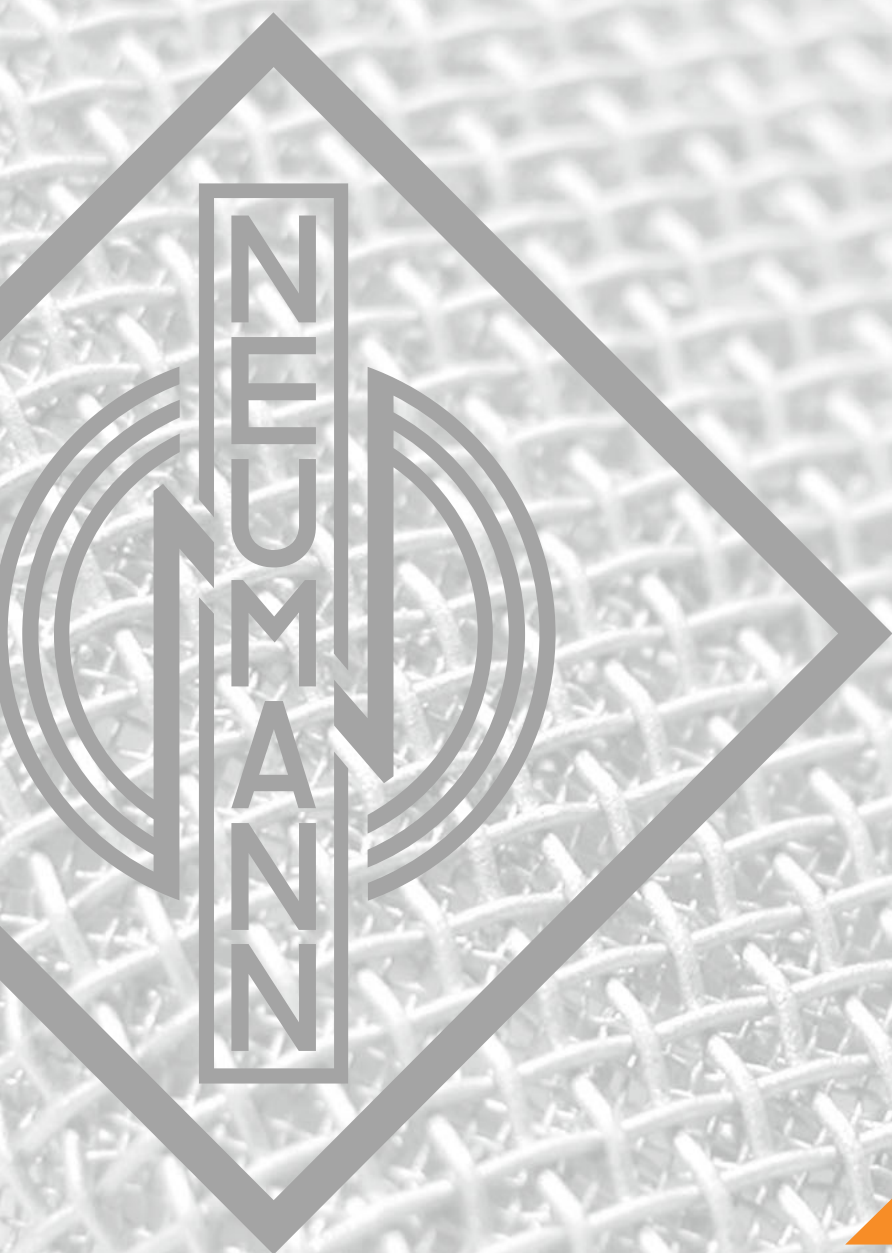


U 89 i

▶ **Large Diaphragm
Microphone**



www.neumann.com



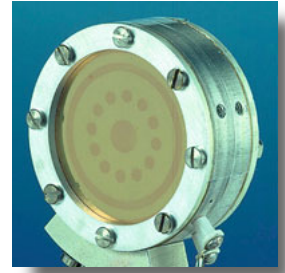
The design of the microphone is a registered design of the Georg Neumann GmbH in certain countries.



Features

- Variable large diaphragm microphone
- Pressure-gradient transducer with double membrane capsule
- Five directional characteristics: omni, wide angle cardioid, cardioid, hypercardioid, figure-8
- Thereby most versatile in all recording situations
- Two-stage roll-off filter
- Switchable 6 dB pre-attenuation
- Extended frequency range in comparison to U 87 Ai

The U 89 is a studio microphone for universal applications. The headgrille protects a dual-diaphragm capsule. A rotary switch below the headgrille selects from five different polar patterns. Therefore the microphone can be adapted easily to large sound sources, and those that are spread wide apart, or to sound sources to be recorded at a greater distance.



The amplifier accepts sound pressure levels up to 134 dB without distortion. This figure can be increased to 140 dB. An additional rotary switch activates a filter that changes the low frequency response either below 80 Hz or 160 Hz.

