

AEA N22

OWNER'S MANUAL



ACTIVE NEAR-FIELD RIBBON MIC

WELCOME

Congratulations on your purchase of the AEA N22 phantom-powered ribbon microphone and welcome to the AEA family. Hard working artists, honing their musical craft for many years, feel strongly about their personal tone, so they need a microphone that translates their signature sound in a recording. Whether you are a musician, home studio owner, or experienced producer/engineer, you will find that the N22 provides a great ribbon tone without the need for EQ in most applications. Most importantly, the N22 was designed by listening first, and measuring only after experienced musicians told us the microphone sounded great. Bridging the gap between vintage and modern, studio and live, the N22 is the perfect companion for musicians and engineers alike.

Your N22 microphone is 100% handcrafted in Pasadena, CA. AEA is a family owned company with a small crew of skilled technicians - most of them being musicians themselves. Proudly independent, we still manufacture all our ribbon microphones and preamps by hand from locally sourced parts.

We hope that the N22 will help you capture many magical performances that touch the heart. Read this manual thoroughly to make sure that you get the best sound and longevity from your new microphone. Please don't be a stranger and become part of the AEA community by sharing your experiences with the N22 via e-mail, phone or our social media channels.

Wes Dooley

Founder of AEA

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INTRODUCTION

The N22 is a side-address, phantom-powered ribbon microphone with a bidirectional (or figure-of-8) pickup pattern. Optimally designed for close-up miking applications like acoustic and electric guitars, vocals, drums, or piano, the N22 can also be used a few feet away from the source thanks to its healthy output level. With phantom-powered JFET electronics and a custom German transformer the N22 achieves optimal performance with a wide range of preamps ranging from vintage high-end models to USB audio interfaces in home studio setups. With a highly-protected pure aluminum ribbon, the N22 shines in both live sound applications and vocal recording, often without the need for an additional pop-filter. Rooted in the RCA tradition just like other AEA ribbons, all NUVO microphones are designed to offer a fresh approach to the ribbon transducer and represent our take on the evolution of the ribbon microphone.

WARRANTY

Your N22 comes with a one-year limited warranty on parts and labor*. **Registering your product within 90 days will extend the warranty to three (3) years.**

Scan the QR code or visit our [website](#) to register.

*AEA is not responsible for shipping costs



SUPPORT

If you should encounter any problems with your N22 microphone or have questions regarding specific applications, please contact our customer support team at support@ribbonmics.com for the quickest response.

To contact us by phone, please call +1-626-798-9128 from 9:00 a.m.- 5:00 p.m. PST Monday-Friday. AEA's repair center is located at 1029 N. Allen Ave, Pasadena, CA 91104, U.S.A.

GENERAL GUIDELINES

Your microphone is a valuable and important investment. Like any piece of recording equipment or musical instrument, it requires common sense and good basic care to keep it working properly. Given simple, basic care, your new microphone will perform admirably for decades.

PHANTOM POWER

The N22 needs a standard 48V phantom-power source to operate, but ensure that phantom power is disengaged before plugging and unplugging the microphone. The loud pops that occur when the microphone is plugged in with phantom power engaged can damage speakers, headphones, and ears.

The phantom current draw for active AEA ribbon mics is 7 milliamps. IEC specifies P48 power should be able to deliver 10 milliamps per input. Some USB and battery-powered audio interfaces won't deliver this. Please check the current values available on your unit to ensure the best performance.

MICROPHONE STORAGE

Keep the microphone covered when it is not in use. This will reduce the damage that may result from a sudden gust of air. Place the supplied protective bag over the microphone when it is not in use. For long term storage, place the microphone in its protective case. An unprotected ribbon microphone can attract minute iron particles, sometimes known as "tramp iron". If allowed, tramp iron can penetrate the screen of a ribbon mic, sufficiently build up in the magnetic gap and rub against the ribbon, causing distortion, electrical shorts or tearing of the ribbon.

AIR TURBULENCE

Never expose the microphone to strong air turbulence. Ribbon microphones can withstand very high SPL (Sound Pressure Level), but can be damaged by a strong gust of air or high levels of very low frequency sound waves (from a kick drum or bass cabinet). This can stretch the ribbon, reducing overall output, especially at high frequencies. Sources that may produce strong blast of air, such as the bass port on an electric guitar or bass amp, an instrument being plugged (or unplugged) while the amp level is turned fully up, or an on-axis kick-drum hole are potentially damaging.

To avoid possible damage, follow "The Hand Test": put the back of your hand where the mic will be; if you can feel the motion of air on your hand, place a pop-filter between the microphone and the source or simply pull the mic further back. When recording kick drums or bass guitar cabinets, angle the microphone to make sure that no wind blasts hit the microphone directly on-axis.

Never blow directly into any microphone to test it. Not only can this force moisture and dirt into the microphone, but strong air movement can stretch the ribbon degrade the microphone's performance. The N22 has specially engineered multilayer protection to provide superior plosives protection, but take care to avoid high-wind outdoor environments.

