USER'S MANUAL

DPA 4099

DPA 4099 Guitar
Guitar Clip Microphone



DPA 4099 Sax
Sax Clip Microphone





DPA 4099 Trumpet
Trumpet Clip Microphone



DPA 4099 Violin
Violin Clip Microphone



DPA MICROPHONES

Expression is everything

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4099 USER'S MANUAL





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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.

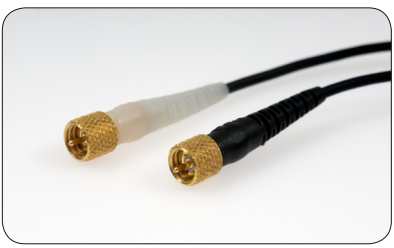
This is the ultimate miking solution for your live instrument applications.

This manual covers the following:

DPA 4099 Guitar
DPA 4099 Sax
DPA 4099 Violin
DPA 4099 Trumpet

Two different microphone sensitivities are available:

- Normal sensitivity for guitars, saxophones and violins (marked with a black cable relief at the connector end).
- Extra low sensitivity with ultra high sound pressure capability for trumpets (marked with a white cable relief at the connector end).



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MOUNTING THE MICROPHONE

1. Adjusting clip height

The height of the 4099 Guitar and 4099 Violin clips can easily be adjusted to fit a wide variety of stringed instruments.

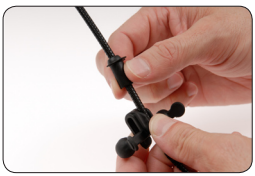
Press the lock on the side of the clip to increase height:



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

2. The gooseneck in clip

Choose the desired gooseneck height and place it in the grip:



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



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



for horn



for violin



for guitar

Note: Bear in mind the difference in mic sensitivity according to different instruments' sound pressure levels.

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3. 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. For more information, please read the application notes.

Mounting on guitar and violin:





Mounting on sax and trumpet:





4. 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:



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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 supplied DAD4099 XLR adapter.

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





1. The guitar family

(guitar, mandolin, banjo, dobro and more)
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-G Guitar Double Cable will reduce cable clutter.

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2. The saxohone family

Soprano: For a round and warm character, place the 4099 Sax microphone as far away from the bell as possible. Place it in front of the bell for a harder sound with more bite.



Alto/Tenor/Baritone: For 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.



Trumpet and Trombone: 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.



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





3. Violin and viola

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 suite your taste. If not, point the microphone at the bridge.



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USING THE DPA ADAPTERS

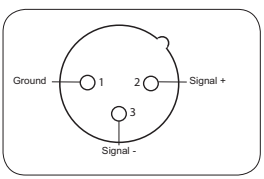
All DPA 4099 Guitar, Violin, Sax, and Trumpet microphone cables are terminated with a proprietary MicroDot connector. When used in conjunction with our range of over 35 adapters, the MicroDot connector provides the ability to connect to virtually all available pro wireless systems.
Various wireless systems 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).
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 each use to ensure the connection is secure and that the cable cannot turn around by the cable relief.

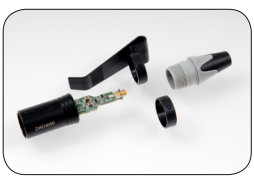




The enclosed XLR adapter, DAD4099, allows the 4099 to work as a regular 48V phantom powered microphone. The DPA 4099 features a belt clip and a permanent first-order low-cut filter at 80 Hz. The filter minimizes handling and wind noise at the microphone output without compromising sound quality, as these instruments have no appreciable frequency response below 80 Hz.

The belt clip can be removed and replaced with the enclosed ring for use of the DAD 4099 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.





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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, replacement is necessary.

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.

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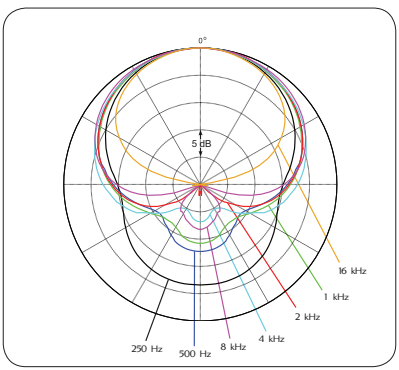
SPECIFICATIONS AND GRAPHS

