USER'S MANUAL

4099 Clip Microphones

DPA 4099B
DPA 4099C
DPA 4099D
DPA 4099G
DPA 4099P
DPA 4099S
DPA 4099T
DPA 4099U
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PRODUCT DESCRIPTION
The DPA 4099 instrument clip microphone is lightweight, flexible and simple to mount, making it the perfect match for your instrument.

It carries a superb natural sound quality and maximum off-axis rejection to achieve excellent gain-before-feedback characteristics for live sound reinforcement.

This is the ultimate miking solution for your live instrument applications.

Two different microphone sensitivities are available:

• Normal sensitivity for bass, cello, guitar, piano, saxophone, violin, and universal use (marked with a black cable relief at the connector end).

• Extra low sensitivity with ultra high sound pressure capability for brass and drums (marked with a white cable relief at the connector end).

4099B Clip Microphone for Bass and more

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

Mounting the microphone
Mount the 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.

4099C Clip Microphone for Cello and more

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

Mounting the microphone
Mount the 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.

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 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.

4099G Clip Microphone
for Guitar, Dobro, and more

Adjusting the clip height
The height of the 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 4099 can be easily readjusted and moved to different instruments 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 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 DAO4099 Double Cable will reduce cable clutter.

4099P Stereo Microphone System for Piano and more

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 4099P
Sensitivity selection tolerance for pair: ± 1 dB at 1 kHz.

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

4099S Clip Microphone
for Saxophones, Bass Clarinet, and more

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

Mounting on instrument
The 4099S can be easily readjusted and moved to different instruments 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 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.

4099T Clip Microphone for Brass

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

Mounting on instrument
The 4099T can be easily readjusted and moved to different instruments 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
Ftor 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 4099.

4099U Universal Clip Microphone

Mounting the gooseneck
Secure the goosenecks 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 certain care in the placement and angling of the microphone. The 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.

4099V Clip Microphone
for Violin, Mandolin, and more

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 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 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 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 3.

BC4099 Clip for Bass and more

CC4099 Clip for Cello and more

DC4099 Clip for Drum

GC4099 Guitar Clip

PC4099 Magnet Mount for Piano and more

STC4099 Sax/Trumpet Clip

UC4099 Universal Clip

VC4099 Violin Clip

USING THE DPA ADAPTERS

All DPA 4099 clip microphone cables are terminated with a proprietary MicroDot connector. 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 enclosed 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 use to ensure the connection is secure and that the cable cannot rotate by the cable relief.

Enclosed adapter

DAD6001-BC	DAD4099
DPA 4099B	DPA 4099G
DPA 4099C	DPA 4099S
DPA 4099D	DPA 4099T
DPA 4099P	DPA 4099V
DPA 4099U	

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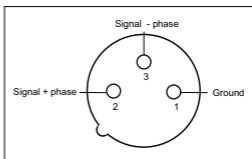
External view of the output connector of the DAD4099 and DAD6001-BC.

MICROPHONE MAINTENANCE

DPA 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 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
4099B/4099C/4099G/4099P/4099S/4099U/4099V:
6 mV/Pa; -44 dB re. 1 V/Pa
4099D/4099T: 2 mV/Pa; -54 dB re. 1 V/Pa
Equivalent noise level, A-weighted
4099B/4099C/4099G/4099P/4099S/4099U/4099V:
Typ. 23 dB(A) re. 20 µPa (max. 26 dB(A))
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)
4099B/4099C/4099G/4099P/4099S/4099U/4099V: 71 dB
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
4099B/4099C/4099G/4099P/4099S/4099U/4099V: 100 dB
4099D/4099T: 95 dB
Max. SPL, peak before clipping
4099B/4099C/4099G/4099P/4099S/4099U/4099V: 142 dB
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 XLR adapter