If you plan to use your N22 in an outdoor or high-wind environment, we recommend using the AEA NUVO windscreen. Designed specifically to the contours of both the N22 and the N8, the NUVO windscreen provides excellent protection from wind blasts, breath noise reduction on close-up vocals, and extra protection when using your NUVOs outdoors. To order the NUVO windscreen and/or other accessories, please visit our online store:

<https://www.aearibbonmics.com/type/accessories/>

STRAY MAGNETIC FIELDS

Ribbon microphones are fundamentally prone to picking up strong external magnetic fields caused by light dimmers or nearby power transformers. Guitar players will know this phenomenon from single-coil pickups. Though AEA designers pay attention to suppressing such sensitivity, it is still possible to encounter this problem. If you experience hum, try rotating or moving the microphone to find a spot where the hum disappears, and try eliminating potential sources of stray magnetic fields.

MICROPHONE POSITIONING

The shock-mounted microphone clip supplied with the N22 helps isolate the ribbon transducer from structure-borne noise. To avoid additional vibration entering the mic through an XLR cable it is important to provide a slack loop by tying the microphone cable tightly to the microphone stand with a cable tie, shoelace, or string. The N22 works well with all standard microphone stands, a high-quality boom stand will still make your life a little bit easier. Mounting the microphone on a strong, sturdy microphone stand with a heavy base (or tripod) is essential. If you are using a boom, make sure that it is properly balanced and make sure the tripod legs are positioned appropriately to prevent tipping.

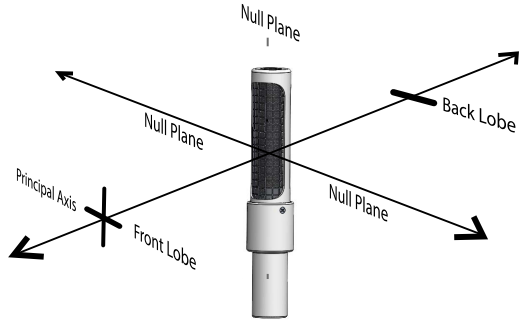
APPLICATIONS ADVICE

We actively encourage users to visit [AEARibbonmics.com](https://www.aearibbonmics.com) to access our comprehensive collection of in-depth articles and tutorials featuring the N22 microphone, along with a library of audio and video demonstrations of the N22 in action.

A FIGURE-OF-8 MICROPHONE

Figure-of-8 microphones are constructed with positive polarity on the front and negative polarity on the back. Positive pressure on the front side of the ribbon produces a positive voltage on (Pin-2).

When using the rear lobe, remember to invert the polarity on your preamp or DAW. This ensures that the signal from the back lobe will be in-phase with other microphones.



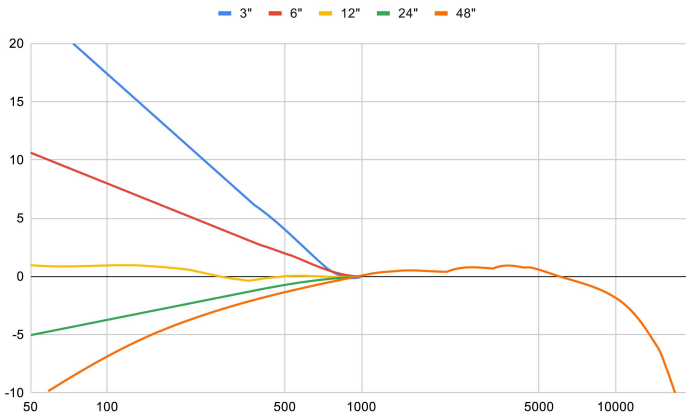
HOW TO MINIMIZE LEAKAGE

A significant and ever-present challenge in contemporary studio recording is minimizing leakage from nearby instruments into the various microphones. While gobos can be effective in isolating performers from each other, they introduce their own set of problems, they usually are bulky, and they inhibit the ability of the musicians to hear and see each other easily.

Since the N22 is bidirectional, it exhibits nulls at right angles to the principal axis. These nulls produce a "plane of rejection" around the sides, top and bottom of the mic that can be used effectively to reduce leakage. Simply arrange the musicians so that nearby instruments are placed in the null of their neighbor's microphone, and vice versa. Although this does not entirely eliminate the need for gobos, it can significantly reduce how many you may need to use. These nulls can also be beneficial in sound reinforcement situations where feedback is always a threat.

Keep in mind that a certain degree of leakage is not necessarily bad. For some styles and genres, it can, in fact, be beneficial to embrace a little bit of leakage in order to create cohesive and natural sounding recordings. You will generally find that well-designed ribbon microphones like the N22 capture a natural off-axis sound, which means that leakage from other instruments can contribute to the overall sound in a pleasing way.

PROXIMITY EFFECT



(graph is a visualization, not an exact measurement)

Proximity effect is a characteristic of all directional microphones; it is a rise in low-frequency response that increases at closer working distances. While this can be used to good effect, particularly with certain voices to give them an enhanced richness and depth, the potential trade-off is reduced articulation or clarity that can result from the masking effect on the treble due to “excessive” bass boost.

