Panasonic®
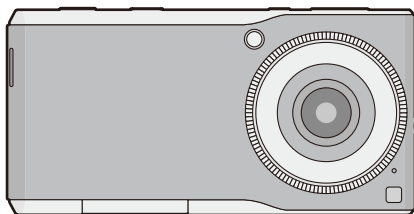
Owner's Manual
for advanced features

Digital Camera

Model No. DMC-CM1

LUMIX

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

Contents

5. Viewer

6. Photo Search

7. Phone

8. People

9. Email/Messaging

10. Web browser

11. Music

12. Maps

13. Other apps and functions

14. Google Play

15. Connecting to external devices

16. Synchronize/Backup/Reset

17. Security

18. Updates

19. Settings list

20. Others

1. Before Use

How to use this manual

- Click a cross reference in the text to jump to the corresponding page.
- By entering keywords in the search field at the top of the Adobe Reader screen, you can run a keyword search and jump to the corresponding page.
- Operations and other details of this manual may vary depending on the Adobe Reader version you are using.

■ About the symbols in the text

    ⬤ :   Indicates a general notification.

    ⬤ :   Indicates a hint for easier use, or a key point for taking pictures with the camera.

    ⬤ :   Indicates conditions that prevent a certain function from being used while taking pictures with the camera.

    (P∗∗**)**:   Indicates a reference page. Click to navigate to that page.

In this owner's manual, steps for setting a menu item are described as follows.

From the Home screen → [▦ **] → [** ⚙ **].**

Standard Accessories

Check that all the accessories are supplied before using this unit.

- The accessories and their shape will differ depending on the country or area where this unit was purchased.
  For details on the accessories, refer to "Basic Owner's Manual".
- microSD Memory Card, microSDHC Memory Card and microSDXC Memory Card are indicated as **microSD card** in the text.
- **microSIM card and microSD card are optional.**

Names and Functions of Main Parts

1	**Shutter button** (P46) Press to take a picture with the camera. Press halfway (lightly) to adjust the focus.	**6**	**Speaker** (P133) Plays the ringtone, music or the caller's voice when in handsfree mode.
2	**Camera selector switch** (P42) Starts or ends the camera.	**7**	**NFC antenna** (P156) The NFC antenna is built-in.
3	**Flash** (P81)/ **AF Assist Lamp** (P118) Flashes or lights up when taking a picture with the camera.	**8**	**Control ring** (P84) Assigned functions can be used by rotating the control ring while taking pictures with the camera.
4	**[ ] button** (P16) Turns the unit on/off, or sets/releases sleep.	**9**	**Lens front ring (Diameter: 37 mm)** (P190)
5	**[ ]/[ ] buttons** (P30, 121) Adjusts the volume of incoming calls, receivers or music. When using the camera function, functions that are used frequently during recording can be assigned to these buttons.	**10**	**Outward facing camera** (P39) Take pictures or motion pictures.
		11	**Microphone** (P40, 133) Records audio when recording motion pictures, and limits noise to make it easier to hear the caller's voice. Picks up and transmits your voice when in handsfree mode.

6

12	**microUSB terminal (P14, 170)** Use this when charging or connecting external devices.
13	**Ringtone lamp/Charging lamp (P14, 180)** Flashes if there is a missed call or new email, and lights up when charging.
14	**Light sensor/Proximity sensor** Sensor to detect the surrounding brightness and automatically adjust the brightness of the screen, and to prevent incorrect operation of the touch screen during a call. Do not cover the sensor area with your hand or paste stickers over it in order to prevent incorrect operation of the sensor.
15	**Display (P18)** Features a touch screen. Operate it by touching directly with your fingers.
16	**Earpiece** Hear the caller's voice.

17	**Earphone terminal (P9)** Connect a headset (optional).
18	**Inward facing camera (P42)** Take pictures or motion pictures.
19	**microSIM card slot (P10)** Insert a microSIM card.
20	**microSD card slot (P11)** Insert a microSD card.
21	**Nameplate** Stowable nameplate. Contains information such as the mobile identification number.
22	**Mouthpiece/Microphone (P40, 132)** Records audio when recording motion pictures, and picks up and transmits your voice when talking.

7

■ About the mobile identification number

This unit has a specific mobile identification number Ⓐ.
The mobile identification number is verified as follows.

To verify the number on-screen:

1 **From the Home screen → [▦] → [⚙].**

2 **[About phone] → [Status] → check the [IMEI] item.**

To verify the number by checking the nameplate:

1 **Open the card slot cover.**

2 **Remove the microSIM card tray.**

3 **Pull the nameplate towards you.**
   ● Be careful as the nameplate may be damaged if it is pulled too hard.

8
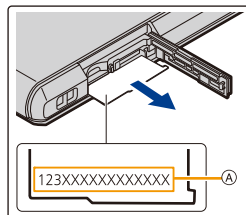
Stereo headset (optional)

You can use a headset (optional) to listen to music or watch videos.
If the headset (optional) has a microphone, you can also use it to talk on the phone.
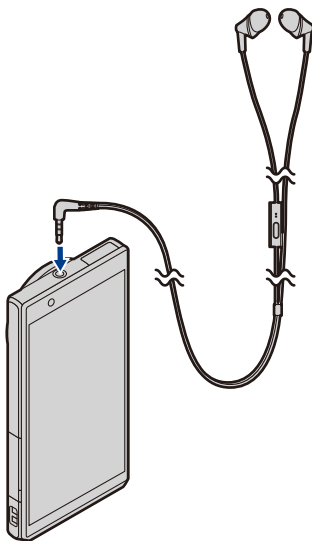
● Check that the headset (optional) plug is completely inserted into the earphone terminal.

Inserting/Removing the microSIM card (optional)

A microSIM card is an integrated circuit that stores the customer's phone number and other information.
Calls and messages (SMS) cannot be sent or received unless the microSIM card is inserted.
If you have inserted/removed the microSIM card, do not deliberately touch or damage the IC terminals.

1 **Open the card slot cover with the control ring face of this unit facing upwards.**

2 **Hold the hooks of the tray with your fingertips and pull it out horizontally.**
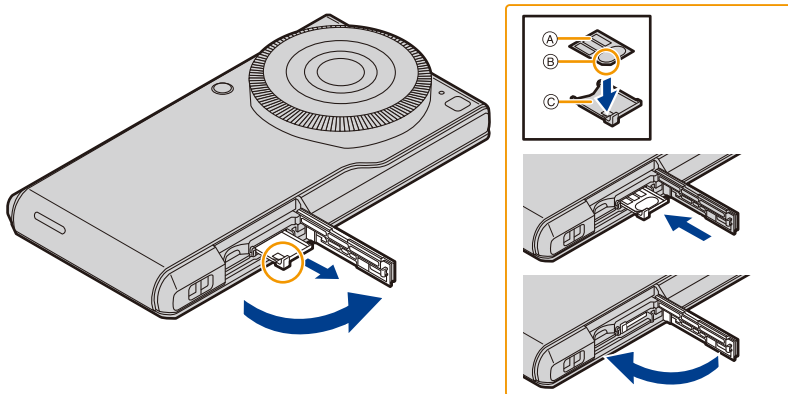
3 **Mount the microSIM card on the tray Ⓒ with the IC face Ⓐ on top.**
 ● Take note of the notch Ⓑ on the microSIM card and mount it in the correct direction.

4 **Check the orientation of this unit and insert the tray horizontally into the slot of the microSIM card.**

5 **Close the card slot cover.**

■ Removing the microSIM card

1 Open the card slot cover with the control ring face of this unit facing upwards.

2 Hold the hooks of the tray with your fingertips, pull it out horizontally, and remove the microSIM card.

3 Check the orientation of this unit and insert the tray horizontally into the slot of the microSIM card.

4 Close the card slot cover.

● Keep the microSIM Card out of reach of children to prevent swallowing.
● Keep the microSIM Card Tray out of reach of children to prevent swallowing.

About the Built-in Memory/the microSD Card (optional)

About Built-in Memory

● **Memory size: Approx. 10 GB**
● The access time for the built-in memory may be longer than the access time for a microSD card.
● You can copy the recorded pictures to a microSD card. **(P126)**

About microSD cards that can be used with this unit

The following microSD cards which conform to the SD standard can be used with this unit.
(These cards are indicated as **microSD card** in the text.)

microSD Memory Card (64 MB to 2 GB)	● microSDHC Memory Cards and microSDXC Memory Cards can be used only with their compatible devices.
microSDHC Memory Card (4 GB to 32 GB)	● Check that the PC and other equipment are compatible when using the microSDXC Memory Cards. ● Check the corresponding manufacturer, capacity and other latest compatibility information from the following support site. **http://panasonic.jp/support/global/cs/dsc/** (This Site is English only.) Note that this does not guarantee compatibility with all operations.
microSDXC Memory Card (64 GB to 128 GB)	● A message prompting to format the microSD card may be displayed when connecting the microSD card to other devices, but do not format.

■ About the motion picture recording and SD speed class

According to the [Rec Quality] **(P48)** of a motion picture, the required microSD card differs. Use a microSD card that meets the following rating of the SD Speed Class.
● SD Speed Class is the speed standard regarding continuous writing. Check via the label on the microSD card, etc.
● The SD speed class represents the level of performance of microSD cards. The SD speed class does not serve as a guarantee of performance for all operations.

[Rec Quality]	SD Speed class	Label example
FHD/HD/VGA/1:1	Class 4 or higher	CLASS④ ④
4K	Class 10	CLASS⑩ ⑩

● The data on the built-in memory or the microSD card may be damaged or lost due to electromagnetic waves, static electricity or breakdown of this unit or the microSD card. We recommend storing important data on a PC etc.
● Keep the microSD Card out of reach of children to prevent swallowing.

Approximate number of recordable pictures and available recording time

■ Number of recordable pictures

● [9999+] is displayed if there are more than 10000 pictures remaining.

Aspect ratio [3:2], Quality [▦]

[Picture Size]	8 GB	32 GB	64 GB	128 GB
L (20M)	720	2910	5790	11600
M (10M)	1310	5310	10570	21190
S (5M)	2290	9250	18020	36100
XS (2.5M)	6010	24300	48660	97480

Aspect ratio [3:2], Quality [RAW]

[Picture Size]	8 GB	32 GB	64 GB	128 GB
L (20M)	220	920	1840	3690
M (10M)	260	1070	2150	4310
S (5M)	290	1170	2350	4700
XS (2.5M)	310	1270	2540	5100

■ Available recording time (when recording motion pictures)

● "h" is an abbreviation for hour, "m" for minute and "s" for second.
● The recordable time is the total time of all the motion pictures which have been recorded.

