

SAMSUNG

SM-R260

User Manual

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Basics

About the 360 Round

The 360 Round camera records high quality 360-degree videos and broadcasts videos in real time. You can record high-quality 360-degree 2D or 3D 4K videos with 17 cameras, and 3D sound with 6 internal microphones.

Save high-quality 4K videos after stitching, or broadcast high-quality 4K videos in real time. Enjoy virtual reality on VR devices recorded on the 360 Round.



Read me first

Please read this manual before using the 360 Round to ensure safe and proper use.

- Images may differ in appearance from the actual product. Content is subject to change without prior notice.
- Before using the 360 Round make sure they are compatible with your camera.
- This product includes certain free/open source software. To see the instructions for viewing the open source license, go to the Samsung website opensource.samsung.com.

Maintaining water and dust resistance

Your camera supports water- and dust-resistance. Follow these tips carefully to maintain the water- and dust-resistance of your camera. Failure to do so may result in damage to your camera.

- To use the waterproof feature, attach the power adapter and LAN cable to the waterproof adapter. Close the cover of the external microphone jack, memory card slot, and multipurpose jack, and then lock the cover switches.
- If the 360 Round is not dried thoroughly, the sound may not record correctly. Dry the 360 round thoroughly before recording video.
- When you attach an external microphone, the waterproof feature may not be supported.
- If you are using the camera while it is connected to an SSD and external battery, the waterproof feature is not available.
- Do not expose the camera to a jet of water, rainwater, etc for more than 3 minutes.
- Do not immerse the camera in fresh water deeper than 5 ft or keep it submerged for more than 30 minutes. If you immerse the camera in any liquid other than fresh water, such as salt water, ionized water, or alcoholic beverage, liquid will enter the camera faster.
- Do not expose the camera to **water moving with force**, such as running water from taps, ocean waves, or waterfalls.
- If the camera is exposed to clean water, dry it thoroughly with a clean, soft cloth. If the camera is exposed to other liquids, such as salt water, ionized water, or alcoholic beverage, rinse it with clean water and dry it thoroughly with a clean, soft cloth. If you do not follow these instructions, the camera's performance and appearance may be affected.

- **If the camera is dropped or impacted**, the water-and dustresistant features of the camera may be damaged.
- The power adapter has no waterproof feature.
- **Your camera has been tested in a controlled environment and certified to be water- and dust-resistant in specific situations (meets requirements of classification IP65 as described by the international standard IEC 60529-Degrees of Protection provided by Enclosures [IP Code]; test conditions: Water jet nozzle, flow rate (12 L/ min), at least 3 minutes). Despite this classification, it is still possible for your camera to be damaged in certain situations.**

Instructional icons



Warning: situations that could cause injury to yourself or others



Caution: situations that could cause damage to your 360 Round or other equipment



Notice: notes, usage tips, or additional information

Package contents

Check the products inside the hard case.

- 360 Round
- Power adapter
- Waterproof adapter (2 included)
- Quick start guide



- The items supplied with the 360 Round and any available accessories may vary depending on the region or service provider.
- The supplied items are designed only for this 360 Round and may not be compatible with other devices.
- Appearances and specifications are subject to change without prior notice.
- You can purchase additional accessories from the Samsung website. Make sure they are compatible with the 360 Round before purchase.
- Use only Samsung-approved accessories. Using unapproved accessories may cause the performance problems and malfunctions that are not covered by the warranty.
- Availability of all accessories is subject to change depending entirely on manufacturing companies. For more information about available accessories, refer to the Samsung website.
- Always keep the 360 Round inside the hard case when it is not in use. If the cameras are scratched or damaged, the video's quality may be reduced.

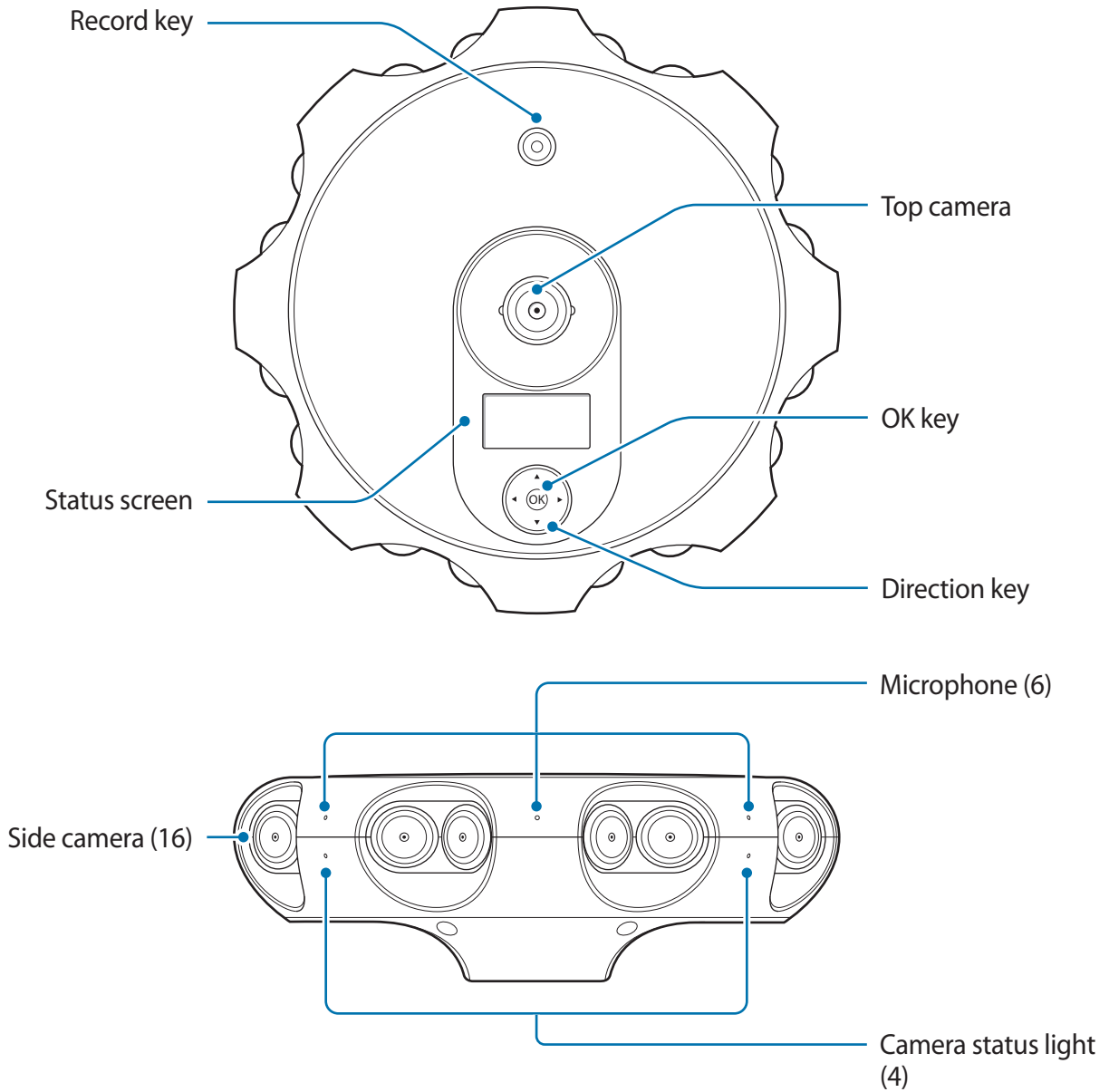
Required specification

Preparation material	Required specification
Memory card	<ul style="list-style-type: none"> • UHS II U3 Read 150 MB/s • Write speed 80 MB/s or more • Maximum supported: Up to 512 GB
Tripod	<ul style="list-style-type: none"> • Connected screw: 0.4 inch • Bearing weight: 2 lb • Minimum height: 5 ft
LAN cable	<ul style="list-style-type: none"> • Cat 6a, 0.2 inch in diameter and under 328 ft long
Computer (for stitching)	<ul style="list-style-type: none"> • Operating system: Windows 10 Professional or above, 64 bit • CPU: Intel Core i7-6700 K or above • Graphics card: NVIDIA: GTX 1080 1 each or more • RAM: 16 GB DDR4 RAM 2 each or above • Power: 850 W
Computer (for preview and Live stream)	<ul style="list-style-type: none"> • Operating system: Windows 10 Professional or above, 64 bit • CPU: Intel Core i7-6950 X or above • Graphics card: NVIDIA: GTX 1080 Ti 2 each or more • RAM: 32 GB DDR4 RAM 2 each or above • Power: 1,600 W
Power adapter	<ul style="list-style-type: none"> • Input: 100-240 VAC, 50-60 Hz • Output: 19 VDC, 2.1 A

