DPA
MICROPHONES

User's manual

d:vote™ **4099B**

d:vote™ **4099C**

d:vote™ **4099D**

d:vote™ **4099G**

d:vote™ **4099P**

d:vote™ **4099S**

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d:vote™ **4099V**

Instrument Microphones

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PRODUCT DESCRIPTION

The d:vote™ 4099 clip microphone range features a modular design with many combinations of microphones, holders, cables and connectors.

The microphones are available in two sensitivities: normal sensitivity for most instruments, low sensitivity for high-SPL handling of brass and drums (marked with a dot on the cuff).

Standard gooseneck length is 140 mm (5.5 in). The optional gooseneck extension unit adds 70 mm (2.8 in) to the length, allowing flexibility in finding the instrument's sweet spot.

The eight different holders will fit the vast majority of instruments.

Detachable cables
Detachable cables make it convenient to mount the mic on an instrument before connecting it. The choice of two different cable qualities makes it possible to tailor your mic to the specific task; you may want to use the heavy duty cable for PA/Live gigs, and the easier-to-hide, thinner cable for personal use on instruments where you don't want the cable weight to interfere with your performance. In case of cable break, service is easy and fast.

More than 35 different adapters are available to make the d:vote 4099 fit various professional wireless systems.

Extending the gooseneck
The gooseneck length can be altered by the optional extension unit, helping with demanding positioning situations such as trombones with mutes. Connect the male MicroDot at the end of the microphone gooseneck to the female MicroDot at the extension using finger torque or employing the supplied connector-tightening tool for higher security.

Mounting the gooseneck
Each holder has a grip designed to fix the microphone gooseneck. Furthermore, a fixation lock slides over the grip to secure it. See description for each instrument solution on the following pages.

d:vote™ 4099B Clip Microphone for Bass
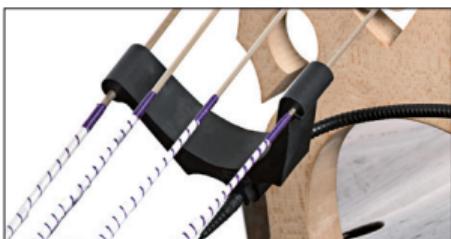
Mounting the gooseneck
Secure the gooseneck by sliding the fixation part over the grip:
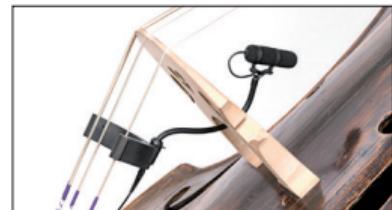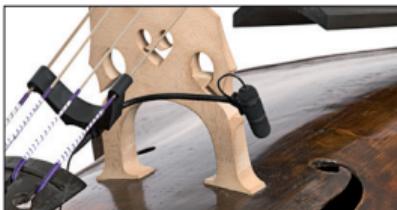
Mounting the microphone
Mount the d:vote 4099B on the bass by attaching it on the two outer strings between the bridge and the tailpiece. Let the holder curve inwards.

Adjust the gooseneck and microphone angle to your desired taste.

For the most natural sound: below the bridge, between instrument top (belly) and strings. For the highest output: angled to one of the f-holes.

d:vote™ 4099C Clip Microphone for Cello

Mounting the gooseneck
Secure the gooseneck by sliding the fixation part over the grip:
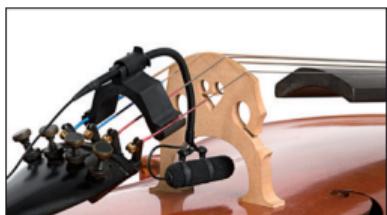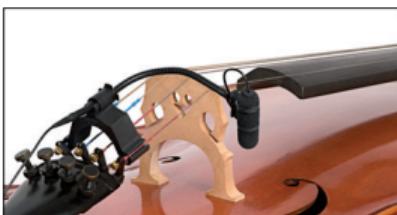
Mounting the microphone

Mount the d:vote 4099C on the cello between the bridge and the tailpiece. Attach it on the two outer strings, let the holder curve outwards.