[Rec Quality]	8 GB	32 GB	64 GB	128 GB
[4K 15p]	20m58s	1h24m39s	2h49m30s	5h39m36s
[FHD 30p]	52m09s	3h30m35s	7h01m41s	14h04m49s
[HD 30p]	1h43m28s	6h57m44s	13h56m28s	27h55m49s
[VGA 30p]	4h12m27s	16h59m17s	34h01m00s	68h09m04s
[1:1 30p]	4h12m27s	16h59m17s	34h01m00s	68h09m04s

● The maximum continuous recordable time of a motion picture is 29 minutes and 59 seconds, which is equivalent to a file size of approximately 4 GB.
You can check the recordable time on the screen. (With [4K 15p]/[FHD 30p], the file size becomes larger, causing the recordable time to become shorter than 29 minutes and 59 seconds)

● The number of recordable pictures and the available recording time are an approximation.
(These vary depending on the recording conditions and the type of microSD card.)
● The number of recordable pictures and the available recording time varies depending on the subjects.
● **The maximum available continuous recording time is displayed on the screen.**
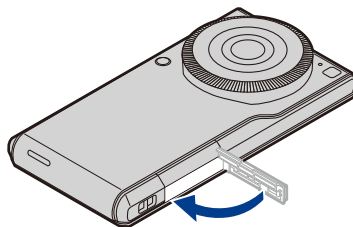
Inserting/Removing the microSD card

1 **Open the card slot cover, ensure that the connection terminal of the microSD card is facing down, and insert it firmly in the correct direction until it makes a "click" sound.**

Ⓐ Do not touch the connection terminals of the microSD card.
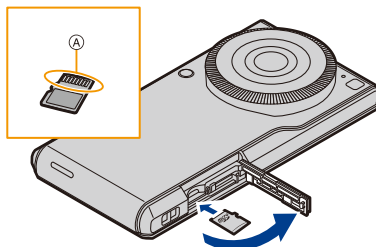
2 **Close the card slot cover.**

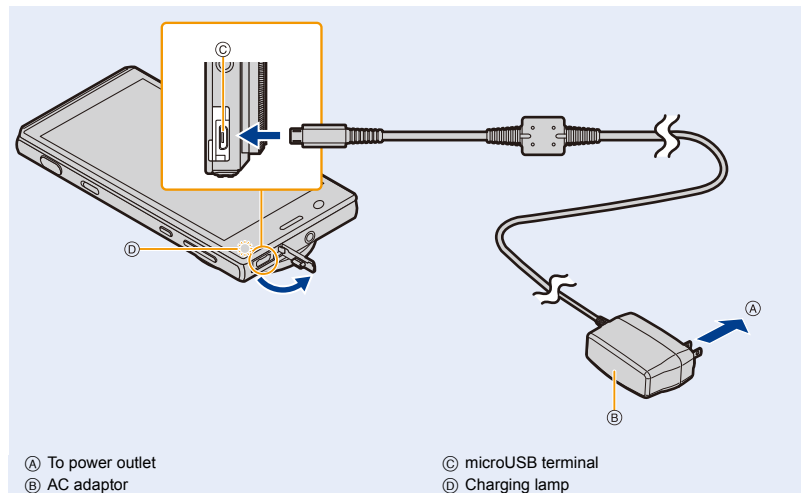■ **Removing the microSD card**

Push the microSD card in until it makes a "click" sound and then pull it out straight.

13

Charging

● **The battery is not charged when this unit is shipped. Charge the battery before use.**

Charge with an AC adaptor

Connect the unit and AC adaptor to charge.

Ⓐ To power outlet
Ⓑ AC adaptor
Ⓒ microUSB terminal
Ⓓ Charging lamp

1 **Open the microUSB terminal cover, check the direction of the AC adaptor cable terminal, and insert it into the microUSB terminal.**

2 **Insert the AC adaptor power plug into the power outlet.**

■ When charging is complete

1 Remove the AC adaptor power plug from the power outlet.

2 Remove the AC adaptor cable terminal from the unit.

● **The unit and AC adaptor may become warm while charging, however this is not a malfunction.**
● The shape of the AC adaptor power plug and power outlet may differ depending on each country/region.
● Do not use any other AC adaptors except the supplied one.
● **Do not leave any metal items (such as clips) near the contact areas of the power plug. Otherwise, a fire and/or electric shocks may be caused by short-circuiting or the resulting heat generated.**

About the charging lamp

On: Charging.

Off: Charging has completed.

● When you start charging an empty battery, the charging lamp may flash. This is not a malfunction. The charging lamp stops flashing and lights up after the battery is charged for a while.

14

Charging time

Charging time	Approx. 150 min

● Approximate charging time when the battery is drained and the unit is turned off.
 The charging time is longer if the unit is turned on during charging.

When the battery becomes low (charge notification)

If the battery level falls below 15%, a message will be displayed stating that the battery is low to notify you to charge the unit.
If the battery becomes flat, a message will be displayed stating that the battery is flat, and the unit will turn off.

Approximate operating time and number of recordable pictures

● The amount of time you can use the unit varies depending on how it used and the usage environment.

Recording still pictures (By CIPA standard in Program AE Mode)

Number of recordable pictures	Approx. 300 pictures
Recording time	Approx. 150 min

Recording conditions by CIPA standard
● CIPA is an abbreviation of [Camera & Imaging Products Association].
● Temperature: 23 °C (73.4 °F)/Humidity: 50%RH when display is on.
● Using a Panasonic microSDHC Memory Card.
● Starting the camera application and recording 30 seconds after this unit is turned on.
● **Recording once every 30 seconds** using full flash every second recording.
● Turning this camera application off every 10 recordings and leaving it until the temperature of the unit decreases.

The number of recordable pictures varies depending on the recording interval time. If the recording interval time becomes longer, the number of recordable pictures decreases.
[For example, if you were to take one picture every two minutes, then the number of pictures would be reduced to approximately one-quarter of the number of pictures given above (based upon one picture taken every 30 seconds).]

Recording motion pictures
(Recording with picture quality set to [FHD 30p])

Recordable time	Approx. 130 min
Actual recordable time	Approx. 90 min

● The maximum continuous recordable time of a motion picture is 29 minutes and 59 seconds, which is equivalent to a file size of approximately 4 GB.
 You can check the recordable time on the screen. (With [4K 15p]/[FHD 30p], the file size becomes larger, causing the recordable time to become shorter than 29 minutes and 59 seconds)
● These times are for an ambient temperature of 23 °C (73.4 °F) and a humidity of 50%RH.
 Please be aware that these times are approximate.
● The actual recordable time is the time of recording possible with repeated start/stop of the camera function, and start/stop of recording.

Turning the unit on/off

Turn on the unit by pressing [⏻] for 2 seconds or more.
- The lock screen will be displayed after a short time. **(P17)**
- The default settings screen will be displayed when you turn the unit on for the first time. **(P17)**
- Press [⏻] to enter/release sleep mode, when the unit is turned on.
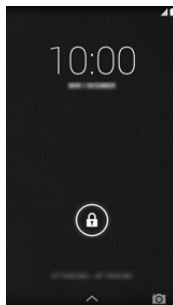
■ **To turn the unit off**
    Press [⏻] for 1 second or more → [Power off] → [OK].

■ **To restart**
    Press [⏻] for 1 second or more → [Reboot] → [OK].

16

Android™ default settings

The first time you turn the unit on after purchase, follow the on-screen instructions and configure the language and Wi-Fi® settings.

1 Select language → [▶].

2 Follow the on-screen instructions to configure various settings.

**3** After configuring various settings, read through description on diagnosis information → [Deny]/[Allow].
- Information concerning the condition of the terminal and information required for resolution is sent to the manufacturing source e.g. during system update or when an error occurs. This information is used for quality and service improvement purposes only.
Data communication charges may be incurred when sending data.
- The tutorial screen is displayed when the default settings are completed.
Confirm the details on the screen, and tap [OK].

- The unit will acquire the date and time from the network to automatically set the date and time, however they may not be set properly depending on the environment that the unit is used in. In this case, set the date and time manually. **(P29)**

Release the lock screen

Slide [🔒] until the guide (white line on the outer circumference) Ⓐ.
- If the [Screen lock] settings have been changed, use the method configured to release the lock.

10:00

Ⓐ
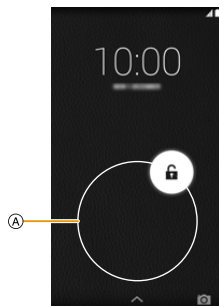
2. **Basic Operation**

Using the touch screen

The unit features a touch screen, which you can operate by touching directly with your fingers.

● Peel off the sheet pasted to the touch screen when first bought before use.
● The touch screen is designed to be lightly touched with a finger.
  Do not press the touch screen strongly with your finger or press objects with sharp tips (claws/ball point pens/pins etc.) against it.
● The touch screen may not work even when touched in the following cases. Please note that they may also result in incorrect operations.
  – Operating with gloves on your hand
  – Operating with your fingertips
  – Operating with foreign objects on top of the operating surface
  – Operating with a protective sheet, seal, etc. pasted on top
  – Operating with the touch screen wet
  – Operating with your fingers wet with sweat or water

Tapping
Tap an item or icon to select it.

Double-tapping
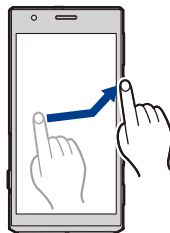Tap the touch screen quickly two times when you want to zoom in and out of webpages, etc.

Tapping and holding
Tap an item or icon without releasing your finger.
Use this to display a context menu.

Flicking
Moving your finger quickly across the touch screen will move back and forth through numerous pictures.

18

Dragging

Tap an item or icon without releasing your finger and slide it.
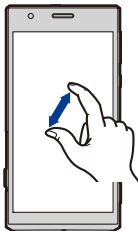
Scrolling

Flick/drag your finger around the screen to display a hidden area.
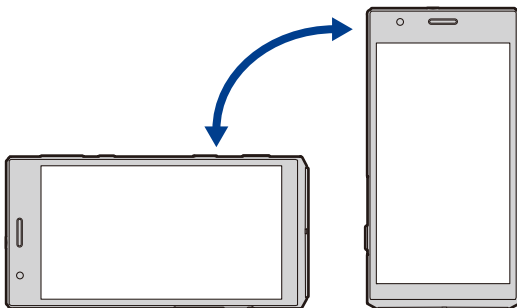
Pinching

When displaying a webpage or picture, use two fingers to push the screen apart and zoom in (pinch out), or bring them together to zoom out (pinch in).

● Controls may differ or not be available depending on the app being used.

19

Switching between vertical and horizontal viewing modes

The unit switches the screen between vertical and horizontal viewing modes depending on its motion sensor that can detect the unit's direction and movement.
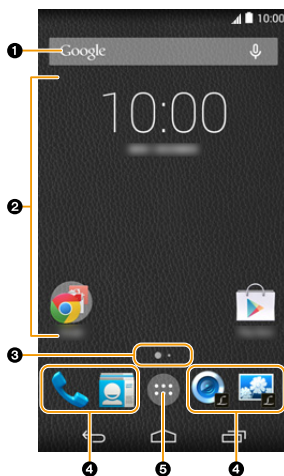

- The screen display may not switch depending on the app being used and other reasons.

Home screen

The Home screen is the main screen for launching apps.
Tapping [ ] when other screens are displayed will return to the Home screen.

A Google Search™

B Area for adding shortcuts, widgets or folders.

C Displays the current page if there are numerous home screen pages.
The page can be switched by flicking in a horizontal direction.

D Frequently used shortcuts or folders
Drag frequently used shortcuts to store them here.

E Displays the app list. **(P27)**

21

Home screen operations

■ Launching an app
Tap the app's icon.

■ Moving an item in the Home screen
1 **Tap and hold an item.**
2 **Drag the item to the desired location.**
● Dragging an item to the edge of the screen displays the next page.

