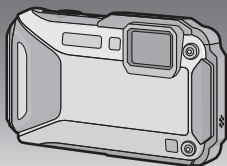# Panasonic

Basic Operating Instructions
Digital Camera

Model No. DMC-FT6

LUMIX

Please read these instructions carefully before using this product, and save this manual for future use.

More detailed instructions on the operation of this camera are contained in "Operating Instructions for advanced features (PDF format)" in the supplied CD-ROM.

SQT0840
F0315MG0

GN

Dear Customer,

We would like to take this opportunity to thank you for purchasing this Panasonic Digital Camera. Please read these Operating Instructions carefully and keep them handy for future reference. Please note that the actual controls and components, menu items, etc. of your Digital Camera may look somewhat different from those shown in the illustrations in these Operating Instructions.

Carefully observe copyright laws.
• Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

Information for Your Safety

WARNING:

To reduce the risk of fire, electric shock or product damage,
• **Do not let water or other liquids drip or splash inside the unit.**
• **Do not expose accessories (battery pack, battery charger, AC adaptor, SD memory card and etc.) to rain, moisture, dripping or splashing.**
• **Use only the recommended accessories.**
• **Do not remove covers.**
• **Do not repair this unit by yourself. Refer servicing to qualified service personnel.**

The socket outlet shall be installed near the equipment and shall be easily accessible.

■ Product identification marking

Product	Location
Digital Camera	Bottom
Battery Charger	Bottom

■ About the battery pack

> **CAUTION**
> - Danger of explosion if battery is incorrectly replaced. Replace only with the type recommended by the manufacturer.
> - When disposing of the batteries, please contact your local authorities or dealer and ask for the correct method of disposal.

- Do not heat or expose to flame.
- Do not leave the battery(ies) in a car exposed to direct sunlight for a long period of time with doors and windows closed.

> **Warning**
> Risk of fire, explosion and burns. Do not disassemble, heat above 60 °C or incinerate.

■ About the battery charger

> **CAUTION!**
> **To reduce the risk of fire, electric shock or product damage,**
> - **Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure this unit is well ventilated.**

- The battery charger is in the standby condition when the AC power supply cord is connected. The primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

∎ Cautions for Use

- Do not use any other USB connection cables except the supplied one or a genuine Panasonic USB connection cable (DMW-USBC1: optional).
- Always use a genuine Panasonic AV cable (DMW-AVC1: optional).
- Use a "High Speed HDMI micro cable" with the HDMI logo.
  Cables that do not comply with the HDMI standards will not work.
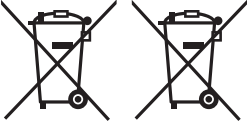 "High Speed HDMI micro cable" (Type D – Type A plug, up to 2 m long)

Keep this unit as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).

- If you use this unit on top of or near a TV, the pictures and/or sound on this unit may be disrupted by electromagnetic wave radiation.
- Do not use this unit near cell phones because doing so may result in noise adversely affecting the pictures and/or sound.
- Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation may adversely affect this unit, disturbing the pictures and/or sound.
- If this unit is adversely affected by electromagnetic equipment and stops functioning properly, turn this unit off and remove the battery or disconnect AC adaptor (DMW-AC5G: optional). Then reinsert the battery or reconnect AC adaptor and turn this unit on.

Do not use this unit near radio transmitters or high-voltage lines.

- If you record near radio transmitters or high-voltage lines, the recorded pictures and/or sound may be adversely affected.

-If you see this symbol-

Disposal of Old Equipment and Batteries
Only for European Union and countries with recycle systems

These symbol are only valid in the European Union and countries with recycle systems.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Contents

Before Use

Please be sure to read "(Important) About the Waterproof/Dustproof and Anti-shock Performance of the Camera" (P9) before using this unit underwater to prevent the unit from being mishandled, which may cause water to seep in.

- Do not apply strong shock or vibration by dropping or knocking the camera. Also, do not apply strong pressure to the camera.
  - Waterproof performance may be impaired.
  - **Lens or LCD monitor may be damaged.**
  - It may cause malfunction in the performance or the function.

■ When inner side of the lens is fogged (condensation)

This unit has been designed to prevent condensation by Anti-fog glass, however it may be caused by the environment in which the camera is used. It is not a malfunction or failure of the camera.
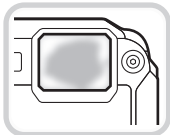
What to do when inner side of the lens is fogged
- Turn off the power and open the side door in a place with constant ambient temperature, away from high temperatures, humidity, sand and dust. The fog will disappear naturally in 10 minutes to 2 hours with the side door open when the temperature of the camera gets close to the ambient temperature.
- Contact Panasonic if the fogging does not disappear.

Conditions in which inner side of the lens may be fogged
Condensation may occur and the inner side of the lens may be fogged when the camera is used in areas that undergo a significant change in temperature or in high humidity, such as the following:
- **When the camera is used underwater suddenly after being on a hot beach etc.**
- **When the camera is moved to a warm area from a cold area, such as at a ski resort or at high altitude**
- **When the side door is opened in a high-humidity environment**

Standard Accessories

Check that all the accessories are supplied before using the camera.
Product numbers correct as of March 2015. These may be subject to change.

1 Battery Pack
  (Indicated as **battery pack** or **battery** in the text)
  Charge the battery before use.
2 Battery Charger
  (Indicated as **battery charger** or **charger** in the text)
3 AC Cable
4 USB Connection Cable
5 CD-ROM
  • Software
  • Operating Instructions for advanced features
  Install on your PC before use.
6 Hand Strap
7 Silicone Jacket

• Supplied accessories are not waterproof (excluding Silicone Jacket).
• SD Memory Card, SDHC Memory Card and SDXC Memory Card are indicated as **card** in the text.
• **The card is optional.**
  You can record or play back pictures on the built-in memory when you are not using a card.
• Consult the dealer or your nearest Service Centre if you lose the supplied accessories. (You can purchase the accessories separately.)

