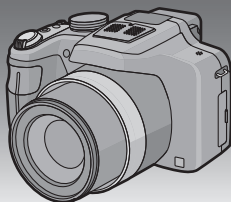


Panasonic®

Basic Operating Instructions Digital Camera

Model No. **DMC-FZ47**

LUMIX



Before use, please read these instructions completely.



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 APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.
- USE ONLY THE RECOMMENDED ACCESSORIES.
- DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. 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 same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- Do not heat or expose to flame.
- Do not leave the battery(ies) in an automobile 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!

- **DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

- 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

- Always use a genuine Panasonic AV cable (DMW-AVC1; optional).
- Always use a genuine Panasonic HDMI mini cable (RP-CDHM15, RP-CDHM30; optional).
Part numbers: RP-CDHM15 (1.5 m), RP-CDHM30 (3.0 m)
- Do not use any other USB connection cables except the supplied one.

In the event of abnormal operation (e.g. if the unit emits smoke or an unusual smell), immediately stop operating the unit and consult the Panasonic Customer Care Centre on 132600.

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 (DMW-AC8G; 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-

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

Information for Your Safety	2
Care of the camera	7
Standard Accessories	8
Names and Functions of Components.....	9
Charging the Battery	12
• Charging	12
• Approximate operating time and number of recordable pictures	14
About the Built-in Memory/the Card	15
Inserting and Removing the Card (optional)/the Battery	16
Setting Date/Time (Clock Set).....	17
• Changing the clock setting	17
Selecting the Recording Mode	18
Taking Pictures with Your Favourite Settings (Programme AE Mode)	20
• Programme Shift	21
Taking Pictures Using the Automatic Function (Intelligent Auto Mode)	22
Recording Motion Pictures	24
Playing Back Pictures ([NORMAL PLAY])	25
Deleting Pictures	25
Setting the Menu	26
Compensating the Exposure	27
Taking Pictures by Specifying the Aperture/Shutter Speed	28
• Aperture-Priority AE	28
• Shutter-Priority AE	28
• Manual Exposure Mode	29
Reading the Operating Instructions (PDF format).....	30
Specifications	32

Care of the camera

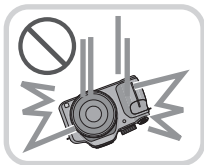
Do not subject to strong vibration, shock, or pressure.

- The lens, LCD monitor, or external case may be damaged if used in following conditions. It may also malfunction or image may not be recorded.
 - Drop or hit the camera.
 - Press hard on the lens or the LCD monitor.
- **When carrying or using the playback feature, ensure that the lens is in the stored position.**
- **There are times when rattling sounds or vibrations will come from the camera, but these are due to the motion of the aperture, the zoom and the motor and do not indicate a defect.**

This camera is not dust/drip/water proof.

Avoid using the camera at location with a lot of dust, water, sand, etc.

- Liquids, sand and other foreign material may get into the space around the lens, buttons, etc. Be particularly careful since it may not just cause malfunctions, but it may become unreparable.
 - Places with a lot of sand or dust.
 - Places where water can come into contact with this unit such as when using it on a rainy day or on a beach.



Standard Accessories

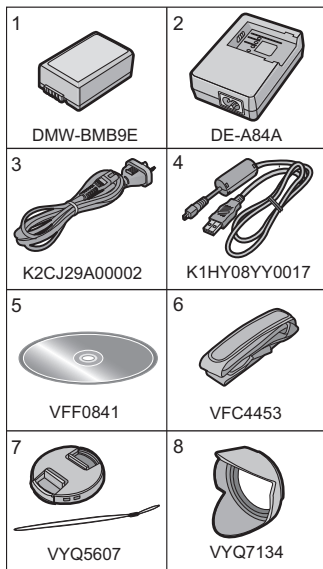
Check that all the accessories are supplied before using the camera.
Product numbers correct as of August 2011. These may be subject to change.