■ Adding a widget to the Home screen
1 **Tap and hold the background → [ ].**
2 **Tap and hold the widget you want to add.**
3 **Drag the item to the desired location.**

■ Adding a shortcut to the Home screen
1 **Tap [ ].**
2 **Tap and hold the app you want to add.**
3 **Drag the item to the desired location.**

■ Creating a folder
1 **Tap and hold an item.**
2 **Drag onto another item.**

■ Renaming a folder
1 **Tap the folder shortcut.**
2 **Tap folder name → Enter folder name.**
● The name of the newly created folder is [Unnamed Folder].
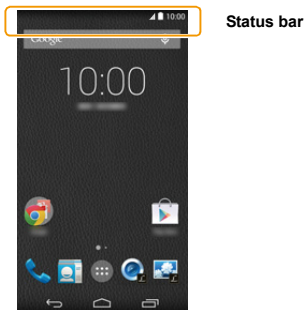
■ Deleting an item from the Home screen
1 **Tap and hold an item.**
2 **Drag the item and drop it on [Remove].**

■ Changing the wallpaper on the Home screen
1 **Tap and hold the background → [ ].**
2 **Select the desired wallpaper.**
3 **Tap [Set wallpaper].**

22

Status bar

The status bar displays icons that let you know the status of the unit, and notification icons.

Status bar

■ List of main status icons

	Network strength		Airplane mode is on
	Roaming		Bluetooth® feature is on
	GPRS network is available		Bluetooth device is connected
	EDGE network is available		microSIM card is not inserted
	3G network is available		Connected to Wi-Fi network
	LTE network is available		Vibrate mode is on
	High speed packet is available		Silent mode is on
	Battery level		Alarm is set
	Battery is charging		Microphone is muted
	GPS is activated		Speakerphone is on

■ List of main notification icons

|			
	New Gmail™ received		Error message
	New email received		Missed call
	New SMS message received		Call in progress
	New voicemail received		Call is on hold
	Synchronizing data		Downloading data
	Open (unsecured) wireless network is available		Uploading data
	Notification from the Google Play™ store		

● The status bar may fade away if there is no input for a while depending on the app being used. Tapping the screen displays the status bar.

23

Notifications panel/Quick menu

Notifications panel

The notifications panel allows you to check notifications such as missed calls and incoming email messages.
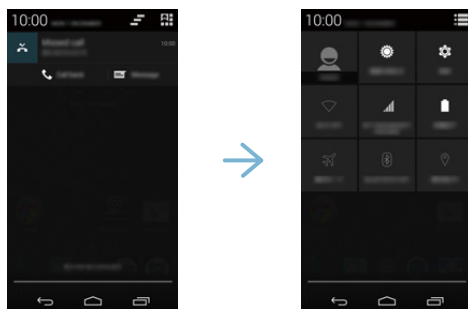
Drag the status bar down.
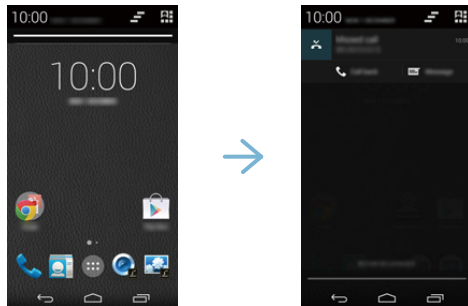
Quick menu

Various settings can be changed and profile confirmed from the quick menu.

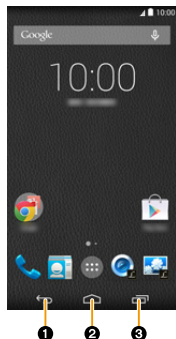**1** **Tap [ ] in the notifications panel screen.**

2 **Tap each setting.**
● Tapping [ ] in the quick menu screen returns to the notifications panel screen.

24

Control icons

Control icons are displayed at the bottom of the screen.

❶ Return to the previous screen.
❷ Display the Home screen.
❸ Display a thumbnail of recently used apps.
   Tapping a thumbnail launches that app.
   ● Tap [ ] while the thumbnail is displayed to clear the app used most recently.

   ● The control icons may fade away if there is no input for a while depending on the app being used.
     Tapping the screen displays the control icons.
   ● In the camera app screen, the control icons are displayed when
     flicking the right edge of the screen to the left.

25

Using apps

Launching an app

1 **From the Home screen → [![icon]].**

2 **Tap the app that you want to launch.**

Close the app

Tap [![icon]].

> ● The app may pause or remain running in the background depending on the app.

Display app options menu

Tap [![icon]] when the app is running.

> ● Controls may differ or the options menu may not be available depending on the app.

■ App list

	[Camera]	Refer to **P39** for details.
	Google Calendar™	Refer to **P161** for details.
	[Gallery]	Refer to **P124** for details.
	[Downloads]	Display downloaded files.
	Google Drive™	Refer to **P156** for details.
	Google Hangouts™	Refer to **P146** for details.
	Google Maps™	Refer to **P155** for details.
	[Email]	Refer to **P142** for details.
	Google Voice Search™	Search for information on apps or webpages on the unit with your voice.
	[Clock]	Display the time, or use the alarm or timer.
	[Photos]	Display pictures or motion pictures that have been taken.
	[Settings]	Refer to **P179** for details.
	[Calculator]	Use four-function calculations.
	[Phone]	Refer to **P132** for details.
	[People]	Refer to **P138** for details.
	Google Chrome™	Refer to **P148** for details.
	Google Earth™	Browse satellite pictures from around the world.
	[Gmail]	Refer to **P145** for details.
	Google Search™	Search for information on apps or webpages on the unit.
	Google+™	Share updates and pictures with other users, or use [Hangouts] to chat with them.
	Google Settings™	Configure various Google™ services.
	Google Keep™	Refer to **P158** for details.
	[Photo Search]	Refer to **P129** for details.
	Google Play Games™	Play games from the Play Store.
	Google Play Newsstand™	Check news of interest from the Play Newsstand.
	Google Play Store	Refer to **P164** for details.
	Google Play Books™	Purchase e-books from the Play Store, and browse Play Books.
	Google Play Music™	Refer to **P152** for details.
	Google Play Movies & TV™	Purchase videos and TV programs from the Play Store, and browse Play Movies.
	YouTube™	Refer to **P163** for details.
	[4K Pre-Burst]	Refer to **P50** for details.
	[4K PhotoCapture]	Refer to **P127** for details.

- The app list spans multiple pages.
  The page can be switched by flicking in a horizontal direction.
- Firmware updates may add additional apps and change the control methods and screen displays of the apps installed on the unit without notice.

27

Entering Text

The keyboard is displayed automatically when you tap a text entry field.

✎ ● The keyboard may differ, or the text and symbols that can be entered may be restricted depending on the app used, language or selected text entry field.

Select entry method

The entry method can be selected depending on the language used.

1 **From the Home screen → [🔲] → [⚙].**

2 **[Language & input] → [Default].**

3 **Select entry method to use.**

Using the Google keyboard
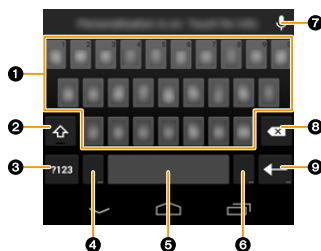
❶ Tap to enter text.
❷ Tap to change the character case.
   Double-tap to turn on the caps lock.
❸ Tap to switch the type of text entered.
❹ Tap to enter text.
   Tap and hold to configure the input options.
❺ Tap to enter a space.
❻ Tap to enter text.
   Tap and hold to enter symbols.
❼ Tap and use voice input.
❽ Delete the character before the cursor.
❾ Tap to enter a line break.
   Tap and hold to enter pictograms.

Basic settings

Setting the date and time

■ Set the date, time and time zone

1   **From the Home screen → [▦] → [⚙].**

2   **Tap [Date & time].**

3   **To set the date and time automatically**
     Turn on the [Automatic date & time] and [Automatic time zone] checkboxes.
     ● This completes the setting.

     To set the date and time manually
     Turn off the [Automatic date & time] and [Automatic time zone] checkboxes, and proceed to the next step.

4   **[Set date] → set the date → [Done].**

5   **[Set time] → set the time → [Done].**

6   **[Select time zone] → select time zone.**

 ● If the date and time is not corrected automatically, set the date and time manually.
 ● If the correct time has not been set, some apps may not function properly.

■ Switch between the 12 hour display and the 24 hour display

1   **From the Home screen → [▦] → [⚙].**

2   **[Date & time] → turn on/off the [Use 24-hour format].**

Sound, vibration settings

■ Adjust the volume

1 **From the Home screen → [▦] → [⚙].**

2 **[Sound] → [Volumes] → drag the slider for the sound to adjust left or right → [OK].**
● The ringtone volume can also be adjusted by pressing [▲]/[▼].

■ Change the ringtone for phone calls

1 **From the Home screen → [▦] → [⚙].**

2 **[Sound] → [Phone ringtone] → select the desired ringtone → [OK].**

■ Turn the incoming call vibration on/off

1 **From the Home screen → [▦] → [⚙].**

2 **[Sound] → turn the [Vibrate when ringing] checkbox on/off.**

■ Turn touch tones on/off

1 **From the Home screen → [▦] → [⚙].**

2 **[Sound] → turn the [Touch sounds] checkbox on/off.**

● Touch tones will be off when the camera is operating, even if [Touch sounds] is set.

■ Turn the touch tone vibration on/off

1 **From the Home screen → [▦] → [⚙].**

2 **[Sound] → turn the [Vibrate on touch] checkbox on/off.**

■ Turn hearing aids mode on/off

1 **From the Home screen → [▦] → [⚙].**

2 **[Sound] → turn the [Hearing aids] checkbox on/off.**

■ Set to vibration mode

Press [⏻] for 1 second or more → 〔 〕.
● This can also be adjusted by pressing [▼] several times or pressing [▲] in silent mode.
● To cancel, press [⏻] for 1 second or more and then either tap [🔊] or [🔇], or press [▲]/[▼].

■ Set to silent mode

Press [⏻] for 1 second or more → 〔 〕.
● This can also be adjusted by pressing [▼] several times.
● To cancel, press [⏻] for 1 second or more and then either tap [🔊] or [🔇], or press [▲].

Screen settings

■ Change display language

1　**From the Home screen → [▦] → [⚙].**

2　**[Language & input] → [Language] → select the desired language.**

■ Change screen brightness

1　**From the Home screen → [▦] → [⚙].**

2　**[Display] → [Brightness] → drag the slider left or right to adjust the brightness.**
  ● Tapping [AUTO] adjusts the screen brightness automatically to suit the surrounding brightness.

　　● Increasing the screen brightness decreases the battery performance.

■ Set how much time passes before entering sleep mode
Set how much time passes before automatically entering sleep mode when there are no operations.

1　**From the Home screen → [▦] → [⚙].**

2　**[Display] → [Sleep] → select the time.**

　　● Press [⏻] to enter sleep mode regardless of the set time.

Account settings

■ Add account
Adding an account allows you to synchronize data with services such as Google.
  ● Setting up a Google account will allow apps to be downloaded from the Play Store, and backup various types of data.
    Setting up a Google account is recommended.

1　**From the Home screen → [▦] → [⚙].**

2　**[Add account] → tap the services to add.**
  ● Follow the on-screen instructions and enter account information.

■ Turn data synchronization on/off
Synchronization of various data can be turned on/off for each account.

1　**From the Home screen → [▦] → [⚙].**

2　**Tap the account services.**
  ● You may need to tap the account again depending on the service.

3　**Turn the checkbox for each type of data on/off.**

3. Connecting to networks

Connecting to mobile networks

2G/3G/LTE networks can be used to access email, messages and the internet.
For most mobile network operators, the connection is configured automatically when a microSIM card is inserted.
If the connection is not configured automatically, an access point must be configured manually.
Check with the mobile network operator with whom you signed the network contract for the information required when setting the access points.

Configure access point

1 **From the Home screen → [ ] → [ ].**

2 **[More...] → [Mobile networks] → [Access Point Names] → [ ].**

3 **[Name] → enter the name for the new settings → [OK].**

4 **[APN] → enter the access point name → [OK].**

5 **Enter other information as required.**
● The details to enter differ depending on your mobile network operator.