1	2
DMW-BCM13E	VSK0801
3	**4**
K2CJ2YY00052	K1HY08YY0031
5	**6**
SFM0088	VFC4297
7	
VMG2093	
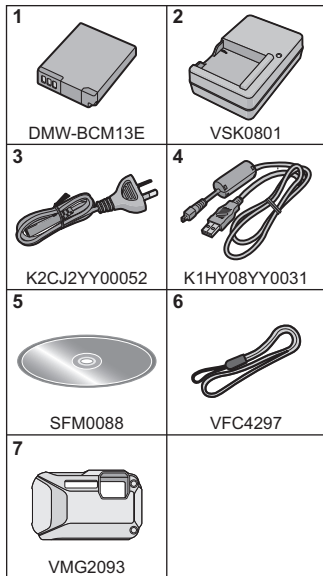
Attaching the Silicone Jacket

Attach is recommended to prevent unintentional opening of the side door when used in the mountains or near water.

• Check that this unit is turned off.
• Attach the Silicone Jacket where there is no sand or dust.

Securely attach the Silicone Jacket to the camera.

• Attach the Silicone Jacket carefully. It may get damaged when attached forcefully.
• Be sure to remove any foreign objects (sand etc.) or water (sea water etc.) adhered inside the Silicone Jacket. If not removed, the foreign objects or water may scratch or dirty the camera. We recommend that you remove the Silicone Jacket from the camera, rinse, and then wipe away the water with a soft dry cloth.
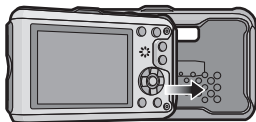
■ Maintenance after using

• Remove the silicone jacket from the unit carefully. It may get damaged when removed forcefully.
• Take the camera out of the Silicone Jacket, and check that foreign objects (sand etc.) or water (sea water etc.) are not adhered.
• Rinse with water, wipe off water with a soft dry cloth, and dry the camera in a well ventilated shaded area.
• Do not dry the camera with hot air from a dryer or similar. It may become unusable due to deformation.
• Do not use chemicals such as benzine, thinner, alcohol, or cleanser, or soap or detergents.
• After use, remove the Silicone Jacket. Do not store the camera for a long period of time with the Silicone Jacket still attached.

(Important) About the Waterproof/ Dustproof and Anti-shock Performance of the Camera

Waterproof/Dustproof Performance
This camera's waterproof/dustproof rating complies with the "IPX8" and "IP6X" ratings. Provided the care and maintenance guidelines described in this document are strictly followed, this camera can operate underwater, to a depth not exceeding 13 m for a time not exceeding 60 minutes. (✻1)

Anti-shock Performance
This camera also complies with "MIL-STD 810F Method 516.5-Shock". The camera has cleared a drop test from a height of 2 m onto 3 cm thick plywood. In most cases this camera should not sustain any damage if dropped from a height not exceeding 2 m. (✻2)

Withstand Load Performance
This camera complies with 100 kgf load tests. (✻3)

This does not guarantee no destruction, no malfunction, or waterproofing in all conditions.

✻1 This means that the camera can be used underwater for specified time in specified pressure in accordance with the handling method established by Panasonic.
✻2 "MIL-STD 810F Method 516.5-Shock" is the test method standard of the U.S. Defense Department, which specifies performing drop tests from a height of 122 cm, at 26 orientations (8 corners, 12 ridges, 6 faces) using 5 sets of devices, and passing the 26 orientation drops within 5 devices. (If failure occurs during the test, a new set is used to pass the drop orientation test within a total of 5 devices)
Panasonic's test method is based on the above "MIL-STD 810F Method 516.5-Shock". However, the drop height was changed from 122 cm to 200 cm dropping onto 3 cm thick plyboard. This drop test was passed.
(Disregarding appearance change such as loss of paint or distortion of the part where drop impact is applied.)
✻3 According to the test conditions specified by Panasonic.

■ Handling of the camera

- Waterproofing is not guaranteed if the unit is subject to an impact as a result of being hit or dropped etc. If an impact to the camera occurs, it should be inspected (subject to a fee) by a Panasonic to verify that the waterproofing is still effective.
- When the camera is splashed with detergent, soap, hot spring, bath additive, sun oil, sun screen, chemical, etc., wipe it off immediately.
- Waterproof function of the camera is for sea water and fresh water only.
- Any malfunction caused by customer misuse, or mishandling will not be covered by the warranty.
- The inside of this unit is not waterproof. Water leakage will cause malfunction.
- Supplied accessories are not waterproof (excluding Silicone Jacket).
- Card and battery are not waterproof. Do not handle with a wet hand. Also, do not insert wet card or battery into the camera.
- Do not leave the camera for a long period of time in places where temperature is very low (at ski resorts or at high altitude etc.) or very high (above 40 °C), inside a car under strong sunlight, close to a heater, on the beach, etc. Waterproof performance may be degraded.

■ About the [Precautions] demonstration display ([Requirements for Underwater use])

- [Precautions] is displayed when the power is turned on for the first time after purchase, with the side door completely closed.
- Please check beforehand to maintain the waterproof performance.

1 Press ◀ to select [Yes], and press [MENU/SET].
- It will automatically skip to the clock setting screen if [No] is selected before it starts.

2 Press ◀/▶ to select the picture.

- ◀: Return to the previous screen

- ▶: View the next screen

- It can be forcefully ended by pressing [MENU/SET].
- When it is forcefully ended while checking by turning the unit off or pressing [MENU/SET], [Precautions] is displayed every time the power is turned on.

3 After the final screen (12/12), press [MENU/SET] to finish.
- When [MENU/SET] is pressed after the final screen (12/12), [Precautions] is not displayed from the next time the power is turned on.
- This can also be viewed from [Precautions] in the [Setup] menu.

Check before using underwater

Always wipe the rubber seal on the side door and the area where rubber seal sits with a dry, lint-free cloth.

1 Check that there are no foreign objects on the inner side of the side door.

- If there is any foreign object, such as lint, hair, sand, etc., on the surrounding area, water will leak within a few seconds, causing malfunction.
- Wipe it off with a soft, dry cloth if there is any liquid.
  It may cause water leaks and malfunction if you use the camera with liquid adhered.
- If foreign objects are present, wipe them off with a dry, lint-free cloth.
- Be extremely careful to remove the small sand etc. that may adhere to the sides and corners of the rubber seal.

