Product Information

M 149 Tube

Tube Microphone

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Features

- *Switchable tube microphone*
- *Transformerless circuitry*
- *High output level*
- *Pressure gradient transducer with the M 49 capsule*
- *Acoustically very open wire mesh cage*
- *Nine directional characteristics: omni, wide angle cardioid, cardioid, hypercardioid, figure-8, and one intermediate position each*
- *7fold switchable low frequency roll-off*

The M 149 Tube is a variable dual-diaphragm microphone. The K 49 capsule – well-known from the legendary U 47 and M 49 microphones – is followed by a tube functioning as an impedance converter. In contrast to earlier concepts – utilizing a transformer – the tube is complemented with a transformerless output circuit design. The M 149 Tube can thus feed long microphone cables without any coloration.

Two slide switches are located below the large, acoustically very open headgrille.

The switch at the front allows selection one of nine directional patterns.

The slide switch at the rear operates a seven-step high pass filter. It allows a very fine adjustment of the cut-off frequency.

Applications

There are nine polar patterns to choose from, making this microphone an ideal choice for a wide range of recording situations.

As its ancestors, the M 149 Tube is a superb vocalist microphone, not only because of the capsule, but also due to its modern circuitry, characterized by extremely low noise level.

Acoustic features

The M 149 Tube is addressed from the front, marked with the Neumann logo. Also on the front is the switch for the selection of the polar patterns.

The capsule is mounted elastically inside the headgrille to eliminate structure borne noise. The surface below the capsule is shaped like a cone to disperse any reflected sound from the acoustic upper half space. This avoids any interference with the primary sound arriving at the capsule directly.

A large headgrille surrounds the capsule. It is acoustically very open and therefore increases the sonic realism.

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Polar patterns

The polar pattern switch selects one of nine directional patterns: omnidirectional, wide-angle-cardioid, cardioid, hypercardioid, figure-8, and one additional intermediate pattern between each major position.

Electrical features

The circuit of the M 149 Tube microphone has been developed to exceed traditional designs. We have selected a modern tube (triode) and combined its exceptional transmission characteristics with the advantages of our proven transformerless output circuit.

The aim was to provide a more controlled environment for the audio signal on its path from the capsule to the output section.

The final stage is an integrated amplifier, especially designed for such applications. It features very low distortion (THD < 0.002 % at ± 10 V), very low self-noise, and high output current capability.

As a result, the tube circuit is completely decoupled from the microphone output and its characteristic response curve will be unaffected by very high signal levels or varying load conditions.

The lower output impedance and higher output current capability allow cable lengths up to 300 m (1000 feet) without any degradation of the audio signal.

Technical Data

Acoustical operating principle	*Pressure gradient transducer*
Directional pattern	*Omnidirectional, wide angle cardioid, cardioid, hypercardioid, figure-8 plus one intermediate position each*
Frequency range	*20 Hz...20 kHz*
Sensitivity at 1 kHz into 1 kohm	*34/47/62 mV/Pa**
Rated impedance	*50 ohms*
Rated load impedance	*1000 ohms*
Equivalent SPL CCIR 468-3	*28/25/23 dB**
Equivalent SPL DIN/IEC 651	*16/13/11 dB-A**
S/N ratio CCIR 468-3	*66/69/71 dB**
S/N ratio DIN/IEC 651	*78/81/83 dB**
Typical SPL (tube characteristic):	
for < 0,5% THD	*120 dB*
for < 5% THD	*136 dB*
Maximum output voltage	*18 dBu*
Dynamic range of the microphone amplifier cardioid:	
DIN/IEC 651 for < 0,5% THD (for < 5% THD)	*101 (121) dB*
Powering	*Power supply N 149*
Matching connectors:	
Microphone	*DIN8F*
Power supply	*XLR3F*
Weight	*730 g*
Diameter	*70 mm*
Length	*201 mm*

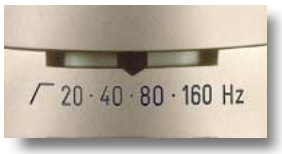
** Omnidirectional / cardioid / figure-8*

The tube amplifier changes the high impedance of the capsule and adds 10 dB of gain to the audio signal, providing optimum operating specifications. The wide dynamic range is impressive, as peak output can be ±10 V, at 20 mA.

The ideal operating point of the tube is maintained throughout its entire life expectancy. Plate current and filament voltage are constantly regulated. A sensor circuit monitors and compensates for any voltage drop across the microphone cable. The tube is heated up slowly through inverse current limiting to guarantee long life. Optimum operating conditions are reached within a very short time.

Filter

A seven-position slide switch is located on the back of the microphone. It selects a high-pass filter, advancing in half-octave steps between 20 Hz and 160 Hz (-3dB). This filter is useful to suppress rumble from air-conditioning and in windy situations.



In addition, the filter provides an effective tool to control the audio signal when the microphone is used at close distance and therefore proximity effect alters the program material.

