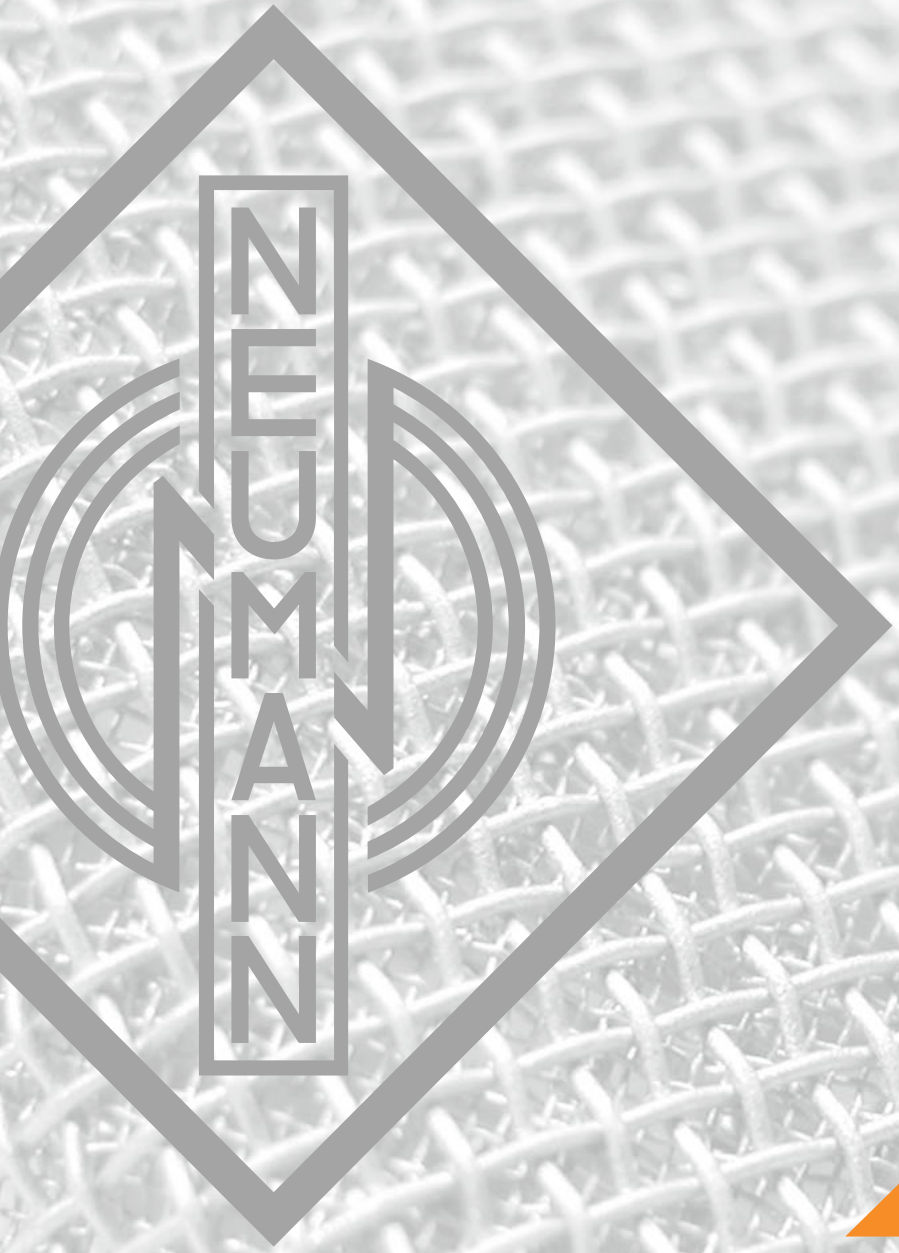
Product Information

# TLM 103

***Large Diaphragm Microphone***




www.neumann.com

*Georg Neumann GmbH • Ollenhauerstr. 98 • 13403 Berlin • Germany • Tel.: +49 (30) 41 77 24-0 • Fax: +49 (30) 41 77 24-50*
*E-Mail: headoffice@neumann.com, engineering@neumann.com, catalog-info@neumann.com • Web: www.neumann.com*

The design of the microphone is a registered design of the Georg Neumann GmbH in certain countries.

