

Shotgun Microphone
ECM-M1

Use this Help Guide when you have issues or questions on how to use your shotgun microphone.



Supported camera models

This unit is a microphone compatible with the Multi Interface Shoe.
For camera models compatible with this unit, view [here](#). (Another window will open.)
In combination with any camera model that is not listed on the website, the unit does not work.

When the message “This accessory is not supported by the device and cannot be used.” is displayed on the camera:

View [here](#).

[Identifying the parts](#)

Preparations

[Unpacking](#)

[Attaching/removing to/from the camera](#)

[Selecting the directivity](#)

[About the adaptive beamforming technology](#)

[About the pickup pattern and the frequency response](#)

[About the output channels](#)

About this unit

[Notes on use](#)

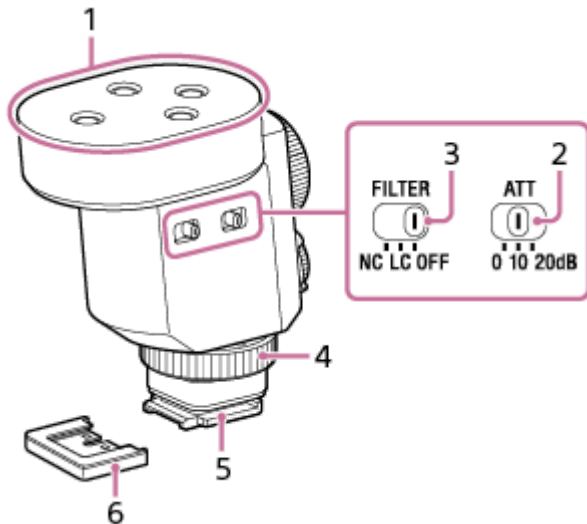
[Specifications](#)

[Trademarks](#)

[When the message “This accessory is not supported by the device and cannot be used.” is displayed on the camera:](#)

Identifying the parts

Top, Side, and Bottom



1. Microphone

2. ATT switch

Select the option suitable for the audio recording volume. To record loud sounds while minimizing distortion, select "20dB." To record quiet sounds, select "0dB." It is recommended that you select an option while monitoring the volume level meter on the camera or the audio recording volume with headphones.

3. FILTER switch

NC: Select this option to use the noise cut filter function. Unpleasant noises are effectively eliminated by digital signal processing. If the sound quality does not seem appropriate, select "OFF."

LC: Select this option to use the low cut filter function. Unwanted noises, such as wind noise, air-conditioning noise, and vibration noise, are minimized.

OFF: Select this option to disable either of the filter functions.

Note

- Hand-held use of the attached camera in a quiet place may cause a soft vibrating sound to be recorded. If the recorded vibrating sound is disturbing, set the FILTER switch to "LC" and try all over again.

4. Lock dial

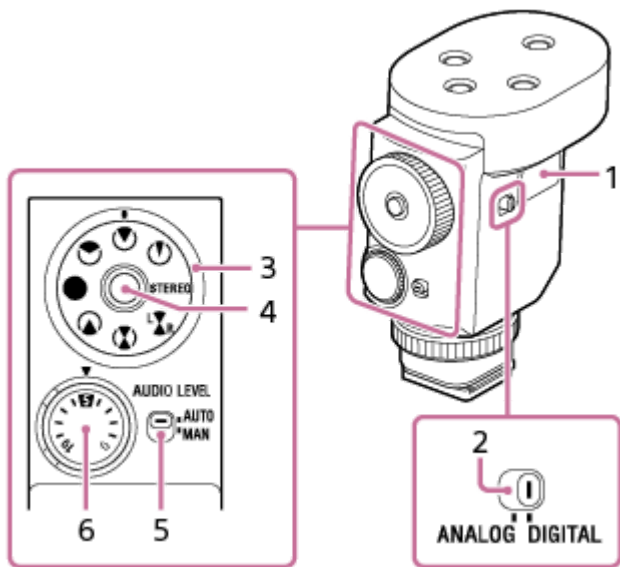
5. Multi Interface foot

Note

- Do not touch the connector of the Multi Interface foot with bare hands.

6. Connector protect cap

Back, Side



1. USB Type-C® port (for maintenance and service use)

Note

- No power is supplied through the USB Type-C port. Do not connect any device, such as a mobile battery pack, to the port for power supply purposes to avoid a malfunction.

2. DIGITAL/ANALOG switch

Select the digital or analog input type.

- If your camera is compatible with the digital audio interface of the Multi Interface Shoe, set the switch to “DIGITAL.”

Digital signal transmission between this unit and the camera has the following merits over analog signal transmission that is enabled by the DIGITAL/ANALOG switch being set to “ANALOG.”

- Audio recording with less noise
- Less audio delay during recording
- Recording with 24-bit audio (only available in combination with the compatible camera)
- Recording with channel 3 and channel 4 (only available in combination with the compatible camera)

Note

- Movies recorded with 24-bit audio may not be played back normally on devices or software incompatible with 24-bit audio, resulting in unexpectedly loud volumes or no sound.

- If your camera is not compatible with the digital audio interface of the Multi Interface Shoe, set the switch to “ANALOG.”

When the message “This accessory is not supported by the device and cannot be used.” is displayed on the camera, set the switch to “ANALOG.”

If this does not help, see [here](#).

3. Directivity mode dial

- ☐: Super-directional
- ◐: Uni-directional
- : Omni-directional
- ◑: Super-directional (Rear)
- ◒: Super-directional (Front+Rear)
- ◓: Super-directional (Front/Rear) separate

STEREO: Stereo

: Ultra-directional

4. Lock button

Pressing this button locks/unlocks the directivity mode dial.

5. AUTO/MAN switch

AUTO: The recording volume level is automatically adjusted.

MAN: Adjust the recording volume with the AUDIO LEVEL dial.

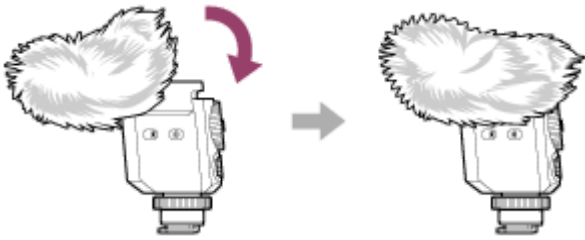
6. AUDIO LEVEL dial

The recording volume level can be adjusted manually for fine tuning when the AUTO/MAN switch is set to "MAN."

It is recommended that you adjust the level while monitoring the volume level meter on the camera or the audio recording volume with headphones.

About the wind screen

By fitting the wind screen over the microphone of the unit, you can minimize the noise caused by the wind or breath hitting the microphone to be included in the recording.



Note

- If the wind screen is exposed to rain and wet, remove it from the unit and let it dry in the shade.

Related Topic

- [Attaching/removing to/from the camera](#)
- [Selecting the directivity](#)
- [About the pickup pattern and the frequency response](#)
- [About the output channels](#)

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Unpacking

If you find anything missing, please contact your dealer.
The number in the parentheses indicates the quantity.