Adjust the gooseneck and microphone angle to your desired taste. For the most natural sound: below the bridge, between instrument top (belly) and strings. For the highest output: angled to one of the f-holes.

d:vote™ 4099D Clip Microphone for Drums
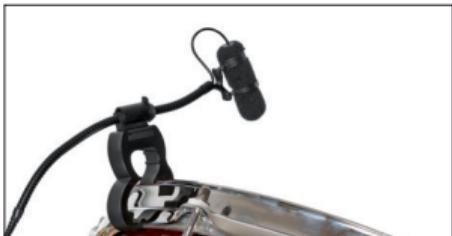
Mounting the gooseneck

Secure the gooseneck in the holder. The gooseneck securing part can be angled 90 degrees offering maximum placement possibilities. Detach the part from the clip and re-mount it turned 90 degrees for a horizontal gooseneck arm.
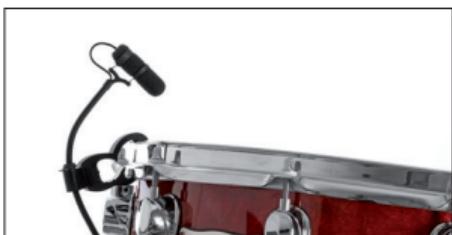
Mounting on instrument

The enclosed clip fits most drums and percussion instruments and can be mounted two ways, either upwards or downwards:

Clip mounted upwards.

Upward turning clip positioning allows for mic placements across the drum skin and will be the most typical live application choice for rock. Point the microphone to the middle of the drum to get more low-end richness or to the edge to get more crispy bite.

Clip mounted downwards.

Downward turning clip positioning allows for mic placements a little further away from the drum and will be a preferred choice for most invisible placements suitable for TV productions. Sonically, this position will also often be the choice for jazz.
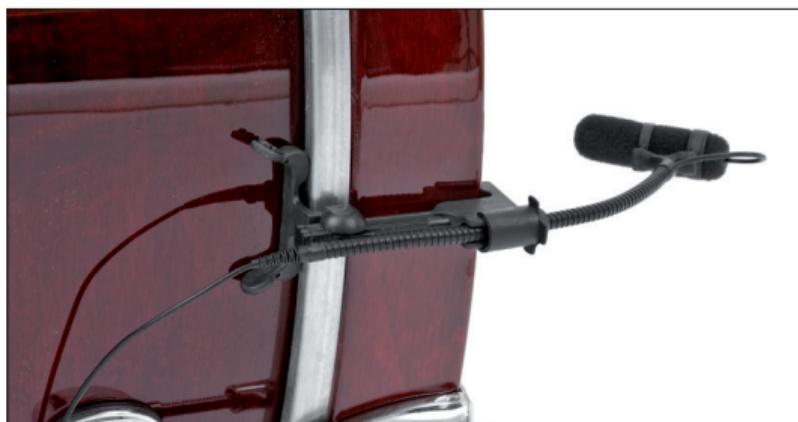
Application note, snare drum

A snare drum may benefit from a two-microphone setup, one on top and one below the drum; the upper mic will focus on the "in-your-face" punch and the lower mic on the snare high-frequency bite from below the drum. Shift polarity on one of them and blend them in the desired balance.

Application note, bass drum
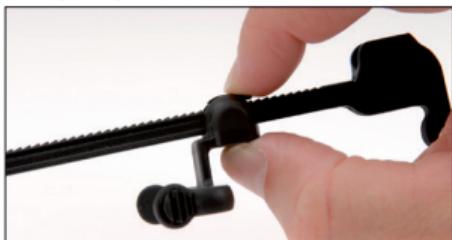
The VC4099 clip (optional accessory) also fits the bass drum rim. The bass drum, too, can benefit from a two-microphone setup, one on the stroke side and one on the front side. Shift polarity on one of them and blend them in the desired balance, controlling the "kick" sound and the low frequency component.

d:vote™ 4099G Clip Microphone
for Guitar, Dobro

Adjusting the clip height

The height of the d:vote 4099G clip can easily be adjusted to fit a wide variety of stringed instruments with a body depth between 35 mm (1.4 in) and 122 mm (4.8 in). Press the lock on the side of the clip to increase height:

Place the clip in its maximum position on the instrument, and reduce the height to fit the instrument by pressing the parts firmly together.