2 Check for cracks and deformation of the rubber seal on the side door.

- The integrity of the rubber seals may decrease after about 1 year, with use and age. To avoid permanently damaging the camera, the seals should be replaced once each year. Please contact Panasonic for related costs and other information.

3 Close the side door securely.

- Ⓐ Red part
- Ⓑ [LOCK] switch (grey part)
- Ⓒ Released state
- Ⓓ Locked state

- Lock the [LOCK] switch securely until the red part is no longer visible.
- To prevent water intrusion, be careful not to catch foreign objects such as liquids, sand, hair, dust, or the strap cord.
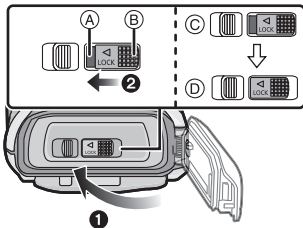
Do not open or close the side door in places with sand and dust, close to water, or with wet hands. Sand or dust adhering may cause water leaks.

Using the camera underwater

- Use the camera underwater to 13 m with the water temperature between 0 °C and 40 °C.
- Do not use for scuba diving (Aqualung).
- Do not use the camera at a depth of over 13 m.
- Do not use it in the hot water over 40 °C (in the bath or hot spring).
- Do not use the camera underwater longer than 60 minutes continuously.
- Do not open or close the side door underwater.
- Do not apply shock to the camera underwater. (Waterproof performance may not be maintained, and there is a chance of water leak.)
- Do not dive into the water holding the camera. Do not use the camera in a location where the water will splash strongly, such as rapid flow or waterfall. (Strong water pressure may be applied, and it may cause malfunction.)
- The camera will sink in the water. Take care not to drop the camera and lose it underwater by securely placing the strap around your wrist or similar measure.

Caring of the camera after using it underwater

Do not open or close the side door until the sand and dust is removed by rinsing the camera with water.
Make sure to clean the camera after using it.
- Thoroughly wipe off any water droplets, sand, and saline matter on your hands, body, hair, etc.
- It is recommended to clean the camera indoors, avoiding places where water spray or sand may fall.

After using it underwater, always clean the camera rather than leaving it in a dirty state.
- Leaving the camera with foreign objects or saline matter on it may cause damage, discolouration, corrosion, unusual odour, or deterioration of the waterproof performance.

1 Rinse with water with the side door closed.

- After use at the seaside or underwater, soak the unit in fresh water pooled in a shallow container for 10 minutes or less.
- If the zoom button or camera [ON/OFF] button do not move smoothly, it may be caused by an adhesion of foreign objects. Using in such a state may cause malfunctions, such as locking up, so wash off any foreign objects by shaking the camera in fresh water.
- Bubbles may come out of the drainage hole when you immerse the camera in water, but this is not a malfunction.

2 **Drain water by holding the camera upside down and shaking it lightly a few times.**
- Make sure to put your hand through the strap to prevent the camera from falling.
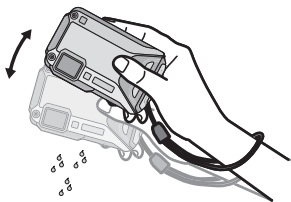
3 **Wipe off water drops on the camera with a soft, dry cloth and dry the camera in a shaded area that is well ventilated.**
- Dry the camera by standing it on a dry cloth. This unit incorporates drain design, draining water in gaps in the camera [ON/OFF] button and zoom button etc.
- Do not dry the camera with hot air from dryer or similar. Waterproof performance will deteriorate due to deformation.
- Do not use chemicals such as benzine, thinner, alcohol or cleanser, soap or detergents.

4 **Confirm that there are no water droplets, open the side door, and wipe off any water droplets or sand left inside using a soft, dry cloth.**
- Water droplets may adhere to the card or battery when the side door is opened without thoroughly drying. Also, water may accumulate in the gap around the card/battery slot or the terminal connector. Be sure to wipe any water off with a soft, dry cloth.
- The water droplets may seep into the camera when the side door is closed while it is still wet, causing condensation or failure.

Names and Functions of Main Parts

1 Flash
2 Self-timer indicator/
   AF Assist Lamp/
   LED light
3 Lens
4 Speaker
   • Be careful not to cover the speaker with your finger. Doing so may make sound difficult to hear.
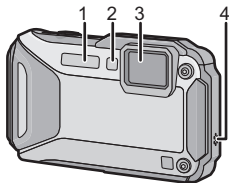
5 LCD monitor
6 [Wi-Fi] button
7 Wi-Fi® connection lamp
8 Zoom button
9 [►] (Playback) button
10 Strap eyelet
   • Be sure to attach the strap when using the camera to ensure that you will not drop it.
   • Be sure to attach the strap to the strap eyelet.
11 Decorative hole
12 [MODE] button
13 [Q.MENU/] button/[ ] (Delete) button
14 [DISP.] button
15 [MENU/SET] button
16 Cursor buttons
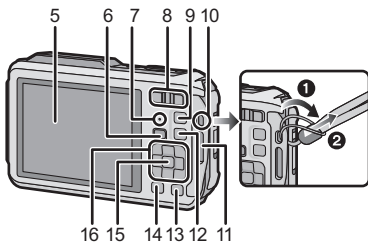
17 Microphones
18 GPS antenna
19 Camera [ON/OFF] button
20 GPS status indicator
21 Shutter button
22 Motion picture button
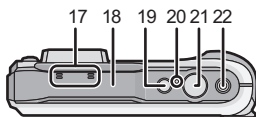
23 Tripod mount
  • A tripod with a screw length of 5.5 mm or more may damage this unit if attached.
24 NFC antenna [⧈]
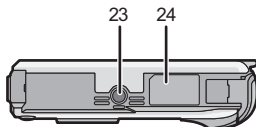
25 [HDMI] socket
26 Card slot
27 Battery slot
  • When using an AC adaptor, ensure that the Panasonic DC coupler (DMW-DCC14: optional) and AC adaptor (DMW-AC5G: optional) are used.
  • Always use a genuine Panasonic AC adaptor (DMW-AC5G: optional).
  • When using an AC adaptor, use the AC cable supplied with the AC adaptor.
28 [AV OUT/DIGITAL] socket
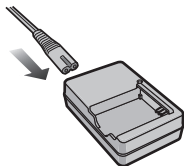29 Release lever
30 [LOCK] switch
31 Side door
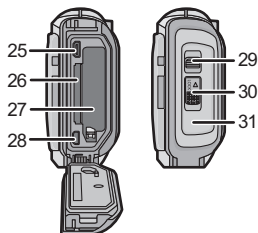
Charging the Battery
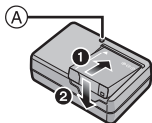
Use the dedicated charger and battery.
- **The battery is not charged when the camera is shipped. Charge the battery before use.**
- **Charge the battery with the charger indoors (10 °C to 30 °C).**