6 **[ ] → [Save].**

Check the current access point

1 **From the Home screen → [ ] → [ ].**

2 **[More...] → [Mobile networks] → [Access Point Names].**
● If multiple access points are configured, the currently connected access point will be indicated.

Configure mobile network details

■ Disabling mobile network connections

Disable a 2G/3G/LTE network connection.
This can be used to avoid unintentional downloads or synchronization.
● Wi-Fi network settings will not be changed.

1 **From the Home screen → [▦] → [⚙].**
2 **[More...] → [Mobile networks].**
3 **Turn off the [Data enabled] checkbox.**

■ Configure data roaming

When data roaming is enabled, you may be able to use another mobile network operator's network for data connections even if you are outside of the range of your operator's network.
For details, contact your mobile network operator.
● Data roaming charges will be incurred.
  Some apps may use data connections without notifying you.

1 **From the Home screen → [▦] → [⚙].**
2 **[More...] → [Mobile networks].**
3 **Turn the [Data roaming] checkbox on.**

■ Configure priority network type

1 **From the Home screen → [▦] → [⚙].**
2 **[More...] → [Mobile networks] → [Preferred network type] → select the item.**

■ Select mobile network operator manually

A specific mobile network operator can be selected and connected to while outside or traveling.
If a mobile network operator is selected manually, the unit will not connect to other mobile network operators even if you move out of range of the selected mobile network operator.

1 **From the Home screen → [▦] → [⚙].**
2 **[More...] → [Mobile networks] → [Network operators].**
  ● The unit will begin searching for networks. Please wait.
3 **Select network.**
  ● Tap [Search networks] to search for networks again.

■ Select mobile network operator automatically

1 **From the Home screen → [▦] → [⚙].**
2 **[More...] → [Mobile networks] → [Network operators].**
  ● The unit will begin searching for networks. Please wait.
3 **Tap [Choose automatically].**

33

Connecting to Wi-Fi® networks

This unit is compatible with Wi-Fi networks.
You can use email and the internet with wireless LAN services.

Turning on the Wi-Fi function

1 From the Home screen → [▦] → [⚙].

2 Turn on [Wi-Fi].
  ● [🛜] is displayed in the status bar if connection settings have already completed.

  ✎ ● When Wi-Fi is turned on, the Wi-Fi connection will take priority even if a mobile network connection is enabled.
  ● When Wi-Fi is turned off, the unit will automatically switch to the mobile network connection.
  ● The Wi-Fi feature consumes additional power from the unit's battery. If Wi-Fi operation is not desired, disabling this feature can extend the overall operating time.

Connecting to a Wi-Fi network

1 From the Home screen → [▦] → [⚙].

2 Tap [Wi-Fi].
  ● A list of detected Wi-Fi networks is displayed.

3 Select a Wi-Fi network.
  ● If a Wi-Fi network that is protected with security is selected, enter the password and tap [Connect].
  ● If the desired Wi-Fi network is not displayed, add the Wi-Fi network manually. **(P35)**

  ✎ ● After you connect to a Wi-Fi network, the unit will automatically switch to that Wi-Fi network the next time it is within range.
  ● Some Wi-Fi networks require you to enter a user name and password when accessing a webpage.
  For details, contact the network administrator.

34

■ Adding a Wi-Fi network manually

Some Wi-Fi networks cannot be detected automatically. In this case, you need to add the Wi-Fi network manually. For details, contact the network administrator.

1   **From the Home screen → [▦] → [⚙].**
2   **[Wi-Fi] → [＋].**
3   **Enter the network SSID.**
4   **Select the network's security type and enter its password → [Save].**

■ Disconnecting from a connected Wi-Fi network

1   **From the Home screen → [▦] → [⚙].**
2   **[Wi-Fi] → tap the connected Wi-Fi network → [Forget].**

Wi-Fi network settings

■ Enabling Wi-Fi network notification

Configure the unit so that it notifies you when a Wi-Fi network is available.

1   **From the Home screen → [▦] → [⚙].**
2   **[Wi-Fi] → [⫶] → [Advanced] → turn the [Network notification] checkbox on.**

■ Configure Wi-Fi connection settings during sleep mode

1   **From the Home screen → [▦] → [⚙].**
2   **[Wi-Fi] → [⫶] → [Advanced].**
3   **Tap [Keep Wi-Fi on during sleep] → select the item.**

35

Connecting to VPNs

If your company or school uses a Virtual Private Network (VPN), you must configure your unit so that you can use the VPN.
For details about configuring your unit, contact the network administrator.

Connecting to a VPN

1 **From the Home screen → [ ] → [ ].**

2 **[More...] → [VPN].**

3 **Tap the VPN to connect to.**

4 **Enter the required information → [Connect].**
 ● [ ] is displayed in the status bar.

Adding a VPN

1 **From the Home screen → [ ] → [ ].**

2 **[More...] → [VPN] → [ ].**

3 **Configure each time as instructed by the network administrator → [Save].**

Disconnecting from a VPN

Open the notifications panel → tap the notifications displayed when connected to the VPN → [Disconnect].

36

Configure a portable Wi-Fi access point

Using this unit as a portable Wi-Fi access point allows PCs with wireless LAN capabilities to connect to the internet.

1 **From the Home screen → [⬚] → [⚙].**

2 **[More...] → [Tethering & portable hotspot] → [Set up Wi-Fi hotspot].**

3 **Configure the network SSID, security and password → [Save].**

4 **Turn the [Portable Wi-Fi hotspot] checkbox on.**
 ● [📶] is displayed in the status bar.

■ Stop the portable Wi-Fi access point

1 **From the Home screen → [⬚] → [⚙].**
2 **[More...] → [Tethering & portable hotspot].**
3 **Turn off the [Portable Wi-Fi hotspot] checkbox.**

37

Configure airplane mode

This turns off all wireless features of the unit to prevent interference with aircraft equipment.

1 **From the Home screen → [ ] → [ ].**

2 **[More...] → turn on the [Airplane mode] checkbox.**
- [ ] is displayed in the status bar.
- This can also be configured by pressing [ ] for 1 second or more, and tapping [Airplane mode].

4. Camera

Before using the camera

- Check whether the lens is stained. **(P190)**
- When starting the camera app, be careful not to interfere with the lens operation.
- Make sure that your fingers or hair do not cover the lens when taking pictures.
- Always take test shots beforehand.
  Always take test shots for important pictures (such as weddings) to confirm that images and sounds are recorded properly.
- If the camera function is interrupted by an incoming call or alarm sound in certain situations, including during exposure or when the unit is eliminating noise caused by a slow shutter speed, an image may not be recorded.
- Compensation cannot be provided for missed shots.
  Compensation cannot be provided for missed shots if technical problems with the unit or microSD card prevent recording.
- The effect of the set shutter speed is not reflected in the Recording screen (image shown in the display).
- The set aperture value is reflected in the Recording screen only when the shutter button is pressed halfway.
- There may be a slight delay between starting recording and actually recording content. When recording objects that are moving fast, the position displayed on the screen when starting recording may differ slightly to the position being recorded.
- If the temperature of the unit increases when taking pictures under high temperature conditions or taking pictures continuously, stop recording and end the camera app.
- **Be sure to pay special attention to the privacy, the likeness rights, etc. of the subject when you use this unit. Use at your own risk.**

∎ Tips for taking good pictures

Hold the unit gently with both hands, keep your arms still at your side and stand with your feet slightly apart.

● Do not cover the flash/AF Assist lamp Ⓐ, the microphone Ⓑ or the speaker Ⓒ with your fingers or other objects.
● Be careful not to move the unit when you press the shutter button.
  If the unit moves, it may cause blurry images.
  Dim areas become blur easily in particular.
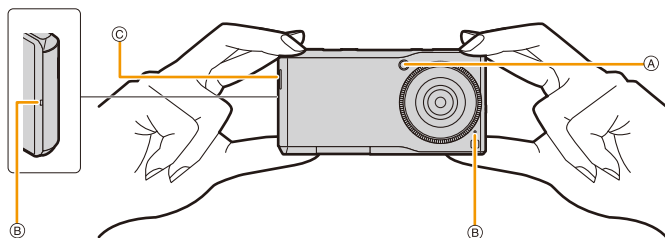
∎ Problems when recording (P186)

About the indication of the applicable mode in the text

Applicable modes: 🅰 🅰⁺ **P** **A** **S** **M** **C1** **C2** 🆂🅲🅽 ✎ ▭

The icons indicate the modes available for a function.
● Black icons: Applicable modes
● Gray icons: Unavailable modes

C1 and **C2** will differ depending on the Recording Modes registered under custom settings.

40

Recording flow

1 **Slide and release the camera selector switch to start up the camera.** (P42)
  ● Home screen → [📷] also starts the camera.

2 **Set the desired Recording Mode.** (P51)

3 **Start recording.**

Taking a Still picture (P46)

  1 **Press the shutter button halfway to focus.**
  2 **Press the shutter button fully (push it in further), and take the picture.**

Recording Motion Picture (P47)

  1 **From the Recording screen → [●].**
     ● Start recording motion pictures.
  2 **Tap [▮].**
     ● Stop recording motion pictures.

💡 **Changing settings to suit the desired situation, and start recording**

Adjusting the area to record
● Using the zoom ☞P79

Adjusting brightness or color shades
● Operating the control ring ☞P84

Recording to suit conditions
● Taking Pictures using Burst Mode ☞P97
● Using the Self-timer ☞P100

4 **Tap [▶] to check recorded images.** (P124)
  ● Releasing the camera selector switch after sliding it, or pressing the shutter button returns to the Recording screen.

💡 **Record without missing a picture opportunity**
Using the [4K Pre-Burst] app to record is recommended. **(P50)**

💡 **Configuring your favorite operation environment to suit recording style**
Configure this from the [Custom] menu. **(P116)**

💡 **Configuring the camera's basic settings, such as changing the save destination of images**
Configure this from the [Setup] menu. **(P122)**

41

Using camera functions

Launching the camera

Slide and release the camera selector switch.

● Home screen → [🔵] also starts the camera.
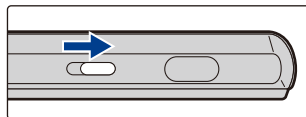
● The camera can also be started by flicking [📷] to the left on the Lock screen.

■ To end the camera

Releasing the camera selector switch after sliding it, or using the steps below returns to the Home screen.

1   **Flick the right edge of the screen to the left.**

2   **Tap [◁◻]. (P25)**

Switching the camera mode (outward facing camera/inward facing camera)

From the Recording screen → [🔄📷].
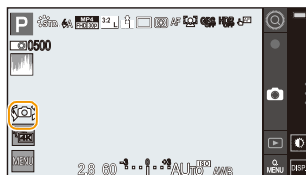
Only the following menus can be set in an inward facing camera.

Menu	Item	
[Rec]	**[Drive Mode]**	[Single]/[Self Timer]
	[Picture Size]	[HD]/[VGA]
[Motion Picture]	**[Rec Quality]**	[HD 30p]/[VGA 30p]
[Custom]	**[Silent Mode]**	[ON]/[OFF]
	[Guide Line]	[9-split]/[8-split]/[OFF]
	[Auto Review]	[1 sec.]/[2 sec.]/[Hold]/[OFF]
	[Touch Shutter Setting]	[ON]/[OFF]
	[Volume Button Setting]	[Exposure]/[White Balance]/[OFF]
[Setup]	All menu items can be set. (excluding [Preview Mode]/[Beep]) **(P122)**	

42

Viewing Recording screens

Switching the Information Displayed on the recording screen

From the Recording screen → [DISP.].