- 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:
Use it to install the software to your PC.
 - Operating Instructions
- 6 Shoulder Strap
- 7 Lens Cap/Lens Cap String
- 8 Lens Hood

• SD Memory Card, SDHC Memory Card and SDXC Memory Card are indicated as **card** in the text.

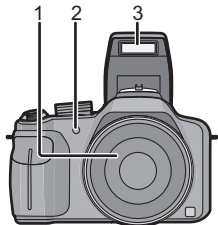
• **The card is optional.**
You can record or play back pictures on the built-in memory when you are not using a card.

• Consult the dealer or your nearest Service Centre if you lose the supplied accessories. (You can purchase the accessories separately.)

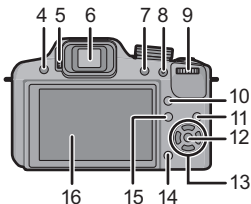


Names and Functions of Components

- 1 Lens
- 2 Self-timer indicator
AF Assist Lamp
- 3 Flash



- 4 Flash open button
- 5 Diopter adjustment dial
- 6 Viewfinder
- 7 [EVF/LCD] button
- 8 [AF/AE LOCK] button
- 9 Rear dial
- 10 [AF/AF-LOCK/MF] button
- 11 Playback button
- 12 [MENU/SET] button



- 13 Cursor buttons

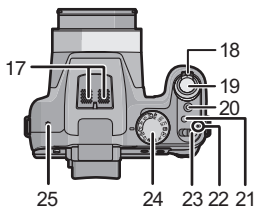
- ▲/ Exposure compensation/
Auto Bracket/Flash output adjustment
- ◀/ Self-timer button
- ▶/ ISO
- ▼/ Function button

The following menus can be assigned.

[PHOTO STYLE]/[ASPECT RATIO]/[QUALITY]/[METERING MODE]/
[WHITE BALANCE]/[I.DYNAMIC]/[GUIDE LINE]/[REC AREA]/
[REMAINING DISP.]

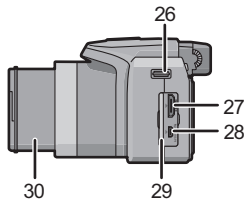
- 14 [Q.MENU] button/Delete button
- 15 [DISPLAY] button
- 16 LCD monitor

- 17 Stereo microphone
- 18 Zoom lever
- 19 Shutter button
- 20 Motion picture button
- 21 [FOCUS] button
- 22 Power lamp
- 23 Camera ON/OFF switch
- 24 Mode dial
- 25 Speaker

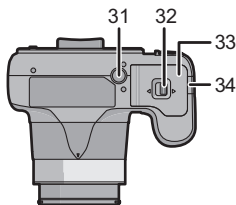


- Do not cover the speaker with your fingers.

- 26 Shoulder strap eyelet
- 27 [HDMI] socket
- 28 [AV OUT/DIGITAL] socket
- 29 Terminal door
- 30 Lens barrel



- 31 Tripod receptacle
- 32 Release lever
- 33 Card/Battery door
- 34 DC coupler cover



- When using an AC adaptor, ensure that the Panasonic DC coupler (DMW-DCC6; optional) and AC adaptor (DMW-AC8G; optional) are used.
- Always use a genuine Panasonic AC adaptor (DMW-AC8G; optional).
- When using an AC adaptor, use the AC cable supplied with the AC adaptor.
- It is recommended to use a fully charged battery or AC adaptor when recording motion pictures.
- If while recording motion pictures using the AC adaptor and the power supply is cut off due to a power outage or if the AC adaptor is disconnected etc., the motion picture being recorded will not be recorded.

Cursor buttons/[MENU/SET] button

This document expresses the up, down, left, and right of the cursor button as follows, or as ▲/▼/◀/▶.

Cursor button:

Selection of items or setting of values etc., is performed.

[MENU/SET] button:

Confirmation of setting contents, etc., is performed.

e.g.: When you press the ▼ (down) button



or

Press ▼

Rear Dial

There are 2 ways to operate the rear dial, rotating left or right, and deciding by pressing.

Rotating:

Selection of items or setting of values is performed during the various settings.

