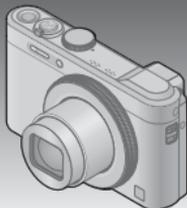


Panasonic®

Basic Operating Instructions Digital Camera

Model No. **DMC-LF1**

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. Install it on your PC to read it.



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 expose this unit 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

■ About the battery pack

CAUTION

- Danger of explosion if battery is incorrectly replaced. Replace only with the type recommended by the manufacturer.
 - When disposing 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 AC adaptor (supplied)

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 unit is in the standby condition when the AC adaptor is connected. The primary circuit is always "live" as long as the AC adaptor 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” (TypeD-TypeA 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 generated by microprocessors 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 (supplied). 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.

For Singapore only

Complies with
IDA Standards
DB01017

For India only

The specifications are exempted for any licensing requirement by Ministry of Communications and Information Technology, G.S.R. 45 (E)., dated 28th January, 2005.

-If you see this symbol-



Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.
If you wish to discard this product, please contact
your local authorities or dealer and ask for the correct
method of disposal.

Contents

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Before use

■ Camera handling

- Keep the camera away from excessive vibration, force, or pressure.
- The camera is not dust resistant, splash resistant, or waterproof.
Avoid using the camera in places with excessive dust or sand, or where water can come into contact with the camera.

■ Condensation (When the lens, the LCD monitor or the viewfinder is fogged up)

- Condensation may occur when the camera is exposed to sudden changes of temperature or humidity. Avoid these conditions, which may make the lens, the LCD monitor or the viewfinder dirty, cause mould, or damage the camera.
- If condensation does occur, turn off the camera and wait about two hours before using it. Once the camera adjusts to the surrounding temperature, the fogging will clear naturally.

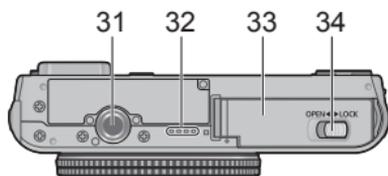
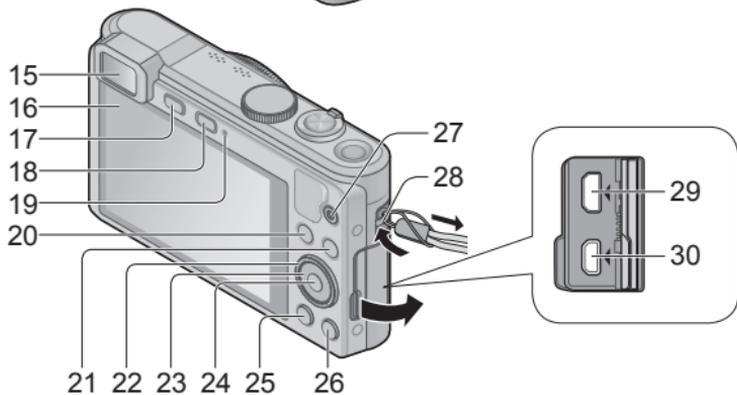
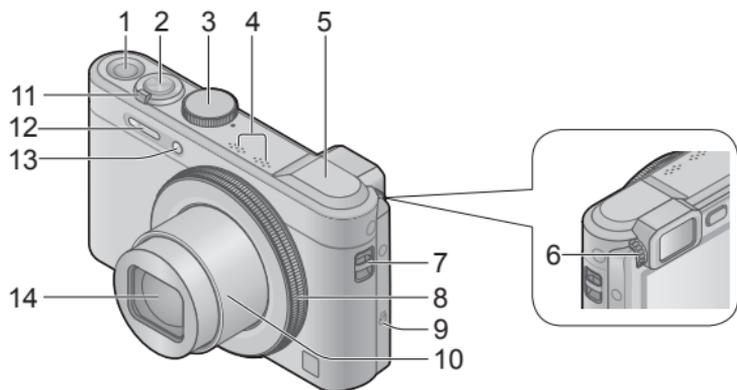
Standard accessories

Check that all the accessories are supplied before using the camera. Part numbers are as of May 2013. These may be subject to change.

