

# Product Information

## **TLM 50 S**

*Pressure Microphone*





## Features

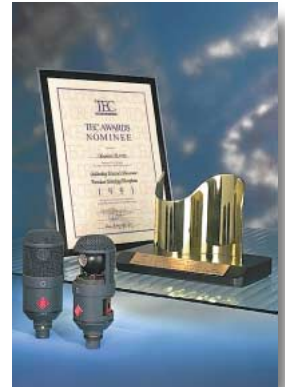
- Small diaphragm microphone with omnidirectional pattern
- Successor of the world-wide successful M 50
- Excellent transmission down to lowest frequencies
- Pressure transducer
- In the upper range pattern similar to pressure gradient transducer
- Set includes cable and auditorium hanger

The TLM 50 is a studio microphone with an unusual omnidirectional characteristic. The same way as in the legendary M 50, the capsule is mounted flush into the surface of a sphere.

This unique design gives the microphone a smooth rise in frequency response and an increased directivity in the upper frequency range.

There the directional characteristic is almost comparable to a pressure gradient microphone. In the lower audio spectrum it performs more as a pressure transducer with a linear response down to the lowest frequencies.

In 1991 the TLM 50 received the MIX MAGAZINE Tec-Award. It is supplied with a swivel mount cable and an auditorium hanger.



## Applications

The design of the TLM 50 is based on the legendary M 50 and has very unique acoustic features. It provides a tool for capturing both direct sound from the instruments and a balanced image of the reverberant environment and is therefore especially suited for stereo recordings with two main microphones.

## Acoustic features

The diaphragm of the pressure capsule is 12 mm in diameter and is only 2,25  $\mu\text{m}$  thick. As a result it has a remarkably fast transient response. The diaphragm is made out of nickel, manufactured by Neumann in a proprietary electroplating process.

The headgrille is acoustically very transparent. Even extreme sound pressure levels do not at all affect the transducer's response.

Of course, the headgrille also protects the microphone capsule from mechanical shock and serves as wind and pop screen.



# TLM 50 S

## Pressure Microphone

### Electrical features

The letters TLM stand for “transformerless microphone”. The usual output transformer is replaced in the TLM 50 by an electronic circuit. As with traditional transformers, this technique ensures good common mode rejection, and prevents RF interference, that may influence the balanced audio signal. The transformerless microphone amplifier provides low self noise, fast transient response, and high output capability.

To protect the capsule from hum pickup through the gauze mesh, it is designed as an “active capsule”: The capsule housing contains the impedance converter built as a hybrid module. The resulting audio signal is fed with low impedance to the filter and output stage in the housing.

### Filter and attenuation

A -10 dB switch and a high-pass filter for the attenuation of frequencies below 100 Hz are located at the rear of the microphone. In the position LIN, the cutoff frequency is 30 Hz. Its purpose is to protect the following equipment from subsonic interference (for example strong air currents).



The -10 dB function is achieved by reducing the capsule polarizing voltage from 60 V to 23 V. It helps to avoid overloading the following units during very high sound pressure levels.

The switch does not extend the dynamic range of the microphone amplifier, but shifts it upward by 10 dB.

### Application Hints

- Its special acoustic properties make this an ideal mic for most classical recordings
- A superb AB stereo pair for perfect balance of direct and reverberant sound
- Decca tree, setup with three microphones
- A highest quality spot (solo) mic

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

### Cable suspension

The recommended accessories, such as cables and connectors, provide sufficient stability and therefore allow suspending the TLM 50 eg. from the ceiling of a concert hall with the included MNV 87 auditorium hanger freely from its own cable.