- Shotgun Microphone (1)
- Wind screen (1)
- Connector protect cap (attached) (1)
- Pouch (1)
- Set of printed documentation

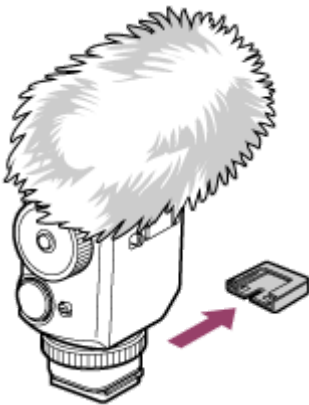
Attaching/removing to/from the camera

Attach the shotgun microphone to a camera.

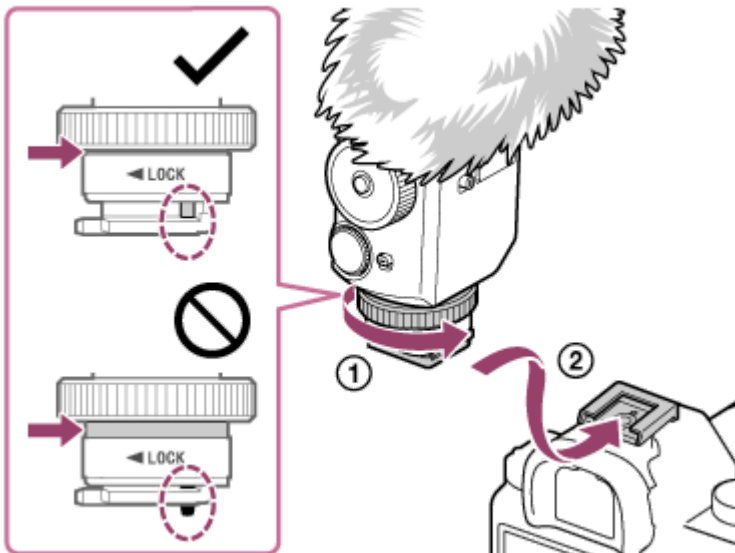
Note

- Before attaching/removing this unit to/from a camera, turn off the power to the camera.

- 1 Remove the connector protect cap from this unit.

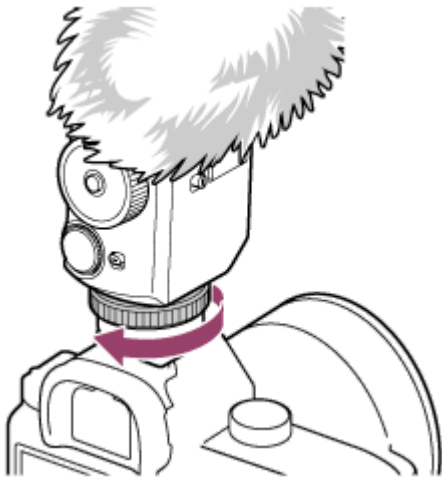


- 2 Release the lock by rotating the lock dial (①) and attach this unit to a camera (②).



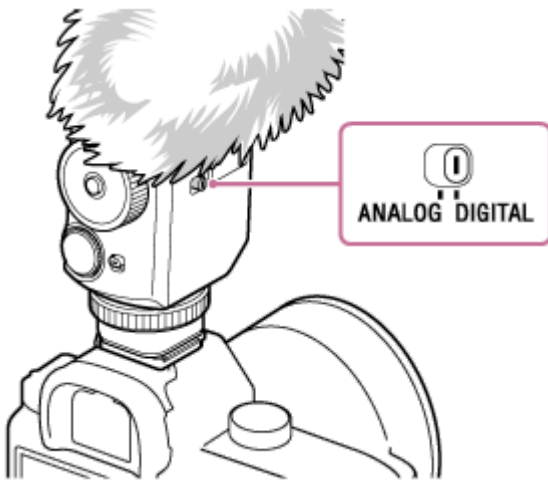
Before attaching this unit to a camera, rotate the lock dial counterclockwise until it stops and make sure that the lock is released.

- 3 Rotate the lock dial in the LOCK direction to firmly secure the unit.



Attaching this unit to a camera automatically switches audio input from the built-in microphone to the external microphone.

4 Check the position of the DIGITAL/ANALOG switch on this unit.



If your camera is compatible with the digital audio interface of the Multi Interface Shoe, make sure that the switch is set to “DIGITAL.” If not, set the switch to “ANALOG.”

If the switch is not set correctly, a compatibility message will be displayed on the camera. For camera models compatible with the digital audio interface of the Multi Interface Shoe, visit the website at:

<https://www.sony.net/dics/ecmm1/>

5 Operate the camera to start recording.

For details, refer to the Help Guide provided for the camera.

To remove the shotgun microphone

Turn off the power to the camera, rotate the lock dial counterclockwise until it stops, and then slide out the Multi Interface foot from the shoe.

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Selecting the directivity

By operating the directivity mode dial, you can select the directivity that is best suited for the sounds to record or the recording conditions.

▼ Super-directional

Sounds in a specific range from the front of this unit are picked, enabling equally clear sound pickup. Super-directional mode enables recording with less reverberations, and is suitable for indoor recording. Super-directional mode is recommended for taking or streaming videos where, for example, the subject is speaking in close proximity to this unit.



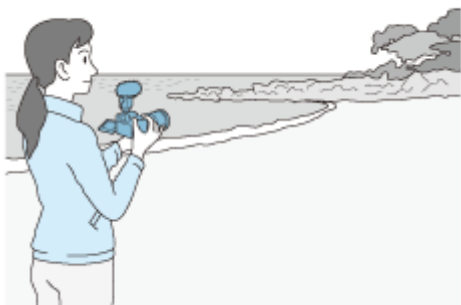
◐ Uni-directional

A wide variety of sounds from the front of this unit are picked. Uni-directional mode is recommended, for example, for recording conferences and meetings.



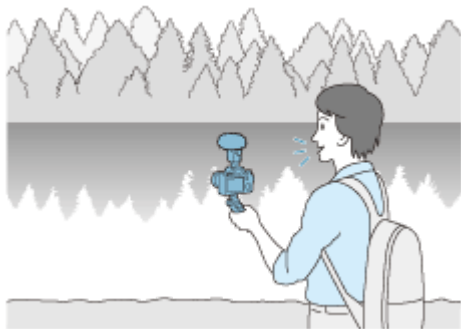
● Omni-directional

Sounds from all directions are equally picked. Omni-directional mode is recommended, for example, for recording whole sounds including environmental sounds.



▲ Super-directional (Rear)

Sounds from the rear of this unit are picked, along with less sounds from the front. Super-directional (Rear) mode is recommended, for example, for taking scenery videos with narratives.



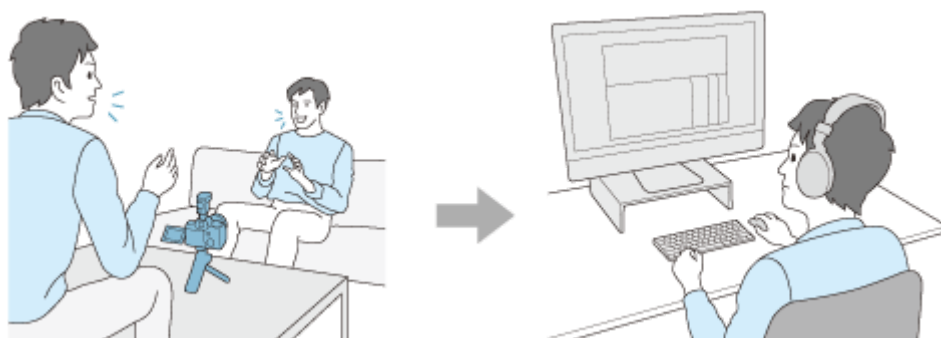
Super-directional (Front+Rear)

Sounds from the front and rear of this unit are equally picked, along with less sounds from the left and right. Super-directional (Front+Rear) mode enables recording of sounds from the subject in front of this unit as well as the voice of the videographer, and is recommended, for example, for recording interview videos.