Principle of operation:
Pressure gradient
Cartridge type:
Pre-polarized condenser
Power supply:
Min. 5 V – max. 50 V through DPA adapter for wireless systems
48 V phantom power ± 4 V with DAD4099 XLR adapter
Frequency range, ± 2 dB, 20 cm (7.9 in) distance:
80 Hz – 15 kHz with 2 dB soft boost at 10-12 kHz.
First-order low-cut filter at 80 Hz with DAD4099
Directional characteristics:
Supercardioid
Sensitivity, nominal, ±3 dB:
4099 Guitar/Violin/Sax: 6 mV/Pa; -44.5 dB re. 1 V/Pa
4099 Trumpet: 2 mV/Pa; -54 dB re. 1 V/Pa
Equivalent noise level A-weighted:
4099 Guitar/Violin/Sax: Typ. 23 dB(A) re. 20 µPa (max. 26 dB(A))
4099 Trumpet: Typ. 28 dB(A) re. 20 µPa (max. 31 dB(A))
Total Harmonic Distortion (THD):
<1 % up to 123 dB SPL peak
<1 % up to 120 dB SPL RMS sine
Max. SPL, peak before clipping:
4099 Guitar/Violin/Sax: 142 dB
4099 Trumpet: 152 dB
Dynamic range:
4099 Guitar/Violin/Sax: 100 dB
4099 Trumpet: 95 dB
S/N ratio, re. 1 kHz at 1 Pa (94 dB SPL):
4099 Guitar/Violin/Sax: 71 dB
4099 Trumpet: 66 dB
Output impedance:
From MicroDot: 30 – 40 Ohm
From DAD4099: 50 Ohm
Cable drive capability:
30 m (98 ft) with DAD4099 XLR adapter
Polarity:
Positively increasing sound pressure produces positive-going voltage at MicroDot pin (and pin 2 on DAD4099 XLR adapter)
Output balance principle:
Signal balanced with enclosed DAD4099 XLR adapter
Common Mode Rejection Ratio:
> 60 dB @ 50 Hz to 15 kHz, DAD4099 XLR adapter

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Current consumption:
1.5 mA (microphone)
3 mA with DAD4099 XLR adapter
Operating temperature range:
-10 – +50 °C (14 – 122 °F)
Operating relative humidity range:
Up to 90 %
Capsule diameter:
5.4 mm (0.2 in)
Microphone length:
45 mm (1.8 in)
Weight:
4099 Guitar: 36 g (1.3 oz)
4099 Violin: 33 g (1.2 oz)
4099 Trumpet 31 g (1.1 oz)
4099 Sax: 31 g (1.1 oz)
Gooseneck length:
140 mm (5.5 in)
Cable length:
1.8 m (6 ft)
Color:
Black
Connector:
MicroDot

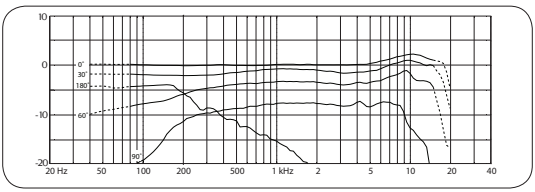
Polar Pattern:



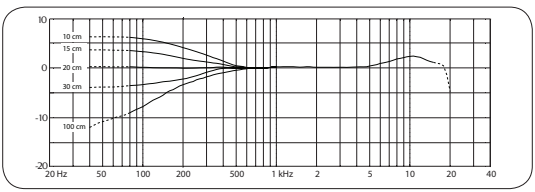
Directional characteristics of 4099 (normalized)

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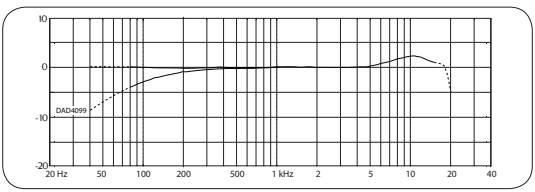
Frequency Responses:



Typical on- and off-axis frequency response of 4099 at 20 cm (7.9 in) distance.



Proximity effect exhibited by 4099.



Typical frequency response of 4099 with DAD4099 XLR adapter in 20 cm (7.9 in).

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ACCESSORIES

Accessories included

DAD4099	Adapter: MicroDot to XLR w. belt clip & low-cut
VC4099	Violin Clip (in 4099 Violin only)
GC4099	Guitar Clip (in 4099 Guitar only)
STC4099	Sax/Trumpet Clip (in 4099 Sax and 4099 Trumpet only)

Accessories available

DMM0007	Universal Surface Mount
DAO4099-G	Guitar Double Cable MicroDot-F to MicroDot-M and Jack to Jack
DUA4099	Foam Windscreens for 4099, 5 pcs.
VC4099	Violin Clip
GC4099	Guitar Clip
STC4099	Sax/Trumpet Clip

More than 35 different connection adapters to wireless systems, please refer to www.dpamicrophones.com.

Service and 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 totally satisfied with the characteristics exhibited by this product, please contact your nearest DPA Microphones representative for further details of service and the repair facilities that are available.

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.

CE marking CE

The CE mark guarantees that the product conforms with relevant directives approved by the European Commission.
EMC directive: 2004/108/EEC
Low voltage directive: 2006/95/EC

Environmental policy

This product is comprised by the WEEE directive and should not be thrown in the garbage bin when obsolete. Instead, return it to your local DPA representative (or DPA Microphones directly) who will dispose of the product in accordance with the current environmental standards.

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All product features and specifications are subject to change without notice.

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DPA4099

DPA MICROPHONES

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