### Delivery Range

Microphone TLM 50  
Microphone cable, IC 4 mt (with stand mount swivel)  
Auditorium hanger, MNV 87 mt  
Dust cover  
Wooden box

### Catalog No.

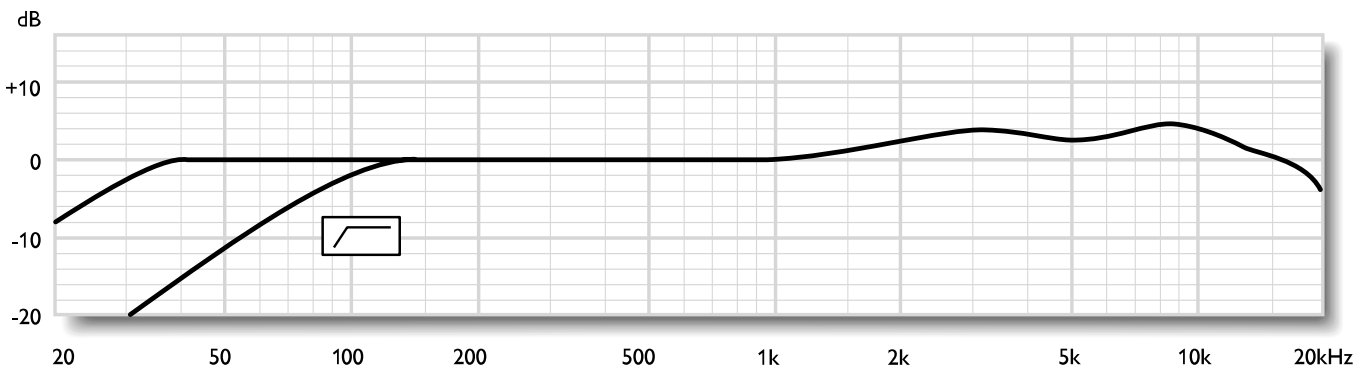
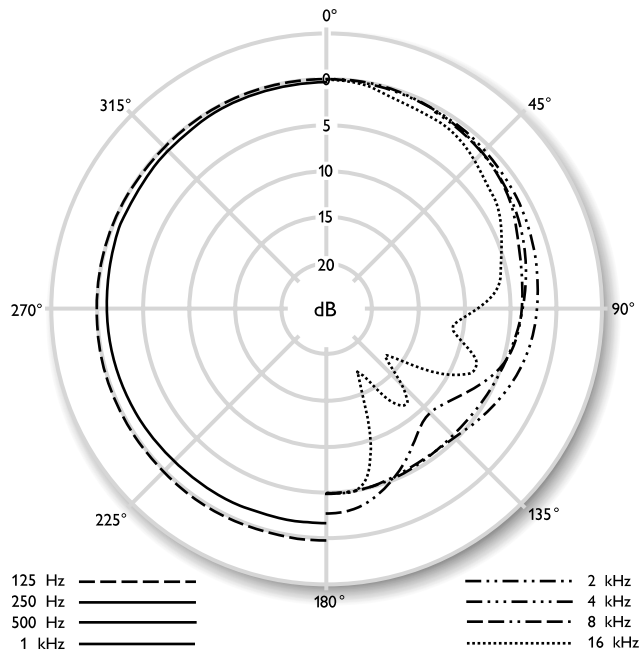
TLM 50 S ..... blk ..... 07135

### Selection of Accessories

Battery supply, BS 48 i ..... blk ..... 06494  
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  
Elastic suspension, EA 50 ..... blk ..... 07359  
Windscreen, WS 87 ..... blk ..... 06753

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

Meaning of color codes:  
blk = black  
ni = nickel



## Technical Data

Acoustical operating principle .....	Pressure transducer	Maximum SPL for THD 0.5% .....	136 dB
Directional pattern .....	Omnidirectional	Maximum SPL for THD 0.5% with preattenuation .....	146 dB
Frequency range .....	20 Hz..20 kHz	Maximum output voltage .....	2540 mV
Sensitivity at 1 kHz into 1 kohm .....	20 mV/Pa	Dynamic range of the microphone amplifier DIN/IEC 651 .....	123 dB
Rated impedance .....	50 ohms	Supply voltage .....	48 V ± 4 V
Rated load impedance .....	1000 ohms	Current consumption .....	2.3 mA
Equivalent SPL CCIR 468-3 .....	26 dB	Matching connector .....	XLR 3F
Equivalent SPL DIN/IEC 651 .....	13 dB-A	Weight .....	490 g
S/N ratio CCIR 468-3 .....	68 dB	Diameter .....	56 mm
S/N ratio DIN/IEC 651 .....	81 dB	Length .....	145 mm