Delivery Range

The specifically designed new N 149 power supply unit feeds the M 149 Tube through an 8-core cable. The output connector for the audio signal is a 3-pin XLR. The output signal is balanced.

The microphone comes as a set in an attracktive case, together with the 8-core microphone connecting cable, the N 149 power supply with plug-in mains unit, the EA 170 full elastic microphone suspension and a dust cover. Also included is a separate wooden box for protection and storing the microphone safely.

N 149 V - Vintage Power Supply

As requested by many recording engineers an optional power supply in the typical vintage design is available: The N 149 V. It handles all mains voltages from 100 V to 240 V, 50 or 60 Hz. Mains power is connected through a standard IEC 320 mains socket.

The three available versions of the N 149 V just differ in their mains power cable.

Delivery Range

M 149 Tube Microphone
N 149 Power supply with plug-in mains unit
EA 170 Elastic suspension
Connecting cable, Wooden box, Dust cover

Catalog No.

M 149 Tube (230 V, Euro) ..... ni 08390
M 149 Tube (117 V, US) ..... ni 08399
M 149 Tube (230 Volt, UK) ..... ni 08403

Selection of Accessories

Popscreen, PS 20 ..... blk 07346

Power Supply, N 149 V (EU) 12253.00101
Power Supply, N 149 V (US) 12253.00201
Power Supply, N 149 V (UK) 12253.00301

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

Color codes: blk = black, ni = nickel

Application Hints

- *Universal tube mic*
- *Its warm and yet transparent sound gives volume and presence to a vocalist*
- *A wide range of adjustments provide the most subtle differentiation of sound, especially in the range of proximity effect*
- *Mic for broadcasting, dubbing, and voice-over*
- *Spot mic for close miking of solo instruments, especially strings, wind instruments, and piano*

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

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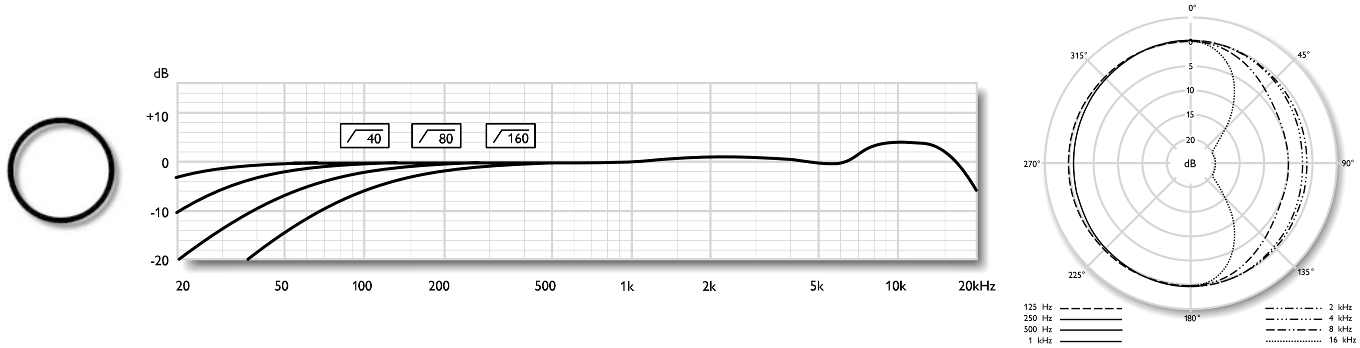