Pressing:

Operations that are the same as [MENU/SET] button, such as determine settings, etc., are performed during the various settings.

• Rear dial is described as follows in these operating instructions.

e.g.: Rotating left or right



e.g.: Pressing the rear dial



Charging the Battery

■ About batteries that you can use with this unit

The battery that can be used with this unit is DMW-BMB9E.

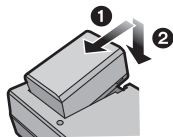
It has been found that counterfeit battery packs which look very similar to the genuine product are made available to purchase in some markets. Some of these battery packs are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these battery packs may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery pack. To ensure that safe products are used we would recommend that a genuine Panasonic battery pack is used.

- Use the dedicated charger and battery.

Charging

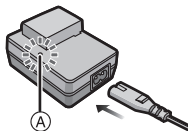
- The battery is not charged when the camera is shipped. Charge the battery before use.
- Charge the battery with the charger indoors.

- 1 Attach the battery paying attention to the direction of the battery.**



- 2 Connect the AC cable.**

- The [CHARGE] indicator (A) lights up and charging begins.



■ About the [CHARGE] indicator

The [CHARGE] indicator turns on:

The [CHARGE] indicator is turned on during charging.

The [CHARGE] indicator turns off:

The [CHARGE] indicator will turn off once the charging has completed without any problem. (Disconnect the charger from the electrical socket and detach the battery after charging is completed.)

• When the [CHARGE] indicator flashes

- The battery temperature is too high or too low. It is recommended to charge the battery again in an ambient temperature of between 10 °C and 30 °C.
- The terminals of the charger or the battery are dirty. In this case, wipe them with a dry cloth.

■ Charging time

Charging time	Approx. 155 min
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Approximate operating time and number of recordable pictures

Number of recordable pictures	Approx. 400 pictures
Recording time	Approx. 200 min

Recording conditions by CIPA standard

- CIPA is an abbreviation of [Camera & Imaging Products Association].
- Programme AE Mode.
- Temperature: 23 °C/Humidity: 50%RH when LCD monitor is on.
- Using a Panasonic SD Memory Card (32 MB).
- Using the supplied battery.
- Starting recording 30 seconds after the camera is turned on. (When the Optical Image Stabilizer function is set to [ON].)
- **Recording once every 30 seconds** with full flash every second recording.
- Rotating the zoom lever from Tele to Wide or vice versa in every recording.
- Turning the camera off every 10 recordings and leaving it until the temperature of the battery decreases.

Playback time	Approx. 330 min
----------------------	------------------------

About the Built-in Memory/the Card

Built-in Memory

- **Memory size: Approx. 70 MB**
- The access time for the built-in memory may be longer than the access time for a card.

Card

The following cards which conform to the SD video standard can be used with this unit.

(These cards are indicated as **card** in the text.)

	Remarks
SD Memory Card (8 MB to 2 GB)	<ul style="list-style-type: none">• Use a card with SD Speed Class* with “Class 4” or higher when recording motion pictures.• SDHC Memory Card can be used with SDHC Memory Card or SDXC Memory Card compatible equipment.• SDXC Memory Card can only be used with SDXC Memory Card compatible equipment.• Check that the PC and other equipment are compatible when using the SDXC Memory Cards. http://panasonic.net/avc/sdcard/information/SDXC.html• Only the cards with capacity listed left can be used.
SDHC Memory Card (4 GB to 32 GB)	
SDXC Memory Card (48 GB, 64 GB)	

- * SD Speed Class is the speed standard regarding continuous writing. Check via the label on the card, etc.

e.g.:

CLASS 



- Please confirm the latest information on the following website.
<http://panasonic.jp/support/global/cs/dsc/>
(This Site is English only.)



Note

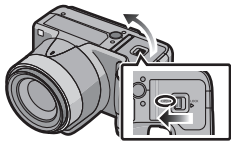
- Keep the Memory Card out of reach of children to prevent swallowing.

Inserting and Removing the Card (optional)/the Battery

- Turn the power switch to [OFF] and confirm that the lens barrel is retracted.
- We recommend using a Panasonic card.