■ About the tilt sensor display

With the tilt sensor displayed, it is easy to correct the tilt of the unit etc.

1 Tap [DISP.] to display the tilt sensor.

2 Check the tilt of the unit.
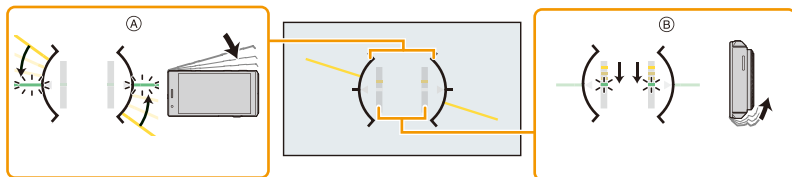
Ⓐ Horizontal direction:
  Correcting tilt to the left

Ⓑ Vertical direction:
  Correcting downward tilt

● When the tilt of the unit is little, the indicator changes to green.
● When recording with a vertical orientation, the display automatically switches to a vertically orientated display.

● With [Tilt sensor adjustment] in the [Setup] menu, you can adjust the tilt of the horizon reference line when the unit is held in a horizontal orientation. **(P123)**
● Even after correcting the tilt, there may still be an error of approximately ± 1°.

● Tilt sensor display may not be displayed correctly when this unit is in motion.

43

Screen display

The display on the screen shows the operation state of the unit.
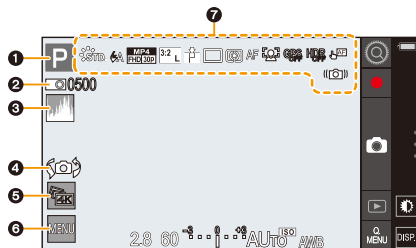
	①	
![IA IA+ P A]		Recording Mode **(P51)**
S M SCN POP 🖼		
C 1 C 2		Custom settings **(P62)**

②

🖭		Storage location **(P122)**
0500		Number of recordable pictures **(P12)**
XXmXXs		Available recording time*1 **(P12)**

③

📊		Histogram **(P120)**

④

📷		Camera Mode (outward facing camera/inward facing camera) switch **(P42)**

⑤

4K		4K Pre-Burst **(P50)**

⑥

MENU		Menu **(P91)**

⑦

STD. VIVD NAT MONO SCNY PORT		Photo Style **(P101)**
⚡A ⚡ ⚡ ⊘		Flash Mode **(P81)**
MP4 FHD 30p		Recording quality **(P48)**
3:2 L		Picture size/Aspect Ratio **(P103)**
🔳 RAW		Quality **(P105)**
☐ 🔁 🔁 ⏱		Drive Mode **(P96)**
🔘 🔘 •		Metering Mode **(P109)**
AF MF		Focus Mode **(P106, 108)**
AEL AFL		AF/AE Lock **(P117, 121)**
👤 🔁 ▦ ▪		AF Mode **(P106)**
GPS ON GPS OFF		Location Logging **(P122)**
HDR ON HDR OFF		HDR **(P111)**
AF		Touch Settings **(P121)**
🔇		Silent Mode **(P116)**
((📷))		Jitter alert **(P46)**

*1 m: minute, s: second

44
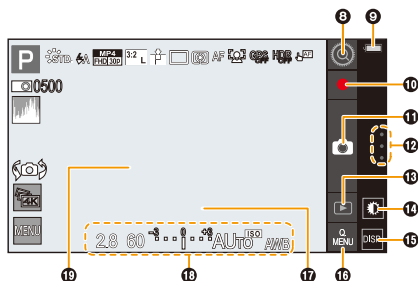
8

⊛	Control ring menu **(P84)**

9

▭	Battery indication

10

● ■	Start/End recording motion picture **(P47)**

11

◻	Picture taking **(P46)**

12

⇦ ⌒ ⇶	App controls **(P25)**

13

▶	Image playback **(P124)**

14

▦	Switch to High Brightness Mode **(P122)**

15

DISP.	Switching display **(P43)**

16

Q. MENU	Quick menu **(P95)**

17

⌒	Control ring operation **(P84)**

18

P↗	Program Shift **(P57)**
2.8	Aperture value **(P46)**
60	Shutter speed **(P46)**
	Exposure compensation value **(P86)**
▪▪▪▪▪	Brightness **(P56)**
	Manual Exposure Assistance **(P61)**
AUTO ISO	ISO sensitivity **(P87)**
	White Balance **(P88)**
☀ ☁ ☂ ☼ K ⬛	White Balance Fine Adjustment **(P90)**
	Color **(P56)**

19

⌐ ¬ ⌊ ⌋	AF area **(P46)**

45

Taking a Still picture

1 **Select the Recording Mode. (P51)**

2 **Press the shutter button halfway to focus.**

- Aperture value and shutter speed are displayed.
  (Flashes in red if the correct exposure is not achieved.)

Ⓐ Aperture value
Ⓑ Shutter speed

Focus	When the subject is focused	When the subject is not focused
Focus indication Ⓒ	On	Blinks
AF area Ⓓ	Green	Red
Sound	Beeps 2 times	—

- Focusing may take longer than usual in a dark environment.
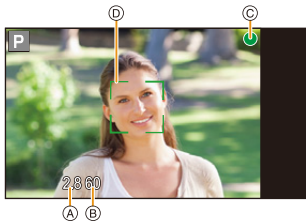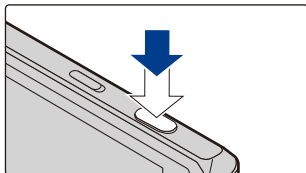
3 **Press the shutter button fully (push it in further), and take the picture.**
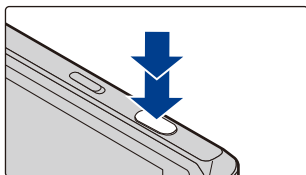
💡 **Subjects and recording conditions which are difficult to focus**
- Fast-moving subjects, extremely bright subjects or subjects without contrast
- When recording subjects through windows or near shiny objects
- When it is dark or when jitter occurs
- When this unit is too close to the subject or when taking a picture of both distant and near subjects

💡 **Taking pictures with touch operations**
1. Hold your finger on [📷] and adjust the focus.
2. Release your finger to take a picture.

- For details on the Touch function, refer to **P121**.

💡 **Preventing jitter**
When you take pictures in the dark, the shutter speed slows down. The jitter alert [((📷))] may appear.
To prevent the unit from shaking, hold it firmly or use an object that keeps the unit still when taking pictures.

46

Recording Motion Picture

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⚲] ▱

Motion pictures can be recorded in the MP4 format.
Audio will be recorded in stereo.

1 From the Recording screen → [●].

Ⓐ Available recording time
Ⓑ Elapsed recording time

● Start recording motion pictures.
● Recording of motion picture appropriate for each mode is possible.
● The recording state indicator (red) Ⓒ will flash while recording motion pictures.
● You can operate the zoom even when recording motion pictures.
● When recording a motion picture, do not cover the microphone with your fingers or other objects.

2 Tap [ ].

● Stop recording motion pictures.
● Still picture recording is also possible during the motion picture recording by fully pressing the shutter button. **(P49)**
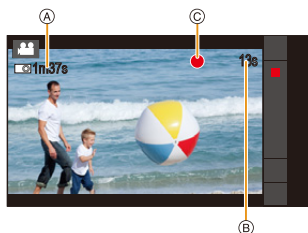
● If you use the zoom before recording a motion picture, the zoom factor will be maintained, but the zoom type may change.
● The focus is fixed at the position where the recording of the motion picture starts.
  To adjust the focus while recording, tap [ ] to refocus.
● When recording motion pictures, the sounds of camera operations such as the control ring or button operations may also be recorded.
● The available recording time displayed on the screen may not decrease regularly.
● Recording motion pictures shorter than 1 second may not be possible.
● The [Sensitivity] will be set to [AUTO] (for motion pictures) when recording motion pictures. Also, the [ISO Limit Set] will not operate.
● It will be recorded in the following categories for certain Recording Modes. A motion picture recording matching each Recording Mode will be performed for the ones not listed below.

Selected Recording Mode	Recording Mode while recording motion picture
● Program AE Mode ● Aperture-Priority AE Mode ● Shutter-Priority AE Mode ● Manual Exposure Mode	Normal motion picture
● [Clear Nightscape]/[Artistic Nightscape]/ [Handheld Night Shot]/[Clear Night Portrait] (Scene Guide Mode)	Low Light Mode

47

⊘ ● Motion pictures cannot be recorded in the following cases.
  – [Glistening Water]/[Glittering Illuminations] (Scene Guide Mode)
  – [Miniature Effect]/[Star Filter] (Creative Control Mode)

■ **Configuring the recording quality**

1 **From the Recording screen → [** MENU **] → [Motion Picture] → [Rec Quality].**

2 **Select the item.**

Item		Size	Frame rate	Bit rate
[MP4 4K 15p]	([4K 15p])	3840×2160	15p	50 Mbps
[MP4 FHD 30p]	([FHD 30p])	1920×1080	30p	20 Mbps
[MP4 HD 30p]	([HD 30p])	1280×720	30p	10 Mbps
[MP4 VGA 30p]	([VGA 30p])	640×480	30p	4 Mbps
[MP4 1:1 30p]	([1:1 30p])	640×640	30p	4 Mbps

■ **About the [Motion Picture] menu**

● [Photo Style], [Metering Mode], [i.Dynamic] and [i.Resolution] are common to both the [Rec] menu and [Motion Picture] menu.
  Changing these settings in one of these menus is reflected in other menu.

■ **About the compatibility of the recorded motion pictures**

Even when a compatible device is used, recorded motion pictures may be played back with reduced picture and sound quality, or they may not be played back.
Also, recording information may not be displayed correctly. Use this unit to playback in such case.

■ **Indication of the icon**

Ⓐ Format
Ⓑ Size
Ⓒ Frame rate

Ⓐ
MP4
Ⓑ — **4K 15p** — Ⓒ

✐ ● What is bit rate
This is the volume of data for a definite period of time, and the quality becomes higher when the number gets bigger. This unit is using the "VBR" recording method. "VBR" is an abbreviation for "Variable Bit Rate", and the bit rate (volume of data for definite period of time) is changed automatically depending on the subject to record. Therefore, the recording time is shortened when a subject with fast movement is recorded.

48

■ Recording still pictures while recording motion pictures

Applicable modes: 🅰 🅰⁺ Ⓟ Ⓐ Ⓢ Ⓜ C1 C2 SCN 🎨 ▭

Still pictures can be recorded even while recording a motion picture. (Simultaneous recording)

During motion picture recording, press the shutter button fully to record a still picture.
● Tapping [📷] can also record still pictures.

49
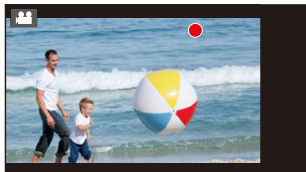
4K Pre-Burst

Burst files are recorded 1.5 seconds before and after the moment that the shutter clicks, and your favorite frame can be selected and the still picture captured.

1 **From the Recording screen → [🎞].**

● Home screen → [⊞] → [🔳] also starts the app.

