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Professional Audio and Music Production

Peluso 22 47SE Tube Microphone

by [Barry Rudolph](#)

FIELD TEST

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One of two U47-type models offered, the Peluso 22 47SE (Standard Edition \$1,967) looks, feels and attempts to recreate, the sound of a brand-new long-bodied Neumann U47. Peluso's more expensive 22 47LE (Limited Edition) differs only in the tube used: a NOS Telefunken EF12K. The SE uses an octal-based American 5693/6SJ7 steel tube with nearly identical specifications but with the advantage of lowering the mic's noise floor to 14dB (A-weighted). Except for this difference, Peluso claims the two microphones sound identical.

The mics are hand-assembled and tested in Floyd, Va., using the German manufacturer's original published specifications and frequency response graphs as a design goal, as well as a testing standard for quality control. Peluso obtains its mic parts, raw materials and machine-shop work from around the world: The 22 47SE's silver-foil output capacitors, resistors and capsule Mylar come from Germany; its transformers are made in the U.S. and Japan; and its outer cases and capsule back plates are machined in China.

DOPPELGÄNGER DEFINED

The 22 47SE circuit closely follows the U47, with some value changes to achieve the best noise floor. It duplicates the grille-mesh material and the internal space surrounding the capsule. The mic's capsule is center-polarized, and its dimensions are the same as the original M7. The Peluso mic is 34 mm in diameter, has a 6-micron Mylar



diaphragm and is coated with a 300-angstrom-thick layer of gold. All Peluso capsules are tensioned using the company's proprietary system.

The mic weighs 1.88 pounds and connects to the power supply with a supplied 16-foot cable using a 7-pin, XLR-style connector at each end. The included 110/230VAC power supply, unlike the original, has a solid-feeling, rotary remote and polar-pattern switch that changes the mic from omni through cardioid to figure-8 in nine steps. A rugged, handsome attaché case holds the microphone (which has its own foam-lined wooden box), the power supply, shock-mount and all cables.

47S TOE TO TOE



Doing an A/B comparison against a mic that is nearly 60 years old is problematic. Short of jumping into a time machine and traveling back to 1949 to compare the 22 47SE to a new Neumann U47, there is no accounting for the aging of components, tube changes, capsule degradation or power supply issues. What's more, existing U47 models have been subjected to decades of use and abuse, as well as repairs and modifications.

For my first test, I located a Telefunken U47 in a private museum collection. Except for being powered up periodically to confirm operation, it has been stored in its original box and unused for 30 years! The museum model is as close to my mythical "time machine" test as possible.

I set up both the 22 47SE and the Telefunken U47 for vocals. Practically speaking, the Peluso is much easier to set up. Its cable is easier to connect, and the shock-mount swivels to any position due to a single knurled captive nut that holds the mic securely in the basket. There's no need to worry about the mic falling out.

I used my hand-built, [Five Fish Studios](#) SC-1 direct-coupled preamp for both mics and had my vocalist perform separate takes at the same measured distance from each mic. The U47 offered a very small increase in lower midrange/upper bass and required more mic gain than the Peluso. The U47 was only slightly duller by comparison to the 22 47SE, but that is not to say that the Peluso is a bright mic. I have to emphasize that I'm talking about minute differences that would disappear as soon as any post-processing was applied to recordings using either of these mics.

I tried the mics on acoustic guitar individually at the same distance-- in front of the 12th fret. I found the vintage Tele to sound "closer" ever-so-slightly more present. The Peluso sounded great on acoustic guitar, better than most large diaphragms close to acoustic instruments.

The differences between the Peluso and a vintage 47 nearly vanished when I repeated my tests using a U47 with a Siemens badge at LAFX Recording Services. That studio's U47 is a popular rental, known for its good sound, reliability and low noise floor. The Siemens U47 has a different screen-mesh design from the old Tele or the Peluso, and had more output level, closely matching the 22 47SE's. Both mics sounded the same, except for the Siemens U47's nearly imperceptible increase of lower midrange/upper bass. Using the studio's API console mic preamps, both mics exhibited a slight amount of muddy, low midrange when recording acoustic guitars. I find this behavior very typical, and it's the main reason I don't use vintage large diaphragm tube mics on close-miked acoustical instruments.

OLD-SCHOOL ANEW

Using the 22 47SE was rewarding. It sounds just like the world's best U47, but without the unpredictable nature of

those old mics. I found it could take hotter vocal levels with less distortion than an old U47 and, at the same time, exhibit a lower noise floor. That's helpful when digging out quiet vocal bits later in the mix. The SE is capable of 140dB SPL with 12mV/Pa sensitivity.

I also liked using the remote pattern switch. It fixes a problem common to vintage mics--the noisy and intermittent pattern switch on the mic itself. Having the 22 47SE is like owning both a U47 and U48. The U47 has only cardioid and omni polar patterns, and the U48 variant, which came out later, has only figure-8 and cardioid.

I liked locating the power supply in the control room and rotating through the patterns while hearing my singer warm up. Omni pattern, used in a quiet and fairly dead recording space, makes for excellent vocal recordings.

New But Old

The Peluso 22 47SE is a kind of time machine--it transports and makes available to today's vocalists the big, impressive sound of the world's most famous and revered microphone, the Neumann U47.

Peluso Microphone Lab, 540/789-4100, www.pelusomicrophonelab.com.

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