1 Slide the release lever in the direction of the arrow and open the card/battery door.

- Always use genuine Panasonic batteries (DMW-BMB9E).
- If you use other batteries, we cannot guarantee the quality of this product.

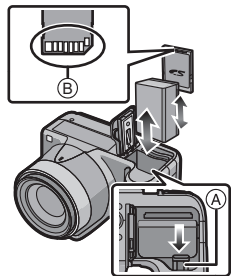


2 **Battery:** Being careful about the battery orientation, insert all the way until you hear a locking sound and then check that it is locked by lever (A).

Pull the lever (A) 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.

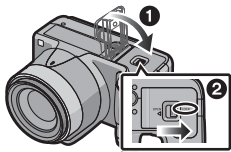
To remove the card, push the card until it clicks, then pull the card out upright.



(B): Do not touch the connection terminals of the card.

3 **1:** Close the card/battery door.

2: Slide the release lever in the direction of the arrow.

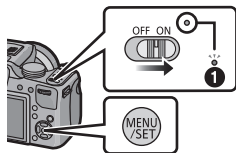


Setting Date/Time (Clock Set)

• The clock is not set when the camera is shipped.

1 Turn the camera on.

- The power lamp **1** lights when you turn this unit on.



2 Press [MENU/SET].



3 Press ◀/▶ to select the items (year, month, day, hour, minute, display sequence or time display format), and press ▲/▼ to set.



4 Press [MENU/SET] to set.

5 Press [MENU/SET].

Changing the clock setting

Select [CLOCK SET] in the [REC] or [SETUP] menu, and press ▶.

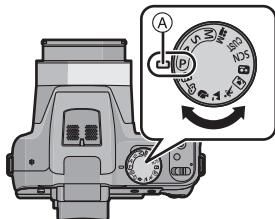
- It can be changed in steps **3** and **4** to set the clock.

Selecting the Recording Mode

Switching the mode by rotating the mode dial.

Align a desired mode with part (A).

- Rotate the mode dial slowly and surely to adjust to each mode.



■ Basic



P Programme AE Mode

The subjects are recorded using your own settings.






fA Intelligent Auto Mode

The subjects are recorded using settings automatically selected by the camera.

■ Advanced

A	Aperture-Priority AE Mode
The shutter speed is automatically determined by the aperture value you set.	
S	Shutter-Priority AE Mode
The aperture value is automatically determined by the shutter speed you set.	
M	Manual Exposure Mode
The exposure is adjusted by the aperture value and the shutter speed which are manually adjusted.	
 M	Creative Video Mode
Record motion picture with manual settings.	
CUST	Custom Mode
Use this mode to take pictures with previously registered settings.	
SCN	Scene Mode
This allows you to take pictures that match the scene being recorded.	
	Creative Control Mode
Record while checking the image effect.	

■ Advanced Scene Mode

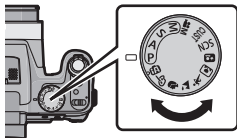
	Portrait Mode
Use this mode to take pictures of people.	
	Scenery Mode
Use this mode to take pictures of scenery.	
	Sports Mode
Use this mode to take pictures of sporting events, etc.	
	Close-up Mode
Use this mode to take pictures of a close-by subject.	
	Night Portrait Mode
Use this mode to take pictures of night scenes and people against night time scenery.	

Taking Pictures with Your Favourite Settings (Programme AE Mode)

The camera automatically sets the shutter speed and the aperture value according to the brightness of the subject.

You can take pictures with greater freedom by changing various settings in [REC] menu.

1 Set the mode dial to [P].

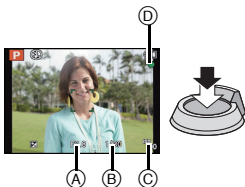


2 Aim the AF area at the point you want to focus on.

3 Press the shutter button halfway to focus.

- (A) Aperture value
- (B) Shutter speed
- (C) ISO sensitivity

- The focus indication (D) (green) lights when the subject is focused.



