AEA KU5A

OWNER'S MANUAL

ACTIVE SUPERCARDIOID END-ADDRESS RIBBON MIC

WELCOME

We congratulate you on your purchase of the AEA KU5A ribbon microphone and welcome you to the AEA family. Never before has a ribbon mic delivered such directionality and uncompromised tonality in a package so fit for both studio and live settings. The KU5A is ideal for studio and live applications where both superior rejection and classic ribbon tonality are paramount. Whether recording a vocal, guitar, or even a snare drum, the KU5A delivers brilliant, focused sound where other conventional ribbons can't. From close range the KU5A retains the hefty low end and pronounced midrange one expects of AEA ribbons and with manageable proximity effect. Vocalists can sing directly into the grille of the KU5A because its interior components are the most protected of any in the AEA lineup. The rugged KU5A is equipped with active electronics, so it's suited for any preamp in the studio or on the road.

Your KU5A microphone is 100% handcrafted in Pasadena, CA. AEA is an independent, family owned company with a small crew of skilled technicians – many of whom are themselves, musicians. We manufacture all our ribbon microphones and preamps with locally sourced parts.

We hope your microphone will capture many magical performances that touch the heart. This manual will help ensure that you get the best sound and longevity from your new microphone. Please become part of the AEA community by sharing your experiences via e-mail, phone or social media.

Wes Dooley
Founder of AEA

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INTRODUCTION

The KU5A is an end-address, phantom-powered, supercardioid ribbon microphone. It is equipped with active circuitry and a custom transformer optimized for all preamps. The reduced rear-lobe of the supercardioid pattern lends to greater rejection of ambient noise and other sound from behind. Sources within 3 inches of the KU5A will benefit from the warm tonality of its proximity effect, and it can handle 135 dB SPL at 1kHz. The KU5A's integrated electronic high-pass filter smoothly rolls off low end with a 6dB/octave at 283Hz. It's supremely durable in close range, outdoor, and live applications and can handle direct blasts of air from loud singers and other instruments that move air.

WARRANTY

Your KU5A 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 KU5A 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 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 most recording equipment and musical instrument, it requires common sense and basic care to keep it functioning properly. Given care, your new microphone will perform dependably for decades.

PHANTOM POWER

The KU5A needs a standard 48V phantom-power source to operate, but ensure that phantom power is disengaged before plugging and unplugging the microphones. The loud 'pops' that occur when the microphone is plugged in with phantom power engaged can damage speakers, headphones, and ears.

AEA strongly recommends against using TRS or TT mic level patch bays. The patching process shorts pin-2 and/or pin-3 of the cable to ground. Sometimes even with phantom power off equipment can be damaged due to phantom power supply voltage bleed which varies. For mic level patching we suggest always using an XLR patch bay.

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 peak performance.

MICROPHONE STORAGE

Keep the microphone covered when it is not in use. This will reduce the damage that may result from a gust of air. Place the supplied protective bag over the microphone when it is not in use. For long term storage, keep 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

Avoid exposing the microphone to strong air turbulence. Ribbon microphones can withstand very high SPL (Sound Pressure Level), but can be damaged by 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.

Take precautions when recording any source that moves air. To avoid damage, follow "The Hand Test": put the back of your hand where the mic will be positioned; if you can feel the moving air, place a pop-filter between the microphone and the source or simply pull the mic farther back. When recording kick drums or bass guitar cabinets, angle the microphone so that no air blasts 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 KU5A has specially engineered multilayer protection against plosives in the front of the microphone, but take care to avoid high-wind outdoor environments.

STRAY MAGNETIC FIELDS

Ribbon microphones are fundamentally prone to picking up strong external magnetic fields generated by light dimmers or nearby power transformers. Though AEA designers paid much attention to suppressing such sensitivity, it is still possible that you might encounter this problem. If you should pick up a hum, try rotating or moving the microphone to find a spot where the hum disappears, and try eliminating potential sources of stray magnetic fields. You can use the microphone to locate the origin of the interference by rotating or moving the mic to find the point of peak interference.

The high-performance magnets used in AEA microphones are incredibly strong, and a significant amount of stray magnetic field lines surround the microphone. To prevent data loss caused by magnetic fields, avoid placing the microphone in close proximity to hard drives, credit cards, analog tape, or any other magnetically sensitive items.

MICROPHONE POSITIONING

Mounting the KU5A on a strong, sturdy microphone stand with a heavy base (or tripod) is encouraged. If you are using a boom, make sure that it is properly balanced and that the tripod legs are appropriately positioned to prevent tipping.

APPLICATIONS ADVICE

We actively encourage users to visit **AEAribbonmics.com** to access our comprehensive collection of in-depth articles and tutorials featuring the KU5A microphone, along with a library of audio and video demonstrations of the KU5A in action.