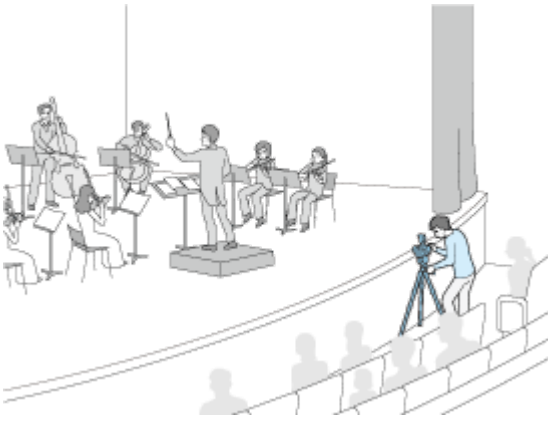
Super-directional (Front/Rear) separate

Sounds from the front (channel 1) and rear (channel 2) of this unit are equally picked, along with less sounds from the left and right. Super-directional (Front/Rear) separate mode enables individual volume adjustment of the front and rear audio after video recording, and is recommended when there is a need for editing the recorded audio.



STEREO(Stereo)

Realistic video recording is possible by clearly localizing the left (channel 1) and right (channel 2) sound sources. Stereo mode is recommended, for example, for taking videos of moving objects, such as racing cars and trains, or videos of music performances in theaters.



Ultra-directional

Because of the adaptive beamforming technology employed by this unit, the target sound from the front of the unit is captured while any other unnecessary sounds are significantly reduced at the same time. Ultra-directional mode is recommended for making recordings with minimum unnecessary sounds at close range, such as voices around the subject, while keeping moderate environmental sounds at long range, such as the sound of a stream and a chirping bird, in the recordings.

For details about the adaptive beamforming technology, see [About the adaptive beamforming technology](#).



Hint

- The closer the subject is located to this unit, the clearer the sound can be picked.

Note

- In the following cases, the sounds from the subject in front of this unit may not be recognized and the audio in recordings may sound lower compared with the one recorded in other directivity modes.
 - Recordings are made in spaces with strong echoes, such as a small room.
 - The subject is located at a distance from this unit.
 - Sounds from the subject are buried in the surrounding noises.
 - The subject is not facing directly toward the front of this unit; it is facing, for example, downward or sideways.

Try one of the following that suits the condition.

- Change the ATT switch setting.
- Set the AUTO/MAN switch to “MAN” and adjust the recording volume level with the AUDIO LEVEL dial.
- Adjust the distance to the subject from this unit or the pointing direction of the unit.
- Change the directivity to Super-directional mode.
- Depending on the environment and sound source, the following issues may occur. If they seem annoying, change the directivity to Super-directional mode.

- The audio volume and quality of the surrounding sounds from other than the front of this unit are unstable.
- The audio quality is unstable. For example, the abrupt clapping-like noise echoes in the audio.

Related Topic

- [About the adaptive beamforming technology](#)

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About the adaptive beamforming technology

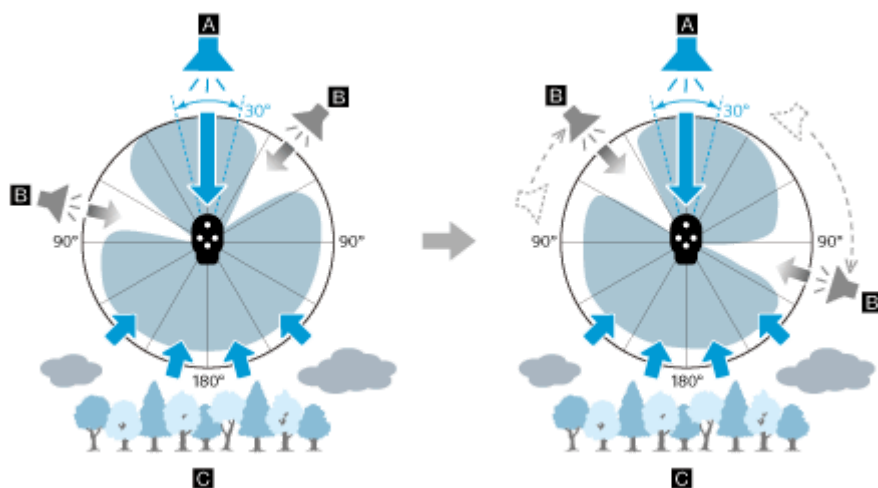
The adaptive beamforming technology is a technology where sounds from within the range of about 30 degrees in front of this unit are recognized and captured as the target sound while unnecessary sounds from within a close range of the target sound are significantly reduced at the same time.

Because the adaptive beamforming technology adapts the sound pickup pattern dynamically to changes in the surrounding environment, unnecessary sounds are kept reduced even when their sources move. On the other hand, environmental sounds at long range are moderately captured along with the target sound.

Ultra-directional mode (adaptive beamforming)

With  (Ultra-directional) selected by the directivity mode dial on this unit, the adaptive beamforming algorithm is applied for recordings.

The following depicts how sounds are picked in Ultra-directional mode:



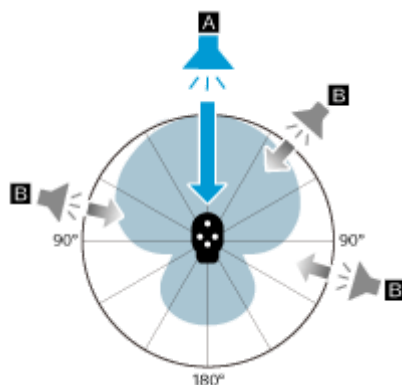
- A** Subject/target sound
- B** Unnecessary sound
- C** Environmental sound

Other directivity modes

In any directivity mode other than Ultra-directional mode, the sound pickup pattern never changes dynamically. As a result, unnecessary sounds from within a close range of the target sound may be captured depending on the location or pointing direction of this unit.

For details about how sounds are picked in each directivity mode, see [Selecting the directivity](#).

