dynamic mic design, which has been largely unchanged since the 1920's.

<p>AKG D5</p>  <p>Pattern: Supercardioid Frequency Response: 70 Hz to 20k Hz Sensitivity: 2.6 mV/Pa Weight: 12 ounces Notes: Dual internal shock-mount system Price: \$99/street</p> <p>akg.com</p>	<p>Apex 381</p>  <p>Pattern: Cardioid Frequency Response: 50 Hz to 18k Hz Sensitivity: 0.2 mV/Pa Weight: 11 ounces Notes: Non-slip, leather-feel finish Price: \$69/street</p> <p>apexelectronics.com</p>	<p>Audio-Technica AE6100</p>  <p>Pattern: Hypercardioid Frequency Response: 60 Hz to 15k Hz Sensitivity: 1.7 mV/Pa Weight: 10.9 ounces Notes: Similar cardioid AE4100 also available Price: \$189/street</p> <p>audio-technica.com</p>	<p>Audix OM7</p>  <p>Pattern: Hypercardioid Frequency Response: 48 Hz to 19k Hz Sensitivity: 0.8 mV/Pa Weight: 10.8 ounces Notes: Low gain output stage for reduced feedback Price: \$229</p> <p>audixusa.com</p>
<p>Avlex Superlux TOP 248</p>  <p>Pattern: Supercardioid Frequency Response: 50 Hz to 16k Hz Sensitivity: 2.0 mV/Pa Weight: 14 ounces Notes: Neodymium magnet structure Price: \$82/street</p> <p>avlex.com</p>	<p>Beyerdynamic TG V90r</p>  <p>Pattern: Cardioid Frequency Response: 50 Hz to 14k Hz Sensitivity: 0.9 mV/Pa Weight: 16.6 ounces Notes: Ribbon element Price: \$339/street</p> <p>north-america.beyerdynamic.com</p>	<p>Blue enCore 200</p>  <p>Pattern: Cardioid Frequency Response: 50 Hz to 16k Hz Sensitivity: 2.25 mV/Pa Weight: 14.1 ounces Notes: Phantom-powered tone shaping circuit Price: \$149/street</p> <p>bluemic.com</p>	<p>CAD CADLive D90</p>  <p>Pattern: Supercardioid Frequency Response: 50 Hz to 15k Hz Sensitivity: 4.0 mV/Pa Weight: 8 ounces Notes: Neodymium magnet Price: \$99/street</p> <p>cadaudio.com</p>

<p>Carvin M68</p>  <p>Pattern: Cardioid Frequency Response: 45 Hz to 15k Hz Sensitivity: 0.2 mV/Pa Weight: 8.5 ounces Notes: Prices include 20' cable Price: \$47/street</p> <p>carvinaudio.com</p>	<p>E-V ND96</p>  <p>Pattern: Supercardioid Frequency Response: 140 Hz to 15k Hz Sensitivity: 3.3 mV/Pa Weight: 9.2 ounces Notes: Slated to ship this month Price: \$199/street</p> <p>electrovoice.com</p>	<p>Galaxy Ergomic GA64</p>  <p>Pattern: Cardioid Frequency Response: 30 Hz to 10k Hz Sensitivity: n/a Weight: 11 ounces Notes: Mic head removes to fit Galaxy HH64 wireless Price: \$80/street</p> <p>galaxyaudio.com</p>	<p>Heil Sound PR-20</p>  <p>Pattern: Cardioid Frequency Response: 50 Hz to 18k Hz Sensitivity: 2.26 mV/Pa Weight: 14 ounces Notes: Includes black, silver and gold grills Price: \$156 (single-grill PR-20 ULT utility version is \$115)</p> <p>heilsound.com</p>
<p>Lewitt MTP 840 DM</p>  <p>Pattern: Supercardioid Frequency Response: 40 Hz to 18k Hz Sensitivity: 3.5 mV/Pa Weight: 12 ounces Notes: Active +6/+12 dB gain boost; 2-step HP filter Price: \$269/street</p> <p>lewitt-audio.com</p>	<p>Microtech Gefell MD 100</p>  <p>Pattern: Cardioid Frequency Response: 50 Hz to 16k Hz Sensitivity: 1.6 mV/Pa Weight: 13.2 ounces Notes: Hypercardioid model MD 110 also offered Price: \$389 street</p> <p>microtechgefell.de</p>	<p>Miktek PM9</p>  <p>Pattern: Supercardioid Frequency Response: 50 Hz to 19k Hz Sensitivity: 1.4 mV/Pa Weight: 10.4 ounces Notes: Neodymium magnet structure Price: \$199 street</p> <p>miktekaudio.com</p>	<p>MXL LSM-3</p>  <p>Pattern: Cardioid Frequency Response: 40 Hz to 15k Hz Sensitivity: 1.85 mV/Pa Weight: 9 ounces Notes: Switched versions also available Price: \$80 street</p> <p>mxlmics.com</p>
<p>Peavey PVM 45ir</p>  <p>Pattern: Hypercardioid Frequency Response: 50 Hz to 18k Hz Sensitivity: 1.6 mV/Pa Weight: 10.4 ounces Notes: Neodymium magnet structure Price: \$85 street</p> <p>peavey.com</p>	<p>RØDE M1</p>  <p>Pattern: Cardioid Frequency Response: 75 Hz to 19k Hz Sensitivity: 1.6 mV/Pa Weight: 12.7 ounces Notes: Neodymium magnet structure Price: \$99/street</p> <p>rodemic.com</p>	<p>Samson Q8</p>  <p>Pattern: Supercardioid Frequency Response: 50 Hz to 16 kHz Sensitivity: 2.5 mV/Pa Weight: 12 ounces Notes: Neodymium magnet structure Price: \$99/street</p> <p>samsontech.com</p>	<p>Sennheiser e945</p>  <p>Pattern: Supercardioid Frequency Response: 40 Hz to 18k Hz Sensitivity: 2.0 mV/Pa Weight: 11.6 ounces Notes: Cardioid e 935 also available Price: \$219/street</p> <p>sennheiserusa.com</p>