END-ADDRESS DIRECTIONALITY

The reduced rear-lobe of the supercardioid pattern lends to ambient noise rejection far superior to that of a conventional bidirectional ribbon mic. It has nulls at approximately ±135° from the principal (front) axis. Projected in three dimensions, these nulls produce a "cone of rejection" to the rear of the microphone that can be use effectively to reduce leakage. Simply arrange the musicians so that nearby instruments are placed in the "null" of the nearby microphone, and vice versa.

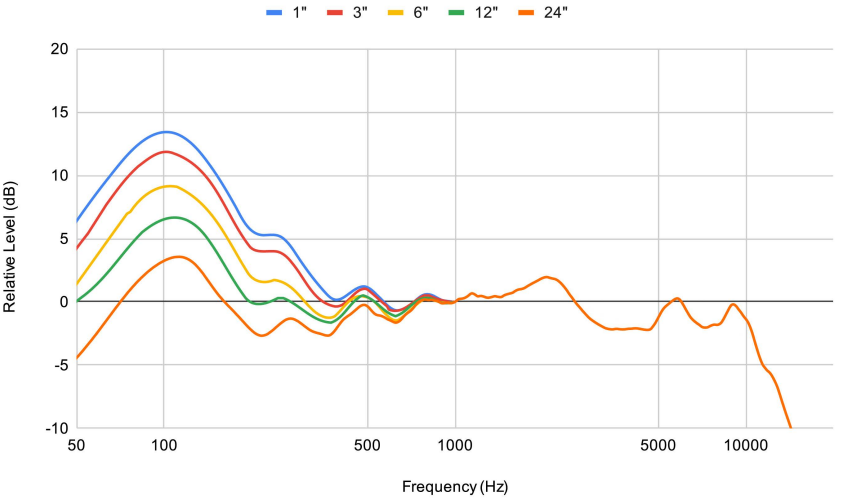
ACTIVE ELECTRONICS

The KU5A is an active microphone complete with a custom transformer and JFET electronics. It features the same custom transformer used in the A440, R84A, and NUVO microphones. This circuitry grants more output, less audible noise, and a stable impedance. Stable impedance allows for a consistent frequency response and greater flexibility with different preamps, including those found in audio interfaces. The boosted output is vital when recording quiet sources like vocals and soft acoustic

guitars. Additionally, the active circuitry also prevents noise, and interference on long cable runs and when operating large lighting rigs. The KU5A requires standard 48-volt phantom power.

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.

PROXIMITY EFFECT



(graph is a visualization, not an exact measurement)

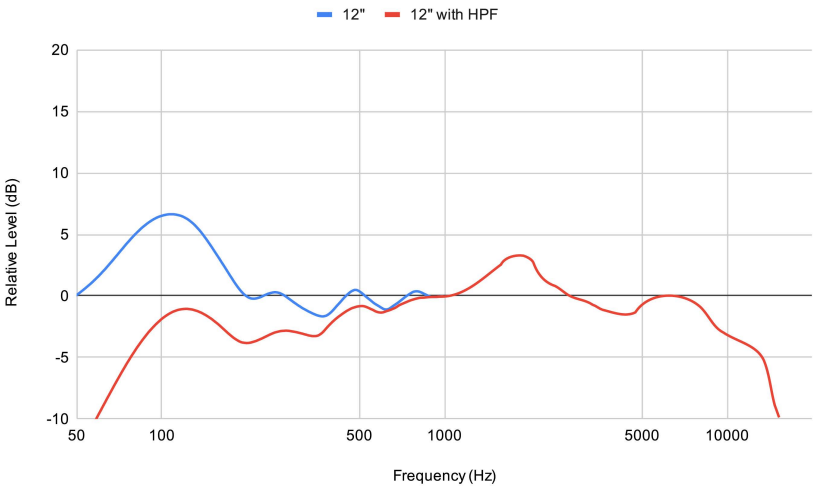
Proximity effect, a characteristic of all directional microphones, is a rise in low-frequency response at closer working distances. This can be utilized to great effect, particularly with deeper vocals to enhance richness and depth. A potential trade-off is reduced articulation resultant of the masking effect on the treble due to "excessive" bass boost.

The KU5A, a near-field ribbon microphone, was designed to minimize proximity effect to allow for close-range recording. Sources within 3 inches of the mic will benefit from the warmth of its proximity effect.

INTEGRATED HIGH-PASS

The KU5A's smooth ribbon midrange softens the sibilance that a condenser often accentuates, and its top end alleviates the need to blend it with other microphones for more bite.

The KU5A has an integrated electronic high-pass filter that can be engaged by an external pushbutton switch. This filter smoothly rolls off the low end with a 6db/octave at 283hz. This high-pass filter was designed specifically for singers who use the KU5A on the road and in the studio, and allows you to position the mic right up against the source without capturing overwhelming proximity effect.