1 **Connect the AC cable.**

2 **Attach the battery, paying attention to the direction of the battery.**
- The [CHARGE] indicator Ⓐ lights up and charging begins.

■ About the [CHARGE] indicator

On:	Charging.
Off:	Charging has completed. **(Charging time: Approx. 165 min)**

■ About batteries that you can use with this unit
**The battery that can be used with this unit is DMW-BCM13E.**

Inserting and Removing the Card (optional)/the Battery

• Check that this unit is turned off.
• **Confirm that there is no foreign object.**
• We recommend using a Panasonic card.

1 ❶: **Slide the [LOCK] switch Ⓐ, and release the lock.**

❷: **Slide the release lever Ⓑ and open the side door.**

• **Always use genuine Panasonic batteries (DMW-BCM13E).**
• **If you use other batteries, we cannot guarantee the quality of this product.**
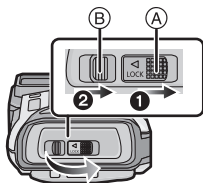
2 **Battery: Being careful about the battery orientation, insert all the way until you hear a locking sound and then check that it is locked by lever Ⓒ. Pull the lever Ⓒ in the direction of the arrow to remove the battery.**

Card: Push it securely all the way until you hear a "click" while being careful about the direction in which you insert it. To remove the card, push the card until it clicks, then pull the card out upright.

Ⓓ: Do not touch the connection terminals of the card.
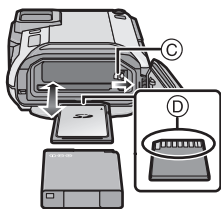
3 **Close the side door until it clicks, and then lock the [LOCK] switch by sliding it toward [◄].**

• Confirm that the red part on the [LOCK] switch is not showing.
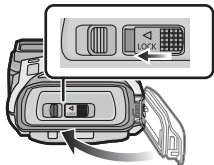
Note

• Keep the Memory Card out of reach of children to prevent swallowing.

Sequence of operations

1 **Press camera [ON/OFF] button.**
   • **The clock is not set when the camera is shipped. Set the date and time before using the camera.**

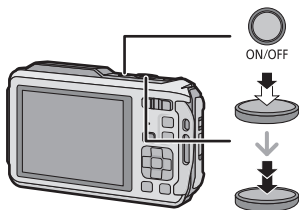**2** **Press the shutter button halfway to focus and then press it fully to take the picture.**

ON/OFF

■ Selecting the Recording Mode

Press [MODE] to select the Recording Mode.

A : Take pictures with automatic settings.

P : Take pictures with your own settings.

M : The exposure is adjusted by the aperture value and the shutter speed that are manually adjusted.

⌀ : Record while checking the image effect.

⚡ : This mode is optimal for taking pictures of sporting events, etc.

☃ : This mode is optimal for taking pictures that show the snow as white as possible at a ski resort or a snow-covered mountain.

☌ : This mode is optimal for taking pictures underwater and at the beach.

☌ : This is optimal for taking pictures underwater deeper than 13 m by the use of the marine case (DMW-MCFT5: optional).

▱ : This mode allows you to take panorama pictures.

SCN : Take pictures according to scene.

∎ Recording Motion Pictures

Start recording by pressing the motion picture button.
• Stop the recording by pressing the motion picture button again.
• Maximum time to record motion pictures continuously with [FHD/50p/**G**]/[FHD/50p]/[FHD/ 50i/**G**]/[FHD/50i] in [AVCHD] is 29 minutes 59 seconds.
• Maximum time to record motion pictures continuously with [MP4] is 29 minutes 59 seconds or up to 4 GB. (For [FHD/25p] in [MP4] format, the file size is large and so the recordable time will drop below 29 minutes 59 seconds.)

∎ Setting the Menu

Press [MENU/SET] to display the menu screen to change the recording function, camera settings, and other settings.

∎ Playing Back Pictures

Press [▶].
• Press ◀/▶ to select the picture.

∎ Deleting Pictures

Select the picture, and then press [🗑].
• Confirmation screen is displayed. Picture is deleted by selecting [Yes].

∎ About the [LED Light] ([Setup])

If you set to [∃🛢🛢ᴏɴ], and press and hold down ▶ (ϟ) on the recording standby screen, the LED light will come on for 60 seconds.

Recording using the GPS function

∎ About the "GPS"

GPS is an abbreviation of [Global Positioning System], which is a system that allows you to check your position utilising GPS satellites.
Calculating the current position by receiving radio waves including orbit information and clock information from multiple GPS satellites is called positioning.
This unit is also compatible with the "GLONASS" satellite positioning system operated by the Russian government.
The unit can record location name information and latitude/longitude for the recorded image and automatically correct the time.

∎ Receiving signals from GPS satellites

• **It is recommended to use by holding the camera still for a while at an outdoor location clear to the sky, with the antenna pointed upward.**
• Radio waves from GPS satellites cannot be received properly at the following locations, so the positioning may not be possible or a significant error may occur.
  – Indoor/underground or underwater/in the woods/travelling in a train or a car etc./close to or between buildings/close to high voltage lines/inside a tunnel/close to mobile phones working on 1.5 GHz band etc.
• Do not cover the GPS antenna with your hands etc.
• Do not carry the unit inside a metallic case or similar when positioning. Positioning is not possible when the unit is covered by metal etc.