The following depicts how sounds are picked in Super-directional mode:



A Subject/target sound

B Unnecessary sound

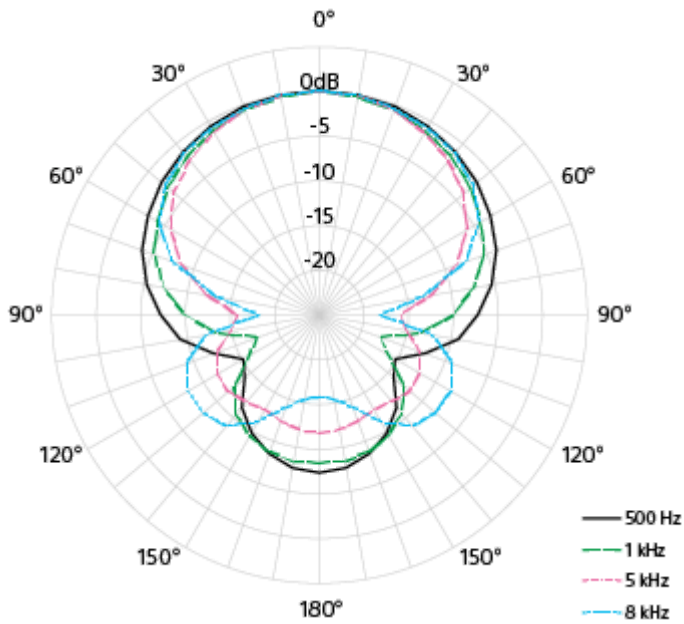
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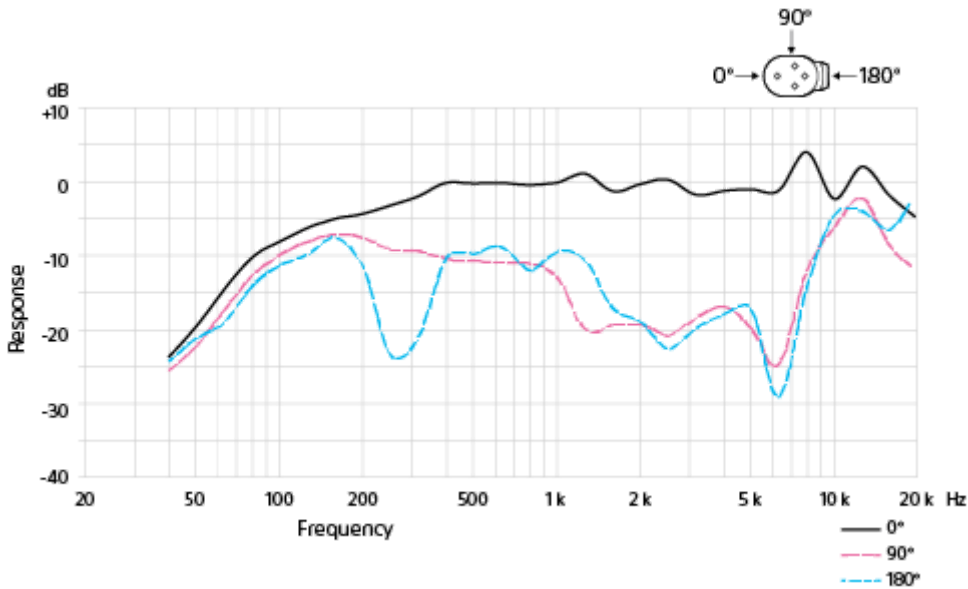
About the pickup pattern and the frequency response