Mounting the gooseneck

Choose the desired gooseneck height and place it in the grip. Secure the gooseneck by sliding the fixation part over the grip:


Mounting on instrument

The d:vote 4099 can be easily readjusted and moved to another instrument by using just one hand. Squeeze the two clamp knobs on the clip to expand it, mount on the instrument, and then release.

It will now fit the shape of the instrument. This will vary depending on the required instrument and playing style.

Application note

A recommended miking placement for the most balanced sound is where the fretboard meets the body, typically above the 12th fret.

For optimum volume, point the microphone toward the sound hole. A blend between your guitar's pick-up and the d:vote 4099 condenser microphone is often a good choice on stage. This can provide even more gain before feedback while keeping a natural guitar tone. The optional DAO4099 Double Cable will reduce cable clutter.

# d:vote™ 4099P Stereo Microphone System for Piano

Mounting the gooseneck in holders

Secure the goosenecks in the holders by sliding the fixation part over the grip:

Placement of microphones

Place the holders in the piano frame and adjust the microphone angle to preferred sonic taste. The microphones can be spaced apart, angled apart, or both.

**Specifications specific to the d:vote™ 4099P**
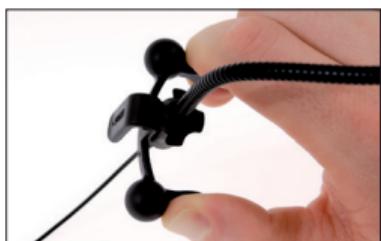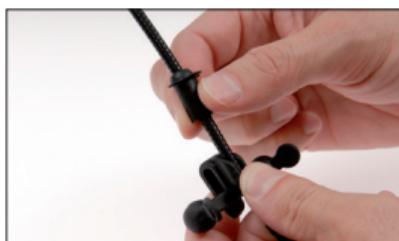
Sensitivity selection tolerance for pair: ± 1 dB at 1 kHz.

Any d:vote 4099P microphone within this sensitivity tolerance is marked with a white dot on the gooseneck fixation part.

d:vote™ 4099S Clip Microphone for Saxophones, Bass Clarinet

Mounting the gooseneck

Secure the gooseneck by sliding the fixation part over the grip:

Mounting on instrument

The d:vote 4099S can be easily readjusted and moved to another instrument by using just one hand. Squeeze the two clamp knobs on the clip to expand it, mount on the instrument, and then release. It will now fit the shape of the instrument. This will vary depending on the required instrument and playing style.

Application note, soprano sax

For a round and warm character, place the d:vote 4099S as far away from the bell as possible. Place it in front of the bell for a harder sound with more bite.
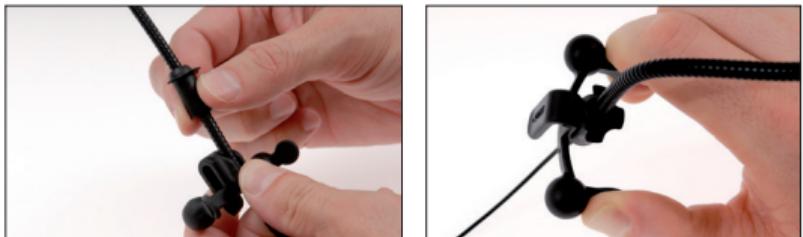
Application note alto/tenor/baritone sax

To create the most balanced sound, do not point the microphone directly into the bell, but angle it between the bell and the keys. In this way you will obtain a nice blend from the two sound components of the saxophone.

# d:vote™ 4099T Clip Microphone for Brass

Mounting the gooseneck

Secure the gooseneck by sliding the fixation part over the grip:

Mounting on instrument

The d:vote 4099T can be easily readjusted and moved to another instrument by using just one hand. Squeeze the two clamp knobs on the clip to expand it, mount on the instrument, and then release. It will now fit the shape of the instrument. This will vary depending on the required instrument and playing style.