Acquiring of the GPS information

When [GPS Setting] is set [ON], positioning is performed at regular intervals. When the positioning is successful, location name information and latitude/longitude are acquired.

1 Press [MENU/SET].

2 Press ▲/▼/◄/► to select [GPS/Sensor] menu, and then press [MENU/SET].

3 Press ▲/▼ to select [GPS Setting], and then press [MENU/SET].

4 Press ▲/▼ to select [ON], and then press [MENU/SET].
  • Exit the menu after it is set.

■ **About the Icon indicating positioning status**

Positioning is performed by this unit when radio waves from 3 or more GPS satellites are received.

• The bar moves up the scale according to the number of GPS satellites from which signals are being received.
  When the bar has filled the scale and positioning has been successful, the indicator goes blue.

Update the GPS information

When the displayed location name information is different from the current location or when the positioning is not successful, move to a location where the radio waves from GPS satellites can be received better and perform the positioning update.

1 Press [MENU/SET].

2 Press ▲/▼/◄/► to select [GPS/Sensor] menu, and then press [MENU/SET].

3 Press ▲/▼ to select [Repositioning], and then press [MENU/SET].

  • Positioning is started and the current location information is updated once the positioning is successful.

When used during overseas travel etc.
• The GPS may not operate in China or close to the Chinese border in neighbouring countries. (As of March 2015)
• The usage of GPS, etc., may be restricted depending on the country or the region. This camera has a GPS function, so check with the embassies or travel agencies etc. prior to your overseas travel regarding any restrictions on cameras with a built-in GPS function.

Sensors (compass/altimeter/barometer) are operated

The direction, altitude, and atmospheric pressure can be measured and recorded in the recorded images.
- **Information measured on this unit is only a rough indication. Do not use it for technical purposes.**
- **When using this unit for full-scale mountain climbing, trekking, or underwater, use the measured information (direction, altitude, depth, atmospheric pressure) only as a rough indication, and always carry a map and purpose-built measurement tools.**
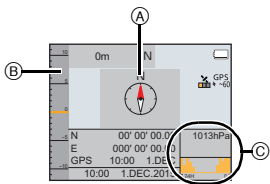
1 Press [MENU/SET].

2 Press ▲/▼/◄/► to select [GPS/Sensor] menu, and then press [MENU/SET].

3 Press ▲/▼ to select [Sensor Settings], and then press [MENU/SET].

4 Press ▲/▼ to select [ON], and then press [MENU/SET].
- Exit the menu after it is set.
- To switch the environment information screen, press [DISP.] several times.

Ⓐ **Compass**
16 bearings are measured based on the direction the lens of the camera is pointing in.
- The coloured portion of the compass needle points north.

Ⓑ **Altimeter**
You can check the altitude of the current location.
- Displaying range is −600 m to 9000 m.

Ⓒ **Barometer**
With the current atmospheric pressure as a reference, it is displayed on the graph within the range of −10 hPa to +10 hPa.
(Atmospheric pressure out of range cannot be displayed in details)

Remote Shooting

You can remotely operate the camera using a smartphone/tablet.

You need to install "Panasonic Image App" (referred to as "Image App" from this point on) on your smartphone/tablet.

Installing the smartphone/tablet app "Panasonic Image App"

The "Image App" is an application provided by Panasonic.

	For Android™ apps	**For iOS apps**
OS	Android 2.3.3 or higher∗	iOS 6.0 or higher (Please note that the iPhone 3GS is not supported.)
Installation procedure	*1* Connect your Android device to a network. *2* Select "Google Play™ Store". *3* Enter "Panasonic Image App" or "LUMIX" into the search box. *4* Select "Panasonic Image App" and install it. • The icon will be added to the menu.	*1* Connect the iOS device to the network. *2* Select "App Store^SM". *3* Enter "Panasonic Image App" or "LUMIX" into the search box. *4* Select "Panasonic Image App" and install it. • The icon will be added to the menu.

• Use the latest version.
• Supported OSs are current as of March 2015 and are subject to change.
• Read the [Help] in the "Image App" menu for further details on how to operate.
• The screen differs depending on the OS.
• The service may not be able to be used properly depending on the type of smartphone/tablet being used. For compatible devices, see the following support site.
  http://panasonic.jp/support/global/cs/dsc/ (This Site is English only.)
• When downloading the app on a mobile network, high packet communication fees may be incurred depending on the details of your contract.
∗ Connecting to this unit with [Wi-Fi Direct] requires Android OS 4.0 or higher and Wi-Fi Direct® support.

Connecting easily to a smartphone/tablet (NFC)

Using the NFC "Near Field Communication" function, you can easily transfer data necessary for a Wi-Fi connection between this camera and the smartphone/tablet.

∎ Compatible models

This function can be used with the NFC compatible device with Android (OS version 2.3.3 or higher). (excluding some models)

Preparation:

(On the camera)
• Set [NFC Operation] to [ON].
(On your smartphone/tablet)
• Check that your smartphone/tablet is a compatible model.
• Turn on the Wi-Fi function.
• Install the "Image App" in advance. (P23)

∎ Controlling this camera remotely with a smartphone/tablet by using the NFC function

You can use the following functions by controlling this camera remotely with your smartphone/tablet.
  – Remote recording (P28)
  – Playing back the pictures in the camera (P28)
  – Saving the pictures in the camera to the smartphone/tablet, or sending them to WEB services (P28)

1 **Launch "Image App" on your smartphone/tablet.**

2 **Touch the smartphone/tablet to the camera while [🖐] is displayed on the connection screen of "Image App".**
  • This function can be used even while the camera is turned off.

3 **When the connection confirmation screen is displayed, press ◀/▶ to select [Yes], and then press [MENU/SET].**

4 **Touch the smartphone/tablet to [🖐] of the camera again.**
  • When the smartphone/tablet has connected, an image of this camera will be displayed on the smartphone/tablet.
  • The connected smartphone/tablet is registered to this camera. A connection can be established with the operation of steps *1* and *2* from the second time onwards.
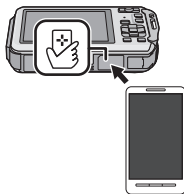
📖 Note

• You can register up to 20 smartphones/tablets. When the number exceeds 20, registrations will be deleted, starting from the oldest touched one.
• Performing [Reset Wi-Fi Settings] will delete the smartphone/tablet registration.

