# USER MANUAL

## WB35F/WB36F/WB37F

SHOOT WOW!
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Samsung SMART CAMERA

Click a topic

This user manual includes detailed usage instructions for your camera. Please read this manual thoroughly.


| | | |
|---|---|---|
| Basic troubleshooting | Quick reference | Contents |
| Basic functions | Extended functions | Shooting options |
| Playback/Editing | Wireless network | Settings |
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# Health and safety information

Always comply with the following precautions and usage tips to avoid dangerous situations and ensure peak performance of your camera.

**Warning**—situations that could cause injury to yourself or others

**Do not disassemble or attempt to repair your camera.**
You can damage the camera and expose yourself to the risk of an electric shock.

**Do not use your camera near flammable or explosive gases and liquids.**
This may cause a fire or explosion.

**Do not insert flammable materials into the camera or store these materials near the camera.**
This may cause a fire or electric shock.

**Do not handle your camera with wet hands.**
This may result in an electric shock.

**Prevent damage to subjects' eyesight.**
Do not use the flash in close proximity (closer than 1 m/3 ft) to people or animals. If you use the flash too close to your subject's eyes, you can cause temporary or permanent eyesight damage.

**Keep your camera away from small children and pets.**
Keep your camera and all accessories out of the reach of small children and animals. Small parts may cause choking or serious injury if swallowed. Moving parts and accessories may present physical dangers as well.

**Do not expose the camera to direct sunlight or high temperatures for an extended period of time.**
Prolonged exposure to sunlight or extreme temperatures can cause permanent damage to your camera's internal components.

**Avoid covering the camera or charger with blankets or clothes.**
The camera may overheat, which may distort the camera or cause a fire.

**Do not handle the power supply cord or the charger during a thunderstorm.**
This may result in electric shock.

**If liquid or foreign objects enter your camera, immediately disconnect all power sources, such as the battery or charger, and then contact a Samsung service center.**

**Comply with any regulations that restrict the use of a camera in a certain area.**

- Avoid interference with other electronic devices.
- Turn off the camera when in an aircraft. Your camera can cause interference with aircraft equipment. Follow all airline regulations and turn off your camera when directed by airline personnel.
- Turn off the camera near medical equipment. Your camera can interfere with medical equipment in hospitals or health care facilities. Follow all regulations, posted warnings, and directions from medical personnel.

**Avoid interference with pacemakers.**
Maintain a safe distance between this camera and all pacemakers to avoid potential interference, as recommended by the manufacturer and research groups. If you have any reason to suspect that your camera is interfering with a pacemaker or other medical device, turn off the camera immediately and contact the manufacturer of the pacemaker or medical device for guidance.

**Caution**—situations that could cause damage to your camera or other equipment

**Remove the batteries from your camera when storing it for an extended period of time.**
Installed batteries may leak or corrode over time and cause serious damage to your camera.

**Use only authentic, manufacturer-recommended, Lithium-ion replacement batteries. Do not damage or heat the battery.**
Inauthentic, damaged, or heated batteries may cause a fire or personal injury.

**Use only Samsung-approved batteries, chargers, cables, and accessories.**
- Using unauthorized batteries, chargers, cables, or accessories can cause batteries to explode, damage your camera, or cause injury.
- Samsung is not responsible for damage or injuries caused by unapproved batteries, chargers, cables, or accessories.

**Use the battery only for its intended purpose.**
Misusing the battery may cause a fire or electric shock.

**Do not touch the flash while it fires.**
The flash is very hot when fired and may burn your skin.

**When you use the AC charger, turn off the camera before you disconnect the power to the AC charger.**
Failing to do so may result in fire or electric shock.

**Disconnect the charger from the wall socket when not in use.**
Failing to do so may result in fire or electric shock.

**Do not use a damaged power supply cord, plug, or loose outlet when you charge batteries.**
This may cause a fire or electric shock.

**Do not allow the AC charger to come in contact with the +/- terminals on the battery.**
This may cause a fire or electric shock.

**Do not drop or subject the camera to strong impacts.**
Doing so may damage the screen or external or internal components.

**Exercise caution when you connect cables or adapters and install batteries and memory cards.**
If you force the connectors, improperly connect cables, or improperly install batteries and memory cards, you can damage ports, connectors, and accessories.

**Keep cards with magnetic strips away from the camera case.**
Information stored on the card may be damaged or erased.

**Never use a damaged charger, battery, or memory card.**
This may result in electric shock or camera malfunction or cause a fire.

**Do not place the camera in or near magnetic fields.**
Doing so may cause the camera to malfunction.

**Do not use the camera if the screen is damaged.**
If the glass or acrylic parts are broken, visit a Samsung Electronics Service Center to have the camera repaired.

**Check that the camera is operating properly before use.**
The manufacturer takes no responsibility for any loss of files or damage that may result from camera malfunction or improper use.

**You must plug the small end of the USB cable into your camera.**
If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.

**Avoid interference with other electronic devices.**
Your camera emits radio frequency (RF) signals that may interfere with unshielded or improperly shielded electronic equipment, such as pacemakers, hearing aids, medical devices, and other electronic devices in homes or vehicles. Consult the manufacturers of your electronic devices to solve any interference problems you experience. To prevent unwanted interference, use only Samsung-approved devices or accessories.

**Use your camera in the normal position.**
Avoid contact with your camera's internal antenna.

## Data transference and your responsibilities

- Data transferred via WLAN can be hacked, so avoid transferring sensitive data in public areas or on open networks.
- The camera manufacturer is not liable for any data transfers that infringe on copyrights, trademarks, intellectual property laws, or public decency ordinances.

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- Wi-Fi®, the Wi-Fi CERTIFIED logo, and the Wi-Fi logo are registered trademarks of the Wi-Fi Alliance.
- Trademarks and trade names used in this manual are the property of their respective owners.

- Camera specifications or contents of this manual may be changed without prior notice due to an upgrade of the camera's functions.
- We recommend using your camera within the country where you purchased it.
- Use this camera responsibly and adhere to all laws and regulations concerning its use.
- You are not allowed to reuse or distribute any part of this manual without prior permission.

## Outline of the User Manual

Basic functions 13

Learn about what is in the product box, the camera's layout, what the icons mean, and basic shooting functions.

Extended functions 37

Learn how to capture a photo and record a video by selecting a mode.

Shooting options 48

Learn how to set the options in Shooting mode.

Playback/Editing 69

Learn how to play back photos or videos, and edit photos. Also, learn how to connect your camera to your computer or TV.

Wireless network 88

Learn how to connect to wireless local area networks (WLANs) and use functions.

Settings 105

Refer to options to configure your camera's settings.

Appendixes 111

Get information about error messages, specifications, and maintenance.

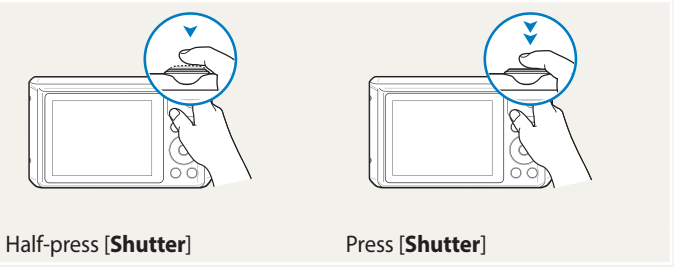
## Icons used in this manual

| Icon | Function |
|---|---|
| | Additional information |
| | Safety warnings and precautions |
| [ ] | Camera buttons. For example, [**Shutter**] represents the shutter button. |
| ( ) | Page number of related information |
| → | The order of options or menus you must select to perform a step; for example: Select **Face Detection** → **Normal** (represents Select **Face Detection**, and then select **Normal**). |
| * | Annotation |

## Expressions used in this manual

**Pressing the shutter**

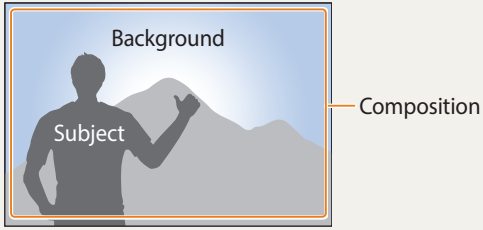
- Half-press [**Shutter**]: Press the shutter halfway down
- Press [**Shutter**]: Press the shutter all the way down



Half-press [**Shutter**] Press [**Shutter**]

**Subject, background, and composition**

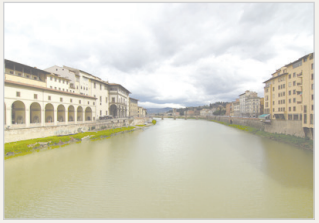
- **Subject**: The main object in a scene, such as a person, animal, or still life
- **Background**: The objects around the subject
- **Composition**: The combination of a subject and background




**Exposure (Brightness)**

The amount of light that enters your camera determines the exposure. You can alter the exposure by changing the shutter speed, aperture value, or ISO sensitivity. By altering the exposure, your photos will be darker or lighter.

▲ Normal exposure



▲ Overexposure (too bright)

# Basic troubleshooting

Learn to solve common problems by setting shooting options.

| | |
|---|---|
| **The subject's eyes appear red.** | Red eye occurs when the subject's eyes reflect light from the camera flash.<br>• Set the flash option to **Red-eye** or **Red-eye Fix**. (p. 52)<br>• If the photo has already been captured, select **Red-eye Fix** in Photo Editor mode. (p. 81) |
| **Photos have dust spots.** | If dust particles are present in the air, you may capture them in photos when you use the flash.<br>• Turn off the flash or avoid capturing photos in a dusty place.<br>• Set ISO sensitivity options. (p. 54) |
| **Photos are blurred.** | Blurring can occur if you capture photos in low light conditions or hold the camera incorrectly.<br>Use the OIS function or half-press [**Shutter**] to ensure the subject is in focus. (p. 35) |
| **Photos are blurred when shooting at night.** | As the camera tries to let in more light, the shutter speed slows. This can make it difficult to hold the camera steady long enough to capture a clear photo and may result in camera shake.<br>• Select **Night** in Smart mode. (p. 42)<br>• Turn on the flash. (p. 52)<br>• Set ISO sensitivity options. (p. 54)<br>• Use a tripod to prevent your camera from shaking. |
| **Subjects come out too dark because of backlighting.** | When the light source is behind the subject or when there is a high contrast between light and dark areas, the subject may appear too dark.<br>• Avoid shooting toward the sun.<br>• Set the flash option to **Fill in**. (p. 52)<br>• Adjust the exposure. (p. 61)<br>• Set the Auto Contrast Balance (**ACB**) option. (p. 62)<br>• Set the metering option to **Spot** if a subject is in the center of the frame. (p. 62) |

# Quick reference

## Capturing photos of people

- Smart mode > Beauty Face ▶ 42
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# Basic functions

Learn about what is in the product box, the camera's layout, what the icons mean, and basic shooting functions.


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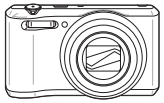
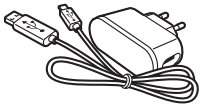
# Unpacking

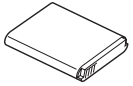
The following items are included in your product box.



Camera

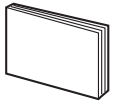


AC adapter/USB cable



Rechargeable battery

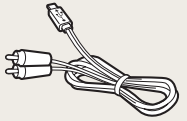
Strap



Quick Start Guide

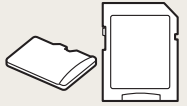
**Optional accessories**

Camera case



A/V cable

Battery charger

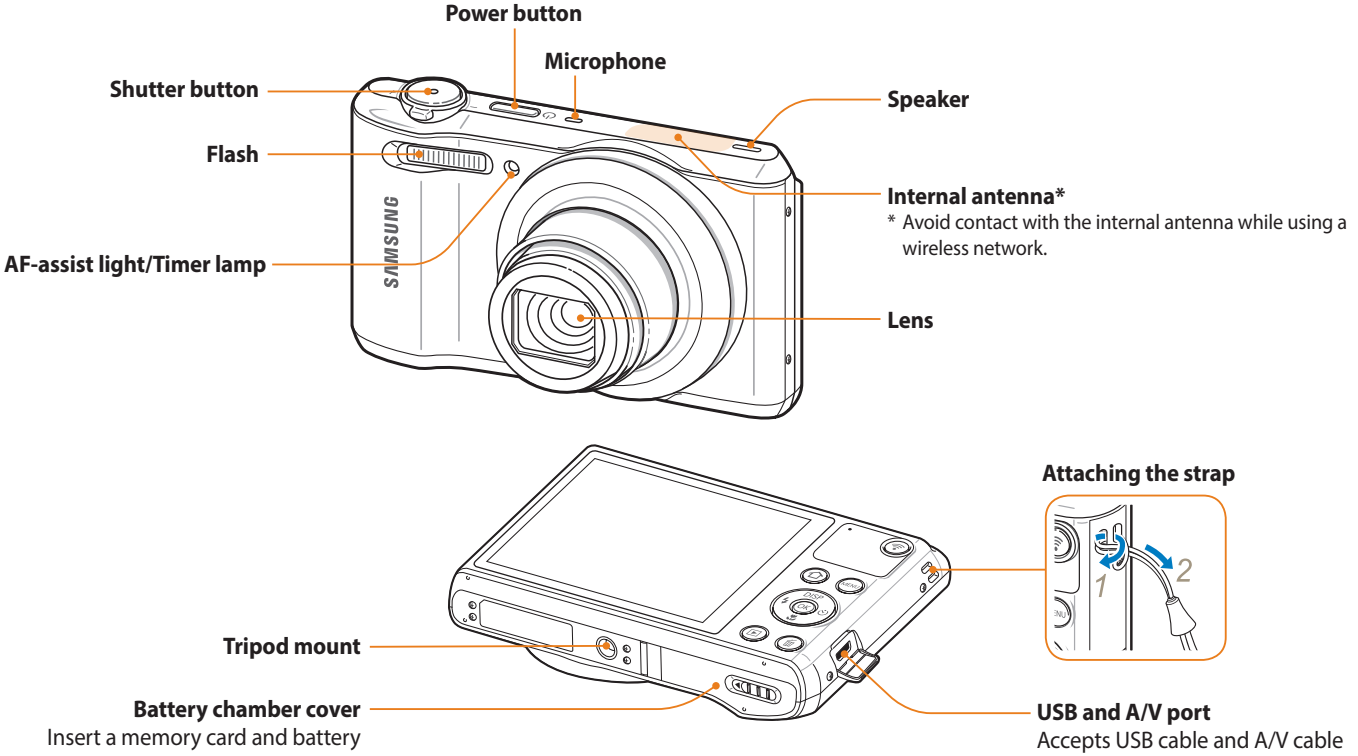


Memory card/Memory card adapter

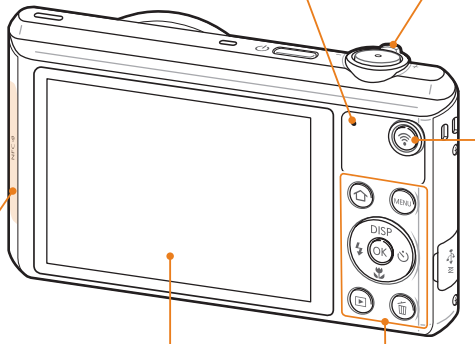
- The illustrations may differ slightly from the items shipped with your product.
- The items included in the box may differ depending on the model.
- You can purchase optional accessories at a retailer or a Samsung service center. Samsung is not responsible for any problems caused by using unauthorized accessories.

# Camera layout

Before you start, familiarize yourself with your camera's parts and their functions.



**Status lamp**
- **Blinking**: When the camera is saving a photo or video, being read by a computer, when the image is out of focus, or when the camera is connecting to WLAN or sending a photo
- **Steady**: When the camera is connected to a computer, charging the battery, or when the image is in focus




**Zoom button**
- **In Shooting mode**: Zoom in or out
- **In Playback mode**: Zoom in on part of a photo or view files as thumbnails, or adjust the volume

**DIRECT LINK button**
Start a preset Wi-Fi function. (p. 17)

**NFC tag**
Launch an NFC feature by reading a tag from an NFC-enabled device. (p. 93)

**Display**

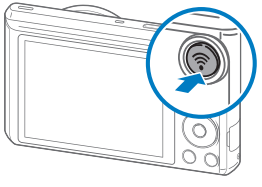
**Buttons**
(See the table below)

| Button | Description |
|---|---|
| ⌂ | Access the Home screen. (p. 23) |
| MENU | Access options or menus. |
| ▶ | Enter Playback mode. |
| 🗑 | Delete files in Playback mode. |

| Button | Description | | |
|---|---|---|---|
| DISP / OK | | **Basic functions** | **Other functions** |
| | DISP | Change the display option. | Move up |
| | ❀ | Change the macro option. | Move down |
| | ϟ | Change the flash option. | Move left |
| | ⏲ | Change the timer option. | Move right |
| OK | Confirm the highlighted option or menu. | | |

## Using the DIRECT LINK button

You can turn on the Wi-Fi feature conveniently with [Wi-Fi].
Press [Wi-Fi] to activate the Wi-Fi function that you have designated.
Press [Wi-Fi] again to return to the previous mode.



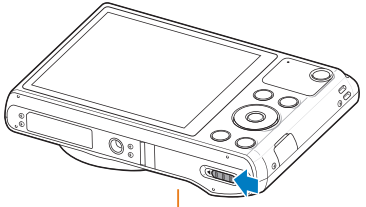
### Setting a DIRECT LINK button option

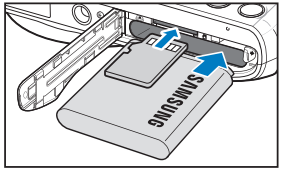
You can select a Wi-Fi function to launch when you press [Wi-Fi].

1. On the Home screen, scroll to **<Basic>**.
2. Select Settings.
3. Select **General** → **DIRECT LINK (Wi-Fi Button)**.
4. Select a Wi-Fi feature. (p. 110)

# Inserting the battery and memory card

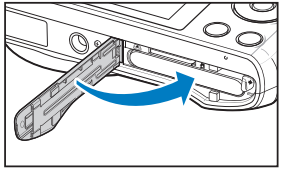
Learn how to insert the battery and an optional memory card into the camera.

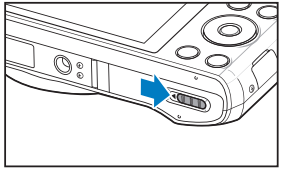




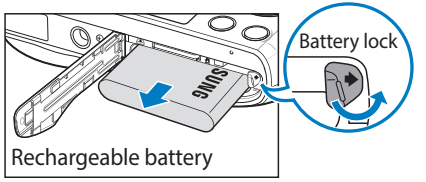

Insert a memory card with the gold-colored contacts facing up.

Insert the battery with the Samsung logo facing up.

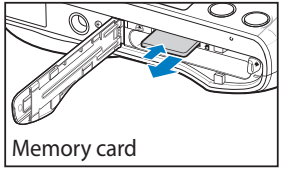




## Removing the battery and memory card




Slide the lock to the right to release the battery.

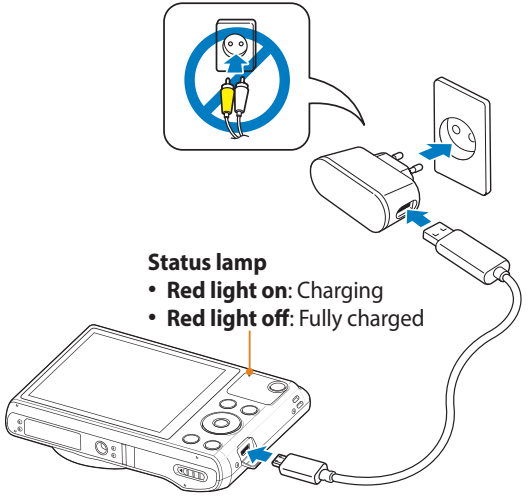



Push the card gently until it disengages from the camera, and then pull it out of the slot.