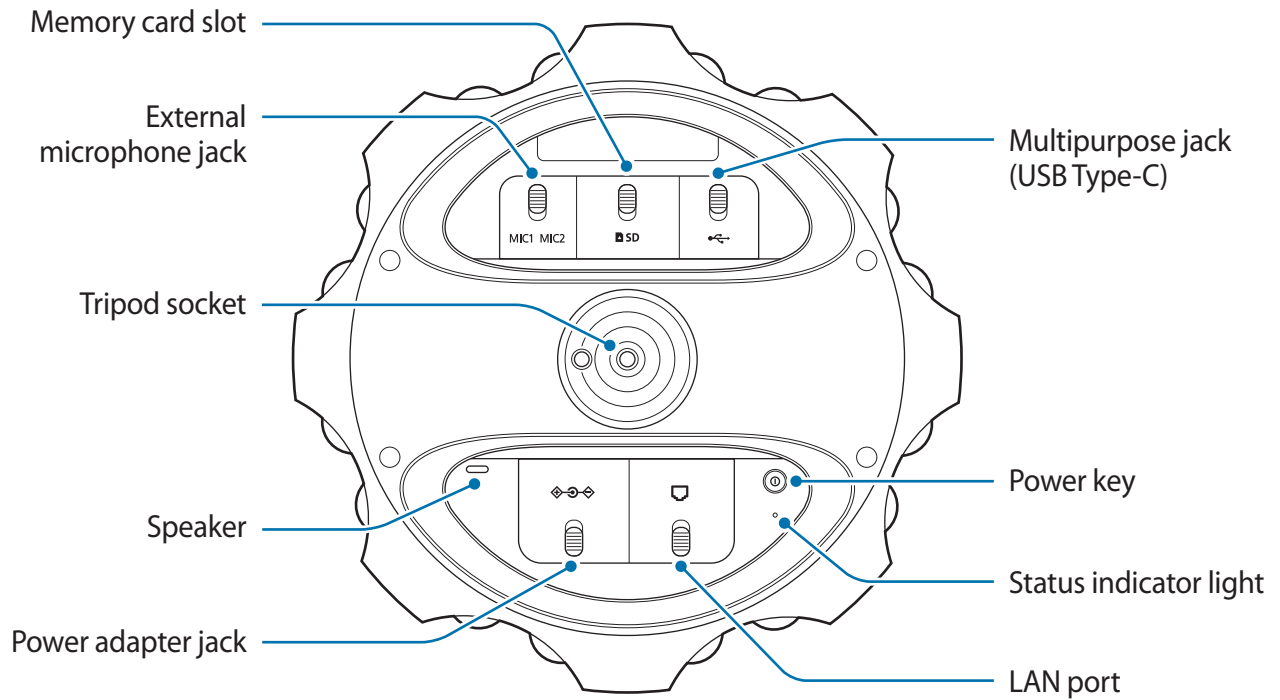


- Requirement except the power adapter are sold separately.
- The above requirements are the minimum required for using the 360 Round. If your computer does not meet the minimum specifications, some features may be restricted.





Device layout



When you use the 360 Round and record the video for a long time, wipe the lens periodically.



Keys

Key	Function	
 Power	<ul style="list-style-type: none"> Turn the 360 Round on or off. 	
 Record	<ul style="list-style-type: none"> Start or stop recording a video. 	
	Up	<ul style="list-style-type: none"> Move to the above option.
	Down	<ul style="list-style-type: none"> Move to the below option.
	Left	<ul style="list-style-type: none"> Move to the previous step.
	Right	<ul style="list-style-type: none"> Access the settings menu or move to the next step.
 OK	<ul style="list-style-type: none"> Select an option. 	

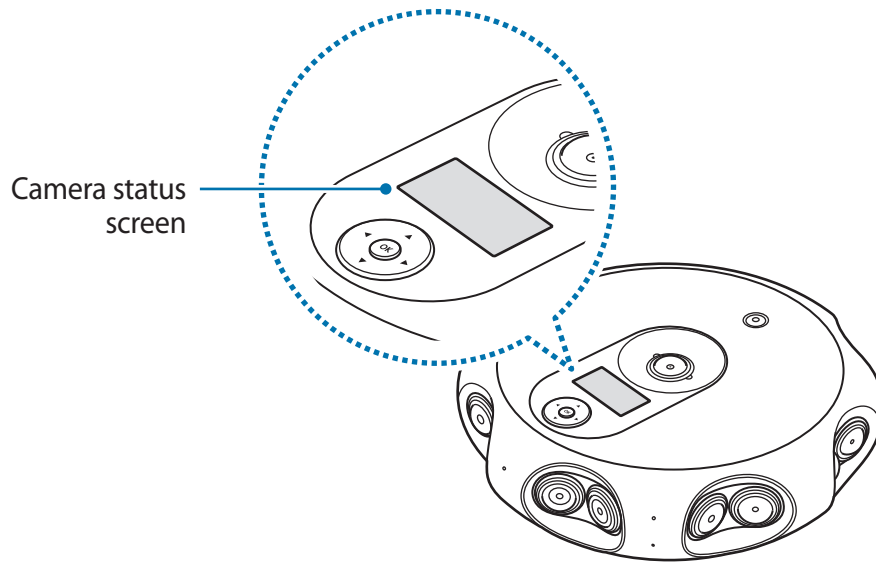
Indicator light and camera status light

You can check the recording status of the 360 Round through the camera status light, and check the current status through the indicator light.

Color	Status
Indicator light flashes blue three times	<ul style="list-style-type: none">• Power on• Successfully formatting a memory card or resetting the 360 Round
Indicator light flashes blue	<ul style="list-style-type: none">• Transferring data• Updating software• Formatting a memory card
Indicator light flashes red three times	<ul style="list-style-type: none">• Power off
Indicator light flashes red	<ul style="list-style-type: none">• Error occurred• Overheating
Camera status light flashes red	<ul style="list-style-type: none">• Recording videos

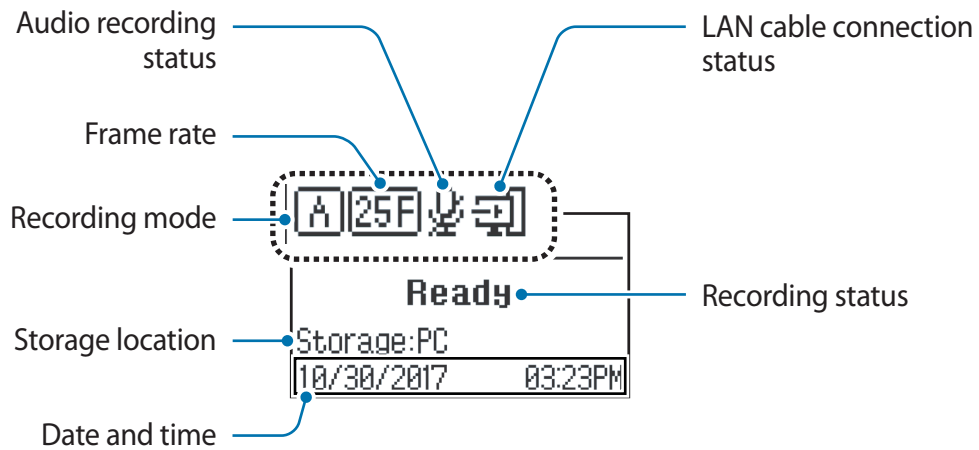
Camera status screen















Access menus, such as camera modes and connection modes, and view the 360 Round's status via messages and indicator icons on the camera status screen.



Indicator icons

Indicator icons appear on the camera status screen. You can check the 360 Round's status on the camera status screen.



Icon	Meaning
	Video saved to memory card
	Video saved to SSD storage
	Set to automatic recording mode (Aperture priority mode)
	Set to manual recording mode (Manual mode)
	Frame rate
	Can not record audio
	Timer set
	Memory card full
	No memory card
	Memory card recognition error
	LAN cable connected
	Temperature abnormality
	Moisture detected on multipurpose jack
	Connected to a computer

Memory card

Installing a memory card

A memory card must be inserted to record videos. Depending on the memory card manufacturer and type, some memory cards may not be compatible with your 360 Round.

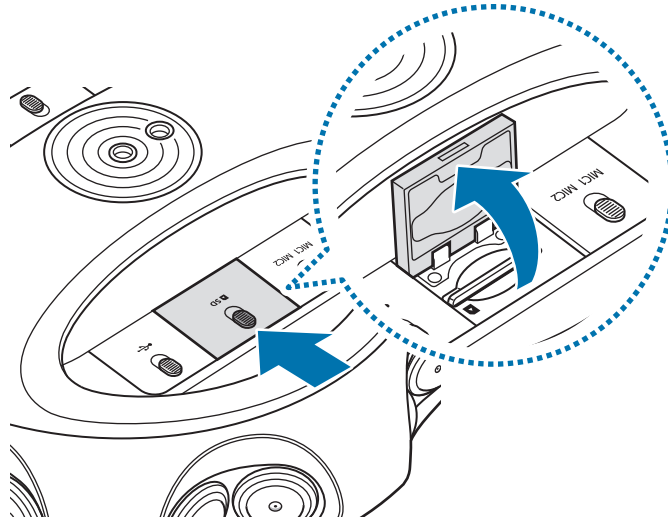


- Some memory cards may not be fully compatible with the 360 Round. Using an incompatible card may damage the 360 Round or the memory card, or corrupt the data stored in it.
- If you use a slow writing memory card, the recording of your video can be interrupted because the card cannot process data at the rate the video is being shot. Replace the card with a faster memory card.
- Use caution to insert the memory card right-side up.