■ Transferring images in this camera to a smartphone/tablet one at a time by using the NFC function

You can transfer pictures in this camera to the smartphone/tablet. This function is useful when you want to transfer an image to the smartphone/tablet of your family or friend.

1 **Play back the picture you want to transfer to the smartphone/tablet in this camera.**

2 **Launch "Image App" on the smartphone/tablet at the transfer destination.**

3 **Touch the smartphone/tablet to the camera while [ ] is displayed on the connection screen of "Image App".**
   • To transfer other pictures, play back the picture you want to transfer, and touch the smartphone/tablet to the camera again.
   • Depending on the environment you are using, it may take a few minutes to complete the image transfer.
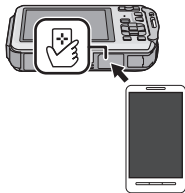
■ About NFC
• If the camera is not recognised even when touching the smartphone/tablet, change positions and try again.
• Do not touch this camera to the smartphone/tablet strongly.
• For information on the operation and settings of NFC-compatible smartphones/tablets, refer to the operating instructions of your device.
• If there is a metal object between this camera and the smartphone/tablet, reading may fail. Also, putting a sticker around the NFC area may deteriorate the communication performance.

Connecting to a smartphone/tablet

Preparations:

• Install the "Image App" in advance. (P23)

1 **Press [Wi-Fi].**

2 **Press ▲/▼/◄/► to select [New Connection], and then press [MENU/SET].**
   • When connecting with the setting you used before, you can select the connection destination from [History Connection] or [Favorite Connection].

3 **Press ▲/▼ to select [Remote Shooting], and then press [MENU/SET].**

   • The information (SSID and password) required for directly connecting your smartphone/tablet to this unit is displayed.
   • To change the connection method, press [DISP.], and then select the connection method. For details, refer to "Changing the connection method". (P27)
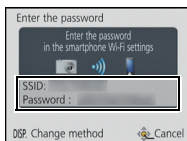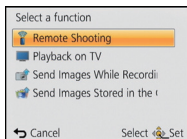
On your smartphone/tablet
(The default connection method is set to [Manual Connection].)

4 **On the setting menu of your smartphone/tablet, turn on the Wi-Fi function.**

5 **Select the SSID that matches the one displayed on the screen of this unit, and then enter the password.**

6 **Start "Image App" on your smartphone/tablet. (P23)**
   • When the connection is complete, live images being captured by the camera are displayed on the smartphone/tablet.

■ Changing the connection method

• When connecting with [Via Network]
(On the camera)

1 **Press ▲/▼ to select [Via Network], and then press [MENU/SET].**
2 **Select the method for connecting to a wireless access point, and set.**

(On your smartphone/tablet)

3 **On the setting menu of your smartphone/tablet, turn on the Wi-Fi function.**
4 **Select the wireless access point you want to connect to, and set.**
5 **Start "Image App" on your smartphone/tablet. (P23)**

• When connecting with [Wi-Fi Direct] or [WPS Connection]
(On the camera)

1 **Press ▲/▼ to select [Direct], and then press [MENU/SET].**

Connection method	Description of settings
[Wi-Fi Direct]	1 Set the device to Wi-Fi Direct™ mode. 2 Press ▲/▼ to select [Wi-Fi Direct] and then press [MENU/SET]. 3 Press ▲/▼ to select the device to connect to, and then press [MENU/SET]. • Read the operating instructions of your device for details.
[WPS Connection]	**[WPS (Push-Button)]** 1 Press ▲/▼ to select [WPS (Push-Button)] and then press [MENU/SET]. 2 Set the device to WPS mode. • You can wait longer for a connection by pressing the [DISP.] button on this unit. **[WPS (PIN code)]** 1 Press ▲/▼ to select [WPS (PIN code)] and then press [MENU/SET]. 2 Enter the PIN code of the device into this unit.

(On your smartphone/tablet)

2 **Start "Image App" on your smartphone/tablet. (P23)**

Taking pictures via a smartphone/tablet (remote recording)

Select [ ] on the smartphone/tablet.
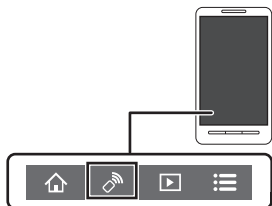
- The recorded images are saved in the camera.
- Motion pictures can also be recorded (excluding [FHD/50p/ **G**]/[FHD/50p]).
- Some settings are not available.
- The screen differs depending on the operating system.

Playing back pictures in the camera

Select [ ] on a smartphone/tablet.
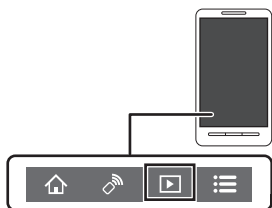
- You can save pictures on the smartphone/tablet.
- Motion pictures cannot be played back.
- You can send pictures to a WEB service, etc.
- The screen differs depending on the operating system.

Reading the Operating Instructions (PDF format)

More detailed instructions on the operation of this camera are contained in "Operating Instructions for advanced features (PDF format)" in the supplied CD-ROM.

∎ For Windows

1 **Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied).**

- If the automatic playback screen is displayed, you can display the menu by selecting and executing [Launcher.exe].
- In Windows 8/Windows 8.1, you can display the menu by clicking a message that is displayed after inserting the CD-ROM and then selecting and executing [Launcher.exe].
- You can also display the menu by double-clicking [SFMXXXX] in [Computer] (XXXX differs depending on the model).

2 **Click the [Operating Instructions].**

- The list of Operating Instructions (PDF format) will be displayed.

3 **Click the language of the Operating Instructions you want to open.**

- The "Operating Instructions for advanced features (PDF format)" will open.
  You can save the "Operating Instructions for advanced features" on the PC.