# Charging the battery and turning on your camera

## Charging the battery

Before you use the camera for the first time, you must charge the battery. Plug the small end of the USB cable into your camera, and then plug the other end of the USB cable into the AC adapter.

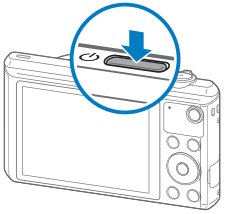



Use only the AC adapter and USB cable supplied with your camera. If you use another AC adapter (such as SAC-48), the camera battery may not charge or work properly.

## Turning on your camera

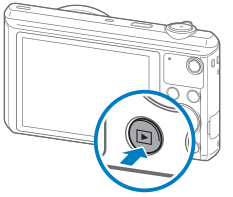
Press [⏻] to turn your camera on or off.

- The initial setup screen appears when you turn on the camera for the first time. (p. 20)



### Turning on your camera in Playback mode

Press [▶]. The camera turns on and immediately accesses Playback mode.



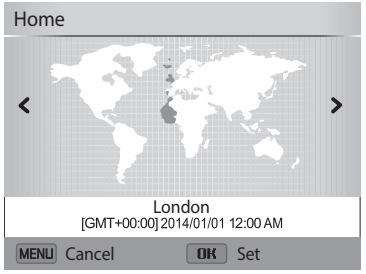
If you turn on your camera by pressing and holding [▶], the camera does not emit any sounds.

# Performing the initial setup

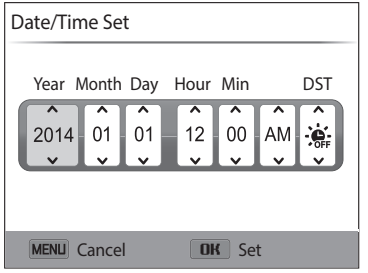
When you turn on your camera for the first time, the initial setup screen appears. Follow the steps below to configure the camera's basic settings. The language is preset for the country or region where the camera is sold. You can change the language as desired.

1 Press [▲] to select **Time Zone**, and then press [▶] or [**OK**].

2 Press [◀/▶] to select a time zone, and then press [**OK**].




3 Press [▲] to select **Date/Time Set**, and then press [▶] or [**OK**].




- The screen may differ depending on the language you selected.

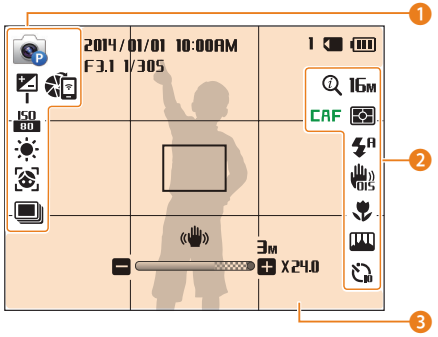
4 Press [◀/▶] to select an item.

5 Press [**DISP**/▲] to set the date, time, and daylight-saving time, and then press [**OK**].

6 Press [▼] to select **Date Type**, and then press [⏲] or [**OK**].
7 Press [**DISP**/▼] to select a date type, and then press [**OK**].
8 Press [▼] to select **Time Type**, and then press [⏲] or [**OK**].
9 Press [**DISP**/▼] to select a time type, and then press [**OK**].
10 Press [**MENU**] to finish the initial setup.

# Learning icons

The icons the camera displays on the screen change according to the mode you select or the options you set. If you change a shooting option, the corresponding icon will blink briefly in yellow.




### 1 Shooting options (left)

| Icon | Description |
|---|---|
| | Shooting mode |
| | Exposure value adjusted |
| ISO 80 | ISO sensitivity |
| | White balance |
| | Face detection |
| | Burst option |
| | AutoShare On |

### 2 Shooting option (right)

| Icon | Description |
|---|---|
| | Intelli zoom on |
| CAF | Continuous auto focus activated |
| 16M | Photo resolution |
| HD | Video resolution |
| | Metering |
| 30 | Frame rate (per second) |
| A | Flash |
| ZOOM | Zoom Mute on |
| OIS | Optical Image Stabilization (OIS) |
| | Focus Option |
| | Image adjustment (sharpness, contrast, and saturation) |
| 10 | Timer |

### 3 Shooting information

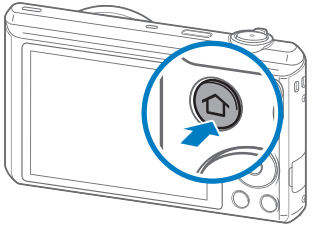
| Icon | Description |
|---|---|
| 2014/01/01 | Current date |
| 10:00 AM | Current time |
| 1 | Available number of photos |
| | Memory card inserted |
| | • : Fully charged<br>• : Partially charged<br>• : Empty (Recharge)<br>• : Charging (Connected with the charger) |
| F 3.1 | Aperture value |
| 1/305 | Shutter speed |
| 00:00:10 | Available recording time |
| | Auto focus frame |
| | Camera shake |
| | Zoom indicator |
| 3M | Photo resolution when the Intelli zoom is on |
| X24.0 | Zoom ratio |

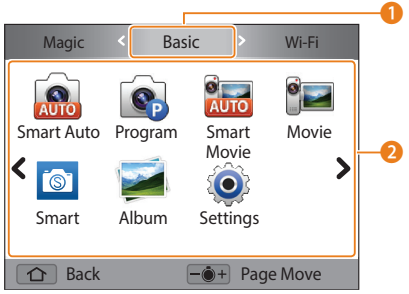
# Using the Home screen

You can select a shooting mode or access the settings menu by selecting the icons on the Home screen.

## Accessing the Home screen

In Shooting or Playback mode, press [⌂]. Press [⌂] again to return to the previous mode.






| No. | Description |
|---|---|
| 1 | Current Home screen<br>• Rotate [**Zoom**] to the left or right to switch to another Home screen.<br>• Press [**DISP**] to scroll to the Home screen name, and then press [ϟ/⏲] to switch to another Home screen.<br>• Press [ϟ/⏲] repeatedly to switch to another Home screen. |
| 2 | Mode icons<br>• Press [**DISP**/✋/ϟ/⏲] to scroll to a desired mode, and then press [**OK**] to access the mode. |

## Icons on the Home screen

**<Basic>**

| Icon | Description |
|---|---|
| | **Smart Auto**: Capture a photo with a scene mode selected automatically by the camera. (p. 38) |
| | **Program**: Capture a photo with settings you have adjusted manually. (p. 39) |
| | **Smart Movie**: Record a video with a scene mode selected automatically by the camera. (p. 40) |
| | **Movie**: Record a video. (p. 41) |
| | **Smart**: Capture a photo with options that are preset for a specific scene. (p. 42) |
| | **Album**: View files as thumbnails. (p. 71) |
| | **Settings**: Adjust settings to match your preferences. (p. 105) |

**<Wi-Fi>**

| Icon | Description |
|---|---|
| | **MobileLink**: Send photos or videos to a smart phone. (p. 95) |
| | **Remote Viewfinder**: Use a smart phone as a remote shutter release and see a preview of an image from your camera on your smart phone. (p. 96) |
| | **Email**: Send photos or videos stored on the camera via email. (p. 98) |
| | **SNS & Cloud**: Upload photos or videos to file sharing services. (p. 101) |
| | **Samsung Link**: View files on a Samsung Link device connected to the same AP. (p. 103) |

**<Magic>**

| Icon | Description |
|---|---|
| | **Live Panorama**: Capture and combine a series of photos to create a panoramic image. (p. 44) |
| | **Photo Filter**: Capture a photo with various filter effects. (p. 45) |
| | **Movie Filter**: Record a video with various filter effects. (p. 46) |
| | **Photo Editor**: Edit photos with various effects. (p. 78) |

## Setting Wallpaper

Set wallpaper for the Home screen with the desired image.

1 On the Home screen, scroll to **<Basic>**.

2 Select .

3 Select **Display** → **Wallpapers**.

4 Select an option.

| Option | Description |
|---|---|
| **Wallpaper Gallery** | Select the desired wallpaper from the default gallery. |
| **Album** | Set a photo you have captured as a wallpaper. |

5 Scroll to the desired wallpaper, and then press [**OK**].

- If you select a photo you have captured, you can set a specified area as wallpaper. Rotate [**Zoom**] to the left or right to reduce or enlarge the area. Press [**DISP**/✿/ϟ/◷] to move the area.

6 Press [**OK**] to save.

- If you select a photo you have captured, press [**OK**], and then select **Yes**.

You can also set the photo you are viewing as wallpaper by pressing [**MENU**], and then selecting **Set Wallpaper** in Playback mode.

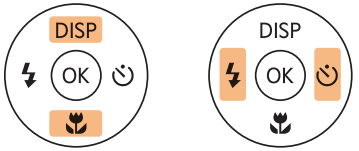
# Selecting options or menus

To select an option or a menu, press [**MENU**], and then press [**DISP**/✿/ϟ/◷] or [**OK**].

1 In Shooting or Playback mode, press [**MENU**].

2 Scroll to an option or a menu.

- To move up or down, press [**DISP**] or [✿].
- To move left or right, press [ϟ] or [◷].







3 Press [**OK**] to confirm the highlighted option or menu.

## Going back to the previous menu

Press [**MENU**] to go back to the previous menu.

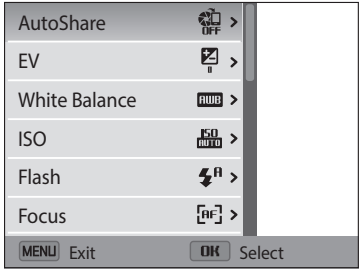
Half-press [**Shutter**] to return to Shooting mode.

**For example, to select a White Balance option in Program mode:**

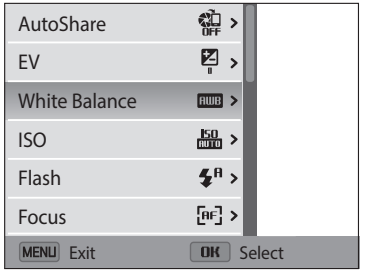
1 On the Home screen, scroll to **<Basic>**.

2 Select .

3 Press [**MENU**].




4 Press [**DISP**/] to select **White Balance**, and then press [] or [**OK**].




5 Press [/] to select a White Balance option.

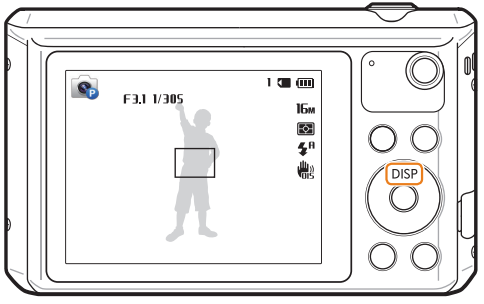
6 Press [**OK**] to save your settings.

# Setting the display and sound

Learn how to change the basic display information and sound settings.

## Setting the display type

You can select a display type for the Shooting or Playback mode. Each type displays different shooting or playback information. See the table below.




Press [**DISP**] repeatedly to change the display type.

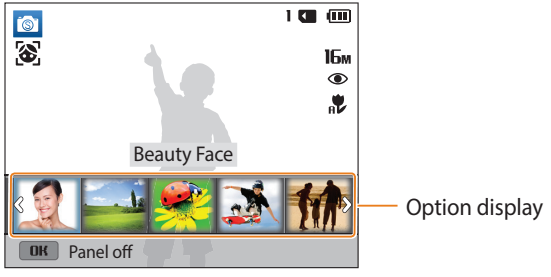
| Mode | Display type |
|---|---|
| **Shooting** | • Hide all information about shooting options.<br>• Show all information about shooting options. |
| **Playback** | • Hide all information about the current file.<br>• Hide all information about the current file except basic information.<br>• Show all information about the current file. |

### Setting the option display view

You can hide or show the option display appearing in some modes.

Press [**OK**] repeatedly.

- Hide the option display.
- Show the option display.




▲ An example in Smart mode

## Setting the sound

Turn the sound your camera emits when you perform functions on or off.

1. On the Home screen, scroll to **<Basic>**.
2. Select .
3. Select **Sounds** → **Beep Sound**.
4. Select an option.

| Option | Description |
|---|---|
| **Off** | The camera does not emit any sounds. |
| **On** | The camera emits sounds. |

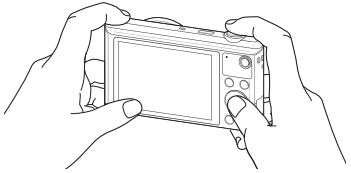
# Capturing photos

Learn how to capture photos easily and quickly in Smart Auto mode.

1 On the Home screen, scroll to **<Basic>**.

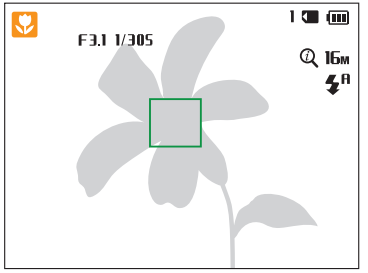
2 Select .

3 Align your subject in the frame.



4 Half-press [**Shutter**] to focus.

- A green frame means the subject is in focus.
- A red frame means the subject is out of focus.




5 Press [**Shutter**] to capture a photo.

6 Press [▶] to view the captured photo.

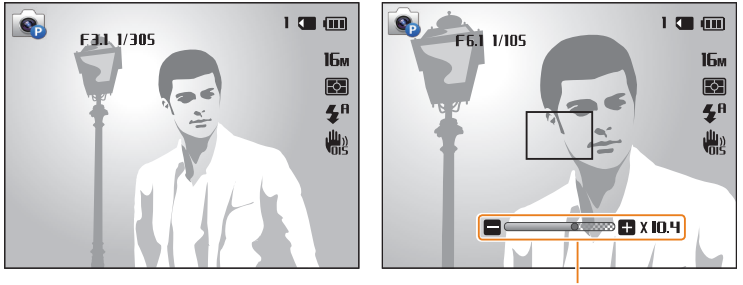
- To delete the photo, press [🗑], and then select **Yes**.

7 Press [▶] to return to Shooting mode.

See page 35 for tips to get clearer photos.

## Zooming

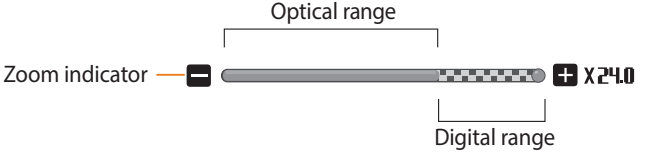
You can capture close-up photos by adjusting the zoom.




When you rotate the zoom button, the zoom ratio shown on the screen may change inconsistently.

### Digital zoom

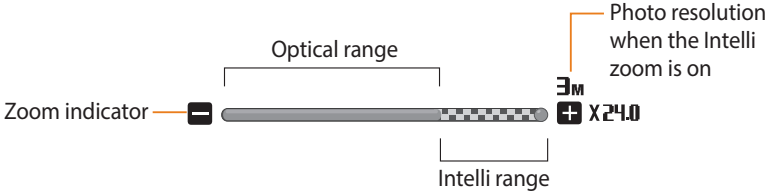
Digital zoom is supported by default in Shooting mode. If you zoom in on a subject in Shooting mode and the zoom indicator is in the digital range, your camera is using Digital zoom. By using both the 12X Optical zoom and 2X Digital zoom, you can zoom in up to 24 times.




- Depending on the shooting options you selected, Digital zoom may not be available.
- If you capture a photo with Digital zoom, the photo quality may be lower than normal.

## Intelli zoom

If the zoom indicator is in the Intelli range, your camera is using Intelli zoom. Photo resolution varies according to the zoom ratio if you use Intelli zoom. By using both Optical zoom and Intelli zoom, you can zoom in up to 24 times.




- Depending on the shooting options you selected, Intelli zoom may not be available.
- Intelli zoom helps you capture a photo with less quality deterioration than Digital zoom. However, the photo quality may be lower than when you use Optical zoom.
- Intelli zoom is available only when you set a 4:3 resolution ratio. If you set another resolution ratio with Intelli zoom on, Intelli zoom will be turned off automatically.
- Intelli zoom is always on in Smart Auto mode.

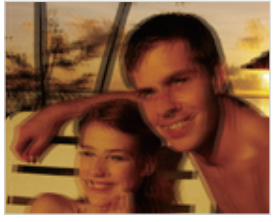
## Setting Intelli zoom

1. In Shooting mode, press [**MENU**].
2. Select **Intelli Zoom**.
3. Select an option.

| Icon | Description |
|---|---|
| | **Off**: The Intelli zoom is deactivated. |
| | **On**: The Intelli zoom is activated. |

## Reducing camera shake (OIS)

Reduce camera shake optically in Shooting mode.



▲ Before correction

▲ After correction

1 In Shooting mode, press [**MENU**].

2 Select **OIS**.

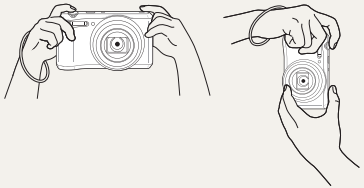
3 Select an option.

| Icon | Description |
|---|---|
| | **Off**: OIS is deactivated. |
| | **On**: OIS is activated. |

- OIS may not function properly when:
  - you move your camera to follow a moving subject
  - you use Digital zoom
  - there is too much camera shake
  - the shutter speed is slow (for example, when you capture night scenes)
  - the battery is low
  - you capture a close-up shot
- If you use the OIS function with a tripod, your images may be blurred by the vibration of the OIS sensor. Deactivate the OIS function when you use a tripod.
- If the camera is hit or dropped, the display will be blurry. If this occurs, turn off the camera, and then turn it on again.

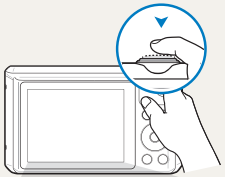
# Tips for getting a clearer photo

## Holding your camera correctly

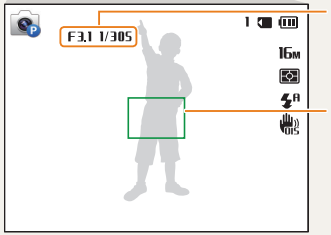


Ensure nothing is blocking the lens, flash, or microphone.

## Half-pressing the shutter button



Half-press [**Shutter**] and adjust the focus. The camera adjusts the focus and exposure automatically.




The camera sets the aperture value and shutter speed automatically.

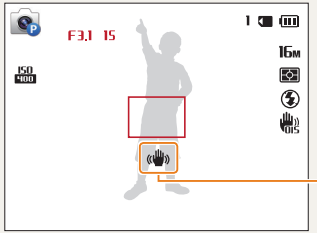
**Focus frame**

- Press [**Shutter**] to capture the photo if the focus frame appears in green.
- Change the composition and half-press [**Shutter**] again if the focus frame appears in red.

## Reducing camera shake

Set the Optical Image Stabilization option to reduce camera shake optically. (p. 34)

## When is displayed




Camera shake

When you shoot in the dark, avoid setting the flash option to **Slow Sync** or **Off**. The aperture remains open longer and it may be harder to hold the camera steady long enough to capture a clear photo.

- Use a tripod or set the flash option to **Fill in**. (p. 52)
- Set ISO sensitivity options. (p. 54)

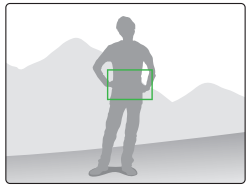
## Preventing your subject from being out of focus

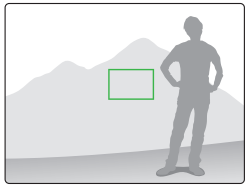
It may be difficult to get your subject in focus when:

- there is little contrast between the subject and background (for example, when your subject is wearing clothing that is similar in color to the background)
- the light source behind the subject is too bright
- the subject is shiny or reflective
- the subject includes horizontal patterns, such as blinds
- the subject is not positioned in the center of the frame

**Using the focus lock**

Half-press [**Shutter**] to focus. When the subject is in focus, you can reposition the frame to change the composition. When you are ready, press [**Shutter**] to capture your photo.