**The TLM 103 is the ideal large diaphragm microphone for all professional and semi-professional applications requiring the utmost in sound quality on a limited budget.**

**By utilizing the tried and true transformerless circuit found in numerous Neumann microphones, the TLM 103 features yet unattained low self-noise and the highest sound pressure level transmission. The capsule, derived from that used in the U 87, has a cardioid pattern, is acoustically well-balanced and provides extraordinary attenuation of signals from the rear.**

**The TLM 103 is available in satin nickel and matte black. Delivery includes an SG 1 metal swivel mount and a wooden jeweler's box.**

## *Applications*

Due to the universal cardioid pattern, straightforward handling, extremely low self-noise level, and finally, the price, the TLM 103 is predestined for all demanding applications from home recording to professional broadcasting and commercial recording studios.

## *Polar pattern*

The TLM 103 is equipped with a large diaphragm capsule with cardioid pattern. By focusing on this pattern – used in most recording situations – the attenuation of unwanted rear sound has been optimized.

Off-axis sounds are rendered naturally while isolation is increased. This also leads to a high feedback suppression when the microphone is used in live situations or where loudspeaker playback is a factor.

## *Acoustic features*

The TLM 103 is addressed from the front, marked with the red Neumann logo on the microphone body.

The K 103 large diaphragm capsule is based on the K 87, well known from the U 67 / U 87 microphones.

The capsule has a flat frequency response up to about 5 kHz, and above that, a wide flat 4 dB presence boost.

The large wire mesh headgrille protects the capsule from plosive sounds and effectively prevents pop noises.

These characteristics are achieved without resorting to corrective resonance effects. Therefore, the microphone maintains an excellent impulse response and reproduces the finest details of music and speech without coloration.

## Electrical features

With just 7 dB-A / 17.5 dB CCIR the self-noise level of the TLM 103 is so reduced that even the smallest signals are reproduced basically noise-free. As it is capable of handling sound pressure levels up to 138 dB without distortion, the TLM 103 provides a dynamic range of 131 dB (A-weighted).

The letters TLM stand for "transformerless microphone". With TLM technology the usual output transformer is replaced by an electronic circuit.

As with traditional transformers, it ensures good common mode rejection, and prevents RF interference that may influence the balanced audio signal.

## Operational safety

The entire internal construction is elastically mounted to attenuate any structure borne noise that could interfere with the TLM 103's operation. Furthermore the capsule is set on an elastic mount.

The frequency range reaches below 20 Hz and ths even very low bass signals are reproduced without coloration.

Due to this low frequency extension, the TLM 103 is more sensitive to structure borne interference and wind noise. For such cases, the elastic suspension EA 1 and the windscreen WS 87 are available as accessories. For close vocal use, the PS 15 or PS 20 a pop screens are recommended.

### Features

- *Large diaphragm cardioid microphone*
- *Pressure-gradient transducer with one-diaphragm capsule*
- *Transformerless circuitry*
- *Extremely low noise: 7 dB-A*
- *Includes swivel mount*
- *Straightforward handling for homerecording and professional studios*
- *High-quality professional equipment for limited budgets*

### Application Hints

- *A universal cardioid mic*
- *Vocalist recording*
- *Announcer's mic for broadcasting/voice over*
- *Due to minimal self-noise: on-air mic for radio/broadcast, very low amplitude signals, radio drama, sampling, foley/sound effects*
- *Home recording and project studios*
- *Spot mic for wind instruments, strings, percussion, guitar amps, drum overhead*

*These are just some of the most common applications. We recommend additional experimentation to gain maximum use from this microphone.*

### Delivery Range

*TLM 103 (mt) Microphone, SG 2 Stand mount swivel in Wooden box*

***Mono set:*** *TLM 103 (mt) Microphone, EA 1 (mt) Elastic suspension in aluminium case*

***Stereo set:*** *2x TLM 103 (mt) Microphone, 2x EA 1 (mt) Elastic suspension in aluminium case*

***Studio set:*** *TLM 103 (mt) Microphone, EA 1 (mt) Elastic suspension*

### Catalog No.

| | | |
|---|---|---|
| TLM 103 | ni | 008430 |
| TLM 103 mt | blk | 008431 |
| TLM 103 Mono set | ni | 008508 |
| TLM 103 mt Mono set | blk | 008509 |
| TLM 103 Stereo set | ni | 008501 |
| TLM 103 mt Stereo set | blk | 008502 |
| TLM 103 Studio set | ni | 008545 |
| TLM 103 mt Studio set | blk | 008544 |