- You will need Adobe Reader to browse or print the "Operating Instructions for advanced features (PDF format)".
  You can download and install a version of Adobe Reader that you can use with your OS from the following website. (As of March 2015)
  http://www.adobe.com/products/acrobat/readstep2.html

Installing supplied software

- The supplied CD-ROM includes the following software.
  – PHOTOfunSTUDIO 9.6 PE (Windows Vista/Windows 7/Windows 8/Windows 8.1)
  – LoiLoScope 30 day full trial version (Windows Vista/Windows 7/Windows 8/Windows 8.1)
    (This will only install a shortcut to the trial version download site.)
- Before inserting the CD-ROM, close all running applications.

1 Check the environment of your PC.

- For details about information such as the operating environment or operating method, refer to the "Operating Instructions for advanced features (PDF format)" or the operating instructions for the respective software programmes.

2 Insert the CD-ROM with the supplied software.

- If the automatic playback screen is displayed, you can display the menu by selecting and executing [Launcher.exe].
- In Windows 8/Windows 8.1, you can display the menu by clicking a message that is displayed after inserting the CD-ROM and then selecting and executing [Launcher.exe].
- You can also display the menu by double-clicking [SFMXXXX] in [Computer] (XXXX differs depending on the model).

3 Click on the [Applications] on the install menu.

4 Click on the [Recommended Installation].

- Proceed with installation according to messages appearing on the screen.

📖 Note
- The software compatible with your PC will be installed.
- "PHOTOfunSTUDIO" and "LoiLoScope" are not compatible with Mac.

Specifications

Specifications are subject to change without notice.

Digital Camera:
Information for your safety

Power Source:	DC 5.1 V
Power Consumption:	1.5 W (When recording)
	1.1 W (When playing back)

Camera effective pixels	16,100,000 pixels	
Image sensor	1/2.33″ MOS sensor, total pixel number 17,500,000 pixels, Primary colour filter	
Lens	Optical 4.6×zoom, f=4.9 mm to 22.8 mm (35 mm film camera equivalent: 28 mm to 128 mm)/F3.3 (Wide) to F5.9 (Tele)	
Image stabiliser	Optical method	
Focus range	Normal	30 cm to ∞
	Macro/ Intelligent auto/ Motion Picture	5 cm (Wide)/30 cm (Tele) to ∞
	Scene Mode	There may be differences in the above settings.
Shutter system	Electronic shutter+Mechanical shutter	
Minimum Illumination	Approx. 12 lx (when i-low light is used, the shutter speed is 1/25th of a second)	
Shutter speed	4 seconds to 1/1300th of a second [Starry Sky] Mode: 15 seconds, 30 seconds	
Exposure	Programme AE (P)/Manual Exposure (M)	
Metering mode	Multiple	
LCD monitor	3.0″ TFT LCD (4:3) (Approx. 460,000 dots) (field of view ratio about 100%)	
Microphones	Stereo	
Speaker	Monaural	
Recording media	Built-in Memory (Approx. 10 MB)/SD Memory Card/ SDHC Memory Card/SDXC Memory Card	

Recording file format		
Still Picture		JPEG (based on "Design rule for Camera File system", based on "Exif 2.3" standard, DPOF corresponding)/MPO
Motion pictures		AVCHD/MP4
Audio compression format		AVCHD: Dolby® Digital (2 ch) MP4: AAC (2 ch)
Interface		
Digital		"USB 2.0" (High Speed)
Analogue video		NTSC/PAL Composite (Switched by menu)
Audio		Audio line output (monaural)
Terminal		
[AV OUT/DIGITAL]		Dedicated jack (8 pin)
[HDMI]		MicroHDMI TypeD
Dimensions (excluding the projecting parts)		Approx. 109.2 mm (W)×67.4 mm (H)×28.9 mm (D)
Mass		Approx. 214 g (with card and battery) Approx. 188 g (excluding card and battery)
Operating temperature		-10 °C* to 40 °C $*$ The performance of the battery (number of recordable pictures/operating time) may decrease temporarily when using in a temperature between -10 °C and 0 °C (cold places such as ski resorts or places at high altitude).
Operating humidity		10%RH to 80%RH
Bearing sensor		16 bearing detection (with angular position correction function by the 3 axes acceleration sensor, with automatic declination correction, and with automatic offset adjustment function)
Atmospheric pressure/ altitude sensor		
Atmospheric pressure		Measurement range 300 hPa to 1100 hPa, with 24 hour memory function in 1 hPa unit (every 1.5 hours)
Altitude		Convert atmospheric pressure to altitude using ISA [International Standard Atmosphere], accuracy: -5 m to $+5$ m
Depth		Displays in 3 levels (displays 0 m to 13 m in 3 levels)
Waterproof performance		Equivalent to IEC 60529 "IPX8". (Usable for 60 minutes in 13 m water depth)

Crash resistance perfomance	The test method of the camera is in compliance with "MIL-STD 810F Method 516.5-Shock"✳.
	✳ "MIL-STD 810F Method 516.5-Shock" is the test method standard of the U.S. Defense Department, which specifies performing drop tests from a height of 122 cm, at 26 orientations (8 corners, 12 ridges, 6 faces) using 5 sets of devices, and passing the 26 orientation drops within 5 devices. (If failure occurs during the test, a new set is used to pass the drop orientation test within a total of 5 devices) • Panasonic's test method is based on the above "MIL-STD 810F Method 516.5-Shock". However, the drop height was changed from 122 cm to 200 cm dropping onto 3 cm thick plyboard. This drop test was passed. (Disregarding appearance change such as loss of paint or distortion of the part where drop impact is applied.) **There is no guarantee of not breaking or malfunctioning under all conditions.**
Withstand Load Performance	100 kgf (According to the test conditions specified by Panasonic)
Dustproof performance	Equivalent to IEC 60529 "IP6X".

Wireless transmitter

Compliance standard	IEEE 802.11b/g/n (standard wireless LAN protocol)
Frequency range used (central frequency)	2412 MHz to 2462 MHz (1 to 11ch)
Encryption method	Wi-Fi compliant WPA™/WPA2™
Access method	Infrastructure mode

Battery Charger (Panasonic VSK0801):
Information for your safety

Input:	AC $\sim$ 110 V to 240 V, 50/60 Hz, 0.2 A
Output:	DC === 4.2 V, 0.65 A
Operating temperature:	0 °C✳ to 40 °C
	✳ The battery cannot be recharged in a temperature less than 0 °C. (The [CHARGE] indicator blinks when the battery cannot be recharged.)