- The 360 Round supports memory cards using the exFAT file structure. Refer to [Required specification](#) for required memory card specifications.
- Memory cards are sold separately. Before purchasing a memory card, be sure to check the specifications of the memory card and purchase a memory card that supports the required specifications or above.
- If you insert or remove a memory card while the 360 Round is turned on, the power automatically turns off. To use the 360 Round, turn it on again.
- Frequent writing and erasing of data shortens the lifespan of memory cards.
- When a memory card is not inserted, **No media** is displayed on the camera status screen.

- 1 Unlock the memory card slot switch to open the memory card slot cover.

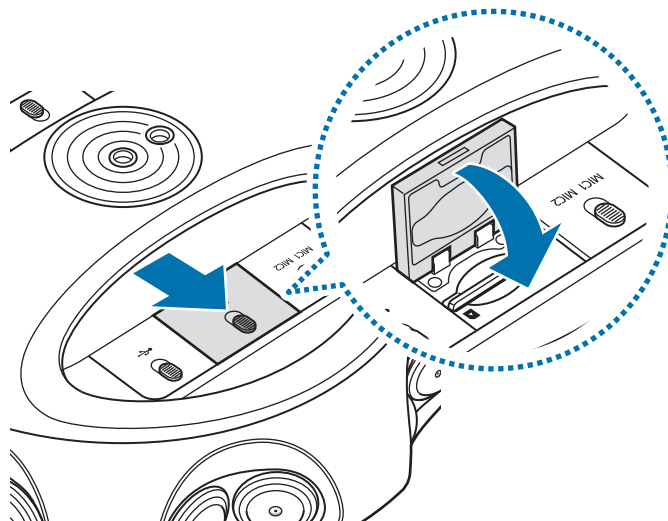


- 2 Insert the memory card into the memory card slot until it clicks into the place.



Be careful not to damage your fingernails when you insert the memory card.

- 3 Close the memory card slot cover and lock the slot cover switch.



Removing the memory card

- 1 Unlock the memory card slot switch to open the memory card slot cover.
- 2 Gently push the memory card in and pull out the removed memory card completely.
- 3 Close the memory card slot cover and lock the slot cover switch.


Formatting the memory card

You can format the memory card on the 360 Round or computer.



Before formatting the memory card, remember to make backup copies of all important data stored in the memory card. The manufacturer's warranty does not cover loss of data resulting from user actions.

On the 360 Round

- 1 Press the Right key on the 360 Round to access the settings menu.
 If the 360 Round is connected to the computer with a LAN cable, you can not enter the settings menu. Remove the LAN cable before formatting the memory card on the 360 Round.
- 2 Press the Down key until **Manage files** appears on the camera status screen and press the OK key.
- 3 Select **Format storage** → **OK** and press the OK key.
When formatting is complete, the completion message appears on the camera status screen.

On the computer



Connect the 360 Round and your computer with a LAN cable before formatting the memory card on your computer.

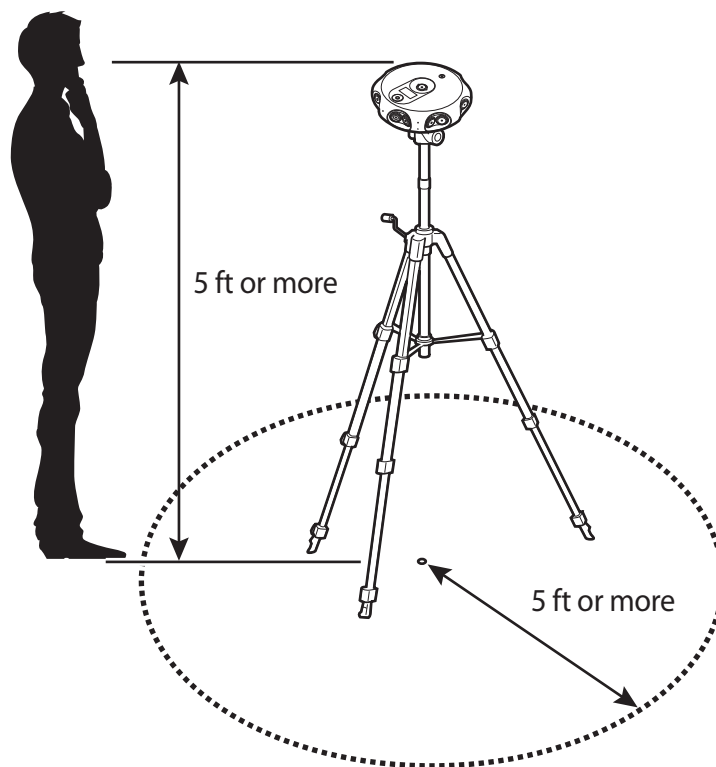
- 1 Launch the **360 Round** program on your computer.
- 2 Click **Device** tab → **Manage files** → **Format** → **OK** on the control panel.
The memory card will be formatted.

Installing the 360 Round

Attach a tripod on the 360 Round and place it on a flat area. Connect the 360 Round to your computer via a LAN cable to control the 360 Round from your computer.

Installation tips

- Set up the 360 Round and tripod securely on a flat area so that they do not topple over.
- Keep a minimum distance of at least 5 ft between the 360 Round and the subject, otherwise the recorded video may appear to be unnatural.
- Install the 360 Round a minimum distance of at least 5 ft above ground, and at least 5 ft under a ceiling.



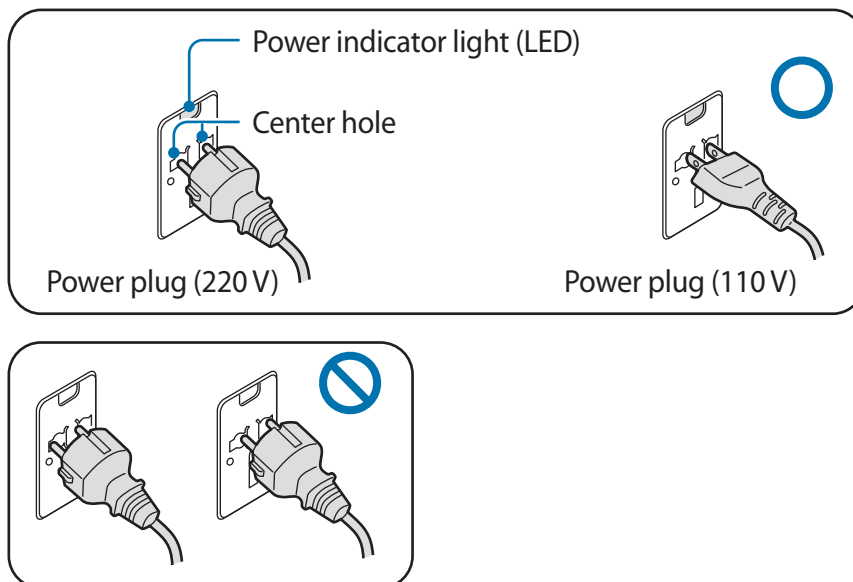
- If the 360 Round is tilted vertically or rotated while recording, the recorded video may appear to be unnatural.
- If you use the 360 Round in a dark location, the recommended ambient brightness should be at least 100 lx.

- Move any objects you do not want to record from the 360 Round's view.
- If you install the 360 Round outdoors, be sure to place the power adapter in a waterproof power box as it is not waterproof.

Caution when using an AC power terminal

Connect the power plug pin vertically into the center hole of the power terminal.

- **If you do not connect the plug pin directly into the center hole**, it will not be correctly connected. Reconnect the plug pin until it fits correctly into the center hole.
- **Connect the power plug to the power terminal when the power indicator light (LED) flashes green.** The power indicator light (LED) flashes green when it is correctly connected. If the power plug is connected incorrectly, the power indicator light (LED) will turn off. Disconnect the plug and check the power indicator light (LED) is on, and then reconnect.



Using as a stationary 360 Round

- 1 Insert the tripod into the 360 Round's tripod socket.
- 2 Connect the LAN cable to the 360 Round's LAN port and to the computer's LAN port.
- 3 Plug the power adapter into the 360 Round's power adapter jack, and into an electric socket.
- 4 Set up the tripod upright.

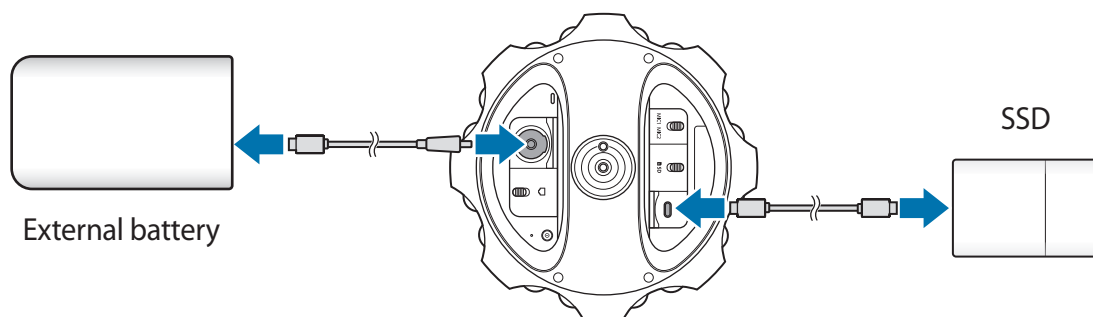


- The LAN cable and tripod are sold separately. Set up the tripod so it is not included in the frame when you are shooting a video.
- If the length of the LAN cable that connects the 360 Round and the computer is more than 328 ft, using an optic LAN converter is recommended.
- Avoid high-voltage electronics when installing the LAN cable.

