

Shure KSM32 : May 1999

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Shure KSM32 Cardioid Condenser Microphone

Reviews : Microphone

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A new studio microphone from Shure is always well worth investigating. **Hugh Robjohns** checks out the KSM32 cardioid mic.

Shure are one of those companies that everyone in the audio business must know of -- after all, every recording and PA engineer in the world will probably have plugged an SM58 into a cable at some stage in their careers. I started with Shure Unidynes, then moved up to SM57s and 58s before discovering their high-end condenser mics like the SM85 and 87. All were (and still are) well-engineered, robust, good-sounding microphones, ideally suited to their intended markets, and all in constant use every day!

The new KSM32, which was launched at the AES convention in San Francisco last September, follows the Shure family tradition. It is a side-firing cardioid mic intended mainly for studio use, with vintage styling and a switchable pre-attenuator and bass filters. The review model came in a sturdy aluminium flightcase complete with a natty red velveteen pouch to keep the microphone snug, a swivelmount, an elastic suspension and a 3/8-inch to 5/8-inch thread adaptor. The list of suggested applications in the microphone's handbook includes the speaking and singing voice, brass, woodwind, acoustic guitars, piano, the whole range of strings, percussion, drum overheads and kick drums (yes, really), choral and orchestral ensembles, and room ambience. Basically, if it makes a noise, Shure reckon this is the mic for the job.

It seems I have been repeating myself in recent mic reviews, but since most of the manufacturers appear to be playing the same marketing game, I think it's important that I say the same for all of them. The marketing literature for the KSM32 states that it is a condenser microphone and, strictly speaking, that's true. However, the capsule is of the 'permanently-biased condenser' type, otherwise known as a back-electret. It is my experience that, certainly in the UK, most audio engineers associate the term 'condenser' or 'capacitor' with an externally and electrically charged capsule, not with a statically charged one, and so might find this description rather misleading.

Of course, modern electret microphones are often of astonishingly good quality and usually offer superb value for money. On occasion, they can even rival the best true capacitor mics. However, they do have a finite life because the static charge must, eventually, leak away. When I first started in this business, a five-year working life was not untypical, but now the manufacturers are predicting well in excess of 15 or 20 years. Other than the method of charging the capsule, the physical construction of an electret capsule is essentially the same as that of a true capacitor mic and should retain the inherent qualities of the breed.



The KSM32

The review microphone was finished in champagne-coloured satin paint with the Shure logo and microphone model number to identify the front of the cardioid pickup pattern. (A charcoal-grey version is also available.) The capsule is supported on a pillar with an internal shockmount to reduce handling noise and is protected behind a dual-layer, wire mesh grille with a fabric liner at the top of the mic body for pop suppression. The circular diaphragm is roughly 20mm in diameter and is made of a high-compliance, gold-layered Mylar, only 2.5µm thick. The design is said to provide extended bass response, improve environmental stability, and excellent transient accuracy. The internal preamplifier is a Class A transformer-less design which is claimed to have extremely low distortion -- less than 0.08% for the equivalent of a 120dB SPL input -- as well as a high output at 16mV/Pa.

The whole microphone weighs 490g and measures 187mm long by 56mm in diameter at its widest part. A three-pin XLR connector extends from the bottom of the mic and a thread around its base secures the microphone to the ShureLock swivel or elastic suspension shockmounts. Note that Shure have adopted the AES wiring standard with the KSM32, which means that positive pressure on the diaphragm produces a positive electrical voltage on pin 2 (many early Shure mics were wired in the opposite sense).

Both the supplied mounts were well engineered and secured the microphone well. Fixing the mic to either of the ShureLock stand adaptors involves screwing the threaded collar of the adaptor onto the microphone base with a knurled ring -- it does not have to be tightened much to hold the mic very firmly. Once affixed, the microphone can be rotated about a vertical axis without excessive effort, yet there is sufficient friction for it to remain where it has been placed. Both adaptors also permit the microphone to be rotated about a horizontal axis, with a winged nut to clamp the joint in the desired position. The elastic shockmount is the

"Other than the method of

SHURE KSM32 £658

pros

- Flattering yet reasonably neutral sound quality.
- Controlled and accurate polar response.
- Smooth and extended frequency response.
- Effective elastic shockmount.
- Dual-slope bass filters.
- Vintage styling.

cons

- None to speak of.

summary

A high-quality cardioid microphone that performs extremely well in a host of applications.

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microphone can typically accommodate sound pressure levels of around 154dB (139dB with the attenuator switched out), although this is affected by the input impedance of the console mic preamplifier. If connected to a relatively high-impedance input (greater than 5.5k(ohm), for example) the KSM32 can tolerate peaks of 160dB SPL, whereas loads of 1k(ohm) reduce the dynamic range to 148dB SPL (with the attenuator switched in). The microphone's self-noise is around 13dB (A-weighted) and so the typical dynamic range is 126dB. The microphone requires phantom power to energise the internal head-amplifier and draws 4.7mA from a 48V supply, although supplies as low as 11V can be used with a commensurate reduction in amplifier headroom and transient capabilities.