4 Press the shutter button fully (push it in further), and take the picture.



Programme Shift

In Programme AE Mode, you can change the preset aperture value and shutter speed without changing the exposure. This is called Programme Shift. You can make the background more blurred by decreasing the aperture value or record a moving subject more dynamically by slowing the shutter speed when taking a picture in Programme AE Mode.

1 Press the shutter button halfway and display the aperture value and shutter speed value on the screen.

2 While the values are displayed (about 10 seconds), perform the Programme Shift by rotating the rear dial.



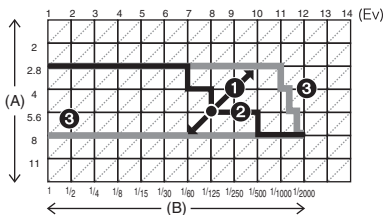
- The Programme Shift indication (A) appears on the screen when Programme Shift is activated.
- Programme Shift is cancelled if the camera is turned off or the rear dial is rotated until the Programme Shift indication disappears.

Example of Programme Shift

(A): Aperture value

(B): Shutter speed

- 1** Programme Shift amount
- 2** Programme Shift line chart
- 3** Programme Shift limit

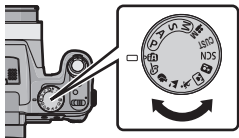


Applicable modes: **IA** P A S M **CUST** **SM** **SCN**    

Taking Pictures Using the Automatic Function (Intelligent Auto Mode)

The camera will set the most appropriate settings to match the subject and the recording conditions so we recommend this mode for beginners or those who want to leave the settings to the camera and take pictures easily.

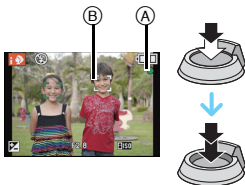
1 Set the mode dial to [**IA**].



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








(A) Focus indication

- The AF area (B) is displayed around the subject's face by the Face Detection function. In other cases, it is displayed at the point on the subject which is in focus.



Scene Detection

When the camera identifies the optimum scene, the icon of the scene concerned is displayed in blue for 2 seconds, after which its colour changes to the usual red.

[iA] →	 [i- PORTRAIT]	 [i- SCENERY]
	 [i- MACRO]	 [i- NIGHT PORTRAIT]*1
	 [i- NIGHT SCENERY]	 [i- SUNSET]
	 [i- BABY]*2	

*1 Only when [iA] is selected.

*2 When [FACE RECOG.] is set to [ON], [iA] will be displayed for birthdays of registered faces already set only when the face of a person 3 years old or younger is detected.

- [iA] is set if none of the scenes are applicable, and the standard settings are set.
- When [iA], [iA] or [iA] is selected, the camera automatically detects a person's face, and it will adjust the focus and exposure. **(Face Detection)**

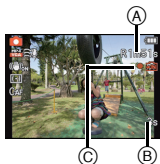
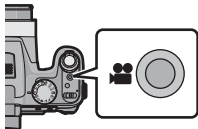
Recording Motion Pictures

This unit can record motion pictures in either AVCHD or MP4 formats.

1 Start recording by pressing the motion picture button.

- (A) Available recording time
- (B) Elapsed recording time

- You can record motion pictures fitting each Recording Mode.
- Release the motion picture button right after you press it.
- The recording state indicator (red) © will flash while recording motion pictures.



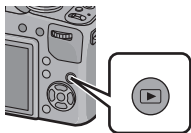
2 Stop the recording by pressing the motion picture button again.

Note

- Maximum time to record motion pictures continuously with [MP4] is 29 minutes 59 seconds or up to 4 GB.

Playing Back Pictures ([NORMAL PLAY])

1 Press [▶].



2 Press ◀ or ▶.

- After selecting the motion picture, press ▶ to start playback.



Deleting Pictures

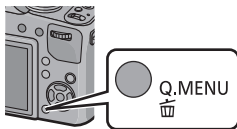
Once deleted, pictures cannot be recovered.

- Pictures on the built-in memory or the card, which are being played back will be deleted.