Adjusting the gooseneck and microphone angle
The gooseneck can flex in all directions. Bend the gooseneck to fit the natural curves of the instrument.

Turn the microphone to the desired angle.

Application notes
For trumpet, trombone, and instruments of similar sizes: For the smoothest sound, do not point the microphone directly into the center of the bell, but position it between the center position and the bell's edge.

All types of mutes can be used together with the d:vote 4099.

d:vote™ 4099U Universal Clip Microphone

Mounting the gooseneck
Secure the gooseneck in the holder by sliding the fixation part over the grip:

The gooseneck securing part can be angled 90 degrees offering maximum placement possibilities. Detach the part from the clip and re-mount it turned 90 degrees for a horizontal gooseneck arm.

Application note

Close-miking instruments like oboe, clarinet, soprano saxophone, and bassoon calls for a certain care in the placement and angling of the microphone. The d:vote 4099 holds a supercardioid directionality and may end up creating an uneven timbre.
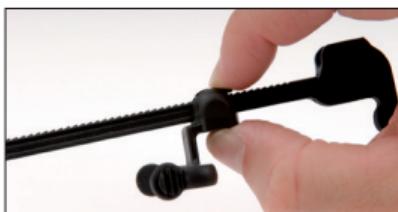
Tip: Create as much distance as possible with the gooseneck and place the mic head above the bell. Twist it backwards to the instrument and point it towards the upper joint (the keys closest to the mouthpiece). In this way the entire instrument range will be covered most naturally.

Place the hook-and-loop fastener around the instrument and insert the end into the opening below the gooseneck. Tight firmly if necessary by pushing the holder at the same time.

d:vote™ 4099V Clip Microphone for Violin and Mandolin

Adjusting the clip height

The height of the VC4099 Violin Clip can easily be adjusted to fit a wide variety of stringed instruments with a body depth between 35 mm (1.4 in) and 55 mm (2.1 in). Press the lock on the side of the clip to increase height.

Adjusting the gooseneck and microphone angle

The gooseneck can flex in all directions. Bend the gooseneck to fit the natural curves of the instrument.

Turn the microphone to the desired angle.

Application note

Most players prefer the d:vote 4099 to be placed on the left side of the instrument to avoid restricting the player's movement. Point the microphone away from the performer's head to avoid breath noise.

For optimum volume, point the microphone toward the f-hole. Please note that this also makes the sound character a little duller, which may or may not suit your taste. If not, point the microphone at the bridge.

GENERAL APPLICATION NOTES

• Always use the d:vote 4099 in its dedicated foam windscreen and shock absorbing rubber mounts.

• When running wireless, it is recommended to use a low-cut filter at 80 Hz in the transmitter to avoid handling and moving noise. This low-cut filter is built into the DAD4099 XLR adapter supplied with d:vote 4099G, 4099V, 4099S, and 4099T.

• The optional DMM0007 Universal Surface Mounts can be useful to control the cable run along the instrument.

Tip: The same gooseneck microphone boom can be used with alternate clips that are specific to each instrument.

Bear in mind the difference in mic sensitivity according to different instruments' sound pressure levels – see page 17.

HOLDERS

BC4099 Clip for Bass

CC4099 Clip for Cello

DC4099 Clip for Drum

GC4099 Guitar Clip

PC4099 Magnet Mount for Piano

STC4099 Sax/Trumpet Clip

UC4099 Universal Clip

VC4099 Violin Clip

USING THE DPA ADAPTERS

All DPA d:vote 4099 cables are terminated with a MicroDot connector at the end of the gooseneck. When used in conjunction with our range of over 35 adapters, the MicroDot connector provides the ability to connect to virtually all available pro wireless systems.

Various wireless systems require the use of electronics inside the adapter to optimize the signal level, the DC offset, and powering of the built-in microphone preamplifier. Using the adapters from DPA ensures the correct electronic circuit with the listed types of wireless systems (please visit www.dpamicrophones.com/adapters).