<input type="checkbox"/> Battery pack DMW-BCN10E • Charge the battery before use. Battery pack is indicated as battery pack or battery in the text. 	<input type="checkbox"/> USB connection cable K1HY08YY0034 
<input type="checkbox"/> AC adaptor VSK0775 (DMC-LF1GH) VSK0772 (DMC-LF1GA)  	<input type="checkbox"/> CD-ROM • Software: Use it to install the software on your PC. 
<input type="checkbox"/> Hand strap VFC4297 	<input type="checkbox"/> CD-ROM VFF1217 • Operating Instructions for advanced features 

- SD Memory Card, SDHC Memory Card and SDXC Memory Card are indicated as card in the text.
- **Cards are 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.)
- Please dispose of all packaging appropriately.
- Keep small parts in a safe place out of the reach of children.
- The illustrations and screens in this manual may differ from the actual product.

Names and Functions of Main Parts



- 1 Camera [ON/OFF] button
- 2 Shutter button
- 3 Mode dial
- 4 Microphones
- 5 [Wi-Fi] antenna
- 6 Diopter adjustment dial
- 7 Strap eyelet
- 8 Control ring
- 9 NFC antenna
- 10 Lens barrel
- 11 Zoom lever
- 12 Flash
- 13 Self-timer indicator/
AF Assist Lamp
- 14 Lens
- 15 Viewfinder
- 16 LCD monitor
- 17 [LVF] button
 - Use this to switch display between viewfinder and LCD monitor.
- 18 [Wi-Fi] button
- 19 Charging lamp/
Wi-Fi® connection lamp
- 20 [Fn] button
- 21 Playback button
- 22 Control dial
- 23 Cursor button
 - In this manual, the button that is to be used is indicated by ▲▼◀▶.
- 24 [MENU/SET] button
- 25 [DISP.] button
- 26 [Q.MENU/👉] / [👈] button
- 27 Motion picture button
- 28 Strap eyelet
 - We recommend using the supplied hand strap to avoid dropping the camera.
- 29 [HDMI] socket
- 30 [AV OUT/DIGITAL] socket
 - This socket is also used when charging the battery.
- 31 Tripod mount
 - Do not attach to a tripod with a 5.5 mm or longer screw. Doing so may damage this unit.
- 32 Speaker
- 33 Card/Battery door
- 34 Release lever

Inserting and removing the battery or SD memory card (optional)

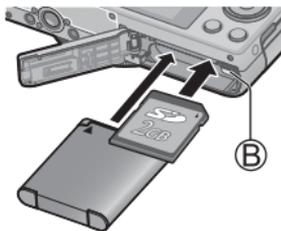
Make sure that the camera is turned off.

- 1 Slide the release lever (A) to the [OPEN] position and open the card/battery door**



- 2 Insert the battery and card, making sure that their orientation is correct**

- Battery: Insert the battery all the way firmly and check that it is locked by lever (B).
- Card: Insert the card all the way firmly until it clicks. Do not touch the terminals on the back of the card.



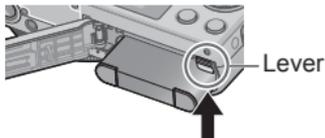
- 3 Close the door**

Slide the release lever to the [LOCK] position.

■ To remove

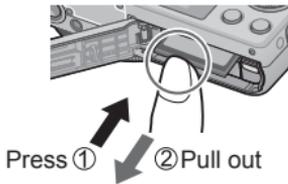
• To remove battery:

Move lever in direction of arrow.



• To remove card:

Push the card until it clicks, then pull the card out.



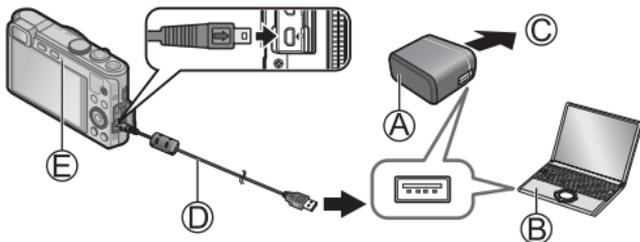
- Always use genuine Panasonic batteries (DMW-BCN10E).
- If you use other batteries, we cannot guarantee the quality of this product.
- Keep the Memory Card out of reach of children to prevent swallowing.
- We recommend using a Panasonic card.

Charging the battery

- The battery that can be used with this unit is DMW-BCN10E.
- The battery is not charged when the camera is shipped. Charge the battery before use.
- Charge the battery with the AC adaptor (supplied) indoors (10 °C to 30 °C).