Super-directional

- Pickup pattern

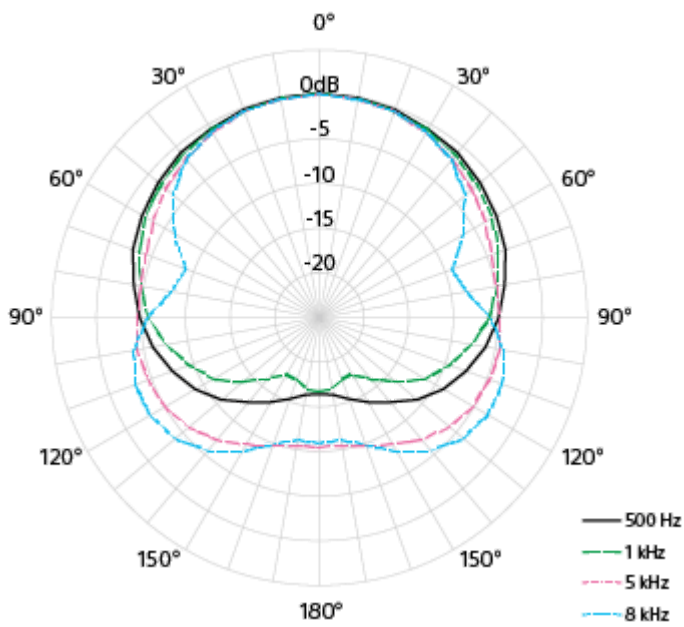


- Frequency response

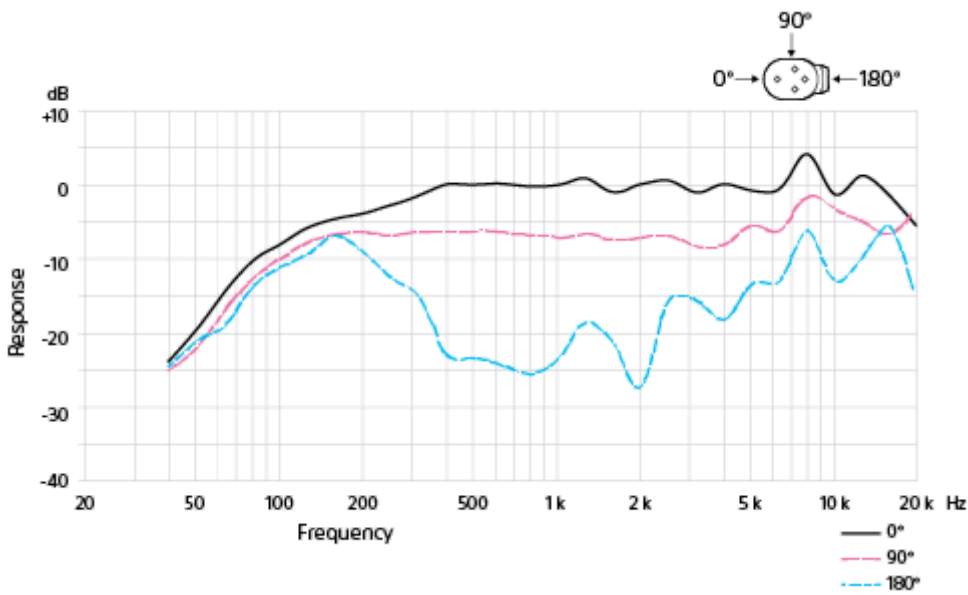


Uni-directional

- Pickup pattern

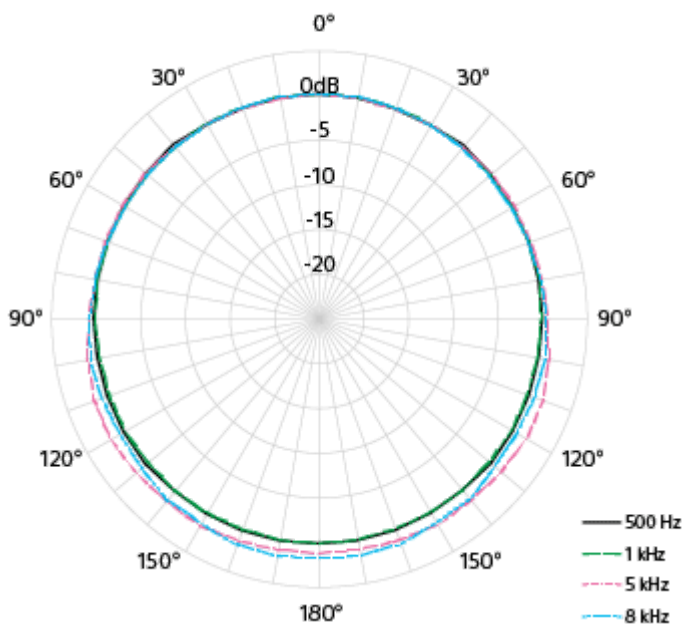


● Frequency response

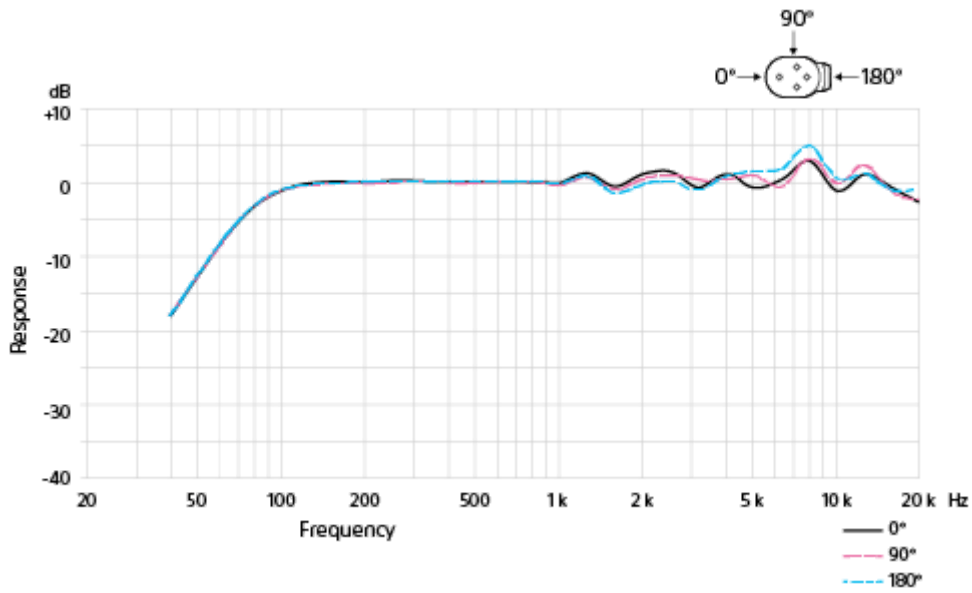


● Omni-directional

● Pickup pattern

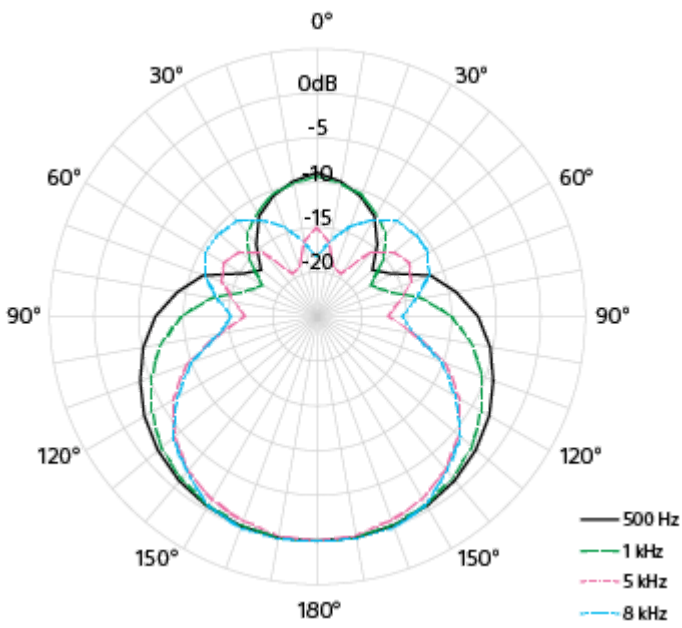


- Frequency response

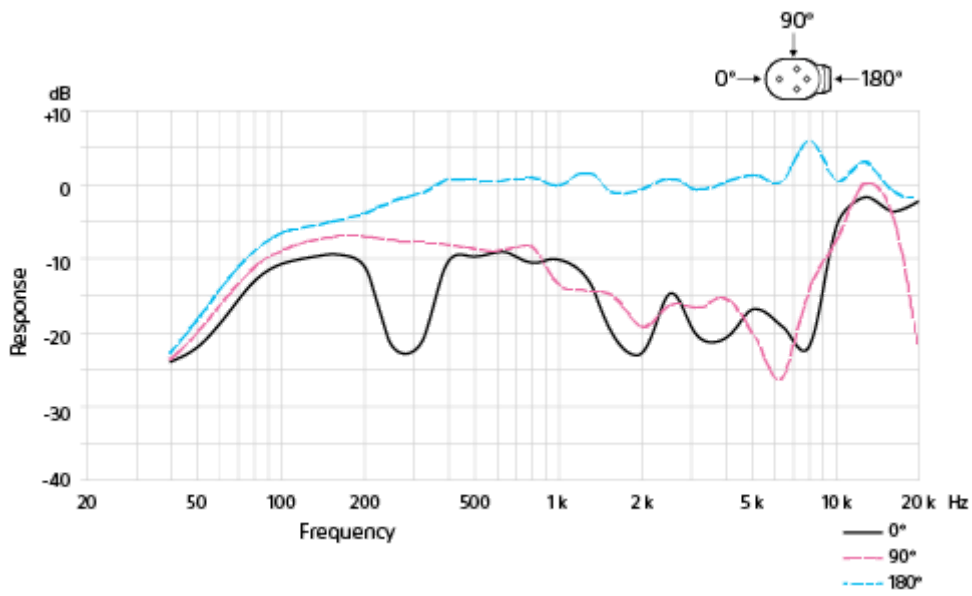


▲ Super-directional (Rear)