The included XLR adapter allows the 4099 to work as a regular 48V phantom powered microphone. The belt clip can be removed and replaced with the enclosed ring for use of the adapter directly in stage boxes or mixing consoles: Dismount the cap of the adapter, remove the belt clip and place the black ring instead. Remount the cap.

Do not attempt to employ non-standard adapters or connectors as you might damage the microphone.

A connector-tightening tool is supplied with each adapter and should be employed whenever the MicroDot connector needs to be tightened. Utilize the tightening tool before making use of the mic to ensure the connection is secure and that the cable cannot rotate by the cable relief.

Sensitivity and adapter overview

Mic	Sensitivity	XLR connection
4099B	Normal – for SPLs up to 142 dB	DAD6001-BC
4099C	Normal – for SPLs up to 142 dB	DAD6001-BC
4099D	Low – for high SPLs up to 152 dB	DAD6001-BC
4099G	Normal – for SPLs up to 142 dB	DAD4099
4099P	Normal – for SPLs up to 142 dB	DAD6001-BC
4099S	Normal – for SPLs up to 142 dB	DAD4099
4099T	Low – for high SPLs up to 152 dB	DAD4099
4099U	Normal – for SPLs up to 142 dB	DAD6001-BC
4099V	Normal – for SPLs up to 142 dB	DAD4099

The DAD4099 adapter features a permanent second-order low-cut filter at 80 Hz. The filter minimizes handling and wind noise at the microphone output without compromising sound quality, as guitar, sax, trumpet and violin have no appreciable frequency response below 80 Hz.

External view of the output connector of the DAD4099 and DAD6001-BC.

ACCESSORIES

CM1618B00	Miniature Cable, 1.6 mm
CM2218B00	Miniature Cable, 2.2 mm
DAO4099	Double Cable 5 m (16.4 ft)
DUA4099	Foam Windscreen for 4099
DMM0007	Universal Surface Mounts
GE4099	Gooseneck Extension, 80 mm (3.15 in) for d:vote

MICROPHONE MAINTENANCE

DPA d:vote 4099 is designed with highly resistant and protective materials in the construction so do not try to clean the microphone as it is unnecessary.

Do not use any spray or fluid containing chemicals that could remove static electricity on or close to the microphone. This could cause permanent damage.

Should the foam windscreen need replacement, remove it from the microphone. Draw the windscreen, not the microphone, away from the shock mount, while holding the microphone cable. Cleaning or washing of the windscreen can be done in distilled water.

For cable cleaning; Use organic oil (e.g. olive oil) or lukewarm, distilled water to remove residue from tape or glue.

The DPA d:vote 4099 is very resistant to humidity and sweat, but keep it away from unnecessary exposure to water and cleaning fluids (keep element dry at all times). It should not be used in direct, heavy rain.

Avoid excessive pressure on the microphone element. The microphone will not perform to its specifications if the directional tube under the foam windscreen has been bent from its original shape.

If the directional tube becomes misshapen, it should be re-shaped as close as possible to its original cylindrical shape.

To minimize potential cable damage, wind up excess cable in soft figure-of-eight loops (preferably 6 – 8 cm (2.5 – 3 in) in diameter), this also helps to reduce handling noise. Do not bend the cable or rub it harshly, that may stress the inner cores and cause them to break over time.

Directional characteristics
Supercardioid

Principle of operation
Pressure gradient

Cartridge type
Pre-polarized condenser

Frequency range
20 Hz - 20 kHz

Frequency range, ± 2 dB, 20 cm (7.9 in) distance
80 Hz - 15 kHz with 2 dB soft boost at 10 - 12 kHz
Second order low-cut filter at 80 Hz with DAD4099

Sensitivity, nominal ± 3 dB at 1 kHz
d:vote 4099B/4099C/4099G/4099P/4099S/4099U/4099V:
6 mV/Pa; -44 dB re. 1 V/Pa
d:vote 4099D/4099T: 2 mV/Pa; -54 dB re. 1 V/Pa

Equivalent noise level, A-weighted
d:vote 4099B/4099C/4099G/4099P/4099S/4099U/4099V:
Typ. 23 dB(A) re. 20 μPa (max. 26 dB(A))
d:vote 4099D/4099T: Typ. 28 dB(A) re. 20 μPa (max. 31 dB(A))