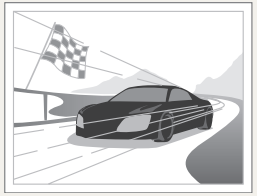




- When you capture photos in low light

Turn on the flash. (p. 52)

- When subjects are moving rapidly



Use the Continuous or Motion Capture function. (p. 65)

# Extended functions

Learn how to capture a photo and record a video by selecting a mode.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# Using Basic modes

Capture photos or record videos using basic modes. You can also use the Smart mode.

## Using the Smart Auto mode

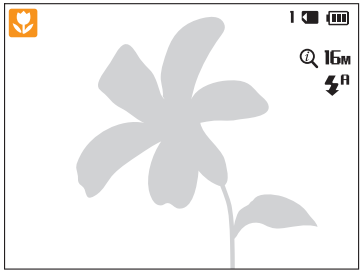
In Smart Auto mode, your camera automatically chooses the appropriate camera settings based on the type of scene it detects. The Smart Auto mode is helpful if you are not familiar with the camera settings for various scenes.

1 On the Home screen, scroll to **<Basic>**.

2 Select .

3 Align your subject in the frame.

- The camera automatically selects a scene. An appropriate scene icon appears at the top left of the screen. The icons are listed below.




| Icon | Description |
|---|---|
| | Landscapes |
| | Scenes with bright white backgrounds |
| | Landscapes at night |
| | Portraits at night |
| | Landscapes with backlighting |
| | Portraits with backlighting |
| | Portraits |
| | Close-up photos of objects |
| | Close-up photos of text |
| | Sunsets |
| | Indoors, dark |
| | Partially lit |
| | Close-up with spot lighting |
| | Portraits with spot lighting |
| | Blue skies |
| | Forested areas |
| | Close-up photos of colorful subjects |

| Icon | Description |
|---|---|
| | Camera is stabilized or on a tripod (when shooting in the dark)* |
| | Actively moving subjects* |

* This icon appears next to the scene icon.

4 Half-press [**Shutter**] to focus.

5 Press [**Shutter**] to capture the photo.

- If the camera does not recognize an appropriate scene mode, it uses the default settings for the Smart Auto mode.
- Even if it detects a face, the camera may not select a portrait mode depending on the subject's position or lighting.
- The camera may not select the correct scene depending on the shooting conditions, such as camera shake, lighting, or distance to the subject.
- Even if you use a tripod, the camera may not detect the mode if the subject is moving.
- The camera consumes more battery power, because it changes settings often to select appropriate scenes.

## Using the Program mode

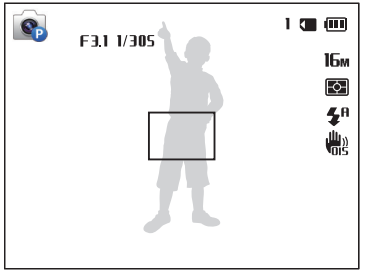
In Program mode, you can set most options, except the shutter speed and aperture value, which the camera sets automatically.

1 On the Home screen, scroll to **<Basic>**.

2 Select .

3 Set the desired options.

- For a list of options, refer to "Shooting options". (p. 48)




4 Align your subject in the frame, and then half-press [**Shutter**] to focus.

5 Press [**Shutter**] to capture the photo.

## Using the Smart Movie mode

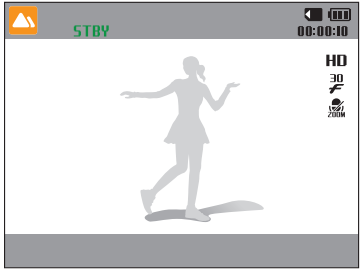
In Smart Movie mode, your camera automatically chooses the appropriate camera settings based on the scene it has detected.

1 On the Home screen, scroll to **<Basic>**.

2 Select AUTO.

3 Align your subject in the frame.

- The camera automatically selects a scene. An appropriate scene icon will appear at the top left of the screen.




| Icon | Description |
|---|---|
| | Landscapes |
| | Sunsets |
| | Blue skies |
| | Forested areas |

4 Press [**Shutter**] to start recording.

5 Press [**Shutter**] again to stop recording.

- If the camera does not recognize an appropriate scene mode, it uses the default settings for Smart Movie mode.
- The camera may not select the correct scene depending on the shooting conditions, such as camera shake, lighting, and distance to the subject.

## Using the Movie mode

In Movie mode, you can customize settings to record HD videos (1280x720) of up to 20 minutes in length. The camera saves recorded videos as MP4 (H.264) files.

- H.264 (MPEG-4 part10/AVC) is a high-compression video format established by the international standards organizations ISO-IEC and ITU-T.
- If you use memory cards with slow write speeds, the camera may not save videos properly. Video recordings may be corrupted or fail to play back correctly.
- Memory cards with slow writing speeds will not support high-resolution videos. To record high-resolution videos, use memory cards with faster write speeds.
- If you activate the Image Stabilization function while recording a video, the camera may record the operating sound of the Image Stabilization function.
- If you use the zoom function when recording a video, the camera may record the noise of the zoom operating. In this case, use the Zoom Mute function. (p. 67)
- CAF (Continuous AF): Use this function to shoot by changing composition while automatically focusing on the center area.

1 On the Home screen, scroll to **<Basic>**.

2 Select .

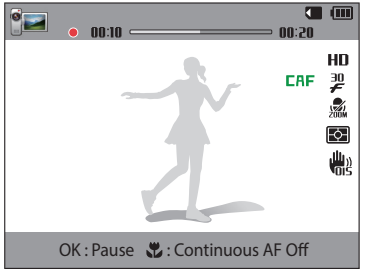
3 Set desired options.
- For a list of options, refer to "Shooting options". (p. 48)

4 Press [**Shutter**] to start recording.
- While recording a video, press [] once to cancel the continuous auto focus function and once again to activate the function.

5 Press [**Shutter**] again to stop recording.

### Pause recording

The camera allows you to temporarily pause a video while recording. With this function, you can record separate scenes as a single video.

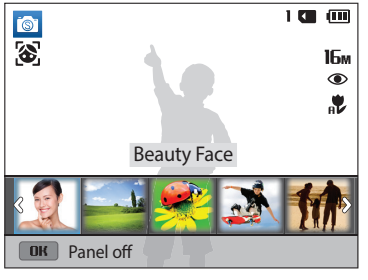



- Press [OK] to pause while recording.
- Press [OK] to resume.

## Using the Smart mode

In Smart mode, you can capture a photo with options that are preset for a specific scene.

1. On the Home screen, scroll to **<Basic>**.
2. Select .
3. Select a scene.



| Option | Description |
|---|---|
| **Beauty Face** | Capture a portrait with options to hide facial imperfections. |
| **Landscape** | Capture still-life scenes and landscapes. |
| **Macro** | Capture small or close-up subjects. |
| **Action Freeze** | Capture subjects moving at high speed. |
| **Silhouette** | Capture subjects as dark shapes against a light background. |
| **Sunset** | Capture scenes at sunset, with natural-looking reds and yellows. |
| **Night** | Capture scenes at night or in low lighting (using a tripod is recommended). |
| **Fireworks** | Capture scenes with fireworks. |
| **Light Trace** | Capture scenes with the light trailing in low-light conditions. |

4 Align your subject in the frame, and then half-press [**Shutter**] to focus.

5 Press [**Shutter**] to capture the photo.

## Using the Album

You can view files as thumbnails.
Refer to "Viewing files as thumbnails". (p. 71)

## Using the Settings menu

You can set or change the camera settings.
Refer to "Settings". (p. 105)

# Using Magic modes

Capture a photo or record a video by selecting appropriate modes for various scenes or effects.

## Using the Live Panorama mode

In Live Panorama mode, you can capture a wide panoramic scene in a single photo. Capture and combine a series of photos to create a panoramic image.

▲ Shooting example

1 On the Home screen, scroll to **<Magic>**.

2 Select .

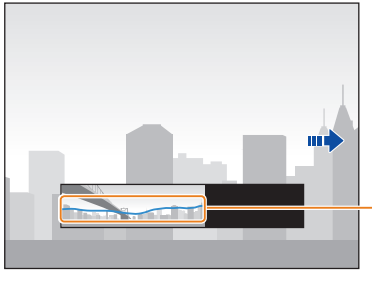
3 Align your subject in the frame, and then half-press [**Shutter**] to focus.

- Align the camera with the far left or the far right, or very top or bottom, of the scene you want to capture.

4 Press and hold [**Shutter**] to start shooting.

5 With [**Shutter**] pressed, slowly move the camera in the direction that will let it capture the rest of the panorama.

- Arrows pointing in the direction of motion are displayed, and the entire shooting image is displayed in the preview box.
- When the viewfinder is aligned with the next scene, the camera captures the next photo automatically.



Stability: A flatter line represents less camera shake.

6 When you are finished, release [**Shutter**].

- When you have captured all the necessary shots, the camera combines them into one panoramic photo.

- For best results when capturing panoramic photos, avoid the following:
  - moving the camera too quickly or too slowly
  - moving the camera too little to capture the next image
  - moving the camera at irregular speeds
  - shaking the camera
  - shooting in dark places
  - capturing moving subjects nearby
  - shooting conditions where the brightness or color of light is changing
- Photos taken are automatically saved, and shooting is stopped under the following conditions:
  - if you change the shooting direction while shooting
  - if you move the camera too rapidly
  - if you don't move the camera
- Selecting Live Panorama mode will disable the digital and optical zoom functions. If you select Live Panorama mode while the lens is zoomed in, the camera automatically zooms out to the default position.
- Some shooting options are not available.
- The camera may stop shooting due to the shooting composition or movement within the scene.
- Your camera may not capture the last scene in its entirety if you stop moving the camera exactly where you want the scene to end. To capture the entire scene, move your camera slightly beyond the point where you want the scene to end.

## Using the Photo Filter mode

Apply various filter effects to your photos to create unique images.

Miniature

Vignetting

Fish-eye

1 On the Home screen, scroll to **<Magic>**.

2 Select .

3 Select an effect.

| Option | Description |
|---|---|
| **Miniature** | Apply a tilt-shift effect to make the subject appear in miniature. |
| **Vignetting** | Apply the retro-looking colors, high contrast, and strong vignette effect of Lomo cameras. |
| **Cross Filter** | Add lines that radiate outward from bright objects to imitate the visual effect of a cross filter. |
| **Fish-eye** | Distort close objects to imitate the visual effect of a fisheye lens. |
| **Classic** | Apply a black and white effect. |
| **Retro** | Apply a sepia tone effect. |

4 Align your subject in the frame, and then half-press [**Shutter**] to focus.

5 Press [**Shutter**] to capture a photo.

- Depending on the option you select, the resolution may change to 5M or less automatically.
- To apply filter effects to saved photos, press [**MENU**] and then select **Open Image** → an image.

## Using the Movie Filter mode

Apply various filter effects to your videos to create unique images.

1 On the Home screen, scroll to **<Magic>**.

2 Select .

3 Select an effect.

| Option | Description |
|---|---|
| **Miniature** | Apply a tilt-shift effect to make the subject appear in miniature. |
| **Vignetting** | Apply the retro-looking colors, high contrast, and strong vignette effect of Lomo cameras. |
| **Fish-eye** | Distort close objects to imitate the visual effect of a fisheye lens. |
| **Classic** | Apply a black and white effect. |
| **Retro** | Apply a sepia tone effect. |
| **Palette Effect 1** | Create a vivid look with sharp contrast and strong color. |
| **Palette Effect 2** | Make scenes clean and clear. |
| **Palette Effect 3** | Apply a soft brown tone. |
| **Palette Effect 4** | Create a cold and monotone effect. |

4 Press [**Shutter**] to start recording.

5 Press [**Shutter**] again to stop recording.

- If you select **Miniature**, playback speed will increase.
- If you select **Miniature**, you cannot record sound in the video.
- Depending on the option you select, the recording resolution may change to VGA or less automatically.

## Editing a photo

You can edit a photo in multiple ways.
Scroll to **<Magic>** on the Home screen, and then select .
Refer to "Editing a photo". (p. 78)

# Shooting options

Learn how to set the options in Shooting mode.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# Selecting a resolution and quality

Learn how to change the image resolution and quality settings.

## Selecting a resolution

As you increase the resolution, your photo or video will include more pixels, so it can be printed on larger paper or displayed on a larger screen. When you use a high resolution, the file size will also increase.

### Setting the photo resolution

1 In Shooting mode, press [**MENU**].

2 Select **Photo Size**.

3 Select an option.

| Icon | Description |
|---|---|
| 16M | **4608 X 3456**: Print on A1 paper. |
| 14MP | **4608 X 3072**: Print on A1 paper in wide ratio (3:2). |
| 12MW | **4608 X 2592** : Print on A1 paper in panorama ratio (16:9) or play back on an HDTV. |
| 10M | **3648 X 2736**: Print on A2 paper. |
| 5M | **2592 X 1944**: Print on A4 paper. |
| 3M | **1984 X 1488**: Print on A5 paper. |
| 2MW | **1920 X 1080**: Print on A5 paper in panorama ratio (16:9) or play back on an HDTV. |
| 1M | **1024 X 768**: Attach to an email. |

### Setting the video resolution

1 In Shooting mode, press [**MENU**].

2 Select **Movie Size**.

3 Select an option.

| Icon | Description |
|---|---|
| HD | **1280 X 720**: HD files to play back on an HDTV. |
| VGA | **640 X 480**: SD files to play back on an analog TV. |
| 240 WEB | **For Sharing**: Post to a sharing service via a wireless network (30 seconds maximum). |

## Selecting a photo quality

Set a photo quality setting. Higher image quality settings will result in larger file sizes. The camera compresses and saves the photos you capture in the JPEG format.

1 In Shooting mode, press [**MENU**].

2 Select **Quality**.

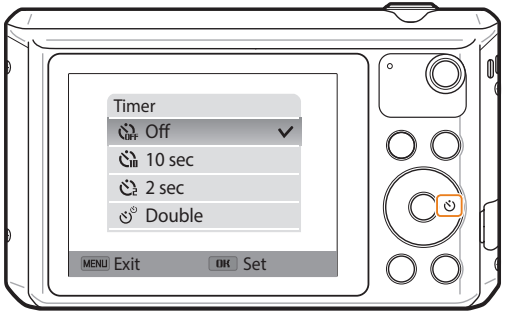
3 Select an option.

| Icon | Description |
|---|---|
| SF | **Super Fine**: Capture photos in super high quality. |
| F | **Fine**: Capture photos in high quality. |
| N | **Normal**: Capture photos in normal quality. |

# Using the timer

Learn how to set the timer to delay shooting.

1 In Shooting mode, press [⏲].




2 Select an option.

| Icon | Description |
|---|---|
| | **Off**: The timer is not active. |
| | **10 sec**: Capture a photo after a 10-second delay. |
| | **2 sec**: Capture a photo after a 2-second delay. |
| | **Double**: Capture one photo after a 10-second delay and another photo after a 2-second delay. |

Available options may differ depending on the shooting conditions.

3 Press [**Shutter**] to start the timer.

- The AF-assist light/timer lamp blinks. The camera will automatically capture a photo after the specified time has elapsed.

- Press [**Shutter**] or [⏲] to cancel the timer.
- Depending on the Face Detection options you selected, the timer function may not be available.
- Timer options are not available if you set burst options.
- In some modes, you can also set the timer option by pressing [**MENU**], and then selecting **Timer**.

# Shooting in the dark

Learn how to capture photos at night or in low light conditions.

## Preventing red-eye

When the flash fires when you capture a photo of a person in the dark, a red glow may appear in the person's eyes. To prevent this, select **Red-eye** or **Red-eye Fix**. Refer to flash options in "Setting a flash option."

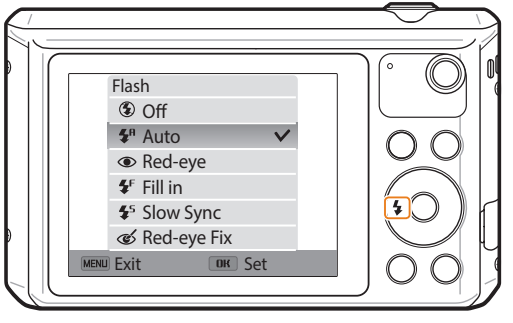
▲ Before correction

▲ After correction

## Setting a flash option

Use the flash when you capture photos in the dark or when you need more light in your photos.

1 In Shooting mode, press [ ].




2 Select an option.

| Icon | Description |
|---|---|
| | **Off**:<br>• The flash will not fire.<br>• The camera will display the shake warning when you are shooting in low light. |
| | **Auto**: The flash will fire automatically when the subject or background is dark. |

| Icon | Description |
|---|---|
| | **Red-eye**:<br>• The flash will fire twice when the subject or background is dark to reduce the red-eye effect.<br>• There is an interval between the 2 bursts of the flash. Do not move until the flash fires a second time. |
| | **Fill in**:<br>• The flash always fires.<br>• The camera automatically adjusts the intensity of the flash. |
| | **Slow Sync**:<br>• The flash fires and the shutter stays open longer.<br>• This option is recommended when you want to capture more ambient light to reveal more details in the background.<br>• Use a tripod to prevent your photos from blurring.<br>• The camera will display the shake warning when you are shooting in low light. |
| | **Red-eye Fix**:<br>• The flash fires twice when the subject or background is dark. The camera corrects red-eye through its advanced software analysis.<br>• There is an interval between the 2 bursts of the flash. Do not move until the flash fires a second time. |

Available options may differ depending on the shooting conditions.

- Flash options are not available if you set burst options or select **Self-Portrait**, **Blink Detection**.
- Make sure that your subjects are within the recommended distance from the flash. (p. 127)
- If light from the flash is reflected or there is a substantial amount of dust in the air, tiny spots may appear in your photo.
- In some modes, you can also set the flash option by pressing [**MENU**], and then selecting **Flash**.

## Adjusting the ISO sensitivity

The ISO sensitivity is the measure of a film's sensitivity to light as defined by the International Organization for Standardization (ISO). The higher ISO sensitivity you select, the more sensitive to light your camera becomes. Use a higher ISO sensitivity to capture better photos and reduce camera shake when not using the flash.

1 In Shooting mode, press [**MENU**].

2 Select **ISO**.

3 Select an option.

- Select ISO AUTO to use an appropriate ISO sensitivity based on the brightness of the subject and lighting.

Higher ISO sensitivities may result in more image noise.

# Changing the camera's focus

Learn how to adjust the camera's focus to suit the subject and the shooting conditions.

## Using macro

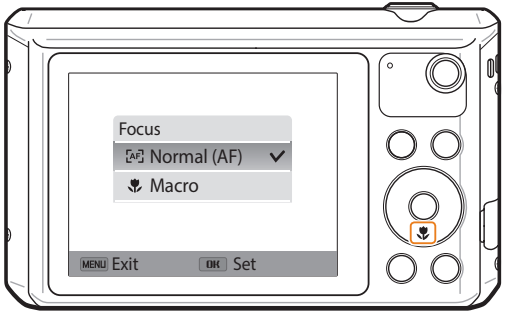
Use macro to capture close-up photos of subjects, such as flowers or insects. (Refer to "Using auto focus".)

- Try to hold the camera firmly to prevent blurry photos.
- Turn off the flash if the distance to the subject is less than 15.7 in. (40 cm).

## Using auto focus

To capture sharp photos, select the appropriate focus option according to your distance from the subject.