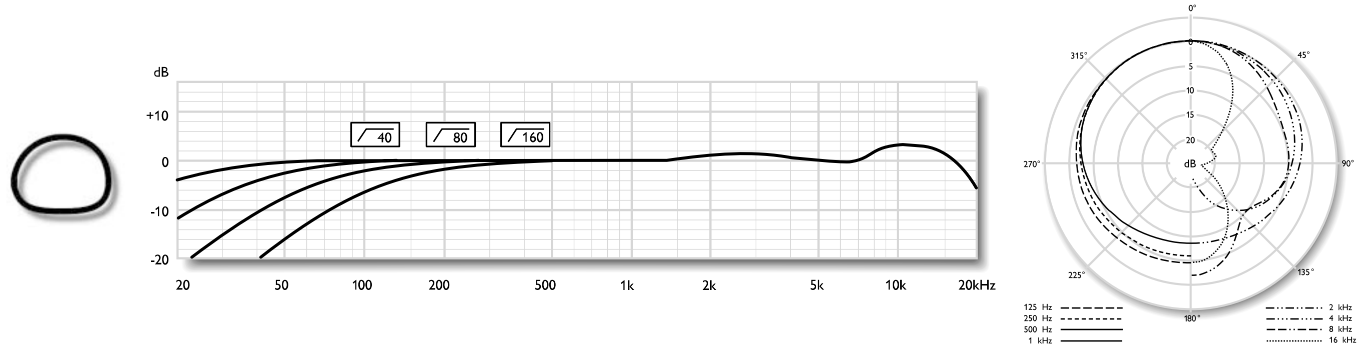

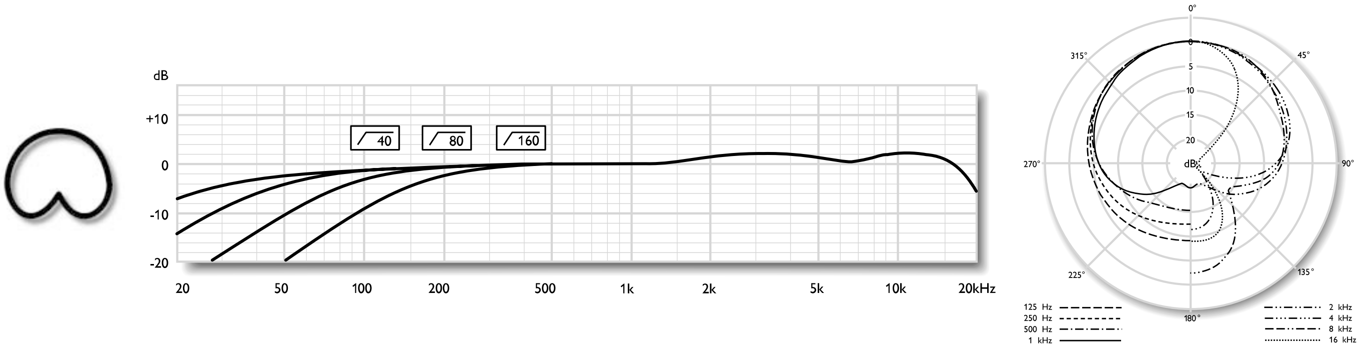

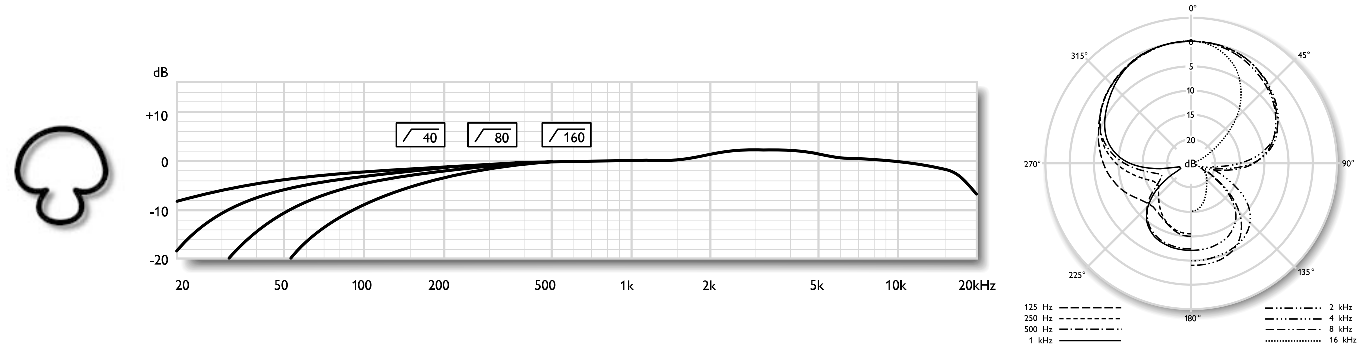

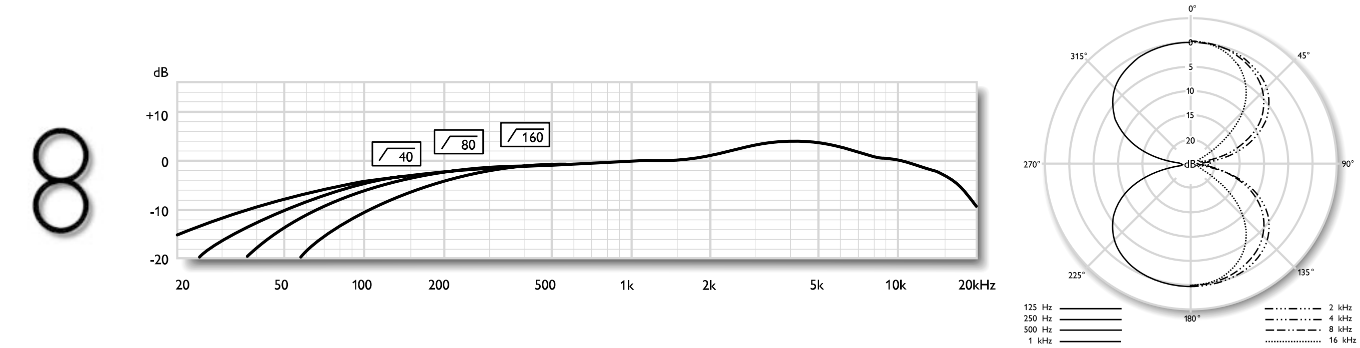

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