Make sure that the camera is turned off.

- 1 Insert the battery to this unit, and then connect this unit to the AC adaptor (supplied) (A) or a PC (B)



- © To the electrical outlet
- © USB connection cable (supplied)

■ Charging lamp (E)

On: Charging in progress (Red)

Off: Charging stops (Charging time: Approx. 160 min)

When using the AC adaptor (supplied), observe the following points as improper connections may cause malfunctions.

- Do not use any other USB connection cables except the supplied one or a genuine Panasonic USB connection cable (DMW-USBC1: optional).
- Do not use any other AC adaptors except the supplied one.
- Do not use the AC adaptor (supplied) or the USB connection cable (supplied) with other devices.

Setting the clock

The clock is not set when the camera is shipped.
Disconnect the unit from the AC adaptor (supplied).

- 1 Press the Camera [ON/OFF] button (A)**
- 2 Press [MENU/SET] (B)**
- 3 Press ▲▼ to select the language, and press [MENU/SET]**
 - [Please set the clock] message appears.
- 4 Press [MENU/SET]**
- 5 Press ◀▶ to select the items (year, month, day, hour, minute, display order or time display format), and press ▲▼ to set**
 - To cancel → Press [Q.MENU/↵] button.
- 6 Press [MENU/SET] to set**
- 7 Confirm the setting and press [MENU/SET]**
 - To return to the previous screen, press [Q.MENU/↵] button.



■ Changing time settings

Select [Clock Set] from [Rec] or [Setup] menu, perform **5** and **6**.
Please see the next page on how to set the menu.

Setting the menu

Refer to the following procedures to operate the menus.

Example: Setting [AF Mode] from  to  in the [Program AE] Mode

1 Press [MENU/SET] to display the menu

Switching to the [Rec] menu

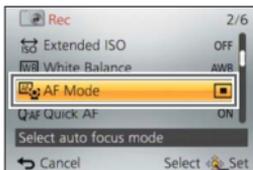
Use cursor button to select [Rec] and press [MENU/SET]

- Items can also be selected by turning the control dial.



2 Press \blacktriangle \blacktriangledown to select [AF Mode] and then press [MENU/SET]

- Depending on the item, its setting may not appear or it may be displayed in a different way.



3 Press \blacktriangle \blacktriangledown to select and then press [MENU/SET] to set

4 Press [Q.MENU/↶] button several times to close the menu

- In recording mode, the menu screen can also be exited by pressing the shutter button halfway.

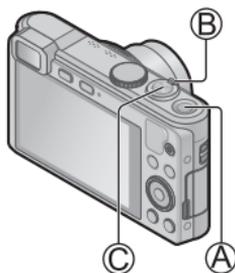
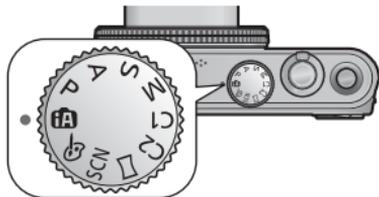


Taking still pictures

- 1 Press the Camera [ON/OFF] button (A)

- 2 Set to the desired recording mode

Align the mode dial correctly to the mode that you want to use.



- 3 Use the zoom lever (B) to adjust the range of the picture to be captured

Capture a wider area (wide-angle)  Enlarge the subject (telephoto)



- 4 Press the shutter button (C) halfway to focus



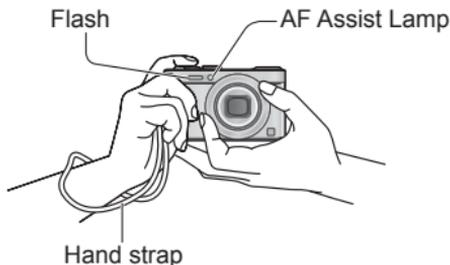
- 5 Press the shutter button (C) fully to take the picture



■ Recording mode

iA	Take pictures with automatic settings.
P	Take pictures with automatic shutter speed and aperture value settings.
A	Determine aperture, then record pictures.
S	Determine shutter speed, then record pictures.
M	Determine aperture and shutter speed, then record pictures.
C1 C2	Record pictures using pre-registered settings.
	Record panorama pictures.
SCN	Take pictures using Scene modes.
	Take pictures by selecting your preferred picture effect.