2 **Taking a Still picture. (P46)**

● Still pictures before and after the shutter clicks are displayed.
● Tap [🔳] to capture the still picture from previously recorded burst files.
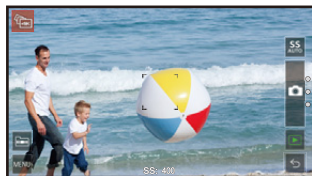
3 **Select frame to capture.**

● Pinch out/pinch in or double tap to zoom in/zoom out of a picture.
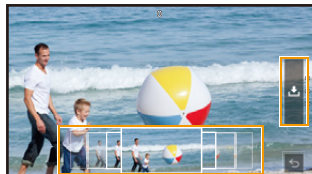
4 **Tap [💾].**

● Captured still pictures are stored in the "PRE-BURST" folder if [Store in] is set to [Internal Storage].
When [Store in] is set to [microSD], the still pictures are stored in the "PRE-BURST[SD]" folder on the microSD card.

● The following settings can also be configured with [4K Pre-Burst].

Menu		Item
[RECORDING SETTINGS]	**[Rec Quality]**	[3840×2160 15fps]/[1920×1080 30fps]
	[Shutter Speed]	[Auto] [Manual]: Operate the control ring to set the shutter speed. **(P84)**
	[Burst picture file]	[Save]/[Do not save]
[SETUP]	[Location Logging]/[Store in]/[Auto Backup]/[Auto OFF]/[Beep]/[Shutter]/[Note]/[Reset]	

● Burst files recorded with the [4K Pre-Burst] app cannot be played back with other apps.
They are also excluded from automatic backup.
● The settings when recording a burst file are updated to the position information and save location settings of the captured picture.
● Striping or flickering may appear under lighting such as fluorescent lighting and LED lighting fixtures, however this is characteristic of MOS sensors which serve as the unit's pickup sensor, and is not a malfunction.
Lowering the shutter speed may reduce the effect of the horizontal stripes.

50

Selecting the Recording Mode

1 **From the Recording screen → Recording Mode icon.**
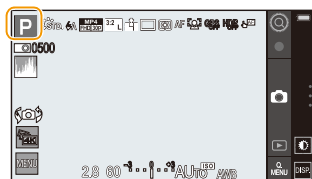
2 **Select the Recording Mode.**
● It can also be selected by rotating the control ring. **(P84)**

fA	**Intelligent Auto Mode (P52)** The subjects are recorded using settings automatically selected by this unit.
fA⁺	**Intelligent Auto Plus Mode (P52)** Allows you to adjust the brightness and color hue when in Intelligent Auto Mode.
P	**Program AE Mode (P57)** Records at the aperture value and shutter speed set by this unit.
A	**Aperture-Priority AE Mode (P58)** The shutter speed is automatically determined by the aperture value you set.
S	**Shutter-Priority AE Mode (P59)** The aperture value is automatically determined by the shutter speed you set.
M	**Manual Exposure Mode (P60)** The exposure is adjusted by the aperture value and the shutter speed which are manually adjusted.
C1 **C2**	**Custom Mode (P62)** Use this mode to take pictures with previously registered settings.
SCN	**Scene Guide Mode (P63)** This mode allows you to take pictures that match the scene being recorded.
⌀	**Creative Control Mode (P70)** Record while checking the image effect.
▭	**Panorama Shot Mode (P77)** This mode allows you to take panorama pictures.

51

Taking Pictures using the Automatic Function

Recording Mode: 🔳 🔳

When you wish to leave settings to this unit and record without thinking about them, use Intelligent Auto Plus Mode or Intelligent Auto Mode, which makes optimal settings for the subject and scene.

Functions that can be set differ between Intelligent Auto Plus Mode and Intelligent Auto Mode.
(○: possible, —: not possible)

	Intelligent Auto Plus Mode	Intelligent Auto Mode
Setting the brightness (P56)	○	—
Setting the color tone (P56)	○	—
Defocus Control (P55)	○	○
Menus that can be set	Refer to **P54** for details.	Refer to **P54** for details.

1 **Set the Recording Mode to [🔳]/[🔳]. (P51)**

2 **Align the screen with the subject.**
  ● When the unit identifies the optimum scene, the icon of the scene concerned is displayed in blue for 2 seconds, after which its color changes to the usual red.

● If the exposure is not adequate, the aperture value and the shutter speed turn red and blink when the shutter button is pressed halfway.

52

■ Scene Detection

When taking pictures

🅰	→	📷	[i-Portrait]
		🏞	[i-Scenery]
		🌷	[i-Macro]
		🌃	[i-Night Portrait]
		🌌	[i-Night Scenery]
		🍴	[i-Food]
		🌅	[i-Sunset]

When recording motion pictures

🅰	→	📷	[i-Portrait]
		🏞	[i-Scenery]
		🔆	[i-Low Light]
		🌷	[i-Macro]

- [🅰] is set if none of the scenes are applicable, and the standard settings are set.
- When [📷] or [🌃] is selected, the unit automatically detects a person's face, and it will adjust the focus and exposure. **(Face Detection)**
- During AF Tracking, Scene Detection does not work until the subject is locked.

- Due to conditions such as the ones below, a different scene may be identified for the same subject.
  - Subject conditions: When the face is bright or dark, the size, color and shape of the subject, the distance to the subject, the contrast of the subject, when the subject is moving
  - Recording conditions: Sunset, sunrise, under low brightness conditions, when the unit is shaken, when zoom is used

---

53

■ **Functions that work automatically**

The following functions work automatically in order for the unit to perform the most optimum settings.
● Scene Detection
● Backlight Compensation
● Face Detection
● Auto White Balance
● Intelligent ISO sensitivity control
● [Red-Eye Removal]
● [i.Resolution]
● [i.Dynamic]
● [AF Assist Lamp]

🟠 **The Backlight Compensation**

● When there is a backlight, the subject appears darker and the unit will automatically attempt to correct it by increasing the brightness of the picture.
In Intelligent Auto Plus Mode or Intelligent Auto Mode, backlight compensation works automatically.

■ **Menus that can be set**

Only the following menus can be set.

Intelligent Auto Plus Mode

Menu	Item
[Rec]	[Drive Mode]/[Photo Style]/[Aspect Ratio]/[Picture Size]/[Quality]/[AF Mode]/[Focus Mode]/[Flash]/[Shutter Type]/[Color Space]
[Motion Picture]	[Photo Style]/[Rec Quality]
[Custom]	[Silent Mode]/[Peaking]/[Peaking Detect Level]/[Histogram]/[Guide Line]/[Auto Review]/[Touch Settings]/[Volume Button Setting]
[Setup]	All menu items can be set. **(P122)**

Intelligent Auto Mode

Menu	Item
[Rec]	[Drive Mode]/[Aspect Ratio]/[Picture Size]/[AF Mode]/[Focus Mode]/[Flash]
[Motion Picture]	[Rec Quality]
[Custom]	[Silent Mode]/[Guide Line]/[Touch Settings]/[Volume Button Setting]
[Setup]	All menu items can be set. **(P122)**

∎ **Taking a picture with a blurred background (Defocus Control)**

Recording Mode: 🄰 🄰⁺

You can easily set the blurriness of the background while checking the screen.
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 **[🔍] → [🔲]. (P84)**
2 **Operate the control ring to set the blur.**

          Strong defocus   **Weak defocus**
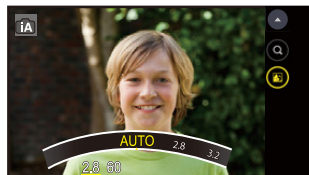
3 **Taking pictures.**

● When recording a motion picture, the blur is adjusted automatically.

55

∎ Recording images by changing the brightness or color tone

Recording Mode: [⟡]

This mode enables you to change the brightness and color tone to your preferred settings from the ones set by this unit.

Setting brightness

1 **[ⓠ] → [⊡]. (P84)**

2 **Operate the control ring to adjust the brightness.**
● Tap [▲] to return to the Recording screen.
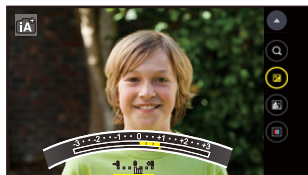
Setting color (Fine adjustment of the White Balance)

1 **[ⓠ] → [⊞]. (P84)**

2 **Operate the control ring to adjust the color.**
● This will adjust the color of the image from a reddish color to a bluish color.
● Tap [▲] to return to the Recording screen.
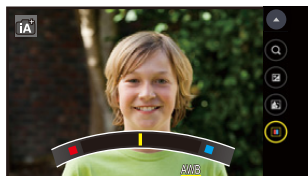
✎ ● The set color will return to normal (center point) when this unit is turned off, when the camera function is terminated, or when the Recording Mode is changed.

56

Taking Pictures with Your Favorite Settings (Program AE Mode)

Recording Mode: [P]

The unit automatically sets the shutter speed and aperture value according to the brightness of the subject.
You can take pictures with greater freedom by changing various settings in the [Rec] menu.

Set the Recording Mode to [P]. (P51)

∎ **Program Shift**

In Program AE Mode, you can change the preset aperture value and shutter speed without changing the exposure. This is called Program 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 Program AE Mode.

1 [ⓒ] → [◐]. (P84)
2 **Rotate the control ring to perform Program Shift.**
   Ⓐ Exposure meter
   ● The Program Shift indication Ⓑ appears on the screen.
   ● To cancel Program Shift, either change the Recording Mode, or rotate the control ring until the Program Shift display disappears.
   ● Tap [▲] to return to the Recording screen.
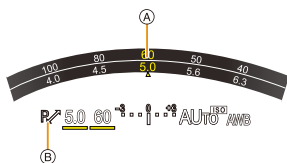
● Program Shift is available in all [Sensitivity] settings except [ISO].

● If the exposure is not adequate, the aperture value and the shutter speed turn red and blink when the shutter button is pressed halfway.

57

Aperture-Priority AE Mode

Recording Mode: [A]

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 Recording Mode to [A].** (P51)

2 **Operate the control ring to set the aperture value. (P84)**

Ⓐ Aperture Value

⟺

Aperture value:
Reduces
It becomes easier to defocus the background.

Aperture value:
Increases
It becomes easier to maintain focus as far as the background.
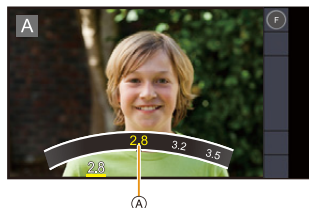
Available Aperture Value	Shutter Speed (Sec)
F2.8 to F11	60 to 1/16000 (with the [Shutter Type] set to [Auto]) 60 to 1/2000 (with the [Shutter Type] set to [Mechanical Shutter])

● If the exposure is not adequate, the aperture value and the shutter speed turn red and blink when the shutter button is pressed halfway.

58

Shutter-Priority AE Mode

Recording Mode: S

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

1 **Set the Recording Mode to [S].** (P51)

2 **Operate the control ring to set the shutter speed.** (P84)

Ⓐ Shutter Speed

⟸⟹
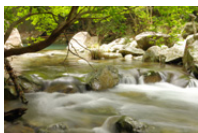
Shutter speed:
Slow
It becomes easier to express movement.

Shutter speed:
Fast
It becomes easier to freeze movement.
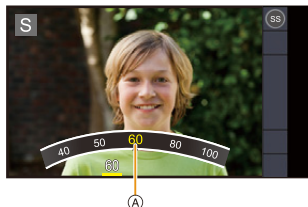
Available Shutter Speed (Sec)*¹	Aperture Value
60 to 1/16000 (with the [Shutter Type] set to [Auto]) 60 to 1/2000 (with the [Shutter Type] set to [Mechanical Shutter])	F2.8 to F11

✳1 When [Burst] in the [Rec] menu is set to [SH], the shutter speed becomes 1/50 to 1/16000.