(graph is a visualization, not an exact measurement)

KU5A ACCESSORIES

The superior windscreen protection of the KU5A can be supplemented by the AEA custom windscreen, which fits securely over its front grille. The windscreen is advantageous in outdoor, high-wind environments or when vocal plosives move too much air. KU5A windscreens are available for purchase from the accessories section of the AEA website at AEARibbonMics.com.

SPECIFICATIONS

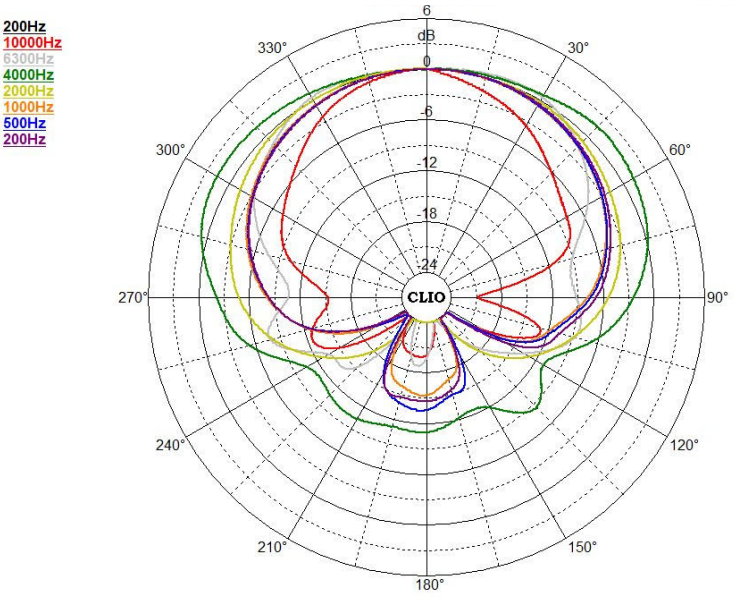
Operating Principle:	Pressure gradient transducer
Directional Pattern:	Supercardioid
Frequency Range:	20Hz to14kHz (+3/-6dB)
Maximum SPL:	135 dB SPL (1% third harmonic > 1 kHz)
Sensitivity:	-43dBV (7.08 mV/Pa) at 1 kHz, no load
Output Impedance:	92 Ω broadband
Load Impedance:	1.0 kΩ or greater
Phantom power:	Requires 48V Phantom Power, 7mA
Polarity:	Pin-2 high for positive pressure at the front of the microphone.
Switchable High-Pass Filter:	6dB/Octave at 283hz
Off Axis Response	
Relative Output at 180°:	-12dB
Angle of Max Rejection:	135°
Transducer Element	
Material:	Pure aluminum corrugated ribbon
Thickness:	1.8 µm
Width:	0.055 in (0.14 cm)
Length:	1.175 in (2.9 cm)
Microphone Dimensions	
Height:	8 in (20.3 cm)
Width:	3.1 in (7.9 cm)
Weight:	1lb 12.6 oz (0.810 kg)
Shipping weight:	4.2 lb (1.91 kg)
Connector:	XLR-3M wired to a 3 meter captive cable
Accessories included:	Storage case, mic bag, user manual

KU5A windscreens are available for purchase at www.aearibbonmics.com

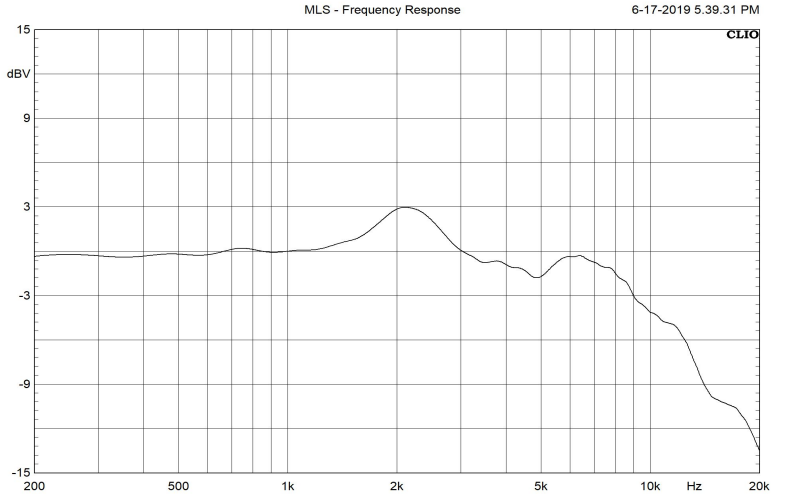
In compliance with the following requirements: RoHS2 Directive: 2011/65/EU

CE

POLAR PATTERN



FREQUENCY RESPONSE



- Data below 200 Hz omitted due to measuring room restrictions
- 0 dBr is equivalent to 7 mV/Pa at 1kHz
- Normalized to 0 dBV at 1kHz. 1/3 octave smoothing

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