

## Large-Diaphragm Condenser Microphone

## Neumann TLM 102

The TLM 102 is a response of the traditional manufacturer Neumann to increasingly economical, steadily improving mass-produced microphones from the Far East. How does it sound when a king mixes with the rank and file?

Despite its cute appearance, the TLM 102 has mature sound characteristics.

In the microphone market, which is dominated by questions of taste, there has been a significant change during the past ten years. With the aid of more efficient mass-production, producers from the Far East, Eastern Europe and Australia have been able to offer microphones in the price segment of up to approximately 800 euros, some of which exhibit very good sound properties. The considerable fluctuations in quality which gave rise, for example, to the term “Chinese firecracker”, have also been reduced to a tolerable level. Nevertheless, with some producers it remains a matter of luck whether the purchaser is greeted by a representative example or a “lemon”, in its decorative wooden microphone case.

**Much can be said concerning the history of Georg Neumann GmbH, however two aspects in particular are of interest here:**

Some of the most outstanding studio microphones of all time have originated in the Development department of the Berlin company; and a large-diaphragm condenser microphone for 600 euros from Neumann, carrying the label “Made in Germany”, is something of a sensation in itself.

**At First Glance**

The TLM 102 is supplied in a sturdy cardboard box with rubber molding which ensures that the microphone and accompanying stand mount are well protected from shaking and damage. When unpacked the TLM 102, weighing only 265 grams, seems quite cute; measuring 9.5 cm high, 5 cm

wide and 5 cm in diameter, it is barely half the size of most large-diaphragm condenser microphones. The included stand mount, which permits secure attachment, has a small rubber lip that helps to insulate the microphone. The thread of the microphone seating is made of metal, while that for the stand attachment and corresponding adapters is made of plastic; here special care is required for mounting. According to the manufacturer, a suitable spider suspension mount is in preparation.

**Technical Features and Construction**

With its fixed cardioid directional characteristic, the TLM 102 is a pressure gradient transducer which can handle sound pressures up to a maximum value of 144 dB. Neumann therefore recommends this small sound transducer even for guitar amplifier pickup or for recordings of percussion such as drum sets – however a pad switch is not available. A supply voltage of 48 volts is required for operation. The equivalent noise level (A-weighted) used to estimate microphone self-noise is 12 dB-A for the TLM 102, which must be ranked as good, although quieter candidates can be found among the competition. However, the quality of a microphone is not dependent upon technical specifications, but rather always results from the interaction of several factors, some of which are subjective. The model designation “TLM” indicates that the circuitry of this sound transducer is transformerless. I therefore expected the detailed, open sound typical of the TLM series, with neutral, defined reproduction of the bass range. The diaphragm has a diameter of 28 mm, while the free surface measures 21 mm.

**A feature of the technical design worth mentioning is the construction of the microphone headgrille:** As usual, I held up the microphone against a light source in order to take a look at the diaphragm – the utility of this ritual can certainly be disputed – but not the observation that here I was



presented with a puzzle. The TLM 102 does not permit a view of its diaphragm, since the interior of the entire microphone headgrille is lined with integrated pop protection made of completely opaque material. The result: There is no popping – but also no peeking.

## Sound

As mentioned above, the preferred fields of application for this little mic include percussion instruments. For this reason I tested the TLM 102 with a tabla, since according to the manufacturer even sound sources that are less loud can benefit from a fast transient response. The sound was in fact pleasantly fresh with distinct impulses, and even drumbeats that rapidly followed one another could be heard very clearly. In addition, here the lean but punchy bass reproduction makes itself felt, allowing the tonal portion of the percussion sound to come through clearly so that the pitch can be definitely localized, without droning. I also tested the candidate with a combo guitar amplifier. In front of a 2 x 12-inch configuration, the mic performs just as well when funky Strat sounds are to be recorded. The biting sounds and frequently intense jumps in level are transmitted expertly by the TLM 102, with a tendency toward warmth. Distorted guitar is recorded in a punchy, natural manner, with a similar quality: Rich and warm. However, according to the manufacturer, the most important areas of application are vocal and speech recording. In the field of vocals, the TLM 102 gives a master-

ly performance. The microphone achieves a voice signal which is rich and makes its presence felt, without overemphasizing the lower mid and bass frequencies. Rather, the TLM 102 produces a signal that sounds quite balanced and “finished” and that can be positioned well in the mix. Speech intelligibility is good, while the boost above 6 kHz mentioned in the manufacturer’s description is unobtrusive and always sounds natural. I compared recordings with and without ad-

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ditional pop protection, and found that the microphone can be operated without added precautions. The fact that external pop protection is not required permits an excellent view of text sheets and of the audio engineer sitting opposite, and aids in the correct positioning of the mouth in front of the diaphragm. However, suitability of the TLM 102 for speech recording depends upon the individual voice. In this area of application, the overtone range of my rather dark, powerful voice seemed reserved and pleasantly natural. However, in the case of very clear, high women’s voices, the warmth mentioned above for guitar amplifiers represents a tendency toward a somewhat less detailed transmission of high frequencies, particularly in combination with the proximity effect, at a speaking distance of approximately 10 to 12 cm. Frequencies which are usually eliminated in vocal signals by the de-esser are

already pre-corrected here; however under certain circumstances they may be missed, when the aim is to emphasize the special character of a voice in spoken texts.

## Conclusion

The Neumann TLM 102 boasts very good “Made in Germany” processing. It provides an excellent performance when used with percussion instruments or amplifiers. For vocal recording it masters the difficult challenge of delivering recordings that are both balanced and ready to mix. The TLM 102 is thus recommended as a true plug-and-play solution for home recording enthusiasts and aspiring pro mixers. Its suitability for speech recording depends upon the individual voice – for high women’s voices it sounds slightly husky, whereas it is well-suited to sonorous men’s voices. All in all however, this is a highly specific criticism, since the general sound quality must be ranked as very good and “typically Neumann”. Subjectively, this microphone sounds considerably more expensive than it is. **K**

### Neumann TLM 102

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Internet	www.neumann.com
Price (MSRP)	600 euros

- ↑ User-friendly sound properties
- ↑ Good price-performance ratio
- ↑ Ready-to-mix signal character