- ● If the exposure is not adequate, the aperture value and the shutter speed turn red and blink when the shutter button is pressed halfway.
- ● If the shutter speed is slow, we recommend that the unit be fixed.
- ● The [Sensitivity] is automatically set to [AUTO] when you switch the Recording Mode to Shutter-Priority AE Mode while the [Sensitivity] is set to [ISO].

Manual Exposure Mode

Recording Mode: [M]

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 Recording Mode to [M]. (P51)**

2 **Operate the control ring to set the aperture value and shutter speed. (P84)**
● The unit switches between aperture setting operation and shutter speed setting operation each time [F_SS] is tapped.

Ⓐ Aperture value
Ⓑ Shutter speed
Ⓒ Manual Exposure Assistance
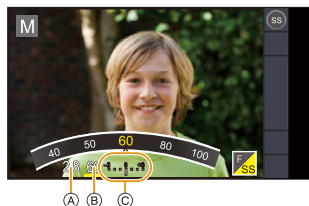
Aperture value	**Reduces** It becomes easier to defocus the background.	**Increases** It becomes easier to maintain focus as far as the background.
Shutter speed	**Slow** It becomes easier to express movement.	**Fast** It becomes easier to freeze movement.

Available Aperture Value	Available Shutter Speed (Sec)*1
F2.8 to F11	60 to 1/16000 (with the [Shutter Type] set to [Auto]) 60 to 1/2000 (with the [Shutter Type] set to [Mechanical Shutter])

✳1 When [Burst] in the [Rec] menu is set to [SH], the shutter speed becomes 1/50 to 1/16000.

60

💡 Manual Exposure Assistance

−3 0 +3	The exposure is adequate.
−3 0 +3	Set to faster shutter speed or larger aperture value.
−3 0 +3	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.

- If the exposure is not adequate, the aperture value and the shutter speed turn red and blink when the shutter button is pressed halfway.
- If the shutter speed is slow, we recommend that the unit be fixed.
- Switching the Recording Mode to Manual Exposure Mode while the ISO sensitivity is [🎞ISO] or [AUTO] switches the ISO sensitivity to [125].

61

Registering your preferred settings (Custom Mode)

Recording Mode: C1 C2

You can register the current camera function settings as custom settings.
If you then record in Custom Mode, you can use the registered settings.
● Initial setting of the Program AE Mode is registered as the custom settings initially.

∎ **Registering Personal Menu Settings (Registering custom settings)**

Up to 2 sets of the current camera settings can be registered in [Cust.Set Mem.] to allow recording to be performed with the same settings. (C1 / C2)

Preparations:
Set in advance the Recording Mode you wish to save and select the desired menu settings on the unit.

1 **From the Recording screen → [MENU] → [Custom] → [Cust.Set Mem.].**

2 **Tap [C1]/[C2].**
● Confirmation screen is displayed. It is executed when [OK] is selected.
  Exit the menu after it is executed.

● The following items are not registered as custom settings.
  – [Auto Backup]/[Tilt sensor adjustment]/[No.Reset] ([Setup] menu)
  – Camera Mode (outward facing camera/inward facing camera)

∎ **Recording using registered custom set**

You can easily call up the settings you have registered using [Cust.Set Mem.].

Set the Recording Mode to [C1]/[C2]. (P51)
● The custom set will be called up.
● Saving of the selected custom settings is displayed on the screen.

∎ **Changing the settings**

Registered content will not change even when the menu setting is changed temporarily with the Recording Mode set to C1 or C2 .
To change the registered settings, overwrite the registered content using [Cust.Set Mem.] on the [Custom] menu.

62

Taking Pictures that match the Scene being recorded (Scene Guide Mode)

Recording Mode: [SCN]

If you select a scene to suit the subject and recording conditions while viewing sample pictures, the unit will set the optimal exposure, color and focus, allowing you to take pictures matching the scene.

1 Set the Recording Mode to [[SCN]] and tap the scene example. (P51)
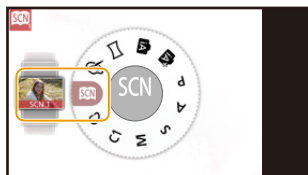
2 Scroll and select the scene example (P64 to P69) and then tap it.
● Scroll the screen to display hidden items.
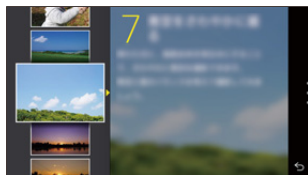
🖉 ● The following items cannot be set in Scene Guide Mode because the unit automatically adjusts them to the optimal setting.
– Changing the [Photo Style] effect
– [Sensitivity]
● If the exposure is not adequate, the aperture value and the shutter speed turn red and blink when the shutter button is pressed halfway.

63
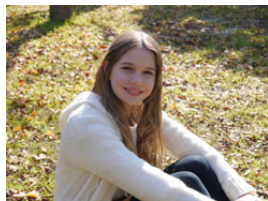
[Clear Portrait]
The brightness of the face is adjusted and the background is defocused to create a clear portrait.
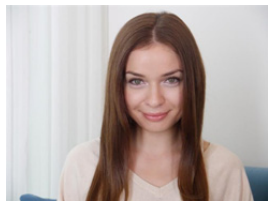
[Silky Skin]
Brighter face and softer skin color creates a healthy younger look.

- The smoothing effect is applied to the part that has a similar tone to the complexion of a subject, as well.
- This mode may not be effective under insufficient lighting.

[Backlit Softness]
When backlighted, the overall screen brightness is increased. Portraits are softened and infused with light.

[Relaxing Tone]
The warm color tone creates an image with a relaxing mood.

[Sweet Child's Face]
Moderate background defocusing and skin tone highlighted draws attention to the child's face.

[Distinct Scenery]
Saturation of sky and trees creates more distinct scenery.
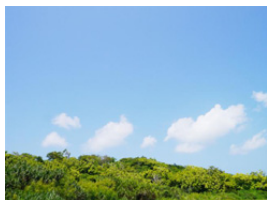
[Bright Blue Sky]
On a sunny day, the overall screen brightness is increased to create a vibrant image of the blue sky.
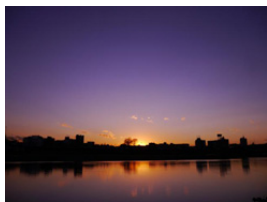
[Romantic Sunset Glow]
The enhanced purple tone creates a romantic image of the sky just after sunset.

65
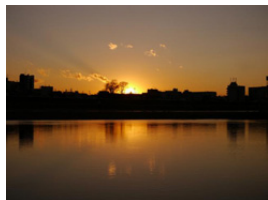
[Vivid Sunset Glow]
Red is enhanced to create a vivid image of the sunset.
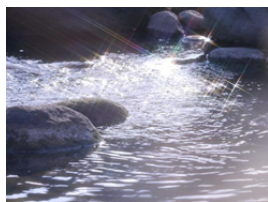
[Glistening Water]
The glisten of the water is enhanced to look brighter and slightly bluish.

- -

- ● Display of the Recording screen will be delayed more than usual and the screen will look as if frames are dropping.
- ● Star filter used in this mode may cause glistening effects on the objects other than water surface.

[Clear Nightscape]
Color saturation of the night light is increased to accentuate the nightscape.

- -

- ● We recommend that you fix the unit and take pictures using the Self-timer.

- ● The shutter may remain closed after taking the picture. This is due to signal processing and is not a malfunction.
- ● Noise may become visible when you take pictures in dark places.

[Cool Night Sky]
Blue tones are enhanced to create a cool and sophisticated image of the night sky after sunset.

- -

- ● We recommend that you fix the unit and take pictures using the Self-timer.

- ● The shutter may remain closed after taking the picture. This is due to signal processing and is not a malfunction.
- ● Noise may become visible when you take pictures in dark places.

66
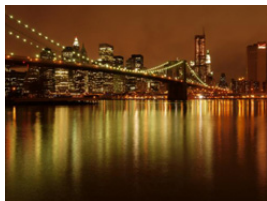
[Warm Glowing Nightscape]
The warm color tone creates a warm image of the nightscape.

- ● We recommend that you fix the unit and take pictures using the Self-timer.

- ● The shutter may remain closed after taking the picture. This is due to signal processing and is not a malfunction.
- ● Noise may become visible when you take pictures in dark places.

[Artistic Nightscape]
A slow shutter speed captures light trails that can creates an artistic nightscape.

- ● We recommend that you fix the unit and take pictures using the Self-timer.

- ● The shutter may remain closed after taking the picture. This is due to signal processing and is not a malfunction.
- ● Noise may become visible when you take pictures in dark places.

[Glittering Illuminations]
The star filter enhances pinpoints of light.

- ● We recommend that you fix the unit and take pictures using the Self-timer.

- ● Display of the Recording screen will be delayed more than usual and the screen will look as if frames are dropping.
- ● The shutter may remain closed after taking the picture. This is due to signal processing and is not a malfunction.
- ● Noise may become visible when you take pictures in dark places.

[Handheld Night Shot]
Capture multiple images and combine the data to minimize blur and noise for hand-held shooting with night scenery.

- ● Do not move the unit during the continuous shooting after pressing the shutter button.

- ● The angle of view will be slightly narrower.

67

[Clear Night Portrait]
Fill flash and a longer exposure capture better portraits against the nightscape.

- -

- **Use the flash.**
- We recommend that you fix the unit and take pictures using the Self-timer.
- When [Clear Night Portrait] is selected, keep the subject still for about 1 second after taking the picture.

- When [Silent Mode] is set to [ON], the flash is not activated.
- The shutter may remain closed after taking the picture. This is due to signal processing and is not a malfunction.
- Noise may become visible when you take pictures in dark places.

[Appetizing Food]
The overall screen brightness is increased to make the food look appealing.

- -

- We recommend that you fix the unit and take pictures using the Self-timer.
- We recommend that you do not use the flash when taking close-up pictures.

[Cute Dessert]
The overall screen brightness is set higher to enhance the cuteness of the dessert.

- -

- We recommend that you fix the unit and take pictures using the Self-timer.
- We recommend that you do not use the flash when taking close-up pictures.
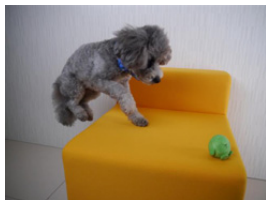
[Freeze Animal Motion]
The faster shutter speed prevents blur and captures a clear image of the fast moving animal.

[Clear Sports Shot]
The faster shutter speed prevents blur, for example at sporting events.

[Monochrome]
A monochrome image captures the mood of the moment.

69

Taking Pictures with different image effects (Creative Control Mode)

Recording Mode: ⚿

This mode records with additional image effects.

1 **Set the Recording Mode to [⚿] and tap the image effect (filter). (P51)**
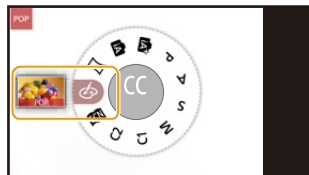
2 **Select and tap the image effect (filter) (P72 to P76).**
● Scroll the screen to display hidden items.
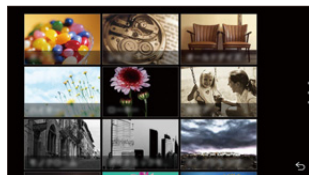
● The White Balance will be fixed to [AWB] and the ISO sensitivity will be fixed to [AUTO]. In addition, the Photo Style will be fixed to [Standard] and the Color Space will be fixed to [sRGB].
● If the exposure is not adequate, the aperture value and the shutter speed turn red and blink when the shutter button is pressed halfway.