Applications

The U 89 i is similar in appearance to the U 87. It is of smaller size, and lighter weight. It features five instead of three directional characteristics and a higher maximum sound pressure level which make this microphone easier adaptable to different applications.

Polar patterns

In addition to the usual directional polar patterns: omnidirectional, cardioid, and figure-8, we have added a hypercardioid and wide-angle cardioid characteristic.

When compared to the standard cardioid pattern, the hypercardioid characteristic suppresses sound from the side more efficiently. The wide-angle polar pattern is especially useful to record large sound sources.

Acoustic features

The microphone is addressed from the front, marked with the Neumann logo. The large diaphragm capsule has a very smooth frequency response for all polar patterns over a wide acceptance angle. The frequency response curves are flat up to 10 kHz within a pickup angle of $\pm 100^\circ$.

As a result the U 89 i has a very even diffuse-field response for all polar patterns. This is important in a reverberant environment when more reflections arrive at the microphone capsule. The acoustic information is not affected in its tonal quality when recorded by the microphone.

This characteristic is achieved without resorting to corrective resonance effects.

The capsule is elastically mounted to avoid any structure borne noise that could interfere with its operation.

Filter and attenuation

The amplifier handles sound pressure levels up to 134 dB without distortion.

With a self noise level of 17 dB (A-weighted) the total dynamic range is 117 dB. Maximum sound pressure level is 140 dB when the -6 dB rotary switch is in the ON position.



A low frequency roll-off at 80 Hz or 160 Hz can be activated with the third rotary switch below the headgrille.

This filter suppresses low frequency interference, yet maintains an even frequency response for close-up sound sources, for example, when proximity effect could adversely affect the program material.



A steep high-pass filter in the LIN position prevents the output transformer of the microphone from being overloaded due to undesired subsonic frequencies.

Operational safety

All exposed surfaces of the microphone capsule, including the diaphragms, are at ground potential. This technology makes them highly immune to electrical and atmospheric interference and contamination through microscopic dust particles.

Delivery Range

Microphone U 89 i (mt)
Wooden box

Catalog No.

U 89 i ni 006449
U 89 i mt blk 006450

Selection of Accessories

Battery supply, BS 48 i blk 006494
Power supply, N 248 blk 008537

Auditorium hanger, MNV 87 ni 006804
Auditorium hanger, MNV 87 mt ... blk 006806

Elastic suspension, EA 89 A ni 007195
Elastic suspension, EA 89 A mt ... blk 007196

Stand mount swivel, SG 289 blk 008659

Popscreen, PS 20 a blk 008488
Windscreen, WS 89 blk 007197

Microphone cable, IC 4 mt
(with stand mount swivel) blk 006557

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

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

Application Hints

- A microphone for universal usage
- Use as spot mic for
 - wind instruments,
 - strings,
 - piano

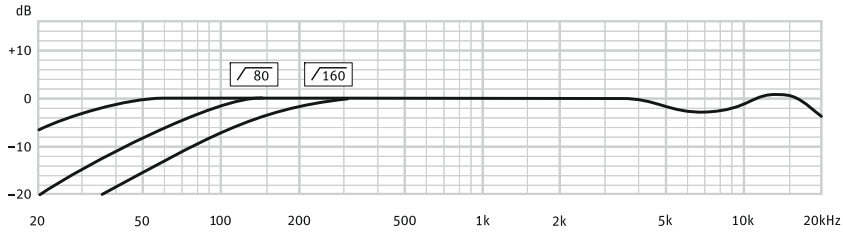
These are just some of the most common applications. We recommend additional experimentation to gain maximum use from this microphone.

Technical Data

Acoustical operating principle Pressure gradient transducer
Directional pattern Omnidirectional, wide angle cardioid,
cardioid, hypercardioid, figure-8
Frequency range 20 Hz..20 kHz
Sensitivity at 1 kHz into 1 kohm 8 mV/Pa
Rated impedance 150 ohms
Rated load impedance 1000 ohms
Signal-to-noise ratio, CCIR¹⁾ (rel. 94 dB SPL) 66 dB
Signal-to-noise ratio, A-weighted¹⁾ (rel. 94 dB SPL) 77 dB
Equivalent noise level, CCIR¹⁾ 28 dB

Equivalent noise level, A-weighted¹⁾ 17 dB-A
Maximum SPL for THD 0.5%²⁾ 134 dB
Maximum SPL for THD 0.5% with preattenuation²⁾ 140 dB
Maximum output voltage 800 mV
Dynamic range of the microphone amplifier (A-weighted) 117 dB
Supply voltage (P48, IEC 61938) 48 V ± 4 V
Current consumption (P48, IEC 61938) 0.8 mA
Matching connector XLR3F
Weight 400 g
Dimensions Ø 46 mm x 185 mm

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



measured in free-field conditions (IEC 60268-4), tolerance ± 2 dB