■ Holding the camera



- To avoid camera shake, hold it with both hands keeping your arms close to your body while standing with your feet slightly apart.
- Do not touch the lens.
- Do not block the flash or the lamp. Do not look at it from close range.

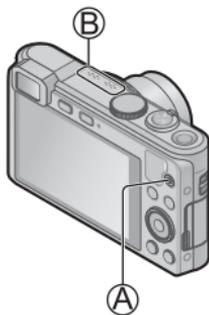
Recording motion pictures

You can record motion pictures with audio (stereo). Zoom can also be used during recording.

1 Press the motion picture button (A) to start recording

- Do not block the microphones (B) when recording motion pictures.
- Immediately release the motion picture button after pressing it.

2 Press the motion picture button (A) again to end recording



● About recording time

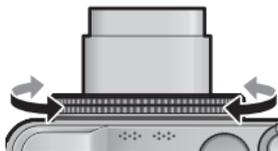
- You can continuously record a motion picture in [MP4] for up to 29 minutes 59 seconds or approx. 4 GB. (Since recording in [MP4] with [FHD] creates larger files, the recording time for such motion pictures will be shorter than 29 minutes 59 seconds.)
- If [Rec Quality] of [AVCHD] motion pictures is set to [FHD], you can continuously record a motion picture for up to 29 minutes 59 seconds.
- You can continuously record [AVCHD] motion pictures for up to 29 minutes 59 seconds. (DMC-LF1GA)
- **If the surrounding temperature is high, or a motion picture is recorded continuously,  is displayed and recording may be stopped halfway through to protect the camera.**
- You can record a motion picture to the built-in memory only in [MP4] using the [VGA] setting.

Using the control ring

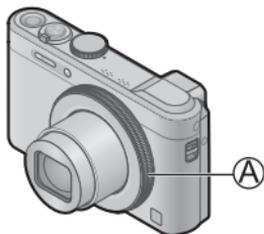
Using the control ring allows you to perform frequently used operations and settings such as Step zoom and ISO Sensitivity directly.

1 Turn the control ring (A)

- You can also perform operations with the control dial. (Some operations may differ under certain recording conditions such as [Manual Exposure] mode.)



(when in [Intelligent Auto] Mode (IA))



Items that can be set by the control ring vary depending on recording modes. Following are the pre-assigned settings.

IA SCN	Step zoom
P	ISO Sensitivity
A	Aperture adjustment
S	Shutter speed adjustment
M	Aperture adjustment You can adjust the shutter speed with the control dial on the back.
 	Picture effects change

Using the control ring

Using Quick menu

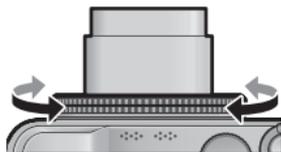
Using the Quick menu, you can change camera settings with the control ring.

1 Press [Q.MENU/↶] button (A)

2 Press ◀▶ to select menu items



3 Turn the control ring to change the setting



• You can also change settings with the control dial.

4 Press [MENU/SET] (B)

Taking pictures with the composition determined [Composition Guide]

By using the viewfinder or LCD monitor to consider the placement of your subject (the composition), you can take more impressive still pictures.

1 Press [Fn] button (A)

- [Fn Button Set] is set to [Composition Guide] at the time of purchase. If another function has been set, select [Composition Guide] from the [Setup] menu.

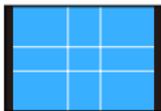


2 Press ▲ ▼ to select the guideline to display and press [MENU/SET]

- To turn off guideline display, select [No Guide].
- If the guideline allows horizontal flipping, use ◀▶ to flip.

■ Guidelines (Examples)

[Rule of Thirds Offset]



[Diagonal lines]



[Tunnel]



[Radiation]



[S-shape]



Viewing your pictures

When a card is in the camera, pictures are played back from the card, and without a card, pictures are played back from the built-in memory.

1 Press the Playback button (A)

- By holding down the Playback button while the camera is off, you can turn the camera on in Playback Mode.



2 Press ◀▶ to select a picture to be displayed

- When the buttons are held down, the pictures can be scrolled quickly forward or backward.
- Pictures can also be selected with the control dial.