The N22's internal design creates a balanced treble and bass ratio at a close distance to the source. The near-field N22 contains a built-in acoustic high-pass filter that allows users to place the mic right up against an instrument. This is all done without an EQ circuit. It naturally reduces proximity effect while also avoiding the room tone that can cause problems in smaller spaces or iso booths.

A NEAR-FIELD RIBBON

The N22 is a near-field ribbon mic and is best used up-close to the source. Its optimal distance for miking is between one and 18 inches (2 cm - 0.5 meters) and is perfect for electric guitar and bass cabs, kick drum, acoustic guitar, and vocals. Because the midrange and top-end are not obscured by proximity effect, it also alleviates the need to blend an additional dynamic mic to add more bite. Because it has less proximity effect, it allows you to get right up against the source while still retaining a balanced sound.

SPECIFICATIONS

Operating Principle: Pressure gradient transducer
Directional Pattern: Bidirectional
Frequency Range: <20 Hz to >20 kHz
Maximum SPL: 141 dB SPL (1% third harmonic > 1 kHz)

Sensitivity: 6.2mV/Pa (-44.1dBV) into unloaded circuit
Output Impedance: 92 Ω broadband
Rec Load Impedance: Phantom 1.0 k Ω or greater
Power: P48 phantom power, 7 mA
Polarity: Pin 2 high for positive pressure at the front of the microphone.

Off-Axis Response

Horizontal: Up to 90 dB rejection at right angles to the front/back axis.
Vertical: Level changes with angle of incidence, but frequency response is consistent.

Transducer Element

Material: Pure aluminum corrugated ribbon
Thickness: 1.8 μ m
Width: 0.185 in (4.7 mm)
Length: 2.35 in (59.7 mm)

Microphone Dimensions

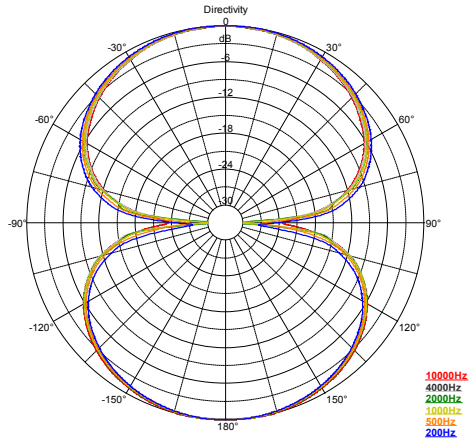
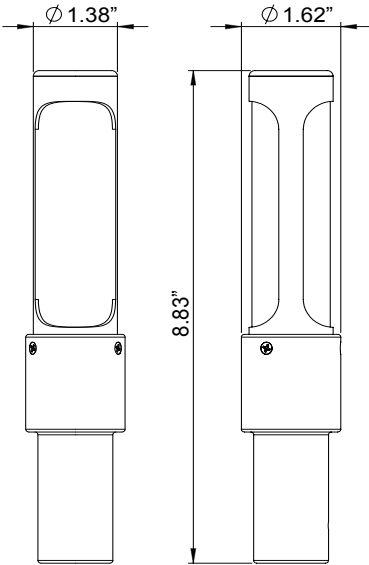
Height: 8.83 in (22.5 cm)
Width: 1.62 in (11.7 cm)
Depth: 1.62 in (9.5 cm)
Weight: 12 oz (335 g)
Shipping Weight: 1 lb 13 oz (810 g)
Connector: XLR-3M

Accessories included Storage/shipping case, mic stand clip, soft cloth bag, user manual

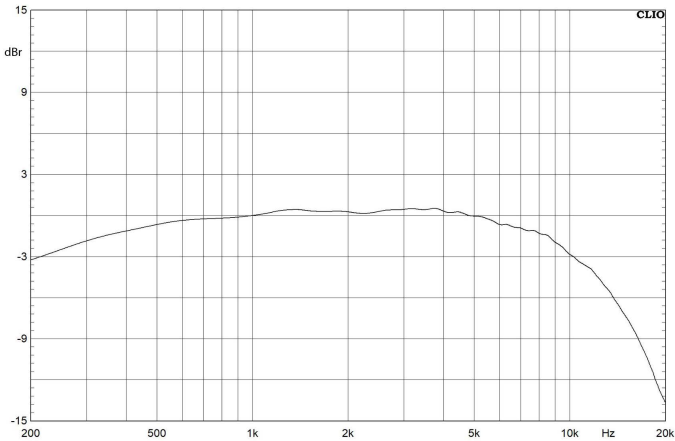
In compliance with the following requirements:
RoHS2 Directive: 2011/65/EU



DIMENSIONS & POLAR PATTERN



FREQUENCY RESPONSE



- Data below 200 Hz omitted due to measuring room restrictions
- 0 dBr is equivalent to $6.2\text{mV}/\text{Pa}$ (-44.1 dBV)
- Normalized to 0 dB at 1kHz. 1/3 octave smoothing



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