S/N ratio (A-weighted), re. 1 kHz at 1 Pa (94 dB SPL)
d:vote 4099B/4099C/4099G/4099P/4099S/4099U/4099V: 71 dB
d:vote 4099D/4099T: 66 dB

Total Harmonic Distortion (THD)
< 1 % up to 123 dB SPL peak
< 1 % up to 120 dB SPL RMS sine

Dynamic range
d:vote 4099B/4099C/4099G/4099P/4099S/4099U/4099V: 100 dB
d:vote 4099D/4099T: 95 dB

Max. SPL, peak before clipping
d:vote 4099B/4099C/4099G/4099P/4099S/4099U/4099V: 142 dB
d:vote 4099D/4099T: 152 dB

Output impedance
From MicroDot: 30 - 40 ohm
From DAD4099/DAD6001-BC: 100 ohm

Cable drive capability
Up to 300 m (984 ft) with DAD4099 or DAD6001-BC XLR adapter

Output balance principle
Signal balanced with DAD4099 or DAD6001-BC XLR adapter

Common Mode Rejection Ratio (CMRR)
> 60 dB from 50 Hz to 15 kHz with DAD4099 or DAD6001-BC XLR adapter

Power supply
Min. 5 V - max. 50 V through DPA adapter for wireless systems
48 V phantom power ±4 V with DAD4099 or DAD6001-BC XLR adapter

Current consumption
Typ. 1.5 mA (microphone)
3.5 mA with DAD4099 or DAD6001-BC XLR adapter

Connector
MicroDot/XLR-M

Color
Black

Weight
Max 50 g (1.8 oz)

Microphone length
45 mm (1.8 in)

Cable length
1.8 m (6 ft)

**Cable diameter**
1.5 mm (0.06 in) or 2.8 mm (0.11 in)
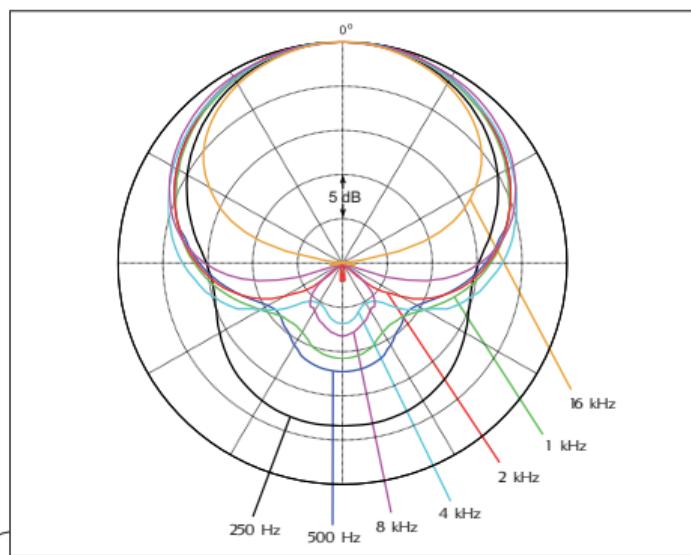
Gooseneck length
140 mm (5.5 in)