Current consumption

Typ. 1.5 mA (microphone)
35 mA with DAD4099 or DAD6001-BC XLR adapter

Connector

MicroDot

Color

Black

Weight

4099B: 46 g (1.62 oz)
4099C: 38 g (1.34 oz)
4099D: 38 g (1.34 oz)
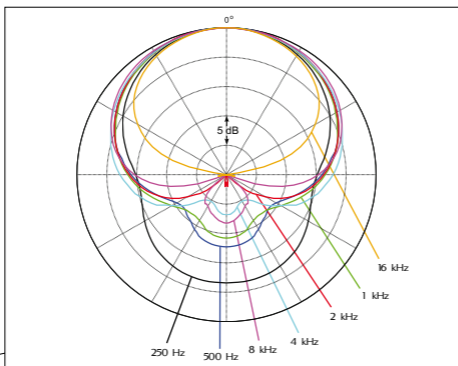4099G: 36 g (1.27 oz)
4099P: 46 g (1.62 oz)
4099S: 31 g (1.1 oz)
4099T: 31 g (1.1 oz)
4099U: 41 g (1.4 oz)
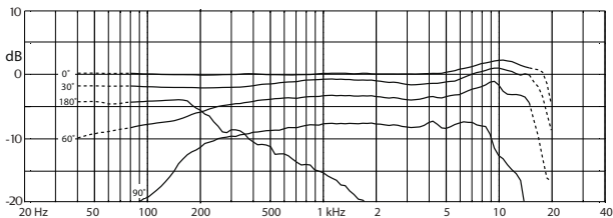4099V: 33 g (1.16 oz)
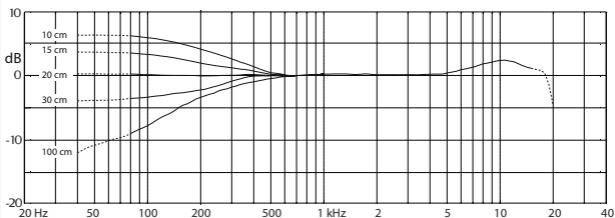
Capsule diameter

5.4 mm (0.2 in)

Polar Pattern
Directional characteristics of DPA 4099 (normalized)

On-Axis Frequency Response
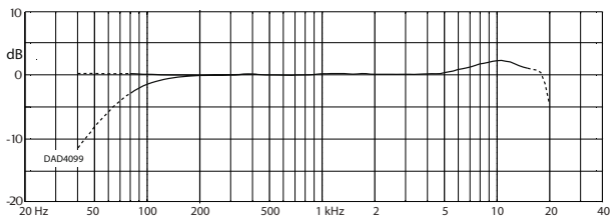Measured at 20 cm (7.9 in) distance

The Proximity Effect
The proximity effect exhibited by DPA 4099

SERVICE & REPAIR

Products from DPA Microphones are extremely stable and there should not be any significant change in the specifications with time and use. If, however, you are not satisfied with the characteristics exhibited by your product, contact your nearest DPA Microphones representative for further details of service and the repair facilities that are available.

On-Axis Frequency Response with DAD4099 XLR Adapter
Measured at 20 cm (7.9 in) distance
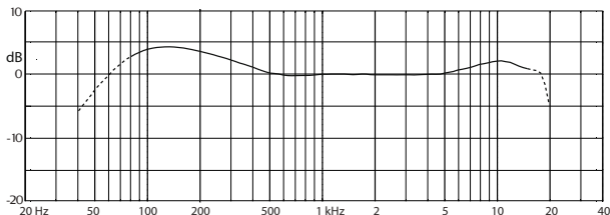
On-Axis Frequency Response with DAD4099 XLR Adapter
Measured at 10 cm (3.9 in) distance

WARRANTY

All products from DPA Microphones are covered by a two-year limited warranty on both mechanical functionality and documented specifications as long as the items are not mistreated, abused, or modified in any way. In case of a warranty claim, your invoice is your warranty registration.

Find your nearest DPA representative on our website, www.dpamicrophones.com, or send e-mail to info@dpamicrophones.com.

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