Using as a portable 360 Round

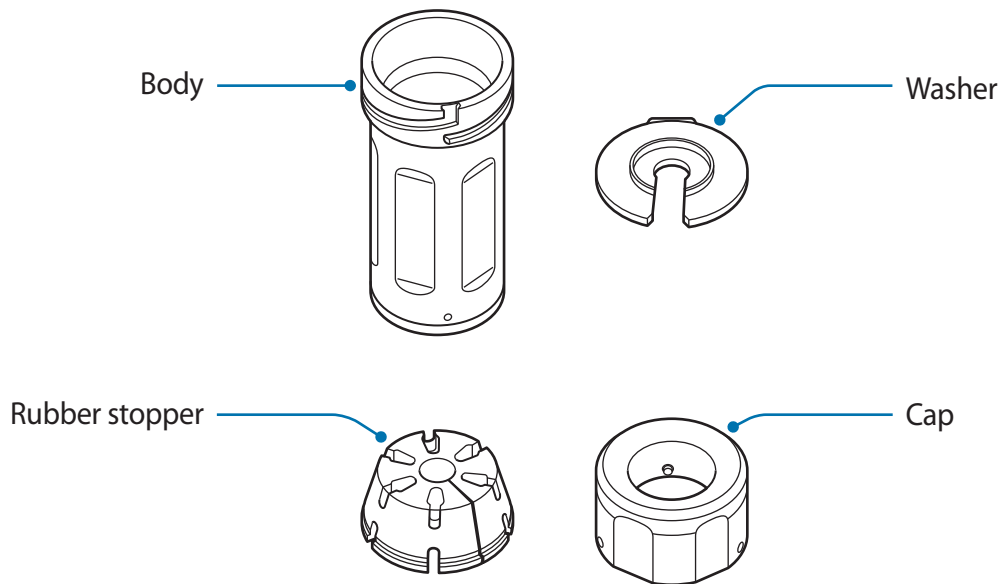
Insert a UHS II SD card or connect an SSD, and connect the external battery to use the 360 Round without connecting it to your computer and power adapter.

Connect the SSD to the multipurpose jack and connect the external battery to the power adapter jack. You can control the 360 Round using the 360 Round's keys.



- Use either a 12 V, 16 V or 19 V standard external battery of 2 A or more. The 360 Round may not work correctly if you use a non-standard external battery.

Waterproof adapter



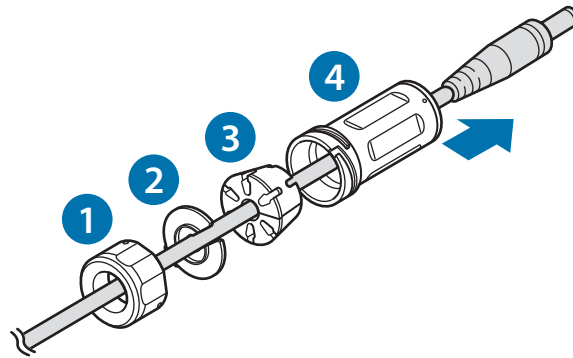
Two rubber stoppers are provided with the 360 Round, the rubber stopper with the small hole is fitted to the power adapter jack, and the rubber with the large hole is fitted to the LAN cable. Use the appropriate rubber stopper. If you cannot distinguish the sizes, check the imprint under each rubber stopper.



Using the waterproof adapter

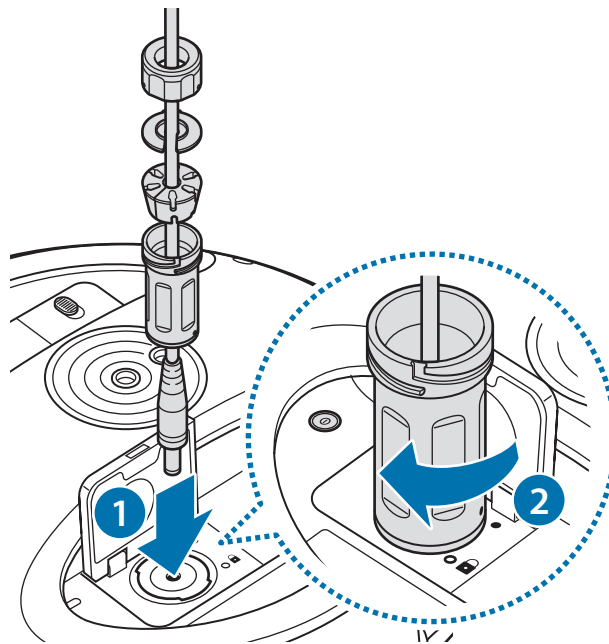
To use the waterproof feature, each waterproof adapter must be attached to the supplied power adapter and to the LAN cable (Cat 6a, 0.2 inch in diameter and under 100 m long, sold separately).

- 1 Twist the cap of the waterproof adapter to remove the cap, washer and rubber stopper.

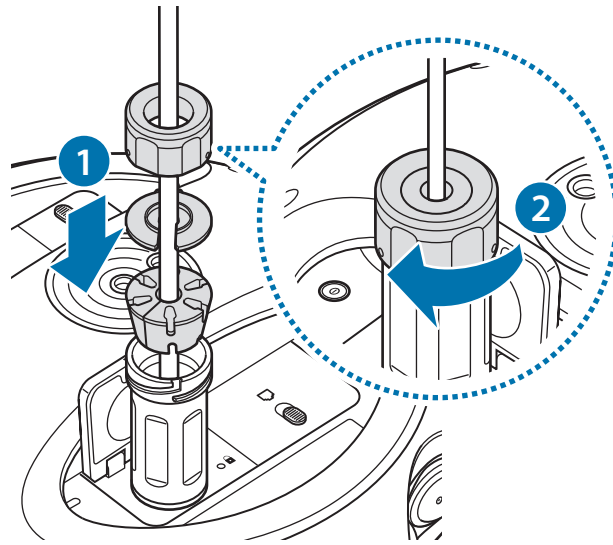
2 Attach the cap, washer, rubber stopper and body respectively to the connecting cable.



3 Connect the cable to the 360 Round and align the white dot located on the bottom of the waterproof adapter's body with the  in the port compartment on the 360 Round. Turn the waterproof adapter in the direction of the  to securely lock it to the 360 Round until it clicks.



- 4 Insert the rubber stopper and washer in order into the body and turn the cap to lock until it clicks.



- Lock the waterproof adapter securely in place. If there is a space between the rubber stoppers, the power adapter cable, and the LAN cable, the waterproof adapter may not work correctly.
- If the power adapter and the LAN cable are very thin or thick, or if you use non-standard cables, the waterproof adapter may not work. Samsung recommends using a power adapter cable 0.1 inch in diameter and a LAN cable 0.2 inch in diameter.
- Be careful not to allow the power adapter to come into contact with water.
- Do not touch the 360 Round, power cable, plug and socket with the wet hands or other body parts. The 360 Round may be damaged or you may be affected by electricity.

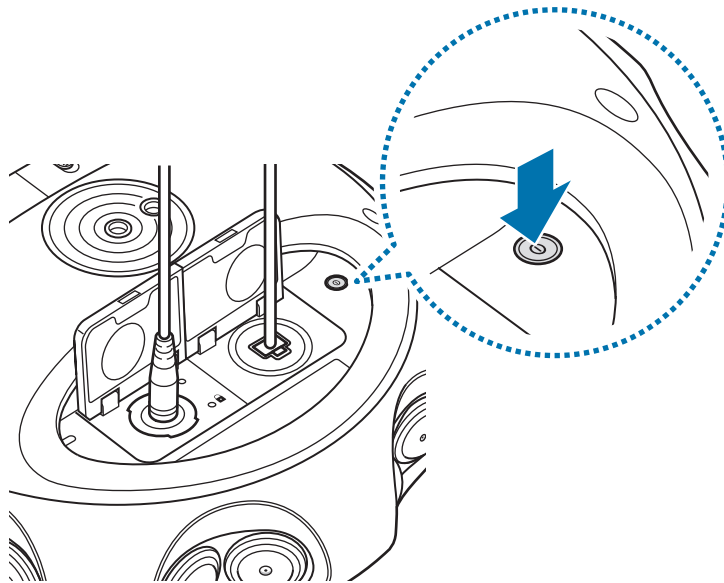
Turning the 360 Round on and off

Press and hold the Power key to turn on the 360 Round.

Indicator light flashes blue three times.

To turn off the 360 Round, press and hold the Power key again.

Indicator light flashes red three times.



- When the 360 Round is connected to your computer, you can turn the 360 Round on and off via the 360 Round program.
- You can set the power to turn off automatically when the 360 Round is not used for a certain period of time. The power off time can be selected from the **Auto power off** setting menu. Refer to [System settings](#) for more information.
- Follow all posted warnings and directions from authorised personnel in areas where the use of wireless devices is restricted, such as aeroplanes and hospitals.