1 In Shooting mode, press [ ].



2 Select an option.

| Icon | Description |
|---|---|
| | **Normal (AF)**: Focus on a subject farther than 31 in. (80 cm) away. Farther than 98 in. (250 cm) away when you use the zoom. |
| | **Macro**: Focus on a subject that is 2-31 in. (5-80 cm) from the camera. 51-98 in. (130-250 cm) when you use the zoom. |
| | **Auto Macro**:<br>• Focus on a subject farther than 2 in. (5 cm) away. Farther than 51 in. (130 cm) away when you use the zoom.<br>• Auto Macro is set automatically in some modes. You cannot set it manually. |

Available options may differ depending on the shooting conditions.

In some modes, you can also set the focus option by pressing [**MENU**], and then selecting **Focus**.

## Adjusting the focus area

You can get clearer photos by selecting an appropriate focus area according to your subject's location in the scene.

1 In Shooting mode, press [**MENU**].

2 Select **Focus Area**.

3 Select an option.

| Icon | Description |
|---|---|
| | **Center AF**: Focus on the center of the frame (suitable when subjects are located at or near the center). |
| | **Multi AF**: Focus on one or more of 9 possible areas. |
| | **Tracking AF**: Focus on and track the subject. (p. 57) |

Available shooting options may differ depending on the shooting mode.

## Using tracking auto focus

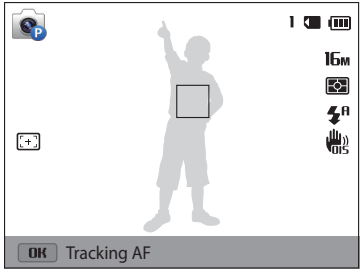
Tracking AF allows you to track and automatically focus on your subject, even when you are moving.

1 In Shooting mode, press [**MENU**].

2 Select **Focus Area** → **Tracking AF**.

3 Focus on the subject you want to track, and then press [**OK**].

- A focus frame appears on the subject and follows the subject as you move the camera.




- The white frame means that your camera is tracking the subject.
- When you half-press [**Shutter**], the green frame means that your subject is in focus.
- The red frame means that your camera failed to focus.

4 Press [**Shutter**] to capture the photo.

- If you do not select a focus area, the focus frame will appear in the center of the screen.
- Tracking a subject may fail when:
  - the subject is too small
  - the subject moves excessively
  - the subject is backlit or you are shooting in a dark place
  - colors or patterns on the subject and the background are the same
  - the subject includes horizontal patterns, such as blinds
  - the camera shakes excessively
- When tracking fails, the feature will be reset.
- If the camera fails to track the subject, you must reselect the subject to track.
- If the camera fails to focus, the focus frame will change to red and the focus will be reset.
- If you use this function, you cannot set Face Detection options, Timer options, Burst options, and Intelli zoom.

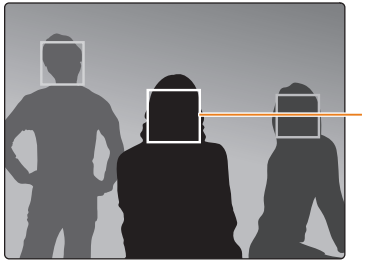
# Using Face Detection

If you use Face Detection options, your camera can automatically detect a human face. When you focus on a human face, the camera adjusts the exposure automatically. Use **Blink Detection** to detect closed eyes or **Smile Shot** to capture a smiling face.

## Detecting faces

Your camera automatically detects up to 10 human faces in one scene.

1. In Shooting mode, press [**MENU**].
2. Select **Face Detection** → **Normal**.



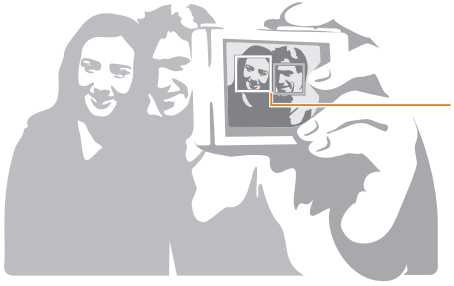
The face nearest the camera or nearest the center of the scene appears in a white focus frame and the rest of the faces appear in gray focus frames.

The closer you are to the subjects, the quicker your camera will detect faces.

## Capturing a self portrait shot

Capture photos of yourself. The camera sets the focus distance to close-up, and then emits a beep when ready.

1. On the Home screen, scroll to **<Basic>**.
2. Select → **Beauty Face**.
3. Press [**MENU**].
4. Select **Face Detection** → **Self-Portrait**.
5. Compose your shot with the lens facing you.
6. When you hear a quick beep, press [**Shutter**].



When faces are located in the center, the camera beeps rapidly.

If you turn **Volume** off in the sound settings, the camera will not emit a beep. (p. 107)

## Capturing a smile shot

The camera automatically releases the shutter when it detects a smiling face.

1 In Shooting mode, press [**MENU**].

2 Select **Face Detection** → **Smile Shot**.

3 Compose your shot.

- The camera automatically releases the shutter when it detects a smiling face.

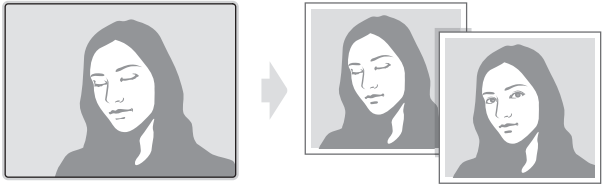
When your subject smiles broadly, your camera can detect the smile more easily.

## Detecting eye blinking

If your camera detects closed eyes, it will automatically capture 2 photos in succession.

1 In Shooting mode, press [**MENU**].

2 Select **Face Detection** → **Blink Detection**.



## Tips for detecting faces

- When your camera detects a face, it tracks the detected face automatically.
- Face Detection may not be effective when:
  - the subject is far from the camera
  - it is too bright or too dark
  - the subject is not facing the camera
  - the subject is wearing sunglasses or a mask
  - the subject's facial expression changes drastically
  - the subject is backlit or the lighting conditions are unstable
- When you set Face Detection options, the AF area is automatically set to Multi AF.
- Depending on the Face Detection options you selected, some Shooting options may not be available.
- Depending on the shooting options you selected, Face Detection options may not be available.

# Adjusting brightness and color

Learn how to adjust the brightness and color for better image quality.

## Adjusting the exposure manually (EV)

Depending on the intensity of the ambient light, your photos may be too bright or dark. In these cases, you can adjust the exposure to get a better photo.

▲ Darker (-)

▲ Neutral (0)

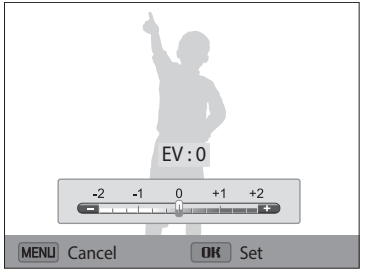
▲ Brighter (+)

1 In Shooting mode, press [**MENU**].

2 Select **EV**.

3 Press [ϟ/⏲] to adjust the exposure.

- The photo will be brighter as the exposure value increases.




4 Press [**OK**] to save your settings.

- Once you adjust the exposure, the setting will be stored automatically. You may need to change the exposure value later to avoid overexposure or underexposure.
- If you cannot decide on an appropriate exposure, select the **AEB** (Auto Exposure Bracket) option. The camera will capture 3 consecutive photos, each with a different exposure: normal, underexposed, and overexposed. (p. 65)

## Compensating for backlighting (ACB)

When the light source is behind your subject or there is high contrast between your subject and the background, your subject is likely to appear dark in the photo. In this case, set the Auto Contrast Balance (ACB) option.

▲ Without ACB

▲ With ACB

1 In Shooting mode, press [**MENU**].

2 Select **ACB**.

3 Select an option.

| Icon | Description |
|---|---|
| OFF | **Off**: ACB (Auto Contrast Balance) is deactivated. |
| ACB | **On**: ACB (Auto Contrast Balance) is activated. |

- The ACB feature is always on in Smart Auto mode.
- The ACB feature is not available when you set Burst options.

## Changing the metering option

The metering mode refers to the way in which a camera measures the quantity of light. The brightness and lighting of your photos will vary depending on the metering mode you select.

1 In Shooting mode, press [**MENU**].

2 Select **Metering**.

3 Select an option.

| Icon | Description |
|---|---|
| | **Multi**:<br>• Your camera divides the frame into several areas, and then measures the light intensity of each area.<br>• Suitable for general photos. |
| | **Spot**:<br>• Your camera measures only the light intensity at the very center of the frame.<br>• If a subject is not in the center of the frame, your photo may be improperly exposed.<br>• Suitable for a subject with backlighting. |
| | **Center-weighted**:<br>• Your camera averages the meter reading of the entire frame with emphasis placed on the center.<br>• Suitable for photos with subjects in the center of the frame. |

## Selecting a White Balance setting

The color of your photo depends on the type and quality of the light source. If you want the color of your photo to be realistic, select a White Balance setting that is appropriate for the lighting conditions, such as Auto WB, Daylight, Cloudy, or Tungsten.

AWB Auto WB

Daylight

Cloudy

Tungsten

1 In Shooting mode, press [**MENU**].

2 Select **White Balance**.

3 Select an option.

| Icon | Description |
|---|---|
| AWB | **Auto WB**: Automatically set the White Balance based on the lighting conditions. |
| | **Daylight**: For outdoor photos on a sunny day. |
| | **Cloudy**: For outdoor photos on a cloudy day or in shadows. |
| | **Fluorescent_H**: For shooting under a daylight fluorescent or 3-way fluorescent light. |
| | **Fluorescent_L**: For shooting under white fluorescent light. |
| | **Tungsten**: For shooting indoor photos under incandescent bulbs or halogen lamps. |
| | **Custom Set**: To use White Balance settings that you define. (p. 64) |
| K | **Color Temp.**: To adjust the color temperature of the light source. (p. 64) |

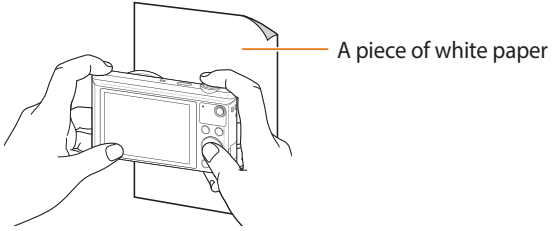
## Defining your own White Balance

You can customize the White Balance by capturing a photo of a white surface, such as a piece of paper, under the lighting conditions in which you intend to capture a photo. The White Balance feature will help you to match the colors in your photo with the actual scene.

1 In Shooting mode, press [**MENU**].

2 Select **White Balance** → **Custom Set**.

3 Aim the lens at a piece of white paper, and then press [**Shutter**].



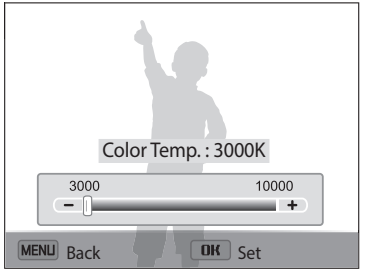

## Adjusting color temperature

1 In Shooting mode, press [**MENU**].

2 Select **White Balance** → **Color Temp.**.

3 Press [ϟ/⏲] to adjust the color temperature to match your light source.

- You can get a warmer photo with a higher value, and a cooler photo with a lower value.




4 Press [**OK**] to save your settings.

# Using burst modes

It can be difficult to capture photos of fast-moving subjects or capture natural facial expressions and gestures of your subjects in photos. Also, it can be difficult to adjust the exposure correctly and select a proper light source. In these cases, select one of the burst modes.

1 In Shooting mode, press [**MENU**].

2 Select **Drive**.

3 Select an option.

| Icon | Description |
|---|---|
| | **Single**: Capture a single photo. (**Single** is not a burst option.) |
| | **Continuous**:<br>• While you are pressing [**Shutter**], the camera continuously captures photos.<br>• The maximum number of photos depends on the capacity of your memory card. |
| | **Motion Capture**: While you are pressing [**Shutter**], the camera captures VGA photos (5 photos per second; maximum of 30 photos). |
| | **AEB**:<br>• Capture 3 consecutive photos, each with a different exposure: normal, underexposed, and overexposed.<br>• It may take longer to capture the photo. Use a tripod for best results. |

4 Align your subject in the frame, and then half-press [**Shutter**] to focus.

5 Press and hold [**Shutter**].

- While you are pressing [**Shutter**], the camera captures photos continuously.

- Available options may differ depending on the shooting conditions.
- When you select **Motion Capture**, your camera will set the resolution to VGA and set the ISO sensitivity to **Auto**.
- Depending on the Face Detection options you selected, some Shooting options may not be available.
- It may take longer to save the photos depending on the memory card capacity and performance.

# Adjusting images

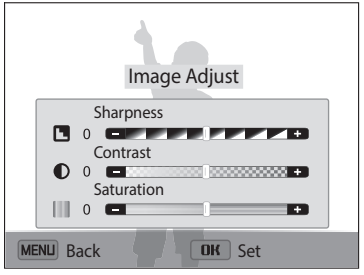
Adjust the sharpness, contrast, or saturation of your photos.

1 In Shooting mode, press [**MENU**].

2 Select **Image Adjust**.

3 Select an option.

- Sharpness
- Contrast
- Saturation




4 Press [ / ] to adjust each value.

| Sharpness | Description |
|---|---|
| – | Soften the edges on your photos (suitable for editing the photos on your computer). |
| + | Sharpen the edges to improve the clarity of your photos. (This may also increase the noise in your photos.) |

| Contrast | Description |
|---|---|
| – | Decrease the color and brightness. |
| + | Increase the color and brightness. |

| Saturation | Description |
|---|---|
| – | Decrease the saturation. |
| + | Increase the saturation. |

5 Press [**OK**] to save your settings.

Select 0 if you do not want to apply any effects (suitable for printing).

# Reducing the sound of the zoom

When you use the zoom while recording videos, the camera can record the sound of the zoom. In this case, use the Zoom Mute function.

1 In Shooting mode, press [**MENU**].

2 Select **Voice**.

3 Select an option.

| Icon | Description |
|---|---|
| | **Zoom Mute**: The camera stops recording sound temporarily when you use the zoom. |
| | **Off**: Record a video without sound. |
| | **On**: Record a video with sound. |

- Do not block the microphone when you use the Zoom Mute function.
- Recordings made with Zoom Mute may differ from actual sounds.

# Available shooting options by shooting mode

For details about shooting options, refer to "Shooting options". (p. 48)

| | Smart Auto | Program | Smart Movie | Movie | Smart | Live Panorama | Photo Filter | Movie Filter |
|---|---|---|---|---|---|---|---|---|
| **Resolution** | O | O | O | O | O | - | O | O |
| **Quality** | - | O | - | - | - | - | O | - |
| **Timer** | O | O | O | O | O | - | O | O |
| **Flash** | O | O | - | - | O | - | O | - |
| **ISO sensitivity** | - | O | - | - | - | - | - | - |
| **Macro** | - | O | - | O | O | - | - | - |
| **Focus area** | - | O | - | - | O | - | - | - |
| **Face detection** | - | O | - | - | O | - | - | - |
| **EV** | - | O | - | O | - | - | - | - |
| **ACB** | - | O | - | - | - | - | - | - |
| **Metering** | - | O | - | O | - | - | - | - |
| **White balance** | - | O | - | O | - | - | - | - |
| **Drive** | - | O | - | - | - | - | - | - |
| **Image adjust** | - | O | - | - | - | - | - | - |
| **Voice** | - | - | O | O | - | - | - | O |
| **Digital zoom** | - | O | - | - | O | - | - | - |
| **Intelli zoom** | O | O | - | - | - | - | - | - |
| **OIS** | - | O | - | O | - | - | - | - |

O: The option is available. Some options may be limited or may not be changeable.
-: The option is not available.

# Playback/Editing

Learn how to play back photos or videos, and edit photos. Also, learn how to connect your camera to your computer or TV.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# Viewing photos or videos in Playback mode

Learn how to play back photos or videos and how to manage files.

## Starting Playback mode

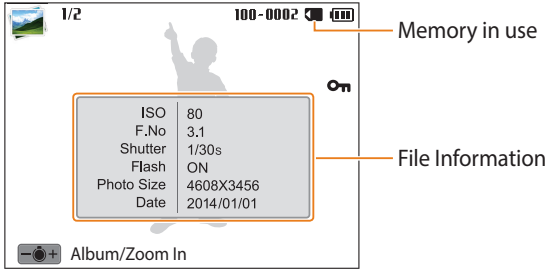
View photos or play videos stored in your camera.

1 Press [▶].
- The most recent file will be displayed.
- If the camera is off, it will turn on and display the most recent file.

2 Press [ϟ/⏲] to scroll through files.
- Press and hold [ϟ/⏲] to scroll through files quickly.

- You may not be able to edit or play back files that were captured with other cameras, due to unsupported sizes (image size, etc) or codecs. Use a computer or another device to edit or play back these files.
- Photos or videos captured in portrait orientation do not rotate automatically and are displayed in landscape orientation by the camera and other devices.

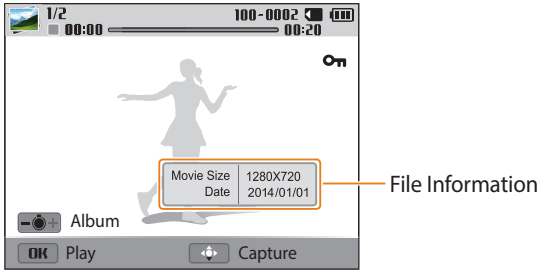
### Photo file information




| Icon | Description |
|---|---|
| 1/2 | Current file/Total files |
| 100-0001 | Folder name-File name |
| | Protected file |

To display file information on the screen, press [**DISP**].

## Video file information

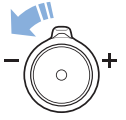



| Icon | Description |
|---|---|
| 1/2 | Current file/Total files |
| 100-0002 | Folder name-File name |
| 00:00 | Current playback time |
| 00:20 | Video length |
| | Protected file |

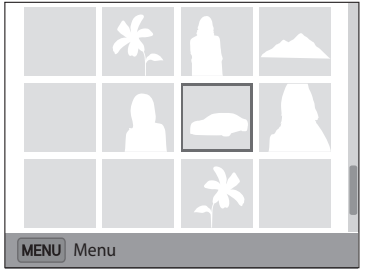
To display file information on the screen, press [**DISP**].

## Viewing files as thumbnails

Scan thumbnails of files.



In Playback mode, rotate [**Zoom**] to the left to view thumbnails (12 at a time). Rotate [**Zoom**] to the left once more to display more thumbnails (24 at a time). Rotate [**Zoom**] to the right to return to the previous view.




- You can also view files as thumbnails by scrolling to **<Basic>** on the Home screen, and then selecting .

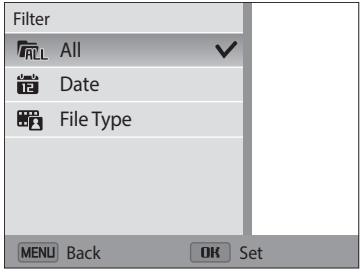
Press [**DISP**/ / / ] to scroll through files.

## Viewing files by category

View files by category, such as date or file type.

1 In Playback mode, rotate [**Zoom**] to the left.
- You can also view files as thumbnails by scrolling to **<Basic>** on the Home screen, and then selecting .

2 Press [**MENU**], and then select **Filter** → a category.




| Icon | Description |
|---|---|
| | **All**: View files normally. |
| | **Date**: View files by the date they were saved. |
| | **File Type**: View files by the file type. |

3 Scroll to a desired list, and then press [**OK**] to open the list.

4 Scroll to a desired file, and then press [**OK**] to view the file.

5 Rotate [**Zoom**] to the left, and then press [**MENU**] to return to the previous view.

- If you change the category, it may take some time for the camera to reorganize files depending on the number of files.
- If you delete a category classified by **Date** or **File Type**, all files in the category will be deleted.