The supplied frequency plot appears to be commendably flat across most of the frequency range, but a few wobbles appear in the region between 2kHz and 10kHz. There are essentially two 3dB peaks at about 7kHz and 10kHz (the upper one being rather narrower than the lower one), with a mild suck-out at 9kHz. All in all, it's the kind of frequency balance which would tend to add a little musical presence and clarity to most sources. The polar response plots show good front/rear rejection and tight cardioid patterns between 250 and 2500Hz. Below 250Hz the pattern opens out towards the rear, but still maintains about 15dB of rejection. Above 2500Hz the back opens out to form a hypercardioid tail (most pronounced at 10kHz) and the front of the cardioid narrows considerably, becoming more than 3dB less sensitive at 60 degrees off-axis by 10kHz. These are perfectly respectable and typical results for this kind of microphone.

In Use

The vintage styling of the KSM32 tends to suggest a particular kind of sound character, and in many ways, that expected character is actually present. I found the mic to share many of the attributes of the classic large-diaphragm Neumann mics -- in the lower registers, for example. It has a warmth and magnitude which can be very flattering to the right sources, and the provision of the two bass-cut filters allows the user to tailor the sound very flexibly, either to compensate for proximity effects, or to complement the sound source. At the same time, the mic also has a clarity and precision about the mid and upper registers, which seem to capture detail and transient information very well, without becoming fierce or spitty. Mid-range neutrality is particularly good and very natural, although with perhaps a hint of brightness at the top end. However, I discovered that this tendency could be tamed very effectively by turning the microphone off-axis slightly, thereby taking advantage of the progressive narrowing of the cardioid pattern towards the extreme HF.

The KSM32 handled loud sources with a close mic technique very well, often not even requiring the pad, although I didn't have the heart to put it in a kick drum! It was reasonably resistant to popping with close vocal work, although on occasions I felt the addition of a foam windshield or separate pop screen would be an advantage (a suitable foam shield is an optional accessory). When supported by the swivelmount, the mic proved adequate at rejecting low-level mechanical vibrations transmitted through the stand, but the elastic suspension was far better, preventing even the heaviest of deliberate vibrations from reaching the capsule.

Although only a single mic was supplied for the review, I would guess that a pair of KSM32s would make a good stereo array. The accuracy of the polar pattern and its smooth off-axis response both suggest its suitability for stereo applications.

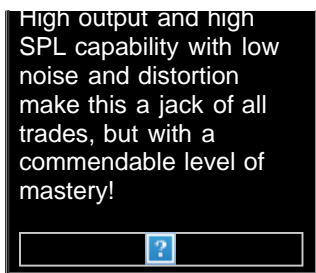
Conclusion

The KSM32 is a fine-sounding microphone representing good value for money. Its smooth, full character make it appropriate in situations where the classic Neumann U47 and U87 mics might otherwise be used, and its vintage styling lend it a visual credibility that is entirely justified by its sound. This is a clear, accurate and detailed mic with a very full and extended bass response, although the inclusion of both gentle and steep high-pass filters allows the bass end to be tamed very effectively if need be. The swivelmount is useful for rigging the mic where space is severely restricted, but the suspension shockmount is to be preferred, and the ShureLock system is very easy and reliable to use. The bottom line is that the KSM32 is another winner from Shure, and worthy of adding to your 'mics to be tried' list at this price bracket. **\$\$\$**

information

£ £658 including VAT.

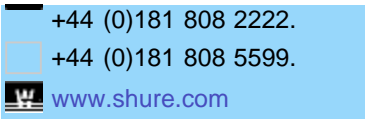
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classic design with upper and lower elastic loops threaded in a star shape between support pillars on the outer mounting ring, and hooks on the inner microphone collar mount. Although the microphone and shockmount assembly are not quite balanced properly, with the whole thing being slightly top-heavy, the assembly is well within the capabilities of the clamping arrangements. Its isolation properties proved excellent -- and even heavy taps on the mic stand were prevented from reaching the microphone.

The back of the microphone features two small recessed toggle switches. The one on the left is a three-position switch to select bass-cut filters. The options are: flat (the mic has a -3dB point at about 20Hz), 18dB/octave at 80Hz, or 6dB/octave from 115Hz. The option of steep or gentle rolloffs is rare but most welcome, and proves highly effective in practice. The second switch introduces a 15dB pre-attenuator to avoid overloading the internal head amplifier when used close to loud sources. The

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