Restarting the 360 Round

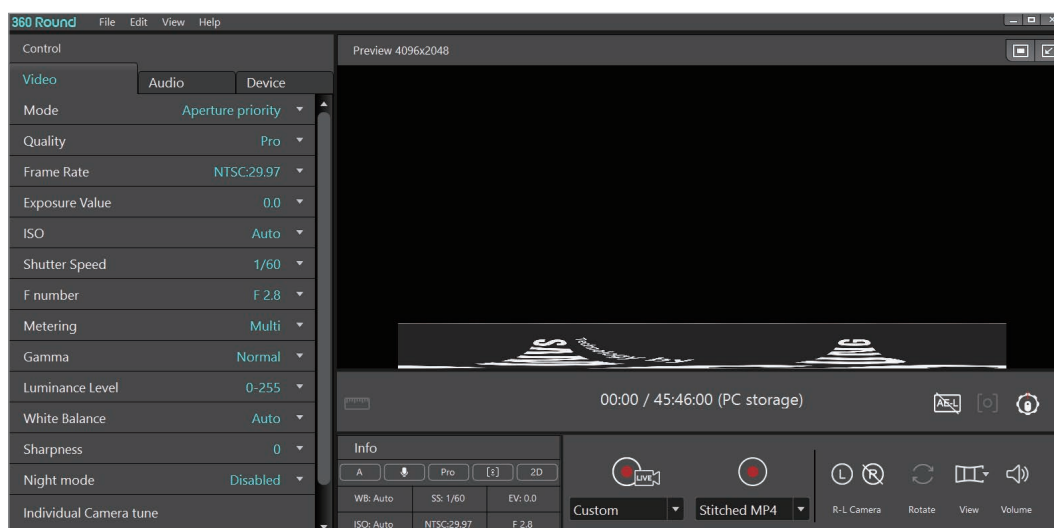
If your 360 Round is frozen and unresponsive, disconnect the power cable and reconnect it. Press and hold the Power key to restart it.

Using the 360 Round

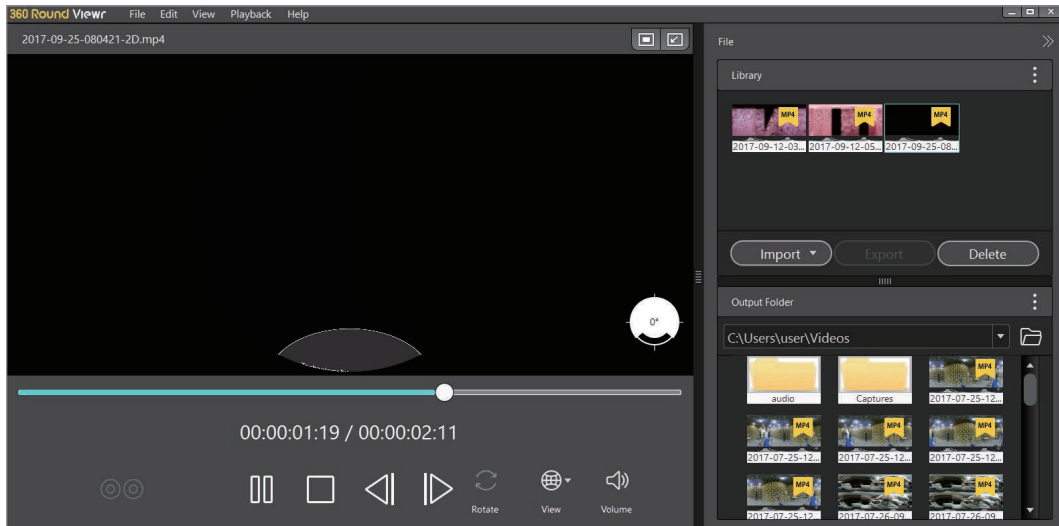
Learning more about 360 Round PC program

By using the 360 Round PC program, you can record videos or stream a live broadcast on your computer.

Use the 360 Round program to configure the 360 Round's settings and records videos and start to broadcast videos in real time. You can also use the 360 Round Viewer to stitch or view stored videos.



The 360 Round screen recording 360-degree video



The 360 Round Viewer screen viewing recorded 360-degree video

Installing and launching the 360 Round PC program

- 1 Download the 360 Round PC program from www.samsung.com/business.
- 2 Connect the camera to the computer with the LAN cable while the power adapter is connected.
- 3 Press and hold the Power key to turn on the camera.
- 4 Launch the **360 Round** program on your computer.
The preview screen will appear.

Recording videos

Introduction

You can record a 360-degree video in 2D or 3D format with 17 cameras. You can also record videos using the 360 Round solely, or connect it to a computer and record using various functions.



A memory card must be inserted into the 360 Round to record videos.

Camera etiquette

- Do not record videos of other people without their permission.
- Do not record videos where legally prohibited.
- Do not record videos in places where you may violate other people's privacy.

Tips for getting the best shots

- Make sure that the lenses are clean and avoid touching the lenses while capturing videos.
- Installing the camera on a tripod is recommended to prevent the camera shaking.
- Do not disconnect the camera from the LAN cable while transferring files. The camera and data may be damaged.
- The 360 Round stops recording video or turns off automatically if the temperature rises above a certain level when it has been used for extended periods. In this case, turn it off and wait until it has sufficiently cooled.

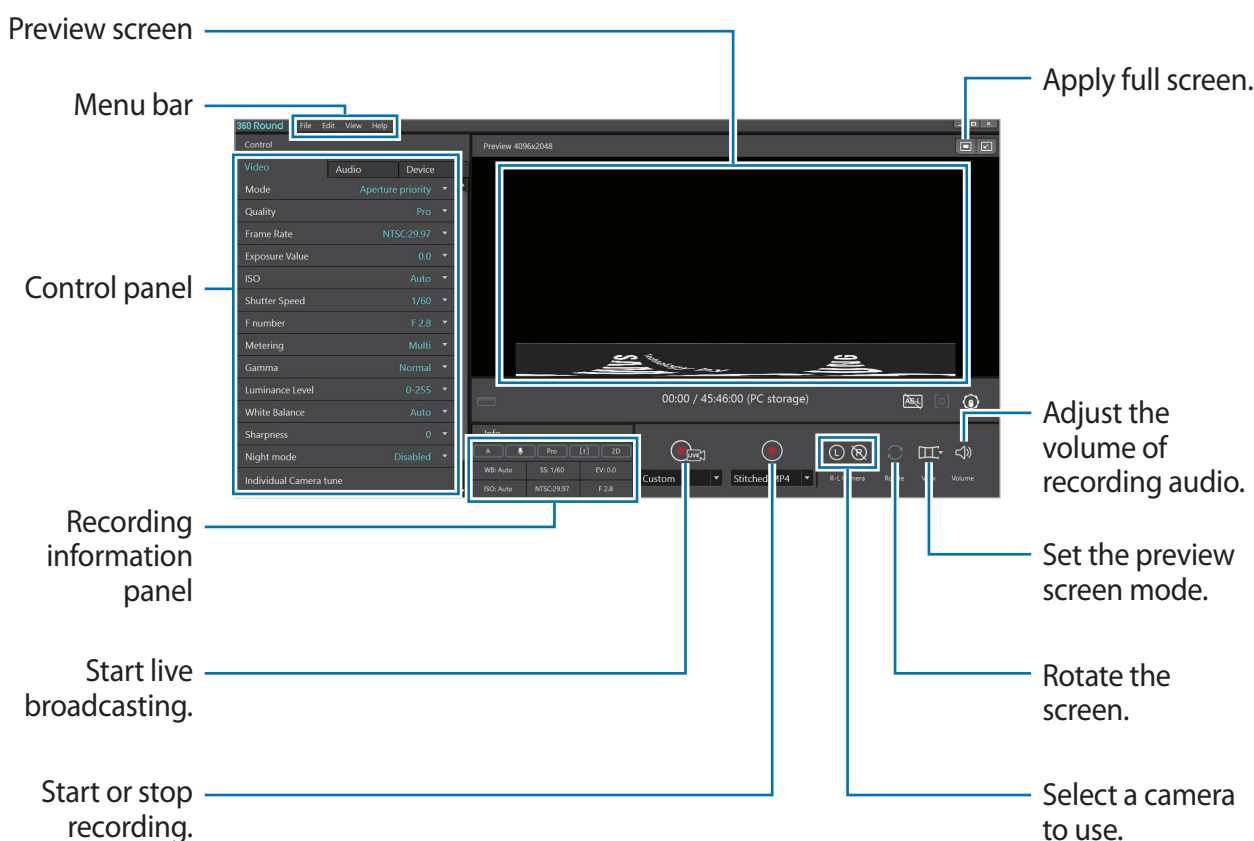
Recording videos using a computer

Use your computer as a viewfinder to record videos. Installing the **360 Round** program on your computer makes it easier to record videos or start live broadcasts.

You can check and change video settings during a recording.

1 Launch the **360 Round** program on your computer.


The preview screen will appear.



2 Click **Device** tab → **Storage** on the control panel and select a location to save videos.

You can select **PC** and save videos to your computer or select **Camera** and save videos to the camera's memory card.

