

## **TLM 103**

**Large Diaphragm  
Microphone**





**T**he 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 loud-speaker 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.

### 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 1 Stand mount swivel, Wooden box

### Catalog No.

TLM 103 ..... ni ..... 08430  
TLM 103 mt ..... blk ..... 08431

### Selection of Accessories

Power supply, N 48 i-2 (230 V) ..... blk ..... 06500  
Power supply, N 48 i-2 (117 V) ..... blk ..... 06502  
Power supply, N 48 i-2  
(without plug-in mains unit) ..... blk ..... 06504  
Battery supply, BS 48 i ..... blk ..... 06494

Auditorium hanger, MNV 87 ..... ni ..... 06804  
Auditorium hanger, MNV 87 mt ..... blk ..... 06806  
Table Stand, MF 3 ..... blk ..... 07321  
Elastic suspension, EA 1 ..... ni ..... 08449  
Elastic suspension, EA 1 mt ..... blk ..... 08450

Popscreen, PS 10 ..... blk ..... 07345  
Popscreen, PS 20 ..... blk ..... 07346  
Windscreen, WS 87 ..... blk ..... 06753

Microphone cable, IC 3 mt ..... blk ..... 06543  
Microphone cable, IC 4  
(with stand mount swivel) ..... ni ..... 06547  
Microphone cable, IC 4 mt  
(with stand mount swivel) ..... blk ..... 06557

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

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

# TLM 103

## Large Diaphragm Microphone

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, according to DIN/IEC 651.

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 thus 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 10 or PS 20 pop screens are recommended.





1998  
TEC  
AWARDS

TECHNICAL EXCELLENCE & CREATIVITY  
OUTSTANDING TECHNICAL ACHIEVEMENT  
MICROPHONE TECHNOLOGY

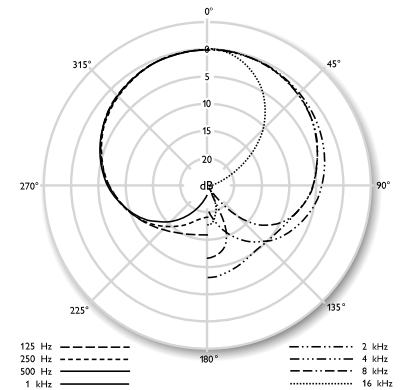
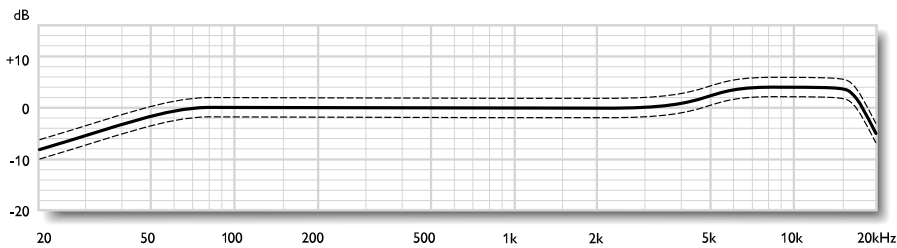
*Neumann TLM 103*

PRESENTED  
BY  
MIX  
FOUNDATION

# TLM 103

## Large Diaphragm Microphone

### Technical Data



Acoustical operating principle .....	Pressure gradient transducer
Directional pattern .....	Cardioid
Frequency range .....	20 Hz..20 kHz
Sensitivity at 1 kHz into 1 kohm .....	21 mV/Pa
Rated impedance .....	50 ohms
Rated load impedance .....	1000 ohms
Equivalent SPL CCIR 468-3 .....	17.5 dB
Equivalent SPL DIN/IEC 651 .....	7 dB-A
S/N ratio CCIR 468-3 .....	76.5 dB
S/N ratio DIN/IEC 651 .....	87 dB

Maximum SPL for THD 0.5% .....	138 dB
Maximum output voltage .....	13 dBu
Dynamic range of the microphone amplifier DIN/IEC 651 .....	131 dB
Supply voltage .....	48 V ± 4 V
Current consumption .....	3 mA
Matching connector .....	XLR 3F
Weight .....	approx. 500 g
Diameter .....	60 mm
Length .....	132 mm

### Selection of Accessories