- Pickup pattern

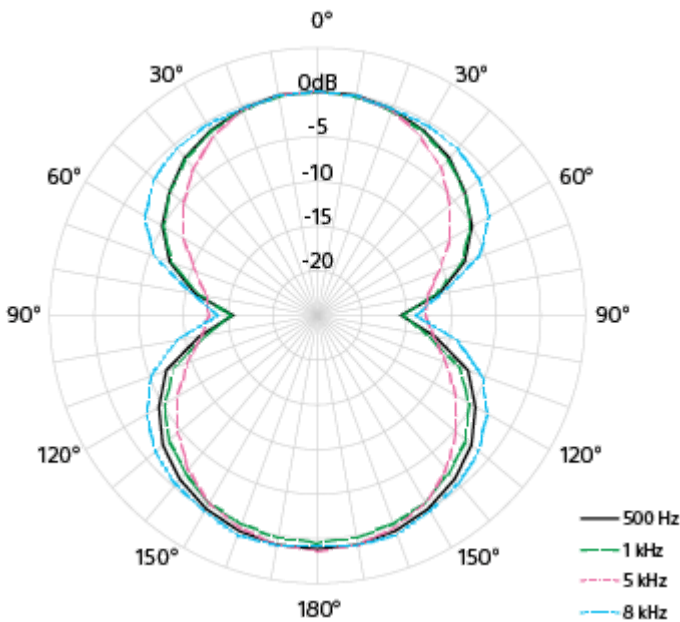


- Frequency response

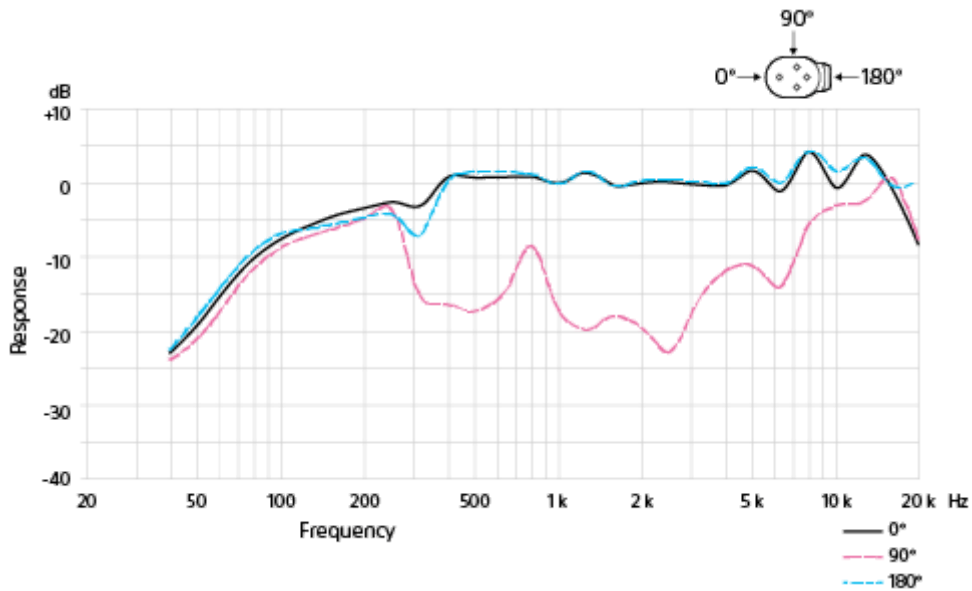


⊗ Super-directional (Front+Rear)

- Pickup pattern

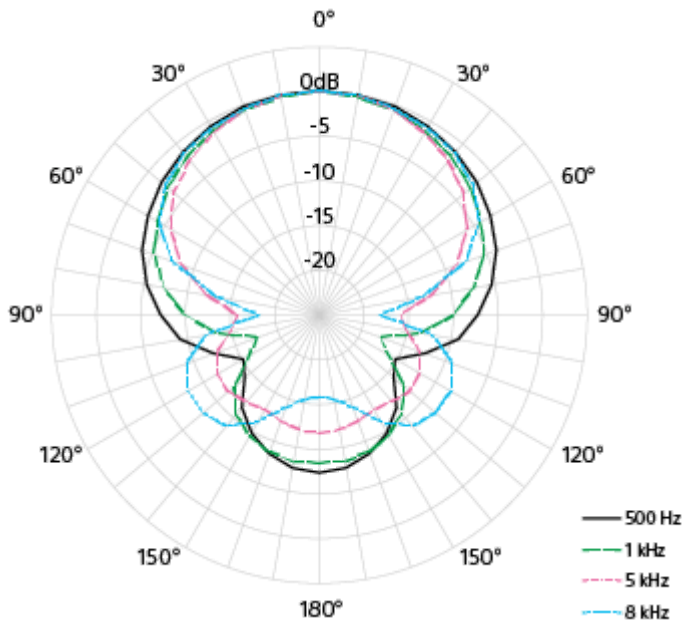


- Frequency response

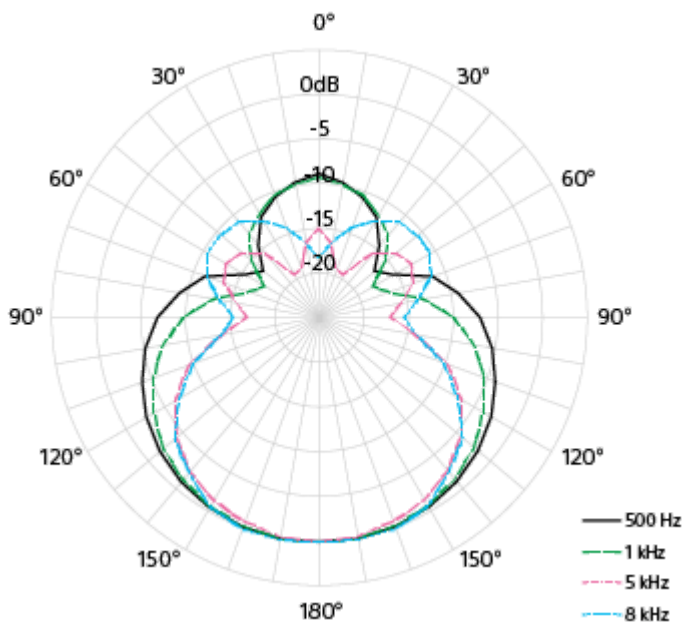


L_R Super-directional (Front/Rear) separate

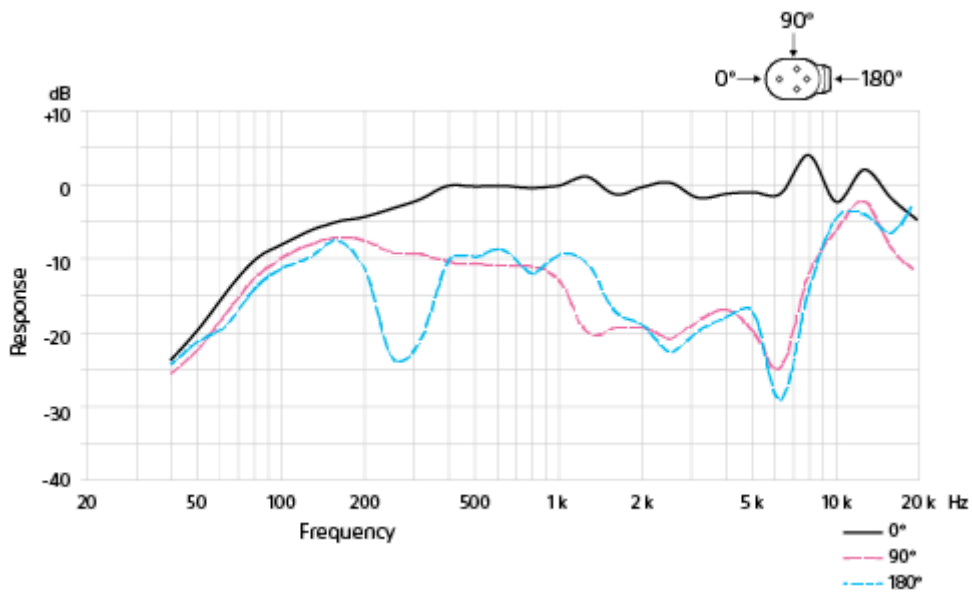
- Pickup pattern (Front)