1 Press [▶].

2 Select the picture to be deleted, and then press [🗑].

- Confirmation screen is displayed.
Picture is deleted by selecting [YES].



Setting the Menu

Example: In the [REC] menu, change [AF MODE] from [■] (1-area-focusing) to [👤] (Face Detection)

1 Press [MENU/SET].

2 Press ▲/▼ or rotate the rear dial to select the menu item.



3 Press ► or the rear dial.

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

4 Press ▲/▼ or rotate the rear dial to select the settings.



5 Press [MENU/SET] or the rear dial to set.

■ Close the menu

Press [MENU/SET] or press the shutter button halfway.

■ Switching to other menus

e.g.: Switching to the [SETUP] menu from [REC] Mode menu

1 Press [MENU/SET].

2 Press ◀.

3 Press ▼ or rotate the rear dial to select the [SETUP] menu icon [🔧].

4 Press ► or the rear dial.

- Select a menu item next and set it.

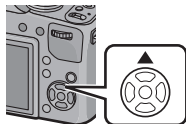




Applicable modes:              

Compensating the Exposure

Use this function when you cannot achieve appropriate exposure due to the difference in brightness between the subject and the background.

- 1** Press  until **[EXPOSURE]** appears.




- 2** Press / to compensate the exposure and then press **[MENU/SET]**.



- The exposure compensation value appears on the screen.
- Select [0 EV] to return to the original exposure.

■ Operate with the rear dial

- 1** Press the rear dial and enable .
- 2** Rotate the rear dial to compensate the exposure.

- (A) Exposure compensation value



Taking Pictures by Specifying the Aperture/Shutter Speed

Aperture-Priority AE

Set the aperture value to a higher number when you want a sharp focus background. Set the aperture value to a lower number when you want a soft focus background.

1 Set the mode dial to [**A**].

2 Rotate the rear dial to set the aperture value.

A Aperture Value

- It will switch between aperture setting operation and Exposure Compensation operation every time the rear dial is pressed.



Shutter-Priority AE

Set with a faster shutter speed when you want to take a sharp picture of a fast moving subject. Set to a slower shutter speed when you want to create a trail effect.

1 Set the mode dial to [**S**].

2 Rotate the rear dial to set the shutter speed.

B Shutter Speed

- It will switch between shutter speed setting operation and Exposure Compensation operation every time the rear dial is pressed.



Manual Exposure Mode

Determine the exposure by manually setting the aperture value and the shutter speed.

The Manual Exposure Assistance appears on the lower portion of the screen to indicate the exposure.

1 Set the mode dial to [M].

2 Rotate the rear dial to set the aperture and shutter speed.

Ⓢ Manual Exposure Assistance

- It will switch between aperture setting operation and shutter speed setting operation every time the rear dial is pressed.



Ⓢ

Manual Exposure Assistance

	The exposure is adequate.
	Set to faster shutter speed or larger aperture value.
	Set to slower shutter speed or smaller aperture value.

- The Manual Exposure Assistance is an approximation. We recommend checking the pictures on the playback screen.

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

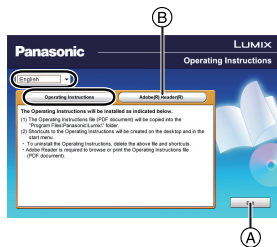
1 Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied).

2 Click the [Operating Instructions].

3 Select the desired language and then click [Operating Instructions] to install.


(A) To return to the install menu.

4 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).

Insert the CD-ROM containing the Operating Instructions (supplied), click  and then follow the messages on the screen to install.

(Compatible OS: Windows XP SP3/Windows Vista SP2/Windows 7)

- You can download and install a version of Adobe Reader that you can use with your OS from the following Web Site.

<http://get.adobe.com/reader/otherversions>

■ To uninstall the Operating Instructions (PDF format)

Delete the PDF file from the “Program Files\Panasonic\Lumix\” folder.

■ For Mac

1

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

2

Open the “Manual” folder in the CD-ROM and then copy the PDF file with the desired language inside the folder.