Battery Pack (lithium-ion) (Panasonic DMW-BCM13E):
Information for your safety

Voltage/capacity:	3.6 V/1250 mAh

Limited Warranty (ONLY FOR AUSTRALIA)

Panasonic Warranty

1. The product is warranted for 12 months from the date of purchase. Subject to the conditions of this warranty Panasonic or its Authorised Service Centre will perform necessary service on the product without charge for parts or labour, if in the opinion of Panasonic, the product is found to be faulty within the warranty period.

2. This warranty only applies to Panasonic products purchased in Australia and sold by Panasonic Australia or its Authorised Distributors or Dealers and only where the products are used and serviced within Australia or it's territories. Warranty cover only applies to service carried out by a Panasonic Authorised Service Centre and only if valid proof of purchase is presented when warranty service is requested.

3. This warranty only applies if the product has been installed and used in accordance with the manufacturer's recommendations (as noted in the operating instructions) under normal use and reasonable care (in the opinion of Panasonic). The warranty covers normal domestic use only and does not cover damage, malfunction or failure resulting from use of incorrect voltages, incorrect installation, accident, misuse, neglect, build-up of dirt or dust, abuse, maladjustment of customer controls, mains supply problems, thunderstorm activity, infestation by insects or vermin, tampering or repair by unauthorised persons (including unauthorised alterations), introduction of sand, humidity or liquids, commercial use such as hotel, office, restaurant, or other business or rental use of the product, exposure to abnormally corrosive conditions or any foreign object or matter having entered the product.

4. This warranty does not cover the following items unless the fault or defect existed at the time of purchase:
   (a) Cabinet Part(s)   (e) DVD, Blu-ray or Recordable Discs
   (b) Video or Audio Tapes   (f) Video / Audio Heads from wear and tear in normal use
   (c) SD cards or USB devices   (g) Information stored on Hard Disk Drive, USB stick or SD card
   (d) User replaceable Batteries   (h) DTV reception issues caused by TV Aerial / Cabling / Wall socket(s)
   etc

5. Some products may be supplied with Ethernet connection hardware. The warranty is limited on such products and will not cover
   (a) Internet and or DLNA connection / setup related problems
   (b) Access fees and or charges incurred for internet connection
   (c) The use of incompatible software or software not specifically stipulated in the product operations manual; and
   (d) Any indirect or consequential costs associated with the incorrect use or misuse of the hardware, its connection to the internet or any other device.

6. To claim warranty service, when required, you should:
   • Telephone Panasonic's Customer Care Centre on 132600 or visit our website referred to below and use the Service Centre Locator for the name/address of the nearest Authorised Service Centre.
   • Send or take the product to a Panasonic Authorised Service Centre together with your proof of purchase receipt as a proof of purchase date. Please note that freight and insurance to and / or from your nearest Authorised Service Centre must be arranged by you.
   • Note that home or pick-up/delivery service is available for the following products in the major metropolitan areas of Australia or the normal operating areas of the nearest Authorised Service Centres:
     - Plasma/LCD televisions / displays (screen size greater than 103 cm)

7. The warranties hereby conferred do not extend to, and exclude, any costs associated with the installation, de-installation or re-installation of a product, including costs related to the mounting, de-mounting or remounting of any screen, (and any other ancillary activities), delivery, handling, freighting, transportation or insurance of the product or any part thereof or replacement of and do not extend to, and exclude, any damage or loss occurring by reason of, during, associated with, or related to such installation, de-installation, re-installation or transit.

Panasonic Authorised Service Centres are located in major metropolitan areas and most regional centres of Australia, however, coverage will vary dependant on product. For advice on exact Authorised Service Centre locations for your product, please telephone our Customer Care Centre on 132600 or visit our website and use the Service Centre Locator.

In addition to your rights under this warranty, Panasonic products come with consumer guarantees that cannot be excluded under the Australian Consumer Law. If there is a major failure with the product, you can reject the product and elect to have a refund or to have the product replaced or if you wish you may elect to keep the goods and be compensated for the drop in value of the goods. You are also entitled to have the product repaired or replaced if the product fails to be of acceptable quality and the failure does not amount to a major failure.

If there is a major failure in regard to the product which cannot be remedied then you must notify us within a reasonable period by contacting the Panasonic Customer Care Centre. If the failure in the product is not a major failure then Panasonic may choose to repair or replace the product and will do so in a reasonable period of time from receiving notice from you.

THIS WARRANTY CARD AND THE PURCHASE DOCKET (OR SIMILAR PROOF OF PURCHASE) SHOULD BE RETAINED BY THE CUSTOMER AT ALL TIMES

If you require assistance regarding warranty conditions or any other enquiries, please visit the
Panasonic Australia website **www.panasonic.com.au** or contact by phone on **132 600**
If phoning in, please ensure you have your operating instructions available.

Panasonic Australia Pty. Limited

ACN 001 592 187   ABN 83 001 592 187

1 Innovation Road, Macquarie Park NSW 2113

PRO-031-F11 Issue: 4.0   01-01-2011

This product incorporates the following software:

(1) the software developed independently by or for Panasonic Corporation,

(2) the software owned by third party and licensed to Panasonic Corporation and/or,

(3) open sourced software including the software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/), and the software written by Eric Young (eay@cryptsoft.com).

For the software categorised as (1) and (2), please view the information by pressing [MENU/SET], displaying [Setup] → [Version Disp.], and then pressing [MENU/SET]. For the software categorised as (3), please refer to the applicable license terms in the following "Operating Instructions for advanced features (PDF format)".

- SDXC Logo is a trademark of SD-3C, LLC.
- Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.
- HDMI, the HDMI Logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.
- HDAVI Control™ is a trademark of Panasonic Corporation.
- Mac and Mac OS are trademarks of Apple Inc., registered in the U.S. and other countries.
- Windows and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- App Store is a service mark of Apple Inc.
- Android and Google Play are trademarks or registered trademarks of Google Inc.