3 Configure camera settings on the control panel of the program.

4 Click ▼ next to  and select the recording mode.

- **RAW SLS:** You can record 3D videos in **Source view** mode and also record original videos that are not stitched.
- **Stitched MP4:** You can record 2D or 3D videos in **Panoramic view** mode.



A memory card must be inserted into the 360 Round to record videos.

5 Click ▼ next to  and select **Settings**.

6 Click **Stitched recording** when the settings screen appears, enter information, and select **OK**.

7 Click  to start recording a video.

The preview screen will appear on the computer and **Recording** will appear on the status screen of your camera. The camera indicator light will blink red.

8 Press  to finish recording video.

Camera status light will turn off.



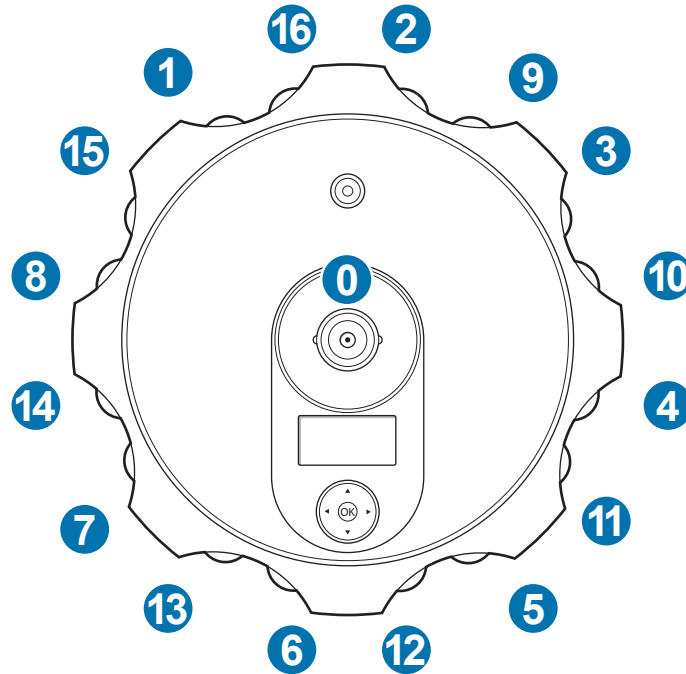
- The 360 Round stops recording video or turns off automatically if the temperature rises above a certain level when it has been used for extended periods. In this case, turn the 360 Round off and wait until it has cooled.
- The 360 Round has been developed for content production and can not be used for security such as CCTV. Do not use it outdoors for more than 12 hours continuously. Doing so may affect the life and performance of the 360 Round and may cause errors when recording videos.



- When connecting to a computer, the keys on the 360 Round will not work.
- To change the storage location, click **Device** tab → **Storage** → **PC** or **Camera** on the control panel. When the 360 Round is selected as the storage location, it changes to **Panoramic view** mode.
- A slight difference in time may occur between the actual subject movement and the subject movement on the preview screen.

Checking the location of each camera

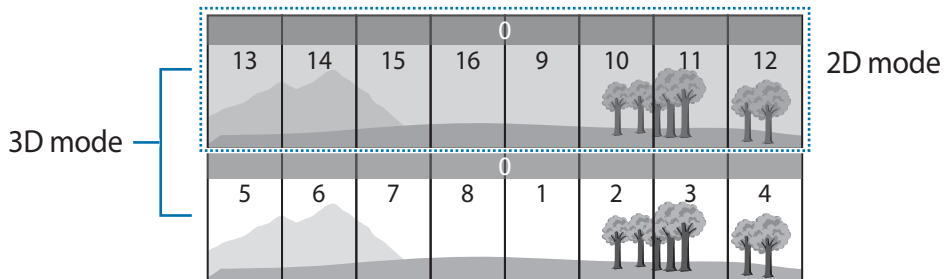
Before recording a video, check the location of the cameras on the top and side of the 360 Round.



- Top camera: The camera number 0.
- Left camera: The cameras number 1 to 8.
- Right camera: The cameras number 9 to 16.

Checking the location of each camera on the recording video screen






Check the location of the 17 cameras in the video you are recording on the 360 Round screen. The following screen shot was taken in Panoramic view mode using all 17 cameras.



Changing the preview screen mode

You can change the preview screen mode to record 2D or 3D videos. When recording in **Source view** mode, you can record original videos that are not stitched. In **Panoramic view** mode, you can record 2D and 3D videos.







Press ▼ on **View** to change the preview screen mode.

-  **Panoramic view:** View the preview screen as a horizontally stretched screen.
-  **Stretched view:** View the recorded video as a big enlarged scene.
-  **360° view:** View the recorded video in spherical form.
-  **Round view:** View the recorded video as a rounded scene.
-  **Source view:** You can preview the screen recording by the cameras on each section. Select **Top**, **Left 1**, **Left 2**, **Right 1** or **Right 2** on the preview screen to check the recording videos from each section. Refer to [Checking the location of each camera](#) for detailed location of cameras on the right and left.
 - **Top:** Use the top camera numbered 0.
 - **Left 1:** Use the cameras on the left numbered 5 to 8.
 - **Left 2:** Use the cameras on the left numbered 1 to 4.
 - **Right 1:** Use the cameras on the right numbered 13 to 16.
 - **Right 2:** Use the cameras on the right numbered 9 to 12.


Setting 2D or 3D mode

You can select which camera to use when you are recording video.

- 1 Launch the **360 Round** program on your computer.
- 2 Click the **L-R Camera** button to select the camera to be used for recording. Refer to [Checking the location of each camera](#) for the detailed location of cameras on the right and left side of the 360 Round.

- **On Panoramic view, Stretched view, 360° view or Round view mode:**
 - : You can record 2D video using the 8 cameras on the right side, and the camera on the top of the 360 Round.
 - : You can record 2D video using the 8 cameras on the left side, and the camera on the top of the 360 Round.
 - : You can record 3D video with all of the 17 cameras on the 360 Round.
 - : All cameras are turned off and the preview screen is disabled.
- **On Source view mode:**
 - : You can record 3D video with all of the 17 cameras on the 360 Round.
 - : All cameras are turned off and the preview screen is disabled.


Rotating the preview screen

You can record and view videos by rotating the preview screen up and down in 180 degrees. Click  to rotate the preview screen.

Adjusting the volume of recording audio

You can adjust the volume of the audio to be recorded.

Click  to adjust the volume.

 If you set the volume excessively high when recording video in a high surrounding environment, the audio may be distorted. Launch the **360 Round** program and click the **Audio** tab and set **Mic. Level - Internal** to **Auto** or **Manual** to turn down the volume.

Recording videos with the 360 Round solely

You can record videos with the 360 Round without connecting it to your computer and power adapter. To record video with the 360 Round solely, you must connect a UHS II SD card or SSD and an external battery. Refer to [Using as a portable 360 Round](#) for more information.

- 1 Press and hold the Power key to turn on the 360 Round.
- 2 Press the Right key on the 360 Round and configure camera settings.
- 3 Press the Record key to start recording video.
Recording appears on the status screen of the camera and recording will be start.
- 4 To finish recording video, press and hold the Record key again.
The video will be saved in the UHS II SD card or SSD.



- The recorded videos are saved in the SSD or UHS II SD card. Even if the UHS II SD card is inserted, the SSD is recognized as the default storage location when the SSD is connected.
- When using an SSD, use an SSD that supports USB 3.1 Super Speed (5 Gbps).
- The 360 Round supports UHS II SD or SSD card using the exFAT file structure.
- If the SSD is connected to the 360 Round, you can not connect the 360 Round to the computer via a LAN cable. Remove the SSD from the 360 Round and then connect it to your computer via a LAN cable.

Live broadcast





Invite your family and friends to watch videos you record with the 360 Round in real time.






- To use this feature, you must be connected to the Internet and sign in to your service account.
- Some features may vary depending on the service provider.

When you select Custom

When you select **Custom**, you can enter the setting values and adjust the broadcasting channel.

- 1 Launch the **360 Round** program on your computer.
- 2 Click ▼ next to  → **Custom**.
- 3 Click .
- 4 Click **Live broadcasting** when the settings screen appears, enter information, and click **OK**.
- 5 Click .
The broadcast will begin.
- 6 Click  to finish the broadcast.

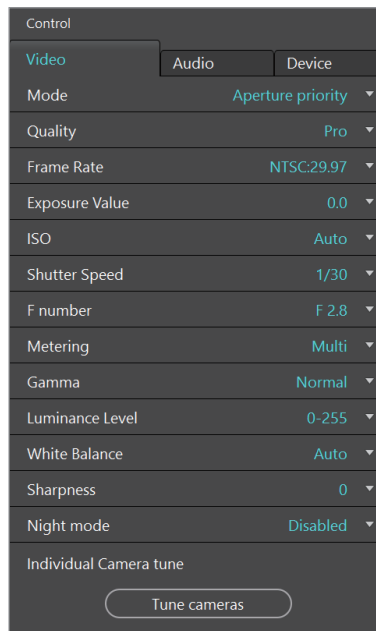
When you select Samsung VR

- 1 Launch the **360 Round** program on your computer.
- 2 Click ▼ next to  → **Samsung VR**.
- 3 Click .
- 4 Sign in to your Samsung VR account.
- 5 Enter the title and details of the broadcast, and then set your broadcast to be public or private.
- 6 Click **Broadcast**.
The broadcast will begin.
- 7 Click  to finish the broadcast.