Gooseneck extension length
75 mm (3 in)
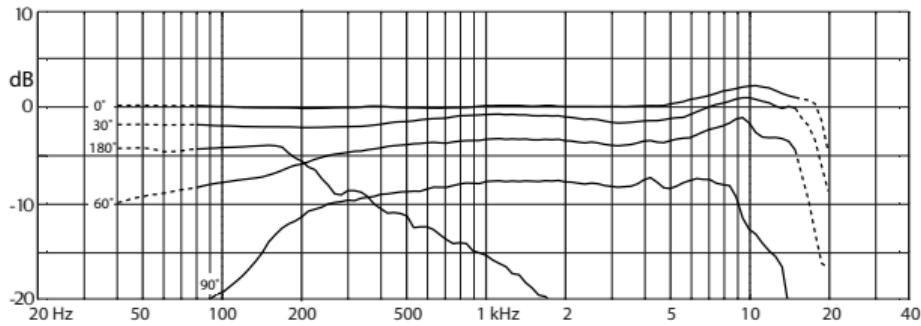
**Capsule diameter**
5.4 mm (0.2 in)
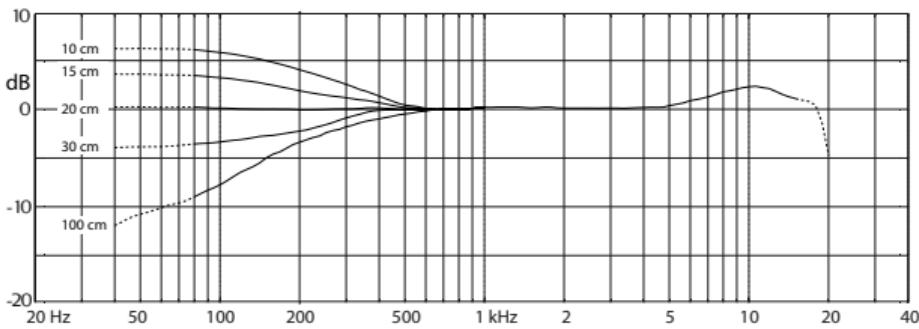
Polar Pattern
Directional characteristics of DPA d:vote 4099 (normalized)
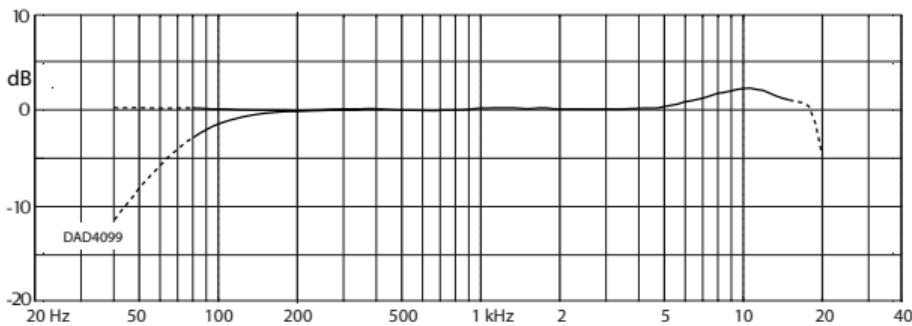
On-Axis Frequency Response
Measured at 20 cm (7.9 in) distance
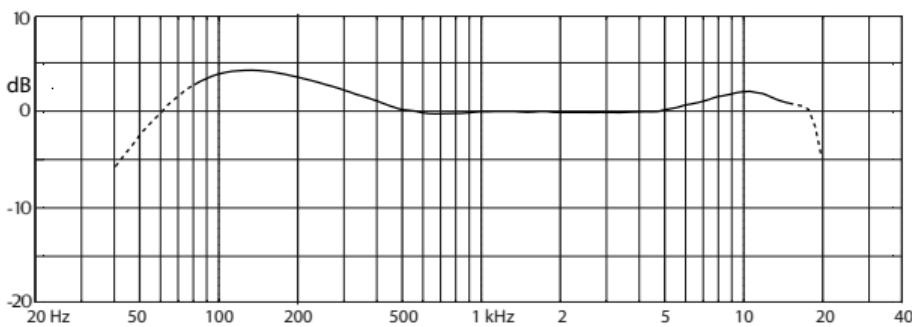
The Proximity Effect
The proximity effect exhibited by DPA d:vote 4099

On-Axis Frequency Response with DAD4099 XLR Adapter
Measured at 20 cm (7.9 in) distance

On-Axis Frequency Response with DAD4099 XLR Adapter
Measured at 10 cm (3.9 in) distance

CE ☒

Service & repair

If you are not satisfied with the characteristics exhibited by this product, please go to
www.dpamicrophones.com/service for instructions.

Warranty

The d:vote™ 4099 Instrument Microphone is covered by a two-year limited warranty.

CE marking

This product conforms with all relevant directives approved by the European Commission.

Product features and specifications are subject to change without notice.

DPA

MICROPHONES

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