## Protecting a file

Protect a file from accidental deletion.

1 In Playback mode, select a file to protect.

2 Press [MENU], and then select **Protect** → **On**.

3 Repeat steps 1 and 2 to protect additional files.

You cannot resize, delete, or rotate a protected file.

## Deleting files

Select files to delete in Playback mode.

### Deleting a single file

You can select one file, and then delete it.

1 In Playback mode, select a file, and then press [🗑].

2 When the pop-up message appears, select **Yes**.

You can also delete files in Playback mode by pressing [MENU], and then selecting **Delete** → **Delete** → **Yes**.

### Deleting multiple files

You can select multiple files, and then delete them at once.

1 In Playback mode, press [🗑].
- When in thumbnails view, press [MENU], select **Delete** → **Select**, and then skip to step 3, or press [🗑], select **Select**, and then skip to step 3.

2 When the pop-up message appears, select **Multiple Delete**.

3 Scroll to each file you want to delete, and then press [OK].
- Press [OK] again to cancel your selection.

4 Press [🗑].

5 When the pop-up message appears, select **Yes**.

**Deleting all files**

You can select all files, and then delete them at once.

1 In Playback mode, press [**MENU**].
- When in thumbnails view, press [**MENU**], select **Delete** → **Delete All**, and then skip to step 3, or press [🗑], select **Delete All**, and then skip to step 3.

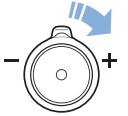
2 Select **Delete** → **Delete All**.

3 When the pop-up message appears, select **Yes**.
- All unprotected files are deleted.

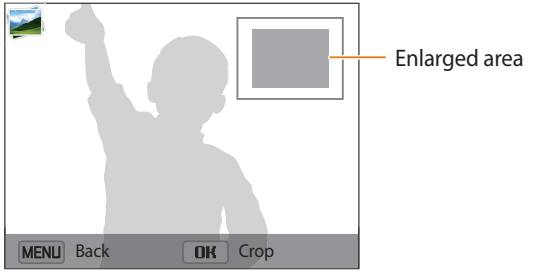
## Viewing photos

Enlarge part of a photo or view photos as a slide show.

### Enlarging a photo




In Playback mode, rotate [**Zoom**] to the right to enlarge a portion of the photo. Rotate [**Zoom**] to the left to zoom out.



| To | Description |
|---|---|
| **Move the enlarged area** | Press [DISP/✿/ϟ/◷]. |
| **Trim the enlarged photo** | Press [OK], and then select **Yes**. (The trimmed photo will be saved as a new file. The original photo is retained in its original form.) |

When you view photos that were captured by another camera, the zoom ratio may differ.

## Viewing panoramic photos

View photos captured in Live Panorama mode.

1 In Playback mode, press [ϟ/◷] to scroll to a desired panoramic photo.
- The entire panoramic photo appears on the screen.

2 Press [OK].
- The camera automatically scrolls through the photo from left to right for a horizontal panoramic photo and from top to bottom for a vertical panoramic photo. The camera then switches to Playback mode.
- While playing back a panoramic photo, press [OK] to pause or resume.
- After you have paused the playback of a panoramic photo, press [DISP/✿/ϟ/◷] to move the photo horizontally or vertically, depending on the direction you moved when capturing the photo.

3 Press [MENU] to return to Playback mode.

The camera automatically scrolls through the panoramic photo only if the longest side of the photo is two or more times longer than the shortest side.

## Playing a slide show

Apply effects and audio to a slide show of your photos. The slide show function does not work for videos.

1 In Playback mode, press [**MENU**].

2 Select **Slide Show Options**.

3 Select a slide show effect option.

- Skip to step 4 to start a slide show with no effects.

* Default

| Option | Description |
|---|---|
| **Play Mode** | Set whether or not to repeat the slide show. (**One Play***, **Repeat**) |
| **Interval** | • Set the interval between photos. (**1 sec***, **3 sec**, **5 sec**, **10 sec**)<br>• You must set the Effect option to **Off** to set the interval. |
| **Music** | Set background audio. |
| **Effect** | • Set a scene change effect between photos. (**Off**, **Calm***, **Relax**, **Lively**, **Sweet**, **Shine**)<br>• Select **Off** to cancel effects.<br>• When you use the Effect option, the interval between photos will be set to 1 second. |

4 Press [**MENU**].

5 Select **Start Slide Show**.

6 View the slide show.

- Press [**OK**] to pause the slide show.
- Press [**OK**] again to resume the slide show.

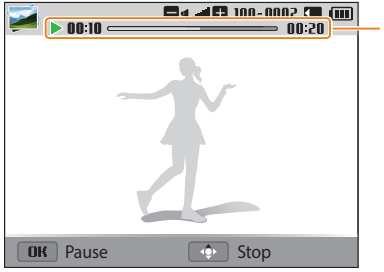
- Press [🗑] to stop the slide show and return to Playback mode.
- Rotate [**Zoom**] to the left or right to adjust the volume level.

## Playing a video

In Playback mode, you can view a video.

1 In Playback mode, select a video, and then press [**OK**].

2 View the video.




Current playback time/
Video length

| To | Description |
|---|---|
| **Scan backward** | Press [ϟ]. Each time you press [ϟ], you change the scan speed in this order: 2X, 4X, 8X. |
| **Pause or resume playback** | Press [**OK**]. |
| **Scan forward** | Press [⏲]. Each time you press [⏲], you change the scan speed in this order: 2X, 4X, 8X. |
| **Adjust the volume level** | Rotate [**Zoom**] to the left or right. |

When playing a movie, you can begin using features such a scanning backward, scanning forward, or pausing after the video has run for 2 seconds.

# Editing a photo

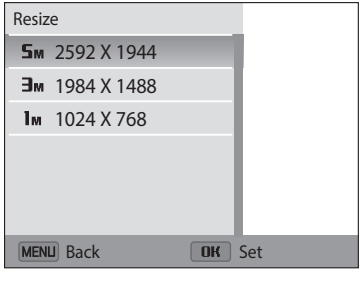
Learn how to edit photos.

- The camera will save edited photos as new files.
- When you edit photos, the camera will automatically convert them to a lower resolution. Photos that you rotate manually are not automatically converted to a lower resolution.
- Photos captured in some modes cannot be edited.

## Resizing photos

Change the size of a photo and save it as a new file.

1. In Playback mode, select a photo, and then press [**MENU**].
2. Select **Resize**.
3. Select an option.

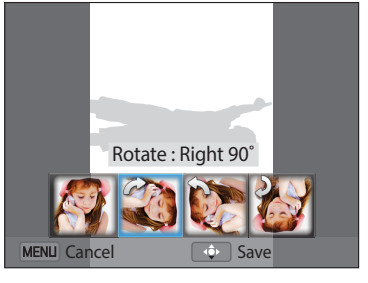



4. Press [**OK**] to save.

Available resize options differ depending on the original size of the photo.

## Rotating a photo

1. On the Home screen, scroll to **<Magic>**.
2. Select .
3. Rotate [**Zoom**] to the left, and then select a photo.
4. Select **Rotate** → an option.
5. Press [ ] to save.




- The camera will overwrite the original file.
- In Playback mode, press [**MENU**], and then select **Rotate** to rotate a photo.

## Applying Smart Filter effects

Apply special effects to your photos.

1 On the Home screen, scroll to **<Magic>**.

2 Select .

3 Rotate [**Zoom**] to the left, and then select a photo.

4 Select **Smart Filter** → an option.

| Option | Description |
|---|---|
| **Normal** | No effect |
| **Miniature** | Apply a tilt-shift effect to make the subject appear in miniature. (The top and bottom of the image will be unclear.) |
| **Vignetting** | Apply the retro-looking colors, high contrast, and strong vignette effect of Lomo cameras. |
| **Cross Filter** | Add lines that radiate outward from bright objects to imitate the visual effect of a cross filter. |
| **Fish-eye** | Distort close objects to imitate the visual effect of a fisheye lens. |
| **Classic** | Apply a black and white effect. |
| **Retro** | Apply a sepia tone effect. |

5 Press [] to save.

## Adjusting brightness, contrast, saturation or dark subjects

Learn how to adjust the brightness, contrast, or saturation. If the center of a photo is dark, you can adjust it to be brighter. The camera will save an edited photo as a new file, but may convert it to a lower resolution.

1 On the Home screen, scroll to **<Magic>**.

2 Select .

3 Rotate [**Zoom**] to the left, and then select a photo.

4 Select an adjusting option.

| Icon | Description |
|---|---|
| | Brightness |
| | Contrast |
| | Saturation |
| ACB | ACB (Adjust dark subjects) |

- If you selected ACB, skip to step 7.

5 Press [/] to adjust the option.

6 Press [**OK**].

7 Press [] to save.

## Adjusting portrait photos

Learn how to correct red-eye and retouch faces. The camera will save an edited photo as a new file, but may convert it to a lower resolution.

### Retouching faces

1 On the Home screen, scroll to **<Magic>**.

2 Select .

3 Rotate [**Zoom**] to the left, and then select a photo.

4 Select **Face Retouch**.

5 Press [/] to adjust the option.

- As the number increases, the skin tone becomes brighter and smoother.

6 Press [] to save.

## Removing red-eye

1. On the Home screen, scroll to **<Magic>**.
2. Select .
3. Rotate [**Zoom**] to the left, and then select a photo.
4. Select **Red-eye Fix**.
5. Press [] to save.

# Editing a video

While playing back a video, you can trim the video or capture an image from the video.

## Trimming a video

1. In Playback mode, select a video, and then press [**MENU**].
2. Select **Trim Movie**.
3. Press [**OK**] to start playing the video.
4. Press [**OK**] → [] at the point where you want the trimming to begin.
5. Press [**OK**] to resume playing the video.
6. Press [**OK**] → [] at the point where you want the trimming to end.
7. Press [] to trim.
8. When the pop-up message appears, select **Yes**.

- The original video should be at least 10 seconds long.
- You can trim videos anywhere between 2 seconds from the beginning and 2 seconds from the end of the video.
- The camera will save the edited video as a new file and leave the original video intact.

## Capturing an image from video

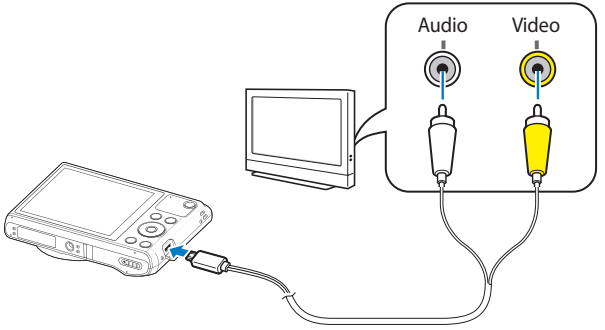
1. While viewing a video, press [**OK**] at the point where you want to capture an image.
2. Press [].

- The resolution of the captured image will be the same as the original video.
- The captured image is saved as a new file.

# Viewing files on a TV

Play back photos or videos by connecting your camera to a TV with the A/V cable.

1 On the Home screen, scroll to **<Basic>**.
2 Select .
3 Select **Connectivity** → **Video Out**.
4 Select the video signal output for your country or region. (p. 108)
5 Turn off your camera and TV.
6 Connect your camera to your TV with the A/V cable.




7 Turn on your TV, and then select the A/V video source with the TV remote control.
8 Turn on your camera.
- The camera automatically enters Playback mode when you connect it to a TV.

9 View photos or play videos using the camera buttons.

- Depending on the TV model, you may see some digital noise or part of an image may not appear.
- Images may not be centered on the TV screen depending on your TV settings.

# Transferring files to a computer

Connect the camera to a computer to transfer files from the camera's memory card to the computer.

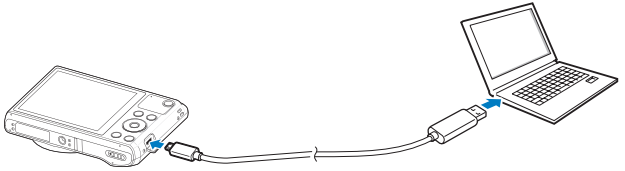
## Transferring files to your Windows OS computer

Connect the camera to your computer as a removable disk.

> Your computer must be running Windows XP, Windows Vista, Windows 7, or Windows 8 for you to connect the camera as a removable disk.

1. On the Home screen, scroll to **<Basic>**.
2. Select .
3. Select **Connectivity** → **i-Launcher** → **Off**.
4. Turn off the camera.
5. Connect the camera to your computer with the USB cable.

> You must plug the small end of the USB cable into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.



6. Turn on the camera.
   - The computer recognizes the camera automatically.
7. On your computer, select **My Computer** → **Removable Disk** → **DCIM** → **100PHOTO**.
8. Drag or save files to your computer.

### Disconnecting the camera (for Windows XP)

With Windows Vista, Windows 7 and Windows 8, the methods for disconnecting the camera are similar.

1 If the status lamp on your camera is blinking, wait until it stops.

2 Click on the tool bar at the bottom right of your computer screen.

3 Click the pop-up message.

4 Click the message box that indicates the camera can be removed safely.

5 Remove the USB cable.

## Transferring files to your Mac OS computer

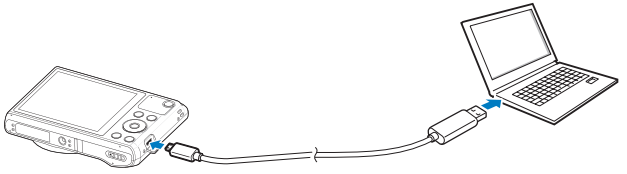
When you connect the camera to your Mac OS computer, the computer will automatically recognize the device. You can transfer files directly from the camera to the computer without installing any programs.

Mac OS 10.5 or later is supported.

1 Turn off the camera.

2 Connect your camera to your Mac OS computer with the USB cable.

You must plug the small end of the USB cable into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.



3 Turn on the camera.
- The computer recognizes the camera automatically and displays a removable disk icon.

4 On your computer, open the removable disk.

5 Drag or save files to your computer.

# System Requirements

Recommended system requirements to play videos on a PC or run the i-Launcher application.

## Windows OS Requirements

| Item | Requirements |
|---|---|
| **CPU** | Intel Pentium®4, 3.2 GHz or higher/<br>AMD Athlon™ FX D2.6 GHz or higher |
| **RAM** | Minimum 512 MB RAM (1 GB or more recommended) |
| **OS*** | Windows 7, or Windows 8 |
| **Hard disk capacity** | 250 MB or more (1 GB and above recommended) |
| **Others** | • 1024 X 768 pixels, 16-bit color display compatible monitor (1280 X 1024 pixels, 32-bit color display recommended)<br>• USB 2.0 port<br>• nVIDIA Geforce 7600GT or higher/<br>ATI X1600 series or higher |

* A 32-bit version of i-Launcher will be installed—even on 64-bit editions of Windows 7, and Windows 8.

## Mac OS requirements

| Item | Requirements |
|---|---|
| **OS** | Mac OS 10.5 or higher (except PowerPC) |
| **RAM** | Minimum 256 MB RAM (512 MB or more recommended) |
| **Hard disk capacity** | Minimum 110 MB |
| **Others** | USB 2.0 port |

- The requirements are recommendations only. It may not work properly even when the computer meets the requirements, depending on the condition of your computer.
- The manufacturer is not responsible for any damage that results from using unqualified computers such as a computer you assembled yourself.

# Wireless network

Learn how to connect to wireless local area networks (WLANs) and use functions.


**Connecting to a WLAN and configuring network settings** ..... 89
- Connecting to a WLAN ..... 89
- Using the login browser ..... 90
- Network connection tips ..... 91
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**Using the NFC Feature (Tag & Go)** ..... 93
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**Using Samsung Link to send files** ..... 103
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# Connecting to a WLAN and configuring network settings

Learn to connect via an access point (AP) when you are in a range of a WLAN. You can also configure network settings.

## Connecting to a WLAN

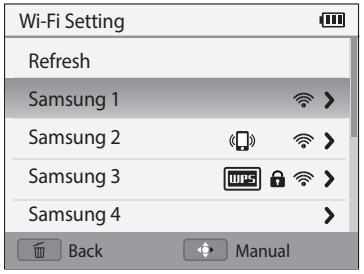
1 On the Home screen, scroll to **<Wi-Fi>**.

2 Select , , or .

3 Follow the on-screen instructions until the Wi-Fi Setting screen appears.

- The camera automatically searches for available AP devices.
- In some modes, press [**MENU**], and then select **Wi-Fi Setting**.

4 Select an AP.




- Select **Refresh** to refresh the list of connectable APs.
- Select **Add wireless network** to add an AP manually. The AP name must be in English to add the AP manually.

| Icon | Description |
|---|---|
| | Ad hoc AP |
| | Secured AP |
| | WPS AP |
| | Signal strength |
| › | Press [] to open network setting options. |

- When you select a secured AP, a pop-up window appears. Enter the required passwords to connect to the WLAN. For information about entering text, refer to "Entering text". (p. 92)
- When a login page appears, refer to "Using the login browser". (p. 90)
- When you select an unsecured AP, the camera will automatically connect to the WLAN.
- If you select a WPS profile supported AP, select › → **WPS PIN connection**, and then enter a PIN on the AP device. You can also connect to a WPS profile supported AP by selecting › → **WPS button connection** on the camera, and then pushing the **WPS** button on the AP device.
- If a pop-up message about data collection regulations appears, read and agree to it.

## Setting network options

1 In the Wi-Fi Setting screen, move to an AP, and then press [⏲].

2 Select each option, and then enter the required information.

| Option | Description |
|---|---|
| **Network Password** | Enter the network password. |
| **IP Setting** | Set the IP address automatically or manually. |

## Manually setting the IP address

1 In the Wi-Fi Setting screen, move to an AP, and then press [⏲].

2 Select **IP Setting** → **Manual**.

3 Select each option, and then enter the required information.

| Option | Description |
|---|---|
| **IP** | Enter the static IP address. |
| **Subnet Mask** | Enter the subnet mask. |
| **Gateway** | Enter the gateway. |
| **DNS Server** | Enter the DNS address. |

## Using the login browser

You can enter your login information via the login browser when connecting to some APs, sharing sites, or cloud servers.

| Button/Icon | Description |
|---|---|
| [**DISP**/✿/ϟ/⏲] | Move to an item or scroll the page. |
| [**OK**] | Select an item. |
| [**MENU**] | Access the following options:<br>• **Previous Page**: Move to the previous page.<br>• **Next Page**: Move to the next page.<br>• **Reload**: Reload the page.<br>• **Stop**: Stop loading the page.<br>• **Exit**: Close the login browser. |
| [🗑] | Close the login browser. |

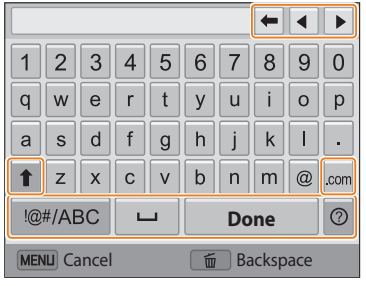
- You may not be able to select some items depending on the page you connected to. This does not indicate a malfunction.
- The login browser may not close automatically after you log into some pages. In this case, close the login browser by pressing [🗑], and then proceed with the desired operation.
- It may take longer to load the login page due to the page size or network speed. If this occurs, wait until the login information input window appears.