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BUYERSGUIDE

Shure KSM8 Dualdyne



Pattern: Cardioid
Frequency Response: 40 Hz to 16k Hz
Sensitivity: 2.66 mV/Pa
Weight: 11.6 ounces
Notes: Dual diaphragm design; also offered as heads for Shure wireless
Price: \$499

shure.com

Sontronics STC-80



Pattern: Cardioid
Frequency Response: 50 Hz to 15k Hz
Sensitivity: 12 mV/Pa
Weight: 11 ounces
Notes: Includes aluminum flight case
Price: \$149

sontronics.com

Sony F780



Pattern: Hypercardioid
Frequency Response: 50 Hz to 18k Hz
Sensitivity: 2.0 mV/Pa
Weight: 10.2 ounces
Notes: Urethane coating for low handling noise
Price: \$359

pro.sony.com

TC Helicon MP-70



Pattern: Supercardioid
Frequency Response: 50 Hz to 18k Hz
Sensitivity: 2.0 mV/Pa
Weight: 10 ounces
Notes: Neodymium magnet
Price: \$169

tc-helicon.com

Telefunken M80

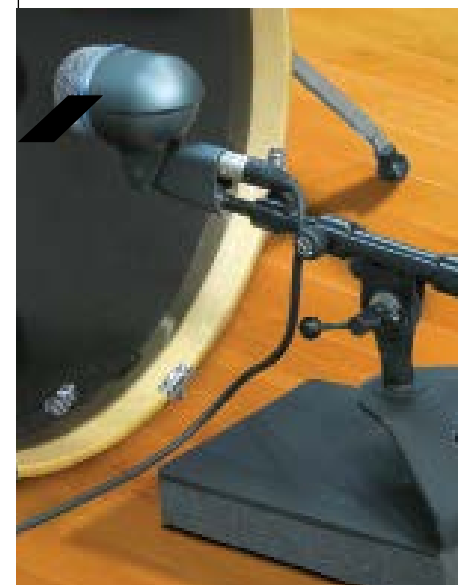


Pattern: Cardioid
Frequency Response: 30 Hz to 18k Hz
Sensitivity: 1.54 mV/Pa
Weight: 13 ounces
Notes: Chrome, gold and wood versions also avail.
Price: \$249

telefunken-elektroakustik.com

Coming Next Month

Kick Drum Mics



Kick Drum Microphones The kick drum lays down the foundation of any great live mix. We look at two dozen top-of-the-line models that deliver the impact and punch.