Viewing motion pictures

- 1 Select a picture with the motion picture icon, and press ▲

Motion picture icon
(differs depending on
the recording mode
and picture quality
setting)



Motion picture
recording time

■ Operations during motion picture playback

▲ : Pause/play

▼ : Stop

◀ : Fast rewind (2 steps)/Single-frame rewind (while paused)

▶ : Fast forward (2 steps)/Single-frame forward (while paused)

[MENU/SET]: Capturing still pictures from motion pictures (while paused)

Control dial: Fast rewind/Fast forward (same as ◀▶)

Zoom lever: Volume adjustment

Deleting pictures

Pictures will be deleted from the card if the card is inserted, or from the built-in memory if the card is not inserted. (Deleted pictures cannot be recovered.)

- 1 Press [] button (A) to delete the displayed picture
- 2 Press ◀ to select [Yes] and then press [MENU/SET] (B)



What you can do with the Wi-Fi® function

For details about Wi-Fi connections, please read “Wi-Fi connection guide”.

■ Using a smartphone as a camera remote control

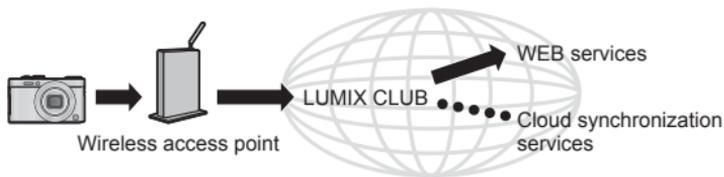
By installing the “Panasonic Image App” on your smartphone, you can operate the camera remotely and use the smartphone to record and play back.

- By using the NFC function, you can hold your smartphone close to the camera and easily make a Wi-Fi connection without making troublesome Wi-Fi settings.



■ Using WEB services

Through LUMIX CLUB, you can send still pictures and motion pictures to social networking services, etc. By selecting the setting to automatically transfer still pictures and motion pictures to [Cloud Sync. Service], you can receive the transferred still pictures and motion pictures on a PC or a smartphone.



■ Transferring pictures automatically [Smart Transfer]

During battery charging, recorded pictures are transferred automatically to PC, AV equipment and cloud folders.



■ Sending pictures to Wi-Fi compatible equipment

You can select pictures on your camera and transfer them to a TV, printer, AV equipment, PC, etc.

Also, during recording, you can transfer still pictures as they are recorded (except for transferring to a printer).

■ Panasonic Image App

The “Panasonic Image App” is an application provided by Panasonic. For details, refer to “Wi-Fi connection guide”.

■ LUMIX CLUB

If you register this unit to the “LUMIX CLUB”, you can synchronize images between the devices you are using, or transfer these images to WEB services.

For details, refer to the “LUMIX CLUB” site.

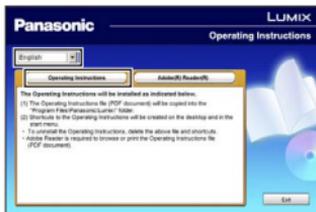
<http://lumixclub.panasonic.net/eng/c/>

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. Install it on your PC to read it.

■ For Windows

- 1 Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied)
- 2 Select the desired language and then click [Operating Instructions] to install
- 3 Double-click the “Operating Instructions” shortcut icon on the desktop



■ When the Operating Instructions (PDF format) will not open

You will need Adobe Acrobat Reader 5.0 or later, or Adobe Reader 7.0 or later to browse or print the Operating Instructions (PDF format).

- You can download and install a version of Adobe Reader that you can use with your OS from the following website.
<http://get.adobe.com/reader/otherversions/>

Supplied software

The supplied CD-ROM contains the following software.
Install the software on your computer to use.

PHOTOfunSTUDIO 9.2 AE	Pictures can be captured to a PC, and can be viewed, organised, printed, etc. Also, still pictures can be corrected and motion pictures can be edited. • Compatible OS: Windows 8 / 7 / Vista / XP
SILKYPIX Developer Studio	This software develops and edits RAW file pictures. Edited pictures can be saved in a file format such as JPEG or TIFF that can be displayed on a PC, etc. For details on how to use the SILKYPIX Developer Studio, refer to the “Help” or the Ichikawa Soft Laboratory’s support website: http://www.isl.co.jp/SILKYPIX/english/p/support/ • Compatible OS: Windows 8 / 7 / Vista / XP Mac OS X v10.4 / v10.5 / v10.6 / v10.7 / v10.8
LoiLoScope (30-day full-trial version)	You can edit motion pictures easily. This will only install a shortcut to the trial version download site. For details about using LoiLoScope, please download and see the manual from the following site. http://loilo.tv/product/20/ • Compatible OS: Windows 8 / 7 / Vista / XP

For details about operating environment and usage, please read “Operating Instructions for advanced features” (PDF format) or the manuals for each software.