## Network connection tips

- Some Wi-Fi features are not available if you do not insert a memory card.
- The quality of the network connection will be determined by the AP.
- The further the distance between your camera and the AP, the longer it will take to connect to the network.
- If a nearby device is using the same radio frequency signal as your camera, it may interrupt your connection.
- If your AP name is not in English, the camera may not be able to locate the device or the name may appear incorrectly.
- For network settings or a password, contact your network administrator or network service provider.
- If a WLAN requires authentication from the service provider, you may not be able to connect to it. To connect to the WLAN, contact your network service provider.
- Depending on the encryption type, the number of digits in the password may differ.
- A WLAN connection may not be possible in all surroundings.
- The camera may display a WLAN enabled printer on the AP List. You cannot connect to a network via a printer.
- You cannot connect your camera to a network and a TV simultaneously.
- Connecting to a network may incur additional charges. Costs will vary based on the conditions of your contract.
- If you cannot connect to a WLAN, try another AP from the available AP list.
- A login page may appear when you select free WLANs provided by some network service providers. Enter your ID and password to connect to the WLAN. For information about registering or the service, contact the network service providers.
- Be cautious when you enter personal information for an AP connection. Do not enter any payment or credit card information on your camera. The manufacturer is not liable for any problem caused by entering such information.
- Available network connections may differ by country.
- The WLAN feature of your camera must comply with radio transmission laws in your region. To ensure compliance, use the WLAN feature only in the country where you purchased the camera.
- The process for adjusting network settings may differ, depending on network conditions.
- Do not access a network that you are not authorized to use.
- Before you connect to a network, ensure your battery is fully charged.
- You cannot upload or send files captured in some modes.
- Files that you transfer to another device may not be supported by the device. In this case, use a computer to playback the files.

## Entering text

Learn how to enter text. The icons in the table below let you move the cursor, change the case, etc. Press [DISP/✿/ϟ/ⓘ] to move to a desired key, and then press [OK] to enter the key.




| Icon | Description |
|---|---|
| ⬅ | Delete the last letter. |
| ◀ ▶ | Move the cursor. |
| ⬆ | In ABC mode, change the case. |
| .com | Enter ".com". |

| Icon | Description |
|---|---|
| !@#/ABC | Switch between Symbol mode and ABC mode. |
| ␣ | Enter a space. |
| **Done** | Save the displayed text. |
| ⓘ | View the entering text guide. |

- You can use only the English alphabets in some modes, regardless of the display language.
- To move to **Done** directly, press [▶].
- You can enter up to 64 characters.
- The screen may differ depending on the input mode.

# Using the NFC Feature (Tag & Go)

Place a smart phone's NFC antenna near the camera's NFC tag to launch the feature for saving photos to a smart phone automatically or the feature for using a smart phone as a remote shutter. You can also transfer files to an NFC-enabled device in Playback mode.

- This feature is supported by NFC-enabled smart phones running Android OS. It is recommended that you use the latest version. This feature is not available for iOS devices.
- You should install Samsung SMART CAMERA App on your phone or device before using this feature. You can download the application from Samsung Apps or the Google Play Store. Samsung SMART CAMERA App is compatible with Samsung camera models manufactured in 2013 or later.
- To read an NFC tag, place the NFC-enabled device near the camera's NFC tag for more than 2 seconds.
- Do not modify the tag information in any way.

## Using NFC features in Shooting mode

Launch AutoShare or Remote Viewfinder by reading a tag from an NFC-enabled device. (p. 94, 96)
Preset to launch the Wi-Fi function by reading a tag on an NFC-enabled device. (p. 110)

## Using NFC features in Playback mode(Photo Beam)

In Playback mode, the camera transfers the current file to the smart phone automatically when you read a tag from an NFC-enabled device.

- To transfer multiple files, read a tag from an NFC-enabled device from the thumbnail view, and then select files.

## Using NFC features in Wi-Fi mode

Select MobileLink or Remote Viewfinder from the pop-up window that appears by reading a tag from an NFC-enabled device. (p. 95, 96)

# Saving files to a smart phone automatically

The camera connects to a smart phone that supports the AutoShare feature via a WLAN. When you capture a photo with your camera, the photo is saved to the smart phone automatically.

- The AutoShare feature is supported by smart phones or tablets running Android OS or iOS. Some features may not be supported by some models. Before using this feature, update the device's firmware to the latest version. If the firmware version is not the most recent, this function may not perform properly.
- You should install Samsung SMART CAMERA App on your phone or device before using this feature. You can download the application from Samsung Apps, the Google Play Store, or the Apple App Store. Samsung SMART CAMERA App is compatible with Samsung camera models manufactured in 2013 or later.
- If you set this function, the setting is maintained even when you change the Shooting mode.
- This feature may not be supported in some modes.

1 On the camera, in Shooting mode, press [**MENU**].

2 On the camera, select **AutoShare** → **On**.
- If the pop-up message that prompts you to download the application appears, select **Next**.

3 On the smart phone, turn on Samsung SMART CAMERA App.
- For iOS devices, turn on the Wi-Fi feature before turning on the application.
- To start the application automatically on an NFC-enabled smart phone, turn on the function and place the smart phone near the NFC tag (p. 16) on the camera.

4 Select the camera from the list and connect the smart phone to the camera.
- The smart phone can connect to only one camera at a time.

5 On the camera, allow the smart phone to connect to your camera.
- If the smart phone has been connected to your camera before, it is connected automatically.
- An icon that shows the connection status ( ) will appear on the camera's screen.

6 On the camera, capture a photo.
- The captured photo is saved to the camera, and then transferred to the smart phone.
- If the GPS feature is activated on the smart phone, the GPS information will be saved with the captured photo.

# Sending photos or videos to a smart phone

The camera connects to a smart phone that supports the MobileLink feature via a WLAN. You can easily send photos or videos to your smart phone.

- The MobileLink feature is supported by smart phones or tablets running Android OS or iOS. Some features may not be supported by some models. Before using this feature, update the device's firmware to the latest version. If the firmware version is not the most recent, this function may not perform properly.
- You should install Samsung SMART CAMERA App on your phone or device before using this feature. You can download the application from Samsung Apps, the Google Play Store, or the Apple App Store. Samsung SMART CAMERA App is compatible with Samsung camera models manufactured in 2013 or later.
- When there are no files in the camera memory, you cannot use this feature.
- If you select files from the smart phone, you can view up to 1,000 recent files and send up to 1,000 files at a time. If you select files from the camera, you can view files that were selected from the camera and the maximum number of files you can send varies depending on the storage space of the smart phone.
- When using this feature on an iOS device, the device may lose its Wi-Fi connection.

1 On the camera's Home screen, scroll to **<Wi-Fi>**.

2 On the camera, select .
- If the pop-up message that prompts you to download the application appears, select **Next**.

3 On the camera, select a sending option.
- If you select **Select Files from Smartphone**, you can use your smart phone to view and share files stored on the camera.
- If you select **Select Files from Camera**, you can select files to send from the camera.

4 On the smart phone, turn on Samsung SMART CAMERA App.
- For iOS devices, turn on the Wi-Fi feature before turning on the application.
- To start the application automatically on an NFC-enabled smart phone, turn on the function and place the smart phone near the NFC tag (p. 16) on the camera.

5 Select the camera from the list and connect the smart phone to the camera.
- The smart phone can connect to only one camera at a time.

6 On the camera, allow the smart phone to connect to your camera.
- If the smart phone has been connected to your camera before, it is connected automatically.
- The application on the smart phone can be closed if no operations are performed on the camera for 30 seconds.

7 On the smart phone or camera, select files to transfer from the camera.

8 On the smart phone, touch the copy button or on the camera, select **Send**.
- The camera will send the files.

The camera screen turns off if you perform no operations on the camera for 30 seconds.

# Using a smart phone as a remote shutter release

The camera connects to a smart phone via a WLAN. Use the smart phone as a remote shutter release with the Remote Viewfinder feature. The captured photo will display on the smart phone.

- The Remote Viewfinder feature is supported by smart phones or tablets running Android OS or iOS. Some features may not be supported by some models. Before using this feature, update the device's firmware to the latest version. If the firmware version is not the most recent, this function may not perform properly.
- You should install Samsung SMART CAMERA App on your phone or device before using this feature. You can download the application from Samsung Apps, the Google Play Store, or the Apple App Store. Samsung SMART CAMERA App is compatible with Samsung camera models manufactured in 2013 or later.

1 On the camera's Home screen, scroll to **<Wi-Fi>**.

2 On the camera, select .
- If the pop-up message that prompts you to download the application appears, select **Next**.

3 On the smart phone, turn on Samsung SMART CAMERA App.
- For iOS devices, turn on the Wi-Fi feature before turning on the application.
- To start the application automatically on an NFC-enabled smart phone, turn on the function and place the smart phone near the NFC tag (p. 16) on the camera.

4 Select the camera from the list and connect the smart phone to the camera.
- The smart phone can connect to only one camera at a time.

5 On the camera, allow the smart phone to connect to your camera.
- If the smart phone has been connected to your camera before, it is connected automatically.

6 On the smart phone, set the following shooting options.
- While using this feature, some buttons are not available on your camera.
- With the smart phone, you can operate the camera only by touching the screen.
- Remote Viewfinder mode supports the 10M and 3M photo sizes only.

7 On the smart phone, touch and hold to focus.
- The focus is automatically set to **Multi AF**.

8 Release to capture the photo.
- If the GPS feature is activated on the smart phone, the GPS information will be saved with the captured photo.

- When you use this feature, the ideal distance between the camera and the smart phone may vary, depending on your surroundings.
- We recommend you keep the distance between the smart phone and the camera within 23 feet (7 m) when you use this feature.
- It will take some time to capture the photo after you release on the smart phone.
- The Remote Viewfinder function will deactivate when:
  - either the camera or the smart phone turn off
  - either device loses its connection to the WLAN
  - the Wi-Fi connection is poor or unstable
  - you perform no operations for approximately 3 minutes while connected
- The camera screen turns off if you perform no operations on the camera for 30 seconds.

# Sending photos or videos via email

You can change settings in the email menu and send photos or videos stored on the camera via email.

## Changing email settings

In the email menu, you can change settings for storing your information. You can also set or change the email password. For information about entering text, refer to "Entering text". (p. 92)

### Storing your information

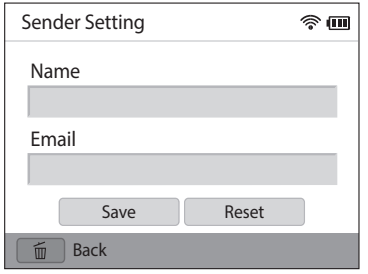
1 On the Home screen, scroll to **<Wi-Fi>**.

2 Select .

3 Press [**MENU**].

4 Select **Sender Setting**.

5 Select the **Name** box, enter your name, and then select **Done**.




6 Select the **Email** box, enter your email address, and then select **Done**.

7 Select **Save** to save your changes.

- To delete your information, select **Reset**.

## Setting an email password

1. On the Home screen, scroll to **<Wi-Fi>**.
2. Select .
3. Press [**MENU**].
4. Select **Setting Password** → **On**.
   - To deactivate the password, select **Off**.
5. When the pop-up appears, select **OK**.
6. Enter a 4-digit password.
7. Enter the password again.
8. When the pop-up appears, select **OK**.

If you forget your password, you can reset it by selecting **Reset** on the password setting screen. When you reset the information, the previously saved user's setting information, email address, and recently sent email list will be deleted.

## Changing the email password

1. On the Home screen, scroll to **<Wi-Fi>**.
2. Select .
3. Press [**MENU**].
4. Select **Change Password**.
5. Enter your current 4-digit password.
6. Enter a new 4-digit password.
7. Enter the new password again.
8. When the pop-up appears, select **OK**.

## Sending photos or videos via email

You can send photos or videos stored on the camera via email. For information about entering text, refer to "Entering text". (p. 92)

1 On the Home screen, scroll to **<Wi-Fi>**.

2 Select .

3 Connect to a WLAN. (p. 89)

4 Select the **Sender** box, enter your email address, and then select **Done**.
- If you have previously saved your information, it will be inserted automatically. (p. 98)
- To use an address from the list of previous senders, select ▼ → an address.

5 Select the **Receiver** box, enter an email address, and then select **Done**.
- To use an address from the list of previous recipients, select ▼ → an address.
- Select + to add additional recipients. You can input up to 30 recipients.
- Select ✕ to delete an address from the list.

6 Select **Next**.

7 Scroll to files to send, and then press [**OK**].
- You can select up to 20 files. The total size must be 7 MB or less.

8 Select **Next**.

9 Select the comment box, enter your comments, and then select **Done**.

10 Select **Send**.
- The camera will send the email.
- If an email fails to send, a message prompting you to send it again appears.

- Even if a photo appears to have transferred successfully, errors with the recipient's email account may cause the photo to be rejected or recognized as spam.
- You may not be able to send an email if no network connection is available or if your email account settings are incorrect.
- You cannot send an email if the combined file sizes exceed the 7MB. The maximum resolution of photos you can send is 2M. The maximum resolution of videos you can send is 240 (WEB). If the selected photo has a resolution higher than 2M, it will be automatically resized to a lower resolution.
- If you cannot send an email because of firewall or user authentication settings, contact your network administrator or network service provider.
- When there are no files in the camera memory, you cannot use this feature.
- You can also send an email in Playback mode by pressing [**MENU**], and then selecting **Share(Wi-Fi)** → **Email**.

# Using photo or video sharing services

Upload your photos or videos to file sharing services. Available sharing services will be displayed on your camera. To upload files to some websites, you must visit the website and register before connecting your camera.

## Accessing a sharing service

1. On the Home screen, scroll to **<Wi-Fi>**.
2. Select .
3. Select a sharing service.
   - If the pop-up message that prompts you to create an account appears, select **OK**.
4. Connect to a WLAN. (p. 89)
5. Enter your ID and password to log in.
   - For information about entering text, refer to "Entering text". (p. 92)
   - To select an ID from the list, select ▼ → an ID.
   - If you have previously logged in to the sharing service, you may be logged in automatically.

You must have an existing account with the file sharing service to use this feature.

## Uploading photos or videos

1. Access the sharing service with your camera.
2. Scroll to files to upload, and then press [**OK**].
   - You can select up to 20 files. The total size must be 10 MB or less. (On some sharing services, the total size or number of files may vary.)
3. Select **Upload**.
   - The camera will upload photos or videos.
   - On some sharing services, you can enter your comments by selecting the comment box. For information about entering text, refer to "Entering text". (p. 92)

- You can set an upload folder for Facebook by pressing [**MENU**], and then selecting **Upload Folder (Facebook)** on the sharing service's list screen.
- You cannot upload files if the file size exceeds the limit. The maximum resolution of photos you can upload is 2M. The maximum resolution of videos you can upload is 240 WEB. If the selected photo has a resolution higher than 2M, it will be automatically resized to a lower resolution. (On some sharing services, the maximum photo resolution may vary.)
- The method of uploading photos or videos may differ depending on the selected sharing service.
- If you cannot access a sharing service because of firewall or user authentication settings, contact your network administrator or network service provider.
- Uploaded photos or videos may be automatically titled with the date they were captured.
- The speed of your internet connection may affect how quickly photos upload or web pages open.
- When there are no files in the camera memory, you cannot use this feature.
- You can also upload photos or videos to file sharing services in Playback mode by pressing [**MENU**], and then selecting **Share(Wi-Fi)** → a sharing service.
- You cannot upload videos to some sharing services.

# Using Samsung Link to send files

You can view files on a Samsung Link device connected to the same AP.

## Viewing photos or videos on devices that support Samsung Link

1 On the Home screen, scroll to **<Wi-Fi>**.

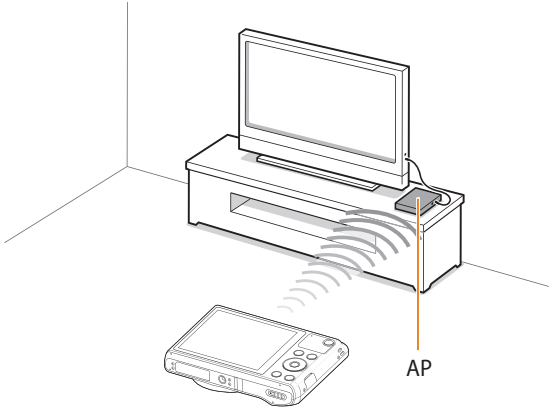
2 Select → **Nearby devices**.
- If the guide message appears, press [**OK**].
- The camera will automatically attempt to connect to a WLAN via the most recently connected AP device.
- If the camera has not previously been connected to a WLAN, it will search for available AP devices. (p. 89)
- You can set to allow only selected devices or all devices to connect by pressing [**MENU**], and then selecting **DLNA Access Control** on the screen.
- A sharing file list is created. Wait until other devices can find your camera.

3 Connect the Samsung Link device to a network, and then turn on the Samsung Link feature.
- Refer to your device's user manual for more information.

4 On the camera, allow the Samsung Link device to connect to your camera.

5 On the Samsung Link device, select a camera to connect to.

6 On the Samsung Link device, browse the shared photos or videos.
- For information about searching for the camera and browsing the photos or videos on the Samsung Link device, refer to the device's user manual.
- Videos may not play smoothly depending on the type of Samsung Link device or the network condition. If this happens, re-record the video in **VGA** or smaller quality and play it again. If videos do not play smoothly on your device over the wireless connection, try connecting the camera to the device with an A/V cable.




▲ The camera is connected to a TV that supports Samsung Link via WLAN.

- You can share up to 1,000 recent files.
- On an Samsung Link device, you can view only photos or videos captured with your camera.
- The range of the wireless connection between your camera and an Samsung Link device may vary depending on the specifications of the AP.
- If the camera is connected to 2 Samsung Link devices, playback may be slower.
- Photos or videos will be shared in their original sizes.
- You can use this feature only with devices that support Samsung Link.
- Shared photos or videos will not be stored on the Samsung Link device, but they can be stored in the camera to meet the device's specifications.
- Transferring photos or videos to the Samsung Link device may take some time depending on the network connection, the number of files to be shared, or the sizes of the files.
- If you power off the camera abnormally while viewing photos or videos on an Samsung Link device (for example, by removing the battery), the device considers the camera to still be connected.
- The order of photos or videos on the camera may be different than on the Samsung Link device.
- Depending on the number of photos or videos you want to share, it may take some time to load your photos or videos and complete the initial set-up process.
- While viewing photos or videos on the Samsung Link device, continuously using the device's remote or performing additional operations on the device may prevent this feature from working properly.
- If you reorder or sort files on the camera while viewing them on an Samsung Link device, you must repeat the initial set-up process to update the list of files on the device.
- When there are no files in the camera memory, you cannot use this feature.
- We recommend you use a network cable to connect your Samsung Link device to your AP. This will minimize any video 'Stuttering' you may experience when streaming content.
- To view files on an Samsung Link device using the **Nearby devices** feature, enable multicast mode on your AP.

# Settings

Refer to options to configure your camera's settings.


**Settings menu** ..... 106
- Accessing the settings menu ..... 106
- Sound ..... 107
- Display ..... 107
- Connectivity ..... 108
- General ..... 109

# Settings menu

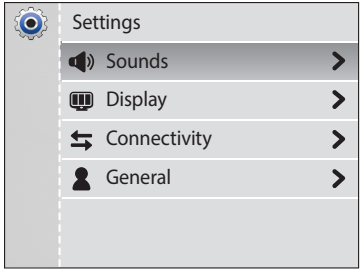
Learn to configure your camera's settings.

## Accessing the settings menu

1 On the Home screen, scroll to **<Basic>**.

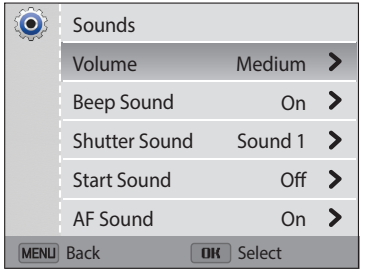
2 Select .