### Selection of Accessories

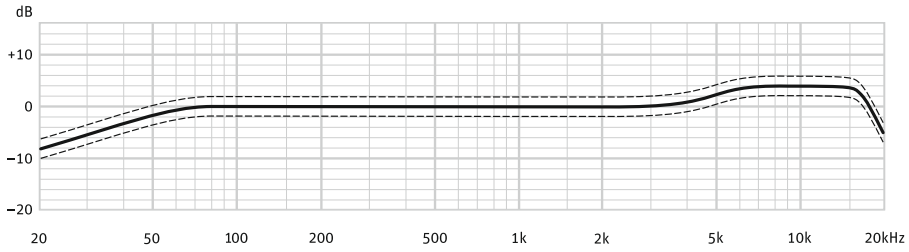
| | | |
|---|---|---|
| Power supply, N 248 | blk | 008537 |
| Auditorium hanger, MNV 87 | ni | 006804 |
| Auditorium hanger, MNV 87 mt | blk | 006806 |
| Elastic suspension, EA 1 | ni | 008449 |
| Elastic suspension, EA 1 mt | blk | 008450 |
| Popscreen, PS 15 | blk | 008472 |
| Popscreen, PS 20 a | blk | 008488 |
| Microphone cable, IC 3 mt | blk | 006543 |
| Microphone cable, IC 4 | ni | 006547 |

*A complete survey and detailed descriptions of all accessories are contained in the accessories catalog.*

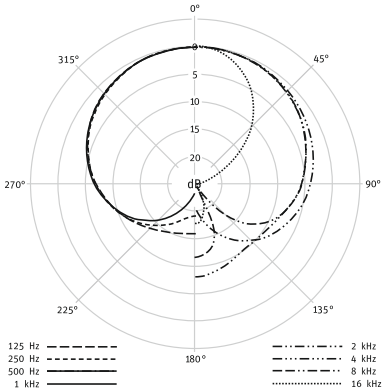
*Meaning of color codes:*
*blk = black,*
*ni = nickel*


1998
TEC
AWARDS
TECHNICAL EXCELLENCE & CREATIVITY
OUTSTANDING TECHNICAL ACHIEVEMENT
MICROPHONE TECHNOLOGY
Neumann TLM 103
PRESENTED
BY
MIX
FOUNDATION
NEUMANN MICROPHONE

## Technical Data




measured in free-field conditions (IEC 60268-4)



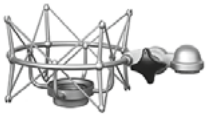

| | |
|---|---|
| *Acoustical operating principle* | *Pressure gradient transducer* |
| *Directional pattern* | *Cardioid* |
| *Frequency range* | *20 Hz...20 kHz* |
| *Sensitivity at 1 kHz into 1 kohm* | *23 mV/Pa* |
| *Rated impedance* | *50 ohms* |
| *Rated load impedance* | *1000 ohms* |
| *Signal-to-noise ratio, CCIR[1] (rel. 94 dB SPL)* | *76.5 dB* |
| *Signal-to-noise ratio, A-weighted[1] (rel. 94 dB SPL)* | *87 dB* |
| *Equivalent noise level, CCIR[1]* | *17.5 dB* |
| *Equivalent noise level, A-weighted[1]* | *7 dB-A* |
| *Maximum SPL for THD 0.5%[2]* | *138 dB* |
| *Maximum output voltage* | *13 dBu* |
| *Dynamic range of the microphone amplifier (A-weighted)* | *131 dB* |
| *Supply voltage (P48, IEC 61938)* | *48 V ± 4 V* |
| *Current consumption (P48, IEC 61938)* | *3 mA* |
| *Matching connector* | *XLR3F* |
| *Weight* | *approx. 450 g* |
| *Diameter* | *60 mm* |
| *Length* | *132 mm* |

[1] according to IEC 60268-1; CCIR-weighting acccording to CCIR 468-3, quasi peak; A-weighting according to IEC 61672-1, RMS [2] measured as equivalent el. input signal

## Selection of Accessories

*Power supply, N 248*

*Battery supply, BS 48 i*



*Elastic Suspension, EA 1 (mt)*

*Table Stand, MF 3*
*(in connection with IC 4)*

*Auditorium Hanger, MNV 87 (mt)*

*Popscreen, PS 15*

*Popscreen, PS 20 a*

*Windscreen, WS 87*

*Microphone Cable, IC 3 mt*

*Microphone Cable, IC 4 (mt)*

*Errors excepted, subject to changes • Printed in Germany • Publ. 05/12 071799/A06*