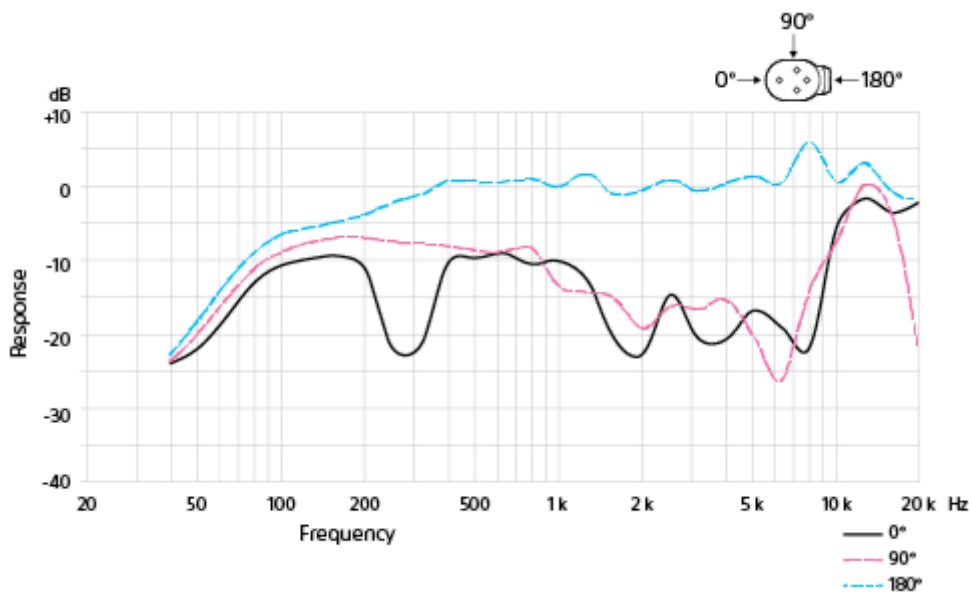
- Pickup pattern (Rear)



- Frequency response (Front)

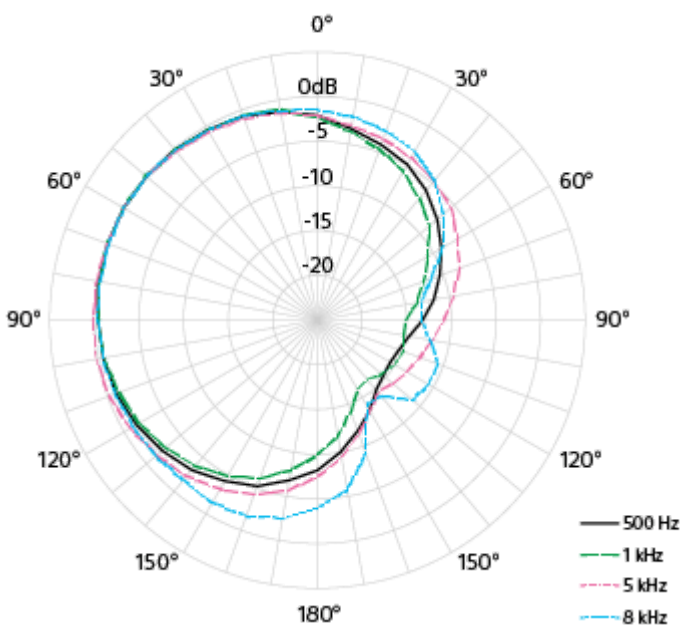


● Frequency response (Rear)

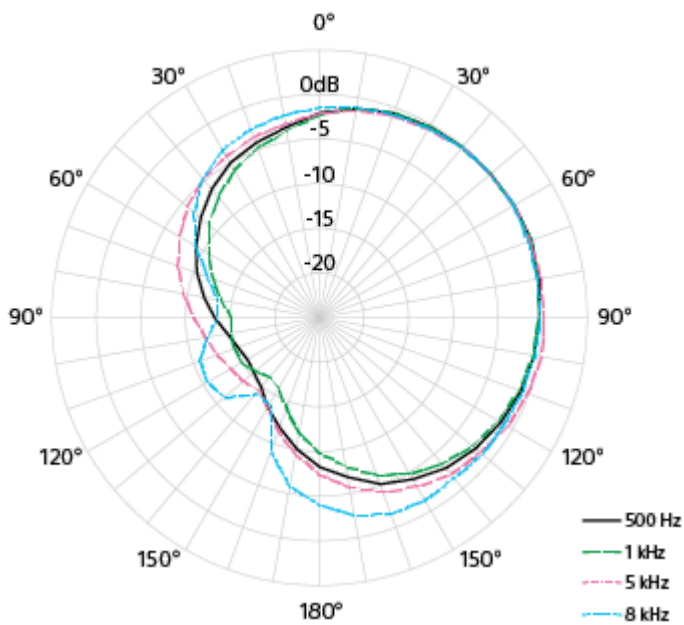


STEREO (Stereo)

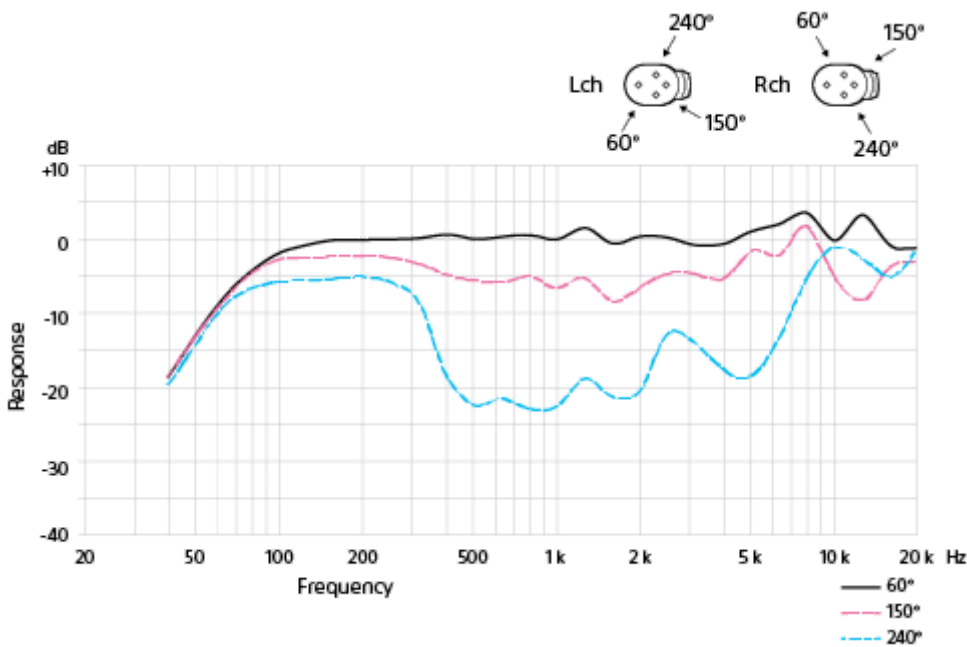
● Pickup pattern (left channel)



● Pickup pattern (right channel)