3 Select a menu.

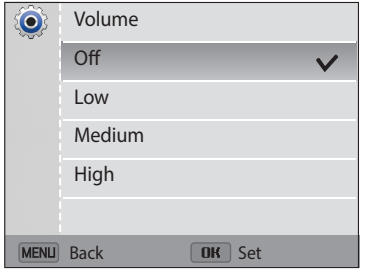



| Icon | Description |
|---|---|
| | **Sounds**: Set various camera sounds and the volume. (p. 107) |
| | **Display**: Customize the display settings. (p. 107) |
| | **Connectivity**: Set the connection options. (p. 108) |
| | **General**: Change the settings for the camera system such as memory format and default file name. (p. 109) |

4 Select an item.




5 Select an option.




6 Press [**MENU**] to return to the previous screen.

## Sound

* Default

| Item | Description |
|---|---|
| **Volume** | Set the volume of all sounds. (**Off**, **Low**, **Medium***, **High**) |
| **Beep Sound** | Set the sound the camera emits when you press the buttons or switch modes on or off. (**Off**, **On***) |
| **Shutter Sound** | Set the sound the camera emits when you press the shutter button. (**Off**, **Sound 1***, **Sound 2**, **Sound 3**) |
| **Start Sound** | Set the sound the camera emits when you turn on your camera. (**Off***, **Star Flight**, **Laser Show**, **Cloud**) |
| **AF Sound** | Set the sound the camera emits when you half-press the shutter button on or off. (**Off**, **On***) |

## Display

* Default

| Item | Description |
|---|---|
| **Start Image** | Set a start image to display when the camera turns on.<br>• **Off***: Display no start image.<br>• **Logo**: Display a default image stored in the internal memory.<br>• **User Image**: Select User Image from the photos you captured in the memory.<br>If you select a new photo as a User Image or reset your camera, the camera will delete the current image. |
| **Wallpapers** | Set wallpaper for the Home screen with the desired image. (**Wallpaper Gallery**, **Album**) |
| **Guide Line** | Select a guide to help you compose a scene. (**Off***, **3 X 3**, **2 X 2**, **Cross**, **Diagonal**) |
| **Date/Time Display** | Set whether or not to display the date and time on the camera's display. (**Off***, **On**) |
| **Help Display** | Display a brief description of an option or menu. (**Off**, **On***) |

* Default

| Item | Description |
|---|---|
| **Display Brightness** | Adjust the brightness of the screen. (**Auto***, **Dark**, **Normal**, **Bright**)<br>**Normal** is fixed in Playback mode even if you have selected **Auto**. |
| **Quick View** | Set whether or not to review a captured image before returning to the Shooting mode. (**Off**, **On***)<br>This feature does not work in some modes. |
| **Auto Display Off** | If you perform no operations for 30 seconds, the camera automatically switches to Power save mode. (**Off***, **On**)<br>In Power save mode, press any button other than [⏻] to resume using the camera. |

## Connectivity

* Default

| Item | Description |
|---|---|
| **Video Out** | Set the video signal output for your region.<br>• **NTSC**: USA, Canada, Japan, Korea, Taiwan, Mexico, etc<br>• **PAL** (supports only BDGHI): Australia, Austria, Belgium, China, Denmark, England, Finland, France, Germany, Italy, Kuwait, Malaysia, Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Switzerland, Thailand, etc |
| **i-Launcher** | Set i-Launcher to launch automatically when you connect your camera to your computer. (**Off**, **On***) |

## General

* Default

| Item | Description |
|---|---|
| **Network Information** | View the Mac address and network certification number of your camera. |
| **Language** | Set a language for the display text. |
| **Time Zone** | Set the time zone for your location. When you travel to another country, select **Visit**, and then select the appropriate time zone. (**Home***, **Visit**) |
| **Date/Time Set** | Set the date and time. |
| **Date Type** | Set a date format. (**YYYY/MM/DD**, **MM/DD/YYYY**, **DD/MM/YYYY**)<br>The default date type may differ depending on the language selected. |
| **Time Type** | Set the time format. (**12 Hr**, **24 Hr**)<br>The default time type may differ depending on the language selected. |

* Default

| Item | Description |
|---|---|
| **File No.** | Specify how to name files.<br>• **Reset**: Set the file number to start from 0001 when you insert a new memory card, format a memory card, or delete all files.<br>• **Series***: Set the file number to resume from the previous file number when you insert a new memory card, format a memory card, or delete all files.<br>• The default name of the first folder is 100PHOTO and the default name of the first file is SAM_0001.<br>• The file number increases by one, from SAM_0001 to SAM_9999, each time you capture a photo or record a video.<br>• The folder number increases by one, from 100PHOTO to 999PHOTO, each time a folder is full.<br>• The maximum number of files that can be stored in one folder is 9,999.<br>• The camera defines file names according to the Design rule for Camera File system (DCF) standard. If you intentionally change file names, the camera may not play back the files. |

* Default

| Item | Description |
|---|---|
| **Imprint** | Set whether or not to display the date and time on captured photos. (**Off***, **Date**, **Date & Time**)<br>• The date and time will be displayed on the bottom right corner of the photo.<br>• Some printer models may not print the date and time properly.<br>• The photo will not display the date and time if:<br>- you select **Live Panorama** in **Magic** mode |
| **Auto Power Off** | Set the camera to turn off automatically when you perform no operations for a specified period. (**Off**, **1 min**, **3 min***, **5 min**, **10 min**)<br>• Your settings will not change when you replace the battery.<br>• The camera will not turn off automatically when the camera is connected to a computer or WLAN or when you are playing a slide show or videos. |
| **DIRECT LINK (Wi-Fi Button)** | Start a preset Wi-Fi function by pressing [Wi-Fi]. (**AutoShare**, **MobileLink***, **Remote Viewfinder**, **Email**, **SNS & Cloud**, **Samsung Link**) |
| **Live view NFC** | Set a Wi-Fi function to launch by reading a tag from an NFC-enabled device in Shooting mode. (**AutoShare**, **Remote Viewfinder***) |

* Default

| Item | Description |
|---|---|
| **AF Lamp** | Set a light to turn on automatically in dark places to help you focus. (**Off**, **On***) |
| **Format** | Format the memory. Formatting will delete all files, including protected files. (**Yes**, **No**)<br>Errors can occur if you use a memory card formatted by another brand of camera, a memory card reader, or a computer. Please format memory cards in the camera before using them to capture photos. |
| **Reset** | Reset menus and shooting options. Date and time, language, and video output settings will not be reset. (**Yes**, **No**) |
| **Open Source License** | View open source licenses. |

# Appendixes

Get information about error messages, specifications, and maintenance.


**Error messages** ..... 112

**Camera maintenance** ..... 113

- Cleaning your camera ..... 113
- Using or storing the camera ..... 114
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# Error messages

When the following error messages appear, try these remedies.

| Error message | Suggested remedies |
|---|---|
| **Cannot read file content** | Delete the damaged file or contact a service center. |
| **Card Error** | • Turn off your camera, and then turn it on again.<br>• Remove your memory card, and then insert it again.<br>• Format your memory card. |
| **Card not supported.** | The inserted memory card is not supported by your camera. Insert a microSD, microSDHC, or microSDXC memory card. |
| **Connection failed.** | • The camera cannot connect to the network using the selected access point. Select another AP and try again.<br>• The camera has failed to connect to the other devices. Try connecting again. |
| **DCF Full Error** | File names do not match the DCF standard. Transfer the files from the memory card to your computer and format the card. Then, open the Settings menu and select **File No.** → **Reset**. (p. 109) |
| **Device disconnected.** | Network connection disconnected while photos are being transferred to supported devices. Re-select a supported device. |

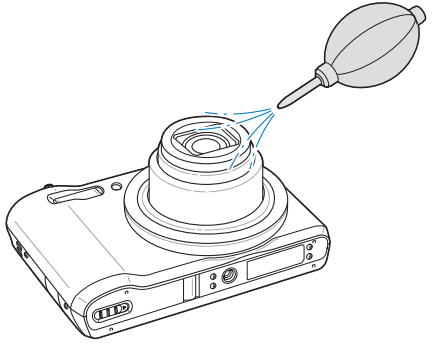
| Error message | Suggested remedies |
|---|---|
| **File system not supported.** | Your camera does not support the FAT file structure of the inserted memory card. Format the memory card on the camera. |
| **Initialization failed.** | The camera has failed to locate a device that supports Samsung Link. Turn on devices on the network that support Samsung Link. |
| **Low Battery** | Insert a charged battery or recharge the battery. |
| **Memory Full** | Delete unnecessary files or insert a new memory card. |
| **No Image File** | Capture photos or insert a memory card that contains some photos. |
| **Password Incorrect** | The password for transferring files to another camera is wrong. Enter the correct password. |
| **Transfer failed.** | • The camera has failed to send e-mails or files to other devices.Try sending again.<br>• Check the network connection and try again. |

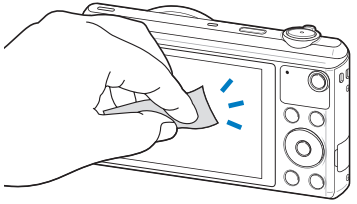
# Camera maintenance

## Cleaning your camera

### Camera lens and display

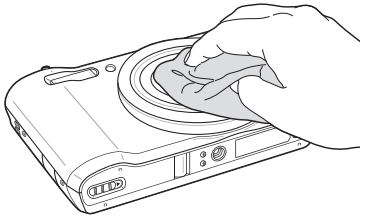
Use a blower brush to remove dust and wipe the lens gently with a soft cloth. If any dust remains, apply lens cleaning liquid to a piece of lens cleaning paper and wipe gently.





### Camera body

Wipe gently with a soft, dry cloth.



- Never use benzene, thinners, or alcohol to clean the device. These solutions can damage the camera or cause it to malfunction.
- Do not press on or use a blower brush on the lens cover. This can damage the camera.

## Using or storing the camera

### Inappropriate places to use or store the camera

- Avoid exposing the camera to very cold or very hot temperatures.
- Avoid using your camera in areas with extremely high humidity, or where the humidity changes drastically.
- Avoid exposing the camera to direct sunlight and storing it in hot, poorly-ventilated areas, such as in a car during summer time.
- Protect your camera and the display from impact, rough handling, and excessive vibration to avoid serious damage.
- Avoid using or storing your camera in dusty, dirty, humid, or poorly-ventilated areas to prevent damage to moving parts and internal components.
- Do not use your camera near fuels, combustibles, or flammable chemicals. Do not store or carry flammable liquids, gases, or explosive materials in the same compartment as the camera or its accessories.
- Do not store the camera where there are mothballs.

### Using on beaches or shores

- Protect your camera from sand and dirt when you use it on beaches or in similar areas.
- Your camera is not waterproof. Do not handle the battery, adapter, or memory card with wet hands. Operating the camera with wet hands may cause damage to your camera.

### Storing for extended period of time

- When you store the camera for an extended period, place it in a sealed container with an absorbent material, such as silica gel.
- Over time, unused batteries will discharge and must be recharged before use.
- You must reset the date and time when you turn the camera on after the camera and battery have been separated for a prolonged period.

### Using the camera with caution in humid environments

When you transfer the camera from a cold environment to a warm one, condensation can form on the lens or internal components of the camera. In this situation, turn off the camera and wait for at least 1 hour. If condensation forms on the memory card, remove the memory card from the camera and wait until all moisture has evaporated before reinserting it.

### Other cautions

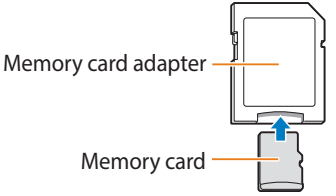
- Do not swing your camera by the strap. This may cause injury to yourself or others or damage to your camera.
- Do not paint your camera, as paint can clog moving parts and prevent proper operation.
- Turn off the camera when not using it.

- Your camera contains delicate parts. Avoid impacts to the camera.
- Protect the display from external force by keeping it in the case when not in use. Protect the camera from scratches by keeping it away from sand, sharp implements, or loose change.
- Do not use the camera if the screen is cracked or broken. Broken glass or acrylic could cause injury to your hands and face. Take the camera to a Samsung service center to have it repaired.
- Never place cameras, batteries, chargers, or accessories near, on, or in heating devices, such as microwave ovens, stoves, or radiators. Heat can deform or overheat these devices, which can cause a fire or explosion.
- Do not expose the lens to direct sunlight, as this may discolor the image sensor or cause it to malfunction.
- Protect the lens from fingerprints and scratches. Clean the lens with a soft, clean, debris-free lens cloth.
- The camera may turn off if struck or dropped. This is to protect the memory card. Turn on the camera to use it again.
- While you use the camera, it may heat up. This is normal and should not affect your camera's lifespan or performance.
- When you use the camera in low temperatures, it may take some time to turn on, the color of the display may be changed temporarily, or after-images may appear. These conditions are not malfunctions and they will correct themselves when the camera is returned to milder temperatures.
- Paint or metal on the outside of the camera may cause allergies, itchy skin, eczema, or swelling for people with sensitive skin. If you experience any of these symptoms, stop using the camera immediately and consult a doctor.
- Do not insert foreign objects into any of your camera's compartments, slots, or access points. Damage due to improper use may not be covered by your warranty.
- Do not allow unqualified personnel to service the camera or attempt to service the camera yourself. Any damage that results from unqualified service is not covered by your warranty.

## About memory cards

### Supported memory cards

Your camera supports microSD (Secure Digital), microSDHC (Secure Digital High Capacity), or microSDXC (Secure Digital eXtended Capacity) memory cards.




To read data with a PC or memory card reader, insert the memory card into a memory card adapter.

## Memory card capacity

The memory capacity may differ depending on the scenes you shoot or shooting conditions. These capacities are based on a 2 GB microSD card:

### Photo

| Size | Super Fine | Fine | Normal |
|---|---|---|---|
| 16M | 231 | 485 | 669 |
| 14MP | 262 | 525 | 719 |
| 12MW | 303 | 606 | 808 |
| 10M | 359 | 719 | 969 |
| 5M | 669 | 1139 | 1486 |
| 3M | 969 | 1609 | 1927 |
| 2MW | 1381 | 2262 | 2738 |
| 1M | 2628 | 3185 | 3806 |

### Video

| Size | 30fps |
|---|---|
| HD<br>1280 X 720 | Approx. 15' 35" |
| VGA<br>640 X 480 | Approx. 30' 44" |
| 240 WEB<br>For Sharing | Approx. 90' 03" |

- The figures above are measured without using the zoom function.
- Available recording time may vary if you use the zoom.
- Several videos were recorded in succession to determine the total recording time.

## Cautions when using memory cards

- Avoid exposing memory cards to very cold or very hot temperatures (below 0 °C/32 °F or above 40 °C/104 °F). Extreme temperatures can cause memory cards to malfunction.
- Insert a memory card in the correct direction. Inserting a memory card in the wrong direction may damage your camera and memory card.
- Do not use memory cards that have been formatted by other cameras or by a computer. Reformat the memory card with your camera.
- Turn off the camera before you insert or remove the memory card.
- Do not remove the memory card or turn off your camera while the lamp is blinking, as this may damage your data.
- When the lifespan of a memory card has expired, you cannot store any more photos on the card. Use a new memory card.
- Do not bend, drop, or subject memory cards to heavy impact or pressure.
- Avoid using or storing memory cards near strong magnetic fields.
- Avoid using or keeping memory cards in areas with high temperatures, high humidity, or corrosive substances.
- Prevent memory cards from making contact with liquids, dirt, or foreign substances. If dirty, wipe the memory card clean with a soft cloth before you insert the memory card into your camera.
- Do not allow liquids, dirt, or foreign substances to come in contact with memory cards or the memory card slot. Doing so may cause memory cards or the camera to malfunction.
- When you carry a memory card, use a case to protect the card from electrostatic discharges.
- Transfer important data to other media, such as a hard disk, CD, or DVD.
- When you use the camera for an extended period, the memory card may become warm. This is normal and does not indicate a malfunction.

The manufacturer is not responsible for any loss of data.

## About the battery

Use only Samsung-approved batteries.

### Battery specifications

| Specification | Description |
|---|---|
| **Model** | BP70A |
| **Type** | Lithium-ion battery |
| **Cell capacity** | 700 mAh |
| **Voltage** | 3.7 V |
| **Charging time* (when the camera is switched off)** | Approximately 150 min |

* Charging the battery by connecting it to a computer may take longer.

### Battery life

| Average shooting time/ Number of photos | | Test conditions (when the battery is fully charged) |
|---|---|---|
| **Photos** | Approximately 100 min/ Approximately 200 photos | The battery life was measured under the following conditions: in Program mode, in darkness, 16M resolution, Fine quality, OIS on.<br>1. Set the flash option to **Fill in**, take a single shot, and zoom in or out.<br>2. Set the flash option to **Off**, take a single shot, and zoom in or out.<br>3. Perform steps 1 and 2, waiting 30 seconds between each step. Repeat the process for 5 minutes, and then turn off the camera for 1 minute.<br>4. Repeat steps 1 to 3. |
| **Videos** | Approximately 70 min | Record videos at HD resolution and 30 FPS. |

- The figures above are based on the CIPA test standards. Your results may differ depending on your actual usage.
- Several videos were recorded in succession to determine the total recording time.
- When using network functions, the battery will be depleted more quickly.

## Low battery message

When the battery has fully discharged, the battery icon will turn red and the "**Low Battery**" message will appear.

## Notes about using the battery

- Avoid exposing batteries to very cold or very hot temperatures (below 0 °C/32 °F or above 40 °C/104 °F). Extreme temperatures can reduce the charging capacity of your batteries.
- When you use the camera for an extended period, the area around the battery chamber may become warm. This does not affect the normal use of the camera.
- Do not pull the power supply cord to disconnect the plug from the power outlet, as this may cause a fire or electric shock.
- In temperatures below 0 °C/32 °F, battery capacity and battery life may decrease.
- Battery capacity may decrease in low temperatures, but will return to normal in milder temperatures.
- Remove the batteries from your camera when storing it for an extended period. Installed batteries may leak or corrode over time and cause serious damage to your camera. Storing the camera for extended periods with the battery installed causes the battery to discharge. You may not be able to recharge a fully discharged battery.
- When you do not use the camera for an extended period (3 months or more), check the battery and recharge it regularly. If you let the battery discharge continually, its capacity and life may decrease, which can lead to a malfunction, fire, or explosion.

## Cautions about using the battery

**Protect batteries, chargers, and memory cards from damage**

Prevent batteries from making contact with metal objects, as this can create a connection between the + and – terminals of your battery and lead to temporary or permanent battery damage and may cause a fire or electric shock.

## Notes about charging the battery

- If the status lamp is off, make sure that the battery is inserted correctly.
- If the camera is on while charging, the battery may not fully charge. Turn off the camera before charging the battery.
- Do not use your camera when you are charging the battery. This may cause a fire or electric shock.
- Do not pull the power supply cord to disconnect the plug from the power outlet, as this may cause a fire or electric shock.
- When the battery is fully discharged, allow it to charge for a while before turning the camera on. Let the battery charge for at least 10 minutes before turning on the camera.
- If you connect the camera to an external power source when the battery is depleted, using high energy-consuming functions will cause the camera to turn off. To use the camera normally, recharge the battery.

- If you reconnect the power cable when the battery is fully charged, the status lamp turns on for approximately 30 minutes.
- Using the flash or recording videos depletes the battery quickly. Charge the battery until the red status lamp turns off.
- If the indicator light does not illuminate, reconnect the cable, or remove the battery and insert it again.
- Overcharging batteries may shorten battery life. After charging is finished, disconnect the cable from your camera.
- Do not bend or place heavy objects on the AC cable. Doing so may damage the cable.

## Notes about charging with a computer connected

- Use only the provided USB cable.
- The battery may not charge when:
  - you use a USB hub
  - other USB devices are connected to your computer
  - you connect the cable to the port on the front side of your computer
  - the USB port of your computer does not support the power output standard (5 V, 500 mA)

## Handle and dispose of batteries and chargers with care

- Never dispose of batteries in a fire. Follow all local regulations when you dispose of used batteries.
- Never place batteries or cameras on or in heating devices, such as microwave ovens, stoves, or radiators. Batteries may explode when they are overheated.