Configuring camera settings

Configuring settings on your computer

Launch the **360 Round** program on your computer. You can configure camera settings from the control panel on your computer.



Control panel

Video

- **Mode:** Set the recording mode.
 - **Aperture priority:** Set the shutter speed to be adjusted automatically according to the aperture value set by the user.
 - **Manual:** Set the shutter speed and aperture value to be set manually by the user.
- **Quality:** Set the quality of the video. The higher the quality, the larger the video's size will be.
- **Frame Rate:** Set the number of frames to be recorded.
 - **NTSC:29.97:** Set to record 30 frames per second.
 - **PAL:25.00:** Set to record 25 frames per second.

- **Exposure Value:** Adjust the exposure value. The exposure value is set automatically depending on the balance of brightness in the composition or the position of the main subject. Set the exposure value higher if the video is dark or set the exposure value lower if the video is bright.
- **ISO:** The ISO image sensor determines the sensitivity to light. The higher the ISO, the more sensitive the light is, so you can record bright videos in dark environments. However, as the ISO increases, the grain will be rougher and the noise will increase.
 - **Limit:** When **Auto** is selected in **ISO**, the maximum value of the ISO value is set and can not be adjusted beyond its maximum value.
- **Shutter Speed:** The shutter speed determines the exposure time that the camera (image sensor) accepts light.
- **F number:** Set the aperture size. The smaller the F value, the larger the diameter of the diaphragm and more light is allowed to pass through to change the brightness of the camera.
- **Metering:** Set the metering method. You can change the way light is measured on the recording screen.
 - **Multi:** Divide the entire recording screen, measure the light and apply the average value to the video.
 - **Center:** Measure the light in front of and around the camera and apply it to your video.
 - **Spot:** Only the light from the camera you select will be measured and applied to the video.
- **Gamma:** Set the gamma value that controls the tone and color of the video.
- **Luminance Level:** Set the brightness range of the video.

- **White Balance:** By selecting the white balance according to the recording environment, you can display the color of the subject, which depends on the original color temperature, same as a person's natural view.
 - **Auto:** The optimum light source is automatically set according to the light source conditions.
 - **Daylight:** This is the appropriate setting when recording on a clear day or outdoors, similar to what a person sees naturally.
 - **Cloudy:** This is the appropriate setting for cloudy days or shadows. It corrects the bluish color of a cloudy day.
 - **Fluorescent_W:** This is the appropriate setting when recording under a white fluorescent light.
 - **Fluorescent_N:** This is the appropriate setting when recording under a fluorescent light (significant white color).
 - **Fluorescent_D:** This is the appropriate setting when recording under daylight fluorescent light (slightly bluish color).
 - **Tungsten:** This is the appropriate setting when recording under a halogen lamp or incandescent lamp. Correct the incandescent yellow light.
 - **K(Manual):** You can also adjust the color temperature of the video.
- **Sharpness:** Set the clarity of the video.
- **Night Mode:** Block the infrared-absorbing filter and set the video to be recorded in black and white. You can record bright videos even in dark environments using infrared light.
- **Individual Camera tune:** Calibrate each camera separately. Select **Tune cameras** to start calibration.
 - **Selected Camera:** Select the camera to be calibrated on the preview screen.
 - **RGB:** You can adjust the **RED**, **GREEN**, and **BLUE** color value individually to raise or lower certain color tones on the preview screen.
 - **Noise reduction:** You can reduce the noise that can occur when recording with high sensitivity or when recording at high speed by increasing the ISO value.
 - **Contrast:** Calibrate the contrast of the video.
 - **Sharpness:** Set the clarity of the video.
 - **Reset:** You can select **Reset Current camera** to set the camera calibration values individually, or select **Reset All camera** to set them all as default.

Audio

- **Source:** Select a device that will record audio.
- **Voice:** Turn on or off the audio to be recorded in the video.
- **Mic. Level - Internal:** Set the volume of the microphone.
 - **Auto:** Set the audio to be recorded at the optimal sound with the Samsung sound solution.
 - **Manual:** Set the audio to be recorded at the original sound without the Samsung sound solution.
- **Sample rate:** Set the sampling frequency of the recorded audio. The larger the sampling, the closer you can record to the original sound, but the size of the video may increase.
- **Audio monitoring:** You can check and set the audio status of the internal or external microphone.

Device

- **Camera name:** You can check or change the name of the 360 Round.
- **Power:** You can turn the 360 Round on and off or reboot it. All values will be reset as default when you reboot.
 - **Device Mac:** Set the Mac address of the 360 Round.
- **Manage files:** Manage and delete recorded videos. You can also format the memory card.
- **Set Timer:** Set the timer.
- **Storage:** Set the location to save the video to either the **PC** or the **Camera**.
- **Info:** Briefly check the information of the recording environment.

Configuring settings on the 360 Round

You can change the recording environment or set the operating environment of the 360 Round from the setup menu.



If the 360 Round is connected to a computer via a LAN cable, you can not enter the settings menu. Remove the LAN cable before entering the settings menu on the 360 Round.

- 1 Press the Right key on the 360 Round to access the settings menu.
- 2 Press the Up key or Down key to access the settings menu you want.
- 3 Press the OK key or Right key and select the settings menu.
Press the Left Key to cancel the settings or move to the previous step.

Video

- **Mode:** Set the recording mode.
 - **Aperture priority:** Set the shutter speed to be adjusted automatically according to the aperture value set by the user.
 - **Manual:** Set the shutter speed and aperture value to be set manually by the user.
- **Quality:** Set the quality of the video. The higher the quality, the larger the video's size will be.
- **Frame rate:** Set the number of frames to be recorded.
 - **NTSC:29.97:** Set to record 30 frames per second.
 - **PAL:25.00:** Set to record 25 frames per second.
- **EV:** Adjust the exposure value. The exposure value is set automatically depending on the balance of brightness in the composition or the position of the main subject. Set the exposure value higher if the video is dark or set the exposure value lower if the video is bright.

- **ISO:** The ISO image sensor determines the sensitivity to light. The higher the ISO, the more sensitive the light is, so you can record bright videos in dark environments. However, as the ISO increases, the grain will be rougher and the noise will increase.
 - **ISO Limit:** When **Auto** is selected in **ISO**, the maximum value of the ISO value is set and can not be adjusted beyond its maximum value.
- **Shutter speed:** The shutter speed determines the exposure time that the camera (image sensor) accepts light.
- **F number:** Set the aperture size. The smaller the F value, the larger the diameter of the diaphragm and more light is allowed to pass through to change the brightness of the camera.
- **Metering:** Set the metering method. You can change the way light is measured on the recording screen.
 - **Multi:** Divide the entire recording screen, measure the light and apply the average value to the video.
 - **Center:** Measure the light in front of and around the camera and apply it to your video.
 - **Spot:** Only the light from the camera you select will be measured and applied to the video.
- **Gamma:** Set the gamma value that controls the tone and color of the video.
- **Luminance:** Set the brightness range of the video.

- **WB:** By selecting the white balance according to the recording environment, you can display the color of the subject, which depends on the original color temperature, same as a person's natural view.
 - **Auto:** The optimum light source is automatically set according to the light source conditions.
 - **Daylight:** This is the appropriate setting when recording on a clear day or outdoors, similar to what a person sees naturally.
 - **Cloudy:** This is the appropriate setting for cloudy days or shadows. It corrects the bluish color of a cloudy day.
 - **Fluorescent W:** This is the appropriate setting when recording under a white fluorescent light.
 - **Fluorescent N:** This is the appropriate setting when recording under a fluorescent light (significant white color).
 - **Fluorescent D:** This is the appropriate setting when recording under daylight fluorescent light (slightly bluish color).
 - **Tungsten:** This is the appropriate setting when recording under a halogen lamp or incandescent lamp. Correct the incandescent yellow light.
 - **Manual:** You can also adjust the color temperature of the video.
- **Sharpness:** Set the clarity of the video.
- **Night mode:** Block the infrared-absorbing filter and set the video to be recorded in black and white. You can record bright videos even in dark environments using infrared light.
- **AE-L:** Reset the fixed exposure value in use.

Audio

- **Voice:** Turn on or off the audio to be recorded in the video.
- **Source:** Select a device that will record audio.
- **Int. Mic level:** Set the volume of the microphone.
- **Sample rate:** Set the sampling frequency of the recorded audio. The larger the sampling, the closer you can record to the original sound, but the size of the video may increase.

Manage files

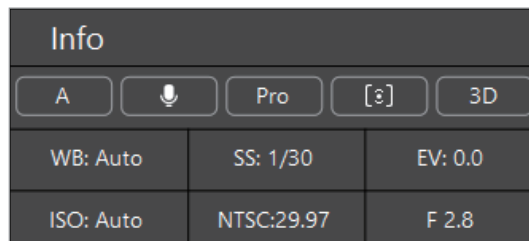
- **Storage:** Select a storage location to save the video.
- **Delete files:** Delete recorded videos.
 - **Delete last file:** Delete the last recorded movie.
 - **Delete all:** Delete all recorded videos.
- **Format storage:** All videos stored in the 360 Round or in the SSD or memory card will be deleted.


