

# Sony C-38B FET Condenser Microphone

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FIELD TEST

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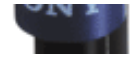
Relive recording in the '60's with the Sony C-38B reissue condenser studio microphone. That's because the genesis for this mic goes back to 1965 with the original C-38FET, the world's first Field Effect Transistor microphone and the successor to the famed C-37A tube mic. The C-38 was then updated in 1969 (C-38A) with a windscreen design change, and again in 1971 (C-38B) with phantom powering (9-volt internal battery or external DC 24V to 48V). The mic was 'reintroduced' to the US market at the 2003 AES Show even though there are over 65,000 in use today.

## Everything You Could Want

Beautifully constructed of painted brass, the C-38B has good heft at 23 ounces and features a large 1 1/3-inch, six-micron thick, gold-deposited Mylar diaphragm with brass backplane. With the same diameter and structure of the C-37A capsule, this is a true condenser capsule polarized with 100 volts. A steel mechanical shutter located behind the capsule changes the polar pattern from unidirectional to omnidirectional. When the shutter is opened, allowing sound to impinge on the back of the diaphragm, the mic is in unidirectional or cardioid and when closed, omni. There is a small, recessed access hole for a brass screw that operates the shutter and the mic's kit includes a small screwdriver for this purpose. Unfortunately if you're careless, after years of turning this screw, it will become worn and difficult to change. The old C-37A has this problem; the screw's head gets so worn, it's difficult to know, with confidence, which pattern is active.

Also on the mic's backside is the on/off/low cut selector rotary switch. Not looking like a switch at all, this is a knurled metal collar surrounding the mic cable's entry into the C-38B's body. There are five switch positions: Off for conserving the internal battery; M for full-range response; M1 has a bass roll-off starting (-3dB point) at 40Hz; V1 is at 80Hz; and V2's roll-off starts way up at about 160Hz. All three roll-offs are 6dB/octave





curves.

## Secret Compartment

An excellent feature is the pop open front door. Slightly difficult (and purposely) to open, this is where you insert a standard nine-volt (6F-22) battery; select the -8dB attenuator pad; or engage the -6dB/octave 7 kHz roll-off filter. For indicating the relative condition of the battery, there is a red light bulb visible at the bottom of the mic's body that flashes momentarily when you first turn on the mic. It's smart to use a regular nine-volt--in a pinch; you can steal one out of your guitar player's stomp pedal.

The C-38B finishes with a gimbaled, U-shaped mounting bracket that attaches to either side of the mic's body with two thumbnuts. This is like the C-37A or the venerable RCA ribbon 77DX mic. I always liked this mount because you could precisely aim the business end of the mic in more ways than other mounting brackets that usually required repositioning the mic stand. This bracket terminates in a rubber shock mount socket in a threaded base that has a strain relief for the 20-foot attached mic cable and XLR connector. There is no elastic suspension shock mount available.

The strain relief and long attached cable make mounting this mic slightly inconvenient. Owners of this mic (or the C-37A) will usually cut the mic cables down to a six-inch 'pigtail' and stake on a new connector. Another caveat is the non-standard threaded base Sony also uses on the C-800G mic. Both these mics come with a U.S. and Euro threaded stand adapters but if you misplaced them, you're out of luck.

### Specifications

Capsule type: condenser  
 Frequency response: rated at 30Hz to 18kHz  
 Polar Patterns: switchable, uni-directional or omni-directional  
 Powering: either internal 9V battery or 24 to 48V phantom power  
 Battery life: approximately 250 hours  
 Current drain (battery): less than or equal to 2 mA  
 Current drain (external): less than or equal to 5 mA  
 Effective output level at 1 kHz: (0 dBm=1 mW/1 Pa)-47 dBm  
 Sensitivity: (0 dB=1V/1Pa, at 1 kHz) -48.0 dB +/-2.0 dB  
 Output impedance: at 1 kHz (balanced) 250 ohms +/- 20%  
 Dynamic range: 116 dB or more  
 Signal to noise ratio: 70dB (A weighted, 1 kHz, 1 Pa)  
 Inherent self-noise: 24 dB SPL (uni), 26 dB SPL (omni)  
 Induction noise from external magnetic field: <= 5 dB SPL  
 Wind noise: <= 44 dB SPL  
 Maximum input sound pressure level: 140 dB SPL  
 Mic attenuator: -8 dB  
 Filters: Low cut choices M, M1, V1, V2; high cut at 5kHz.  
 Internal battery: 9V 6F-22 type  
 Microphone cable: 19.7 feet  
 Dimensions: 3 1/8 inches diameter. 8 1/2 x 1 13/16 inches long  
 Weight: 1 LB 7 OZ