**Personal injury or death can occur if the battery is handled carelessly or improperly. For your safety, follow these instructions for proper battery handling:**

- The battery can ignite or explode if not handled properly. If you notice any deformities, cracks, or other abnormalities in the battery, immediately discontinue use of the battery and contact a service center.
- Use only authentic, manufacturer-recommend battery chargers and adapters and charge the battery only by the methods described in this user manual.
- Do not place the battery near heating devices or expose it to excessively warm environments, such as the inside of an enclosed car in the summertime.
- Do not place the battery in a microwave oven.
- Avoid storing or using the battery in hot, humid places, such as spas or shower enclosures.
- Do not rest the camera on flammable surfaces, such as bedding, carpets, or electric blankets for a prolonged period.
- When the camera is switched on, do not leave it in any confined space for a prolonged period.
- Do not allow battery terminals to come in contact with metallic objects, such as necklaces, coins, keys, or watches.
- Use only authentic, manufacturer-recommended, Lithium-ion replacement batteries.
- Do not disassemble the battery or puncture it with any sharp object.
- Avoid exposing the battery to high pressure or crushing forces.
- Avoid exposing the battery to major impacts, such as dropping it from high places.
- Do not expose the battery to temperatures of 60 °C (140 °F) or above.
- Do not allow the battery to come in contact with moisture or liquids.
- Do not expose the battery to sources of excessive heat such as sunshine, fire, or the like.

**Disposal guidelines**

- Dispose of the battery with care.
- Do not dispose of the battery in a fire.
- Disposal regulations may differ by country or region.Dispose of the battery in accordance with all local and federal regulations.

**Guidelines for charging the battery**

Charge the battery only by the methods described in this user manual. The battery can ignite or explode if not charged properly.

## Upgrading the firmware

i-Launcher allows you to upgrade the firmware of your camera.

1 On the Home screen, scroll to **<Basic>**.

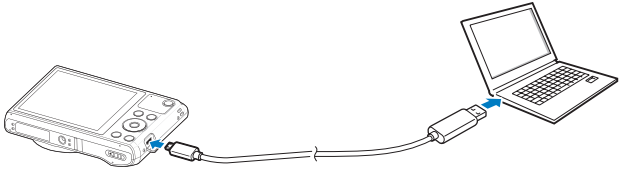
2 Select .

3 Select **Connectivity** → **i-Launcher** → **On**.

4 Turn off the camera.

5 Connect the camera to your computer with the USB cable.

> You must plug the small end of the USB cable into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.



6 Turn on the camera.

7 Install i-Launcher on the PC.

| OS | How to Install |
|---|---|
| **Windows** | When the pop-up window prompts you to install i-Launcher, select **Yes**.<br>• If a pop-up window prompting you to run iLinker.exe appears, run it first.<br>• If the pop-up window does not appear, select **My Computer** → **i-Launcher** → **iLinker.exe**.<br>• When you connect the camera to a computer with i-Launcher installed, the program will launch automatically. |
| **Mac** | Click **Devices** → **i-Launcher** → **Mac** → **iLinker**. |

8 Upgrade the firmware to the latest version following the on-screen instructions.

- Select **Firmware Upgrader** on the screen of i-Launcher.

> • Before upgrading the firmware, ensure that the PC is connected to a network.
> • Do not power off during the firmware upgrade.

# Before contacting a service center

If you are having trouble with your camera, try these troubleshooting procedures before you contact a service center. If you have attempted the suggested remedy and are still having problems with your device, contact your local dealer or service center.

When you leave your camera at a service center, be sure to also leave the other components that may have contributed to the malfunction, such as the memory card and battery.

| Situation | Suggested remedies |
|---|---|
| **Cannot turn on the camera** | • Ensure that the battery is inserted.<br>• Ensure that the battery is inserted correctly. (p. 18)<br>• Charge the battery. |
| **The power turns off suddenly** | • Charge the battery.<br>• Your camera may be in Auto Power Off mode. (p. 110)<br>• The camera may turn off to prevent the memory card from being damaged due to an impact. Turn on your camera again. |
| **The camera is losing battery power quickly** | • The battery may lose power more quickly in low temperatures (below 0 °C/32 °F). Keep the battery warm by putting it into your pocket.<br>• Using the flash or recording videos depletes the battery quickly. Recharge if needed.<br>• Batteries are consumable parts that must be replaced over time. Get a new battery if the battery life is diminishing quickly. |

| Situation | Suggested remedies |
|---|---|
| **Cannot capture photos** | • There is no space on the memory card. Delete unnecessary files or insert a new card.<br>• Format the memory card.<br>• The memory card is defective. Get a new memory card.<br>• Make sure that the camera is switched on.<br>• Charge the battery.<br>• Make sure that the battery is inserted correctly. |
| **The camera freezes** | Remove the battery and insert it again. |
| **The camera heats up** | While you use the camera, it may heat up. This is normal and should not affect your camera's lifespan or performance. |
| **The flash does not work** | • The flash option may be set to **Off**. (p. 52)<br>• You cannot use the flash in some modes. |

| Situation | Suggested remedies |
|---|---|
| **The flash fires unexpectedly** | The flash may fire due to static electricity. The camera is not malfunctioning. |
| **The date and time are incorrect** | Set the date and time in the display settings. (p. 109) |
| **The display or buttons do not work** | Remove the battery, and then insert it again. |
| **The camera display responds poorly** | If you use your camera at very low temperatures, it may cause the camera screen to malfunction or discolor. For better performance of your camera screen, use your camera in moderate temperatures. |
| **The memory card has an error** | • Turn off your camera, and then turn it on again.<br>• Remove your memory card, and then insert it again.<br>• Format your memory card.<br>See "Cautions when using memory cards" for more detail. (p. 117) |

| Situation | Suggested remedies |
|---|---|
| **Cannot play back files** | If you change the name of a file, your camera may not play the file (the name of the file should meet the DCF standard). If you encounter this situation, play back the files on your computer. |
| **The photo is blurry** | • Make sure that the focus option you set is suitable for close-up shots. (p. 55)<br>• Make sure that the lens is clean. If not, clean the lens. (p. 113)<br>• Make sure that the subject is within range of the flash. (p. 127) |
| **The colors in the photo do not match the actual scene** | An incorrect White Balance can create unrealistic color. Select the proper White Balance option to suit the light source. (p. 63) |
| **The photo is too bright or too dark** | Your photo is overexposed or underexposed.<br>• Turn the flash off or on. (p. 52)<br>• Adjust the ISO sensitivity. (p. 54)<br>• Adjust the exposure value. (p. 61) |

| Situation | Suggested remedies |
|---|---|
| **The TV does not display your photos** | • Make sure that the camera is correctly connected to the TV with the A/V cable.<br>• Make sure that your memory card contains photos. |
| **Your computer does not recognize your camera** | • Make sure that the USB cable is connected correctly.<br>• Make sure that your camera is switched on.<br>• Make sure that you are using a supported operating system. |
| **Your computer disconnects the camera while transferring files** | The file transmission may be interrupted by static electricity. Disconnect the USB cable and connect it again. |

| Situation | Suggested remedies |
|---|---|
| **i-Launcher is not functioning properly** | • End i-Launcher and restart the program.<br>• Make sure that **i-Launcher** is set to **On** in the settings menu. (p. 108)<br>• Depending on your computer's specifications and environment, the program may not launch automatically. In this case, click **Start** → **All Programs** → **Samsung** → **i-Launcher** → **Samsung i-Launcher** on your Windows computer. (For Windows 8, open Start screen, and then select **All apps** → **Samsung i-Launcher**.) Or, click **Applications** → **Samsung** → **i-Launcher** on your Mac OS computer. |
| **Your TV or computer cannot display photos and videos that are stored on a microSDXC memory card.** | microSDXC memory cards use the exFAT file system. Ensure that the external device is compatible with the exFAT file system before connecting the camera to the device. |
| **Your computer does not recognize a microSDXC memory card.** | microSDXC memory cards use the exFAT file system. To use microSDXC memory cards on a Windows XP computer, download and update the exFAT file system driver from the Microsoft website. |

# Camera specifications

| Image sensor | |
|---|---|
| Type | 1/2.3" (Approximately 7.76 mm) CCD |
| Effective pixels | Approximately 16.2 mega-pixels |
| Total pixels | Approximately 16.6 mega-pixels |
| **Lens** | |
| Focal length | Samsung Lens 12x Zoom Lens f = 4.3–51.6 mm<br>(35 mm film equivalent: 24–288 mm) |
| F-stop range | F3.1(W)–F6.3(T) |
| Digital zoom | • Still image mode: 1.0–2.0X<br>• Playback mode: 1.0–14.4X (depending on image size)<br>• Intelli zoom: 2.0X |
| **Display** | |
| Type | TFT LCD |
| Feature | 2.7" (67.5 mm) QVGA(230K) |
| **Focusing** | |
| Type | TTL auto focus (Center AF, Multi AF, Tracking AF,<br>Face Detection AF, Video continuous auto focus (CAF)) |

| Range | | Wide (W) | Tele (T) |
|---|---|---|---|
| | Normal (AF) | 31 in. (80 cm)-infinity | 98 in. (250 cm)-infinity |
| | Macro | 2-31 in. (5-80 cm) | 51-98 in. (130-250 cm) |
| | Auto Macro | 2 in. (5 cm) -infinity | 51 in. (130 cm)-infinity |

**Shutter speed**

- Smart Auto: 1/8–1/2,000 sec.
- Program: 1–1/2,000 sec.
- Night: 8–1/2,000 sec.
- Fireworks: 2 sec.

| Exposure | |
|---|---|
| Control | Program AE |
| Metering | Multi, Spot, Center-weighted, Face Detection |
| Metering range | EV 2–17 (Wide, ISO Auto), EV 4–19 (Tele, ISO Auto) |
| Compensation | ±2EV (1/3 EV Step) |
| ISO equivalent | Auto, ISO 80, ISO 100, ISO 200, ISO 400, ISO 800, ISO 1600, ISO 3200 |

| Flash | |
|---|---|
| Mode | Auto, Red-eye, Fill in, Slow Sync, Off, Red-eye Fix |
| Range | • Wide: 7.87-157.48 in. (0.2-4.0 m) (ISO Auto)<br>• Tele: 19.69-62.99 in. (0.5-1.6 m) (ISO Auto) |
| Recharging time | Approximately 5 sec. |
| **Shake reduction** | |
| Optical Image Stabilization (OIS) | |
| **Effect** | |
| Photo Shooting mode | • Photo Filter (Smart Filter): Miniature, Vignetting, Cross Filter, Fish-eye, Classic, Retro<br>• Image Adjust: Sharpness, Contrast, Saturation |
| Video Shooting mode | Movie Filter: Miniature, Vignetting, Fish-eye, Classic, Retro, Palette Effect 1, Palette Effect 2, Palette Effect 3, Palette Effect 4 |
| **White Balance** | |
| Auto WB, Daylight, Cloudy, Fluorescent_H, Fluorescent_L, Tungsten, Custom Set, Color Temp. | |
| **Date Imprinting** | |
| Date & Time, Date, Off | |

| Shooting | |
|---|---|
| Photos | • Modes: Smart Auto (Portrait, Night Portrait, Backlight Portrait, Night, Backlight, Landscape, White, Natural Green, Blue Sky, Sunset, Macro, Macro text, Macro Color, Tripod, Action, Low Light, Spotlight, Spotlight (Macro), Spotlight (Portrait)), Program, Smart (Beauty Face, Landscape, Macro, Action Freeze, Silhouette, Sunset, Night, Fireworks, Light Trace), Live Panorama, Photo Filter<br>• Burst: Single, Continuous, Motion Capture, AEB<br>• Timer: Off, 10 Sec, 2 Sec, Double (10 Sec, 2 Sec) |
| Videos | • Modes: Smart Scene Detection (Landscape, Blue Sky, Natural Green, Sunset), Movie Filter<br>• Format: MP4 (H.264) (Max recording time: 20 min)<br>• Size: 1280 X 720, 640 X 480, 240 Web<br>• Voice: On, Off, Zoom Mute<br>• Continuous AF: Continuous AF On, Continuous AF Off |

| Playback | |
|---|---|
| Photos | • Type: Single image, Thumbnails, Multi Slide Show with Music and Effect, Smart Album*<br>* Smart Album category: All, Date, File Type<br>• Edit: Rotate, Smart Filter, Brightness, Contrast, Saturation, ACB, Face Retouch, Red-eye Fix, Resize, Crop<br>• Effect: Smart Filter (Normal, Miniature, Vignetting, Cross Filter, Fish-eye, Classic, Retro) |
| Videos | Video editing: Still image capture, Time trimming |
| **Storage** | |
| Media | External memory (Optional):<br>microSD card (2 GB guaranteed),<br>microSDHC card (up to 32 GB guaranteed),<br>microSDXC card (up to 64 GB guaranteed)<br>- Class 6 and above recommended |

| | |
|---|---|
| File format | • Still Image: JPEG (DCF), EXIF 2.3<br>• Movie Clip: MP4 (Video: MPEG-4.AVC/H.264, Audio: AAC) |
| Image size | Icon: Size<br>16M: 4608 X 3456<br>14MP: 4608 X 3072<br>12MW: 4608 X 2592<br>10M: 10M: 3648 X 2736<br>5M: 2592 X 1944<br>3M: 1984 X 1488<br>2MW: 1920 X 1080<br>1M: 1024 X 768 |
| **Wireless network** | |
| MobileLink, Remote Viewfinder, Email, SNS & Cloud, Samsung Link, AutoShare, S/W Upgrade Notifier | |

| NFC | |
|---|---|
| Yes | |
| **Interface** | |
| Digital output connector | USB 2.0 |
| Audio input/ output | Internal speaker (Mono), Microphone (Mono) |
| Video output | A/V: NTSC, PAL (selectable) |
| DC power input connector | 5.0 V |
| **Power source** | |
| Rechargeable battery | Lithium-ion battery (BP70A, 700 mAh) |
| Connector type | Micro USB (5 pin) |
| The power source may differ depending on your region. | |

| Dimensions (W X H X D) |
|---|
| 3.97 X 2.40 X 1.08 in. (100.9 X 61.2 X 27.5 mm) |
| **Weight** |
| 5.11 oz (145 g) (without battery and memory card) |
| **Operating Temperature** |
| 0–40 °C (32-104 °F) |
| **Operating Humidity** |
| 5–85 % |
| **Software** |
| i-Launcher |

Specifications may change without notice to improve performance.

# Glossary

**ACB (Auto Contrast Balance)**
This feature automatically improves the contrast of your images when the subject is backlit or when there is a high contrast between your subject and the background.

**AEB (Auto Exposure Bracket)**
This feature automatically captures several images at different exposures to help you capture a properly-exposed image.

**AF (Auto Focus)**
A system that automatically focuses the camera lens on the subject. Your camera uses the contrast to focus automatically.

**Aperture**
The aperture controls the amount of light that reaches the camera's sensor.

**Camera shake (Blur)**
If the camera is moved while the shutter is open, the entire image may appear blurred. This occurs more often when the shutter speed is slow. Prevent camera shake by raising the sensitivity, using the flash, or using a faster shutter speed. Alternately, use a tripod or the OIS function to stabilize the camera.

**Composition**
Composition in photography means arranging objects in a photo. Usually, abiding by the rule of thirds leads to a good composition.

**DCF (Design rule for Camera File system)**
A specification to define a file format and file system for digital cameras created by the Japan Electronics and Information Technology Industries Association (JEITA).

**Depth of field**
The distance between the nearest and farthest points that can be acceptably focused in a photograph. Depth of field varies with lens aperture, focal length, and distance from the camera to the subject. For example, using a smaller f-number will create a large depth of field and blur the background in the composition.

**Digital zoom**
A feature that artificially increases the amount of zoom available with a zoom lens (Optical zoom). When using the Digital zoom, the image quality will deteriorate as the magnification increases.

**EV Compensation**

This feature allows you to quickly adjust the exposure value measured by the camera, in limited increments, to improve the exposure of your photos. Set the EV compensation to -1.0 EV to adjust the value one step darker and 1.0 EV to one step brighter.

**EV (Exposure Value)**

All the combinations of the camera's shutter speed and lens aperture that result in the same exposure.

**Exif (Exchangeable Image File Format)**

A specification to define an image file format for digital cameras created by the Japan Electronic Industries Development Association (JEIDA).

**Exposure**

The amount of light allowed to reach the camera's sensor. Exposure is controlled by a combination of the shutter speed, the aperture value, and ISO sensitivity.

**Flash**

A speed light that helps to create adequate exposure in low-light conditions.

**Focal length**

The distance from the middle of the lens to its focal point (in millimeters). Longer focal lengths result in narrower angles of view and the subject is magnified. Shorter focal lengths result in wider angles of view.

**H.264/MPEG-4**

A high-compression video format established by international standard organizations ISO-IEC and ITU-T and developed by the Joint Video Team (JVT). This codec is capable of providing good video quality at low bit rates.

**Image sensor**

The physical part of a digital camera that contains a photosite for each pixel in the image. Each photosite records the brightness of the light that strikes it during an exposure. Common sensor types are CCD (Charge-coupled Device) and CMOS (Complementary Metal Oxide Semiconductor).

**ISO sensitivity**
The sensitivity of the camera to light, based on the equivalent film speed used in a film camera. At higher ISO sensitivity settings, the camera uses a higher shutter speed, which can reduce blur caused by camera shake and low light. However, images with high sensitivity are more susceptible to noise.

**JPEG (Joint Photographic Experts Group)**
A lossy method of compression for digital images. JPEG images are compressed to reduce their overall file size with minimal deterioration of the image resolution.

**LCD (Liquid Crystal Display)**
A visual display commonly used in consumer electronics. This display needs a separate backlight, such as CCFL or LED, to reproduce colors.

**Macro**
This feature allows you to capture close-up photos of very small objects. When using the macro feature, the camera can maintain a sharp focus on small objects at a near life-size ratio (1:1).

**Metering**
The metering refers to the way in which the camera measures the quantity of light to set the exposure.

**MJPEG (Motion JPEG)**
A video format which is compressed as a JPEG image.

**NFC (Near Field Communication)**
NFC is a set of standards for radio communication at very close proximity. You can use NFC-enabled devices to activate features or exchange data with other devices.

**Noise**
Misinterpreted pixels in a digital image that may appear as misplaced or random, bright pixels. Noise usually occurs when photos are shot with a high sensitivity or when a sensitivity is automatically set in a dark place.

**OIS (Optical Image Stabilization)**
This feature compensates in real-time for shaking and vibrating while shooting. There is no image degradation compared to Digital Image Stabilization feature.

**Optical zoom**

This is a general zoom which can enlarge images with a lens and does not degrade the quality of images.

**Quality**

An expression of the rate of compression used in a digital image. Higher quality images have a lower rate of compression, which usually results in a larger file size.

**Resolution**

The number of pixels present in a digital image. High resolution images contain more pixels and typically show more detail than low resolution images.

**Shutter speed**

Shutter speed refers to the amount of time it takes to open and close the shutter, and it is an important factor in the brightness of a photo, as it controls the amount of light which passes through the aperture before it reaches the image sensor. A fast shutter speed allows less time to let light in and the photo becomes darker and more easily freezes subjects in motion.

**Vignetting**

A reduction of an image's brightness or saturation at the periphery (outer edges) compared to the center of the image. Vignetting can draw interest to subjects positioned in the center of an image.

**White balance (color balance)**

An adjustment of the intensities of colors (typically the primary colors red, green, and blue) in an image. The goal of adjusting the white balance, or color balance, is to correctly render the colors in an image.

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(Applicable in countries with separate collection systems)

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To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

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