System settings

- **Screen timeout:** Set the time to turn off the screen automatically when the 360 Round is not in use.
- **Set timer:** Set the timer.
- **Auto power off:** Set auto power off.
- **Beep Sound:** Adjust the volume of the effect sound of the 360 Round.
- **LED:** Turn the indicator light on and off.
- **Reset settings:** Initialize the settings of the 360 Round.
- **Date and time:** Manually set the time and date displayed on the camera status screen or change the displaying format.
- **Language:** Select the language you want to use.
- **About device:** Check information such as the 360 Round's name or firmware version, or update software.
- **System check:** Check the current status of the 360 Round or the memory card inserted in the 360 Round.

Checking the video recording options

On the computer



Info		
A		Pro
WB: Auto	SS: 1/30	EV: 0.0
ISO: Auto	NTSC:29.97	F 2.8

Recording information panel

You can check the video recording options set on the control panel of the **360 Round** program on the information panel. The setting values of the information panel are changed to what you set on the control panel.

On the 360 Round

You can check the video recording options set in the settings menu on the camera status screen. The indicator icons on the camera status screen are changed to what you set on the settings menu. Refer to [Camera status screen](#) for more information.

Stitching videos

You can make a 360-degree video by stitching recorded videos together.

- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Import an SLS file and click **Export** on the **Library** panel.
- 3 Select a file to stitch from the file list.
To change the storage location of the file, click **Change folder** and select a folder to export videos.
- 4 Click **Export as single stitched video file** or **Export as multiple video file** → **Export**.




The edge parts of each 17 camera's recording will be deleted after stitching so that they will not affect the finished video's quality.

Viewing videos








Viewing videos recorded with the computer

You can view your recorded videos on your computer.

- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Click **Import** on the **Library** panel.
- 3 Select a video to view and click **Open**.
The file will be added to the **Library** panel.
- 4 Select the desire file or drag the file to the preview screen on the **Library** panel.
The video will be played.
Alternatively, click  on the **Output Folder** panel, and click the storage location, and then select a video from the videos list.

Changing the viewing mode

You can change the viewing mode while playing a video.

-  **Panoramic view:** View the recorded video as a horizontally stretched scene.
 -  **Stretched view:** View the recorded video as an enlarged scene.
 -  **360° view:** View the recorded video in spherical form.
 -  **Round view:** View the recorded video as a rounded scene.
 -  **Three screen view:** Split the screen to view the video with the right, left, and top camera respectively.
-  • In the **Stretched view**, **Round view**, and **360° view** modes, you can view videos from different angles by dragging across the screen in any direction. To reset the angle to the default setting, tap .
- Only the **Panoramic view** mode is supported for videos recorded in 3D.

Rotating the screen

You can view videos by rotating the screen up and down in 180 degrees.

Click  to rotate the screen.

Adjusting the volume of the recorded audio

You can adjust the volume of the recorded audio.

Click  to adjust the volume.

Viewing videos recorded solely by the 360 Round

Remove the UHS II SD card or SSD inserted in the 360 Round to check the recorded video. Refer to the user manual of each external storage device for more information.

Deleting videos

On the computer

- 1 Launch the **360 Round** program on your computer.
- 2 Click **Device** → **Manage files** → **Browse Camera storage** on the control panel.
- 3 Select the video to delete and click **Delete**.
To delete all videos, click **Select all** → **Delete**.

On the 360 Round

- 1 Press the Right key on the 360 Round to access the settings menu.
- 2 Select **Manage files** → **Delete files**.
To delete last recorded video, select **Delete last files**.
To delete all videos, select **Delete all**.

Updating the software

The 360 Round and the 360 Round program can be updated to the latest software.



You can update the software of 360 Round and 360 Round program only if the computer is connected to a wireless or wired network.

Updating the 360 Round

On the computer



Connect the 360 Round to your computer via a LAN cable before updating.

- 1 Connect the camera to the computer with the LAN cable while the power adapter is connected.
- 2 Press and hold the Power key to turn on the 360 Round.
- 3 Launch the **360 Round** program on your computer.
- 4 Click **Help** → **Check for updates** → **Camera software** → **OK** on the menu bar.

On the 360 Round

You can update the firmware directly from the 360 Round.



- If the 360 Round is connected to your computer via a LAN cable, you can not enter the settings menu. Remove the LAN cable before updating.
- Insert the SD card before updating. The firmware will be stored separately on the SD card.

- 1 Connect the camera to the computer via a LAN cable while the power adapter is connected.
- 2 Press and hold the Power key to turn on the 360 Round.

3 Press the Right key on the 360 Round to access the settings menu.

4 Select **System settings** → **About device** → **Software Update** → **OK**.



Be careful not to turn off or disconnect the 360 Round from the power adapter cable during an update.

Updating the program

Updating the 360 Round program

1 Launch the **360 Round** program on your computer.

2 Click **Help** → **Check for updates** → **360 Round software** → **OK** on the menu bar.

Updating the 360 Round Viewer program

1 Launch the **360 Round Viewer** program on your computer.

2 Click **Help** → **Check for updates** → **OK** on the menu bar.

Appendix

Managing the 360 Round

Cleaning the camera

Use a brush to remove dust from the camera and status screen, and wipe with a soft cloth. For persistent dust, lightly wipe the lens with a little cleaning fluid on the lens cleaning paper and wipe the exterior with a soft cloth.

When using the 360 Round, fine dust may enter the camera and it may appear on the recorded videos depending on the recording environment. This is not a defect of the 360 Round, but rather caused by fine dust entering the lens. Use a blower to clean the dust.

Using and storing the 360 Round

Do not store or use the 360 Round in the following situations:

- Extremely high or low temperature
- Where humidity is high or humidity changes rapidly
- Where there is direct sunlight or airtightness (such as in a closed car in summer)
- Where there is a strong vibration or a strong magnetic field (by motor, transformer, magnet)
- Where there is a lot of sand or dust
- Where there is a fire or volatile material
- Where there are mothballs such as naphthalene

Using the 360 Round at the beach or near water

Please note the following when using the 360 Round near the beach or water.

- Be careful not to let water or sand get into the 360 Round. This may cause a malfunction.
- The 360 Round is not waterproof when the cover is open. Do not insert an adapter or memory card with wet hands.
- Do not touch the 360 Round, power cable, plug and socket with wet hands or another body part. The 360 Round may be damaged or you may be affected by electricity.

Dealing with dew

Moving from a cold place to a warm place in a short period of time may cause water droplets to appear inside of the 360 Round or on the lens. Turn off the power and wait for about one hour before using the 360 Round. If water droplets form on the memory card, remove the memory card and dry it completely before using it.

Troubleshooting

Before contacting a Samsung Service Center, please attempt the following solutions. Some situations may not apply to your 360 Round.

Your 360 Round does not turn on

Make sure the power adapter cable is connected properly to your 360 Round. If you use the 360 Round as a portable, make sure that the external battery is connected properly.

The 360 Round does not connected to the computer properly or it is disconnected.

- Make sure that the 360 Round and your computer are properly connected to the LAN cable.
- Check your 360 Round is turned on.
- Make sure the specifications of the computer meets the recommended specifications of computer.

The time on the 360 Round has been reset

The time will be reset when you update the 360 Round.

Your 360 Round is hot to the touch

When using the 360 Round for an extended period, the 360 Round and its battery may heat up. If the temperature rises above a certain level, the 360 Round will stop recording and turn off automatically to prevent damage. If the 360 Round is turned off due to overheating, wait for it to cool down before resuming use.

The memory card icon appears on the camera status screen

- Ensure that a memory card is inserted.
- Ensure that your memory card is not damaged.

Data stored in the 360 Round has been lost

Always make backup copies of all important data stored in the Gear 360. Otherwise, you cannot restore data if it is corrupted or lost. Samsung is not responsible for the loss of data stored in the Gear 360.

A small gap appears around the outside of the 360 Round case

- This gap is a necessary manufacturing feature and some minor rocking or vibration of parts may occur.
- Over time, friction between parts may cause this gap to expand slightly.

The lens is dirty

Wipe the lens in a circular motion with a clean, soft cloth.

Safety information

Follow the warning information provided below to prevent incidents such as fire or explosion

- Do not expose the camera to physical impact or damage.
- Use only manufacturer-approved accessories and supplies.
- Prevent the power adapter jack, LAN port, etc. from contacting conductive elements, such as metal or liquids.
- If any part of the camera is cracked or broken, stop using the camera immediately.

Follow the warnings below to prevent injury to people or damage to the camera

- Do not allow children or animals to chew or suck the camera.
- The camera can be used in locations with an ambient temperature of 0 °C to 35 °C. You can store the camera at an ambient temperature of -20 °C to 50 °C. Using or storing the camera outside of the recommended temperature ranges may damage the camera.
- Do not use your camera in a hot environment or near fire.
- Comply with all safety warnings and regulations regarding mobile device usage while operating a vehicle.
- Use only the power adapter supplied with the camera. Using an unapproved adapter may cause an electric shock.
- When connecting the camera to the tripod or fixing it to a high position, make sure to tighten the connecting part. If the connecting part become loose and falls down, the camera may be damaged or it may result in personal injury.
- Do not use your camera outdoor during a thunderstorm.

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