### In The Studio

I always do my first general comparisons to other mics while just talking directly into the mics and having my assistant switch between them on my cue. I listen on my AKG 271 headphones and log my first impressions. Of the ten mics I tried, only the much more expensive tube Neumann M149 beat it in overall openness and bigness in sound. Here are a few quick takes of well-known mics in the studio's locker compared to the Sony C-38B. A Soundelux U195 was less open and less 'in your face'--the Sony was much more present; an AKG C-414ULS had less top, bottom and lower midrange than the C-38B; and a Neumann U-87 was thinner sounding due to an upper mid-range boost compared to the flatter C-38B.

I also tried recording the C-38B on drums, bongos, vocals, acoustic guitar, and then as a room mic. In all cases, the Sony performed very well making it a very

versatile first choice "go to" all-purpose condenser mic.

On a snare drum I compared the C-38B to an AKG C-414EB and a brand new Shure SM-57. I used the -10dB pad on the AKG and the -8dB on the Sony for miking a 6 1/2-inch 1967 Ludwig snare with a Remo Weatherking coated head. While the 57 has its familiar 'cut and top end,' it was thin and lacks the ability to capture my drummer's stick

work and subtle accents like the C-38B did. Just like the C-37A tube mic, the C-38B picked up more body and rim of the drum for a much more realistic sound. The 414 was dull but had good bottom end like the Sony--but this particular AKG was over ten years old and probably is desperate need of a capsule cleaning.

With close-miked drums, I've always found condensers sound best for quiet to medium drum levels where they do a better job of capturing nuanced playing. For bashing Rock drummers--where every hit is as hard as possible with baseball bats for sticks--subtle is not so important--and dynamic mics work fine--most of the time, they're desirable.

Recording a set of Gon Bops bongos went the same: the Sony was much warmer and captured more of the overall tone of the drums. The 57 had a tinier sound with more of the 'dynamic mic immediacy'--a good-sized sound that would fit into any track as percussion flavor and better than the soloistic voice the C-38B gave the bongos. Vocals are great sounding on the C-38B. Both female and male vocals sound full and there is no 'folding up' with loud singing right on the diaphragm. You'll need a pop filter but the slight high frequency lift on this mic more makes up for any loss there. The great proximity effect in unidirectional mode was useful to my thin sounding singer. I had no sibilance problems with close singing and I didn't have to use the -8dB pad either. The C-38B makes a good omni mic for vocalists who move around a lot. The mic stays warm and smooth in omni.

On acoustic guitars, once again the C-38B's full fat sound worked great although I had to move it back from the guitar and crank more mic pre-amp gain. I tried the M1 roll-off position when I got close to the guitar's sound hole and it did the trick. Position V1 is fairly drastic but usable if you're close-miked and trying to slim down a large-bodied acoustic, like a Gibson J-200, to sound more like a Bluegrass guitar like a Collings OM2H. The V2 position is very telephonic sounding and works for special effects. Switching to omnidirectional also sounded great on acoustic. I could move in closer without the bass build up. In general, either pattern is crisp and even--not overly bright or thick in the lower mid-range. If you always carve acoustics to fit the part/track with an equalizer (like I do), this mic will start you out in a good place.

Finally, for room miking the C-38B in omni picked up everything in good balance. The smooth response deemphasized the room's inherent boxy sound. The C-38B is the perfect choice for an all around utilitarian studio microphone that you can freely use with great results for any recording task. I'd recommend a stereo pair for room mics, string sections or drum overheads. The clear high frequency response and solid low frequencies will present you with a true to life sonic picture. The C-38B sells for \$2,200 and for more information; contact Sony Professional Audio at 800-686-7669 or [www.sony.com/professional](http://www.sony.com/professional)

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