- PHOTOfunSTUDIO / LoiLoScope are not compatible with Mac.

Installing supplied software

Preparations:

- Check your PC's specifications and operating environment for each software.
- Before inserting the CD-ROM (supplied), close all running applications.

■ Windows

1 Insert the CD-ROM with the supplied software

- The installation menu runs.

2 Click [Recommended Installation]

- Continue the installation procedure following the instructions displayed on the screen.

■ Mac (SILKYPIX Developer Studio)

1 Insert the CD-ROM with the supplied software

2 Double-click the recognised disc to open

3 Double-click the [SILKYPIX] folder to open

4 Double-click an icon in the folder

- Continue the installation procedure following the instructions displayed on the screen.

Specifications

Digital Camera: Information for your safety

Power Source	DC 5 V
Power Consumption	1.7 W (When recording with LCD Monitor) 1.1 W (When playing back with LCD Monitor)
Camera effective pixels	12,100,000 pixels
Image sensor	1/1.7" MOS sensor, total pixel number 12,800,000 pixels Primary colour filter
Lens	Optical 7.1x zoom f=6.0 mm to 42.8 mm (35 mm film camera equivalent: 28 mm to 200 mm) / F2.0 (Max. Wide) to F5.9 (Max. Tele)
Image Stabiliser	Optical method
Focus range	
Normal	50 cm (Max. Wide) / 80 cm (Max. Tele) to ∞
Macro / iA mode / Motion picture / MF	3 cm (Max. Wide) / 80 cm (Max. Tele) to ∞
Scene Mode	The focus ranges listed above may vary depending on the selected Scene Mode.
Shutter system	Electronic shutter + Mechanical shutter
Shutter speed	250 seconds to 1/4000th of a second [Starry Sky] Mode: 15 seconds, 30 seconds, 60 seconds
Minimum Illumination	Approx. 6 lx (when i-Low light is used, the shutter speed is 1/25th of a second)

Specifications

Exposure (AE)	Programme AE (P) / Aperture-priority AE (A) / Shutter-priority AE (S) / Manual exposure (M)
Metering Mode	[Multi Metering] / [Center Weighted] / [Spot]
LCD monitor	3.0" TFT LCD (3:2) (Approx. 921,600 dots)
Viewfinder	Colour LCD Viewfinder (Approx. 200,000 dots) (with diopter adjustment -4 to +4 diopter)
Microphones	Stereo
Speaker	Monaural
Recording media	Built-in Memory (Approx. 87 MB) SD Memory Card / SDHC Memory Card / SDXC Memory Card
Recording file format	
Still picture	RAW / 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) Data from the PC can not be written to the camera using the USB connection cable. (DMC-LF1GA)
Analogue video	NTSC / PAL Composite (Switched by menu)
Audio	Audio line output (Monaural)
Terminal	HDMI: MicroHDMI TypeD AV OUT/DIGITAL: Dedicated jack (8 pin)
Dimensions	Approx. 102.5 mm (W) x 62.1 mm (H) x 27.9 mm (D) (excluding the projection part)

Mass	With card and battery: Approx. 192 g Excluding card and battery: Approx. 170 g
Operating temperature	0 °C to 40 °C
Operating humidity	10%RH to 80%RH

Wi-Fi

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

NFC

Compliance standard	ISO / IEC 18092 NFC-F (Passive Mode)
----------------------------	--------------------------------------

Specifications

AC adaptor

(Panasonic VSK0775 (DMC-LF1GH)): Information for your safety

Input	~ 110 V to 240 V, 50/60 Hz, 0.2 A
Output	=== 5 V, 800 mA

AC adaptor

(Panasonic VSK0772 (DMC-LF1GA)): Information for your safety

Input	~ 110 V to 240 V, 50/60 Hz, 0.2 A
Output	=== 5 V, 800 mA

Battery pack (lithium-ion)

(Panasonic DMW-BCN10E): Information for your safety

Voltage / capacity	3.7 V / 950 mAh
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