3

Double click the PDF file to open it.

Specifications

Digital Camera:

Information for your safety

Power Source:	DC 8.4 V
Power Consumption:	1.7 W (When recording with LCD Monitor) 1.5 W (When recording with Viewfinder) 1.0 W (When playing back with LCD Monitor) 0.7 W (When playing back with Viewfinder)

Camera effective pixels	12,100,000 pixels	
Image sensor	1/2.33" CCD, total pixel number 12,500,000 pixels, Primary colour filter	
Lens [NANO SURFACE COATING]	Optical 24× zoom, f = 4.5 mm to 108 mm (35 mm film camera equivalent: 25 mm to 600 mm) Wide end: F2.8 to F8.0 (when recording motion pictures: F2.8 to F11) Tele end: F5.2 to F8.0 (when recording motion pictures: F5.2 to F11)	
Digital zoom	Max. 4×	
Extra optical zoom	Max. 46.9× (When set to 3,000,000 pixels [3M] or less)	
Focus range	AF	30 cm (Wide)/2 m (Tele) to ∞
	AF Macro/MF/ Intelligent Auto/ Motion Picture	1 cm (Wide)/1 m (Tele) to ∞
	Scene Mode	There may be differences in the above settings.

Shutter system	Electronic shutter+Mechanical shutter
Burst recording	
Burst speed	Approx. 3.7 pictures/second
Number of recordable pictures	Max. 7 pictures
Hi-speed burst	
Burst speed	Approx. 10 pictures/second (Speed priority) Approx. 7 pictures/second (Image priority) [3M (4:3), 2.5M (3:2), 2M (16:9) or 2.5M (1:1) is selected as the picture size.]
Number of recordable pictures	Approx. 15 to 100 pictures
Minimum Illumination	Approx. 9 lx (when i-low light is used, the shutter speed is 1/25th of a second)
Shutter speed	
Still picture	60 seconds to 1/2000th of a second [STARRY SKY] Mode: 15 seconds, 30 seconds, 60 seconds
Motion pictures	1/30 to 1/20000th of a second Creative Video Mode (Manual Exposure/Manual Focus): 1/8 to 1/20000th of a second

Exposure (AE)	Programme AE (P)/Aperture-Priority AE (A)/ Shutter-Priority AE (S)/Manual Exposure (M) Exposure compensation (1/3 EV Step, -3 EV to +3 EV)	
Metering mode	Multiple/Centre weighted/Spot	
LCD monitor	3.0" TFT LCD (3:2) (Approx. 461,000 dots) (field of view ratio about 100%)	
Viewfinder	Colour LCD Viewfinder (Approx. 202,000 dots) (field of view ratio about 100%) (with diopter adjustment -4 to +4 diopter)	
Flash	Built-in pop up flash	
	Flash range: Approx. 30 cm to 9.5 m (Wide, [ISO AUTO] is set)	
Microphone	Stereo	
Speaker	Monaural	
Recording media	Built-in Memory (Approx. 70 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	AVCHD	AC3/2 ch
	MP4	AAC/2 ch
Interface		
Digital	"USB 2.0" (High Speed)	
Analogue video Audio	NTSC/PAL Composite (Switched by menu) Audio line output (monaural)	

Terminal	
[AV OUT/ DIGITAL]	Dedicated jack (8 pin)
[HDMI]	MiniHDMI TypeC
Dimensions (excluding the projecting parts)	Approx. 120.3 mm (W)×79.8 mm (H)×91.9 mm (D)
Mass	Approx. 498 g (with card and battery) Approx. 454 g (excluding card and battery)
Operating temperature	0 °C to 40 °C
Operating humidity	10%RH to 80%RH

Battery Charger (Panasonic DE-A84A):

Information for your safety

Input:	AC ~ 110 V to 240 V, 50/60 Hz, 0.15 A
Output:	DC --- 8.4 V, 0.43 A

Battery Pack (lithium-ion) (Panasonic DMW-BMB9E):

Information for your safety

Voltage/capacity:	7.2 V/895 mAh
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