● Frequency response

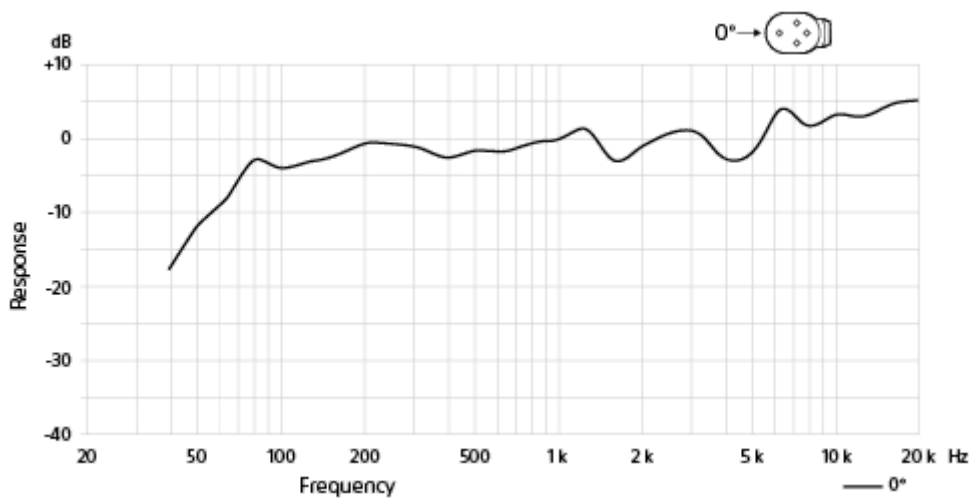


🔊 Ultra-directional

● Pickup pattern

In Ultra-directional mode, audio processing to reduce unnecessary sounds from other than the front of this unit changes dynamically according to the surrounding environment. This makes it impossible to depict the pattern in a particular chart, thus the pickup pattern chart is not presented.

● Frequency response



Frequency responses to the sounds from other than the front of this unit (those from the angle of 90/180 degrees) change dynamically according to the surrounding environment. Thus, the frequency responses to those sounds are not included in the chart.

For details about Ultra-directional mode (adaptive beamforming processing), see [About the adaptive beamforming technology](#).

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About the output channels

When using a camera that is capable of 4-channel recording in combination with this unit, recording with channel 3 and channel 4 is available by changing the output channel setting to 4 channels on the camera.

Regardless of the directivity mode dial setting on this unit, sounds are recorded as follows:

- Channel 3: Omni-directional
- Channel 4: Omni-directional (-20 dB)

Use this feature to record ambient and other sounds in addition to sounds from the sound source of which directivity is specified on this unit.

A -20 dB gain correction is automatically applied to the audio on channel 4.*

* A gain correction is not for preventing clipping noise from occurring during loud audio recording.

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Notes on use

- To protect the connector of the Multi Interface foot from damage while carrying around this unit, remove the unit from the camera, attach the connector protect cap to the foot and put the unit in the supplied pouch.
- While recording is in progress, operation and handling noises of a camera or a lens may be recorded. Touching this unit while recording is in progress causes a noise to be included in the recording.
- During audio monitoring or recording on the camera, audio delay may be noticeable.
If delay in audio monitoring seems annoying, set [Audio Out Timing] to [Live] on the camera. This may reduce audio delay. (Only applicable to the compatible camera)
If delay in audio recording seems annoying set the DIGITAL/ANALOG switch to "DIGITAL." This may reduce audio delay. (Applicable when this unit is used in combination with the camera that is compatible with the digital audio interface.)
- Before changing the lens, make sure that no wind screen fibers are present on the surface of the lens and the camera body. If present, clean them off with a blower etc. and then change the lens.
- If dust or water droplets are present on the surface of the microphone, a successful recording may not be possible. Be sure to clean the microphone surface before using this unit.

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Specifications

Type	Back electret condenser type
Sampling frequency/the number of quantization bits	48 kHz/16 bit, 48 kHz/24 bit ^{*1}
Frequency response	40 Hz to 20 000 Hz
Pickup pattern (selectable)	Super-directional / Uni-directional / Omni-directional / Super-directional (Rear) / Super-directional (Front+Rear) / Super-directional (Front/Rear) separate / Stereo / Ultra-directional
Front sensitivity^{*2}	-20 dBFS (0.1 Pa, 1 kHz)
Intrinsic noise^{*2 *3 *4}	14 dB SPL or less (0 dB = 2×10^{-5} Pa)
Wind noise^{*2 *4 *5}	45 dB SPL or less (without the wind screen attached) 20 dB SPL or less (with the wind screen attached)
Maximum input sound pressure level	120 dB SPL ^{*2 *6}
Dynamic range^{*3}	106 dB or more
Operation temperatures	0 °C to 40 °C (32 °F to 104 °F)
Storage temperatures	-20 °C to +55 °C (-4 °F to +131 °F)
Dimensions (Approx.)	40 mm × 72.2 mm × 64.4 mm (1 5/8 in. × 2 7/8 in. × 2 5/8 in.) (Width/Height/Depth) (excluding the wind screen and projecting parts)
Mass (Approx.)	65 g (2.3 oz)

*1 Movies recorded with 24-bit audio may not be played back normally on devices or software incompatible with 24-bit audio, resulting in unexpectedly loud volumes or no sound.

*2 Acquired by setting the AUTO/MAN switch and the ATT switch to "AUTO" and "10dB," respectively.

*3 Acquired by setting the DIGITAL/ANALOG switch to "DIGITAL."

*4 Acquired by setting the directivity mode dial to  (Ultra-directional).

*5 Equivalent sound pressure level value converted from the average value of the noise that is output from the microphone when a wind velocity of 2 m/sec. is applied. (0 dB = 2×10^{-5} Pa)

*6 Equivalent sound pressure level value converted from the input level value that is acquired when 1% waveform distortion is produced by 1 kHz output signals from the microphone. (0 dB = 2×10^{-5} Pa)

Design and specifications are subject to change without notice.

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Trademarks

- “Multi Interface Shoe” is a trademark of Sony Group Corporation.
- USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum.

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When the message “This accessory is not supported by the device and cannot be used.” is displayed on the camera:

Do the following in the listed order.

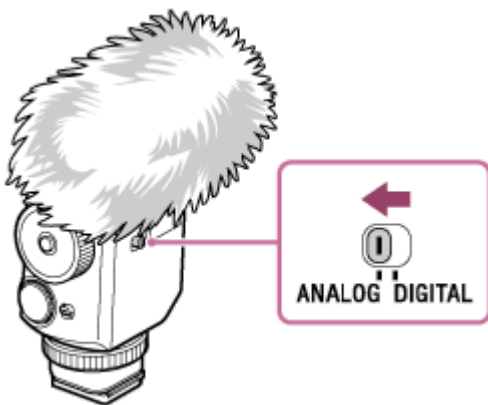
1 Make sure that your camera is compatible with this unit.

For camera models compatible with this unit, visit the website at:
<https://www.sony.net/dics/ecmm1/>

Note

- In combination with any camera model that is not listed on the above website, the unit does not work.

2 To use a camera that is not compatible with the digital audio interface in combination with this unit, set the DIGITAL/ANALOG switch on the unit to “ANALOG.”



3 Clean the contacts on this unit and the camera. When either or both of the contacts are soiled with dust or the like, the camera may fail to detect that the unit is attached. To clean the contacts, use a cotton swab or a dry, soft cloth (e.g., a cleaning cloth). Do not use water or chemicals for cleaning.

Note

- Make sure that the DIGITAL/ANALOG switch is slid all the way to either “ANALOG” or “DIGITAL.” If the switch is located in between, this unit may not work properly.