70

■ **Taking a picture with a blurred background (Defocus Control)**

You can easily set the blurriness of the background while checking the screen.

1 [(⊘)] → [(▦)]. (P84)
2 **Operate the control ring to set the blur.**
● Tap [(▲)] to return to the Recording screen.

(⊘) ● This function is not available in the following case:
– [Miniature Effect] (Creative Control Mode)

■ **Setting brightness**

1 **Tap [(▦)].**
2 **Operate the control ring to configure settings.**
● Tap [(▲)] to return to the Recording screen.

71
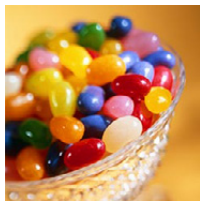
[Expressive]
This effect emphasizes the color to make a pop art picture.

[Retro]
This effect gives a faded image.
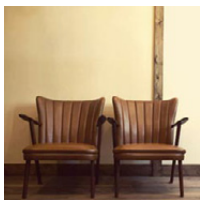
[Old Days]
This effect adds a bright, soft and nostalgic feel to the overall image.

[High Key]
This effect adds a bright, airy and soft feel to the overall image.

- -

● If you select this effect with Panorama Shot Mode, the effect may not be apparent in places with insufficient brightness.

72
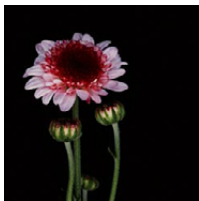
[Low Key]
This effect adds a dark and relaxing feel to the overall image and enhances bright parts.

[Sepia]
This effect creates a sepia image.

[Monochrome]
This effect creates a black and white picture.

[Dynamic Monochrome]
This effect gives a higher contrast to create an impressive black and white picture.

[Impressive Art]
This effect gives your photo a dramatic contrast look.

- -

● If you select this effect with Panorama Shot Mode, seams between pictures may become noticeable.

73

[High Dynamic]
This effect produces the optimum brightness for both dark and bright parts.

[Cross Process]
This effect gives your photo a dramatic color look.

[Toy Effect]
This effect reduces peripheral brightness to give the impression of a toy camera.

[Toy Pop]
This effect creates a vivid and bright image with the look of a toy camera.
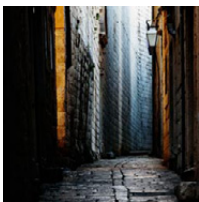
[Bleach Bypass]
This effect gives a higher contrast and a lower saturation to create a calm and tranquil picture.

74

[Miniature Effect]
This effect blurs peripheral areas to give the impression of a diorama.

- -

Setting the type of defocus
With [Miniature Effect] you can make the subject stand out by intentionally creating defocused and in-focus portions.
You can set the recording orientation (defocus orientation) and the position and size of the in-focus portion.

1 **From the Recording screen → [ ].**

2 **Tap [ ] to set the recording orientation (defocus orientation).**

3 **Tap the in-focus area.**

4 **Drag [○] to change the size of the in-focus area.**
● You can change to 3 types of size.

5 **Tap [ ].**

- -

● Display of the Recording screen will be delayed more than usual and the screen will look as if frames are dropping.

75
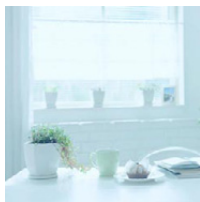
[Fantasy]
This effect creates a fantastical image in a pale color tone.

[Star Filter]
This effect transforms pin-points of light into a star effect.

- -

- Display of the Recording screen will be delayed more than usual and the screen will look as if frames are dropping.
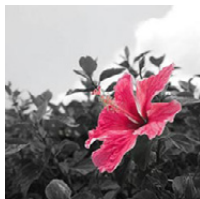
[One Point Color]
This effect leaves one selected color to emphasize impressiveness.

- -

Set the color to leave in
Set the color to leave in by selecting a location on the screen.

1   **Tap [ ].**
2   **Tap the area of the color you wish to preserve.**

3   **Tap [ ].**

- -

- Depending on the subject, the set color may not be left in.

76

Taking panorama pictures (Panorama Shot Mode)

Recording Mode: ▭

Consecutive photos taken while this unit is moved are combined to form a panorama.

1 **Set the Recording Mode to [▭]. (P51)**

💡 **Adding an image effect**
Operate the control ring to select the image effect. (P84)
● Image effects that are available for Creative Control Mode can be added. **(P70)**
  (excluding [Toy Effect], [Toy Pop], [Bleach Bypass], [Miniature Effect] and [Fantasy])
● If no image effect is to be added, select [No Effect].

2 **Press the shutter button halfway to focus.**

3 **Press the shutter button fully and move the unit in a small circle in the direction of the arrow on the screen.**

Recording from left to right
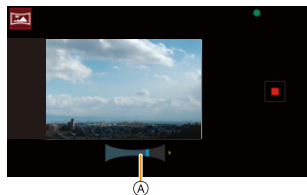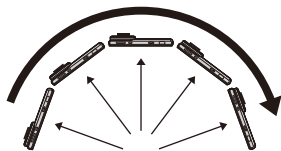
Ⓐ Recording direction and panning (Guide)

● Move the unit at a constant speed.
  Pictures may not be able to be recorded properly if the unit is moved too fast or slow.

4 **Press the shutter button once again to end the still picture recording.**
● Recording can also be ended by moving the unit to the end of the guide.

77

● Move the unit towards the recording direction while taking care not to shake the unit.
(If the camera shakes too much, pictures may not be able to be recorded, or the recorded panorama picture may become narrower (smaller).)

● The zoom position is fixed to Wide.
● If the exposure is not adequate, the aperture value and the shutter speed turn red and blink when the shutter button is pressed halfway.
● The White Balance is fixed to [AWB].
● When multiple pictures are combined to create a single panorama picture, the subject may appear distorted or the connection points may be noticeable in some cases.
● The maximum number of pixels for recording panorama pictures is as follows.

	Horizontal Resolution	**Vertical Resolution**
Horizontal	Approx. 3800 pixels	Approx. 640 pixels

● [Shutter Type] is fixed to [AUTO].

● A panorama picture may not be able to be created, or the pictures may not be combined properly when recording the following subjects or under the recording conditions below.
– Subjects with a single, uniform color or repetitive pattern (such as the sky or a beach)
– Moving subjects (person, pet, car, waves, flowers blowing in the breeze, etc.)
– Subjects where the color or patterns change in a short time (such as an image appearing on a display)
– Dark places
– Locations with flickering light sources such as fluorescent lights or candles

Zoom and Flash

Taking Pictures with the Zoom

Applicable modes: 🅰 🅰⁺ P A S M C1 C2 SCN 🎨 ▭

You can zoom-out to record landscapes etc. in wide angle (Wide) or zoom-in to make people and objects appear closer (Tele).
(Maximum magnification: 4×)

Pinching in/pinching out the screen.

or

Operating with the control ring. (P84)

● If [(Q)] is not displayed, refer to "Change various settings with the control ring" on **P85**.
● The zoom can also be operated by tapping [<]/[>].
● The zoom can be operated continuously by tapping and holding [<]/[>].
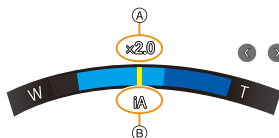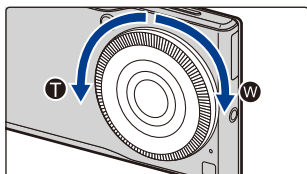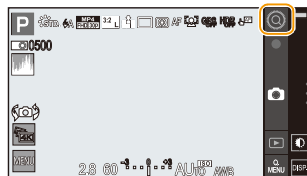
Ⓐ Zoom magnification
Ⓑ Zoom types

79

∎ About zoom types

Use Extended Optical Zoom, Intelligent Zoom or Digital Zoom to zoom in.
Combinations of zoom types are fixed depending on the picture sizes.

[EZ]	Extended Optical Zoom	● This function works when any of the picture sizes indicated with "EX" **(P104)** are selected. Zooms in without deteriorating the image quality.
[iA]	Intelligent Zoom	● You can zoom in while minimizing deterioration of the image quality.
[Digital]	Digital Zoom	● The image quality deteriorates as it is zoomed in, however the zoom factor can be increased more.

● This function is not available in the following cases:
  – [Impressive Art]/[Toy Effect]/[Toy Pop]/[Miniature Effect] (Creative Control Mode)
  – [Handheld Night Shot] (Scene Guide Mode)
  – When [Burst] in the [Rec] menu is set to [SH]
  – When [HDR] is set to [ON]
  – When [Quality] is set to [RAW] or [RAW]
● Zooming cannot be performed by pinching in/pinching out in the following case.
  – When [Touch Shutter] in the [Touch Settings] is set.

80

Taking pictures by using the flash

Applicable modes: ⓘⒶ ⓘⒶ P A S M C1 C2 ⓢⓒ𝗡 📷 ▭

With the built-in flash you can take pictures in dark places or adjust the entire contrast of a picture by illuminating a subject with a bright background.
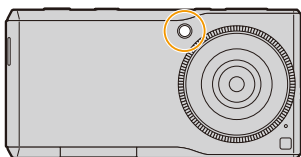
Flash
Do not cover it with your fingers or other objects.

From the Recording screen → [MENU] → [Rec] → [Flash].

[≢A]	([Auto])	The flash is automatically activated when the recording conditions make it necessary. ● **The flash is [ ] to suit recording conditions while [Burst], [Auto Bracket] or recording motion pictures. It does not turn off until recording is complete.**
[≢]	([Forced Flash On])	The flash is activated every time regardless of the recording conditions. ● **The flash is temporarily [≢A] while [Burst], [Auto Bracket] or recording motion pictures.**
[ ]	([Always ON])	Permanently on. ● **The available recording range is smaller than when recording with [≢A] and [≢].**
[☉]	([Forced Flash Off])	The flash is not activated in any recording conditions. ● **Use this when you take pictures in places where the use of flash is not permitted.**

● Correcting red-eye **(P113)**

81

■ **The available flash range (approximation)**

If the distance to the subject is close when taking a picture using a flash, part of the recorded image becomes dark because the light of flash is blocked by the lens or it becomes out of flash range. Check the distance to the subject when taking a picture.

	Wide
[AUTO] in [Sensitivity]	60 cm (2.0 feet) to 5.3 m (17 feet)

● This is the range when [ISO Limit Set] **(P113)** is set to [OFF].

● Recording a subject from too close, or without sufficient flash will not provide the appropriate level of exposure, and may result in a picture that is too white or dark.
● If recording a subject without sufficient flash, the White Balance may not be properly adjusted.

■ **Shutter speed for each flash setting**

Flash setting	**Shutter speed (Sec.)**
⚡A	
⚡	60 to 1/16000 (with the [Shutter Type] set to [Auto])
⭲D	60 to 1/2000 (with the [Shutter Type] set to [Mechanical Shutter])
⚡⊘	

82

■ Available flash settings by Recording Mode

The available flash settings depend on the Recording Mode.

(○: Available, —: Not available)

Recording Mode		⚡A	⚡	⫶D	⊘
🅐	**Intelligent Auto Mode**	○	—	—	○
🅐⁺	**Intelligent Auto Plus Mode**	○	—	—	○
P	**Program AE Mode**	○	○	○	○
A	**Aperture-Priority AE Mode**	○	○	○	○
S	**Shutter-Priority AE Mode**	○	○	○	○
M	**Manual Exposure Mode**	○	○	○	○
✎	**Creative Control Mode**	—	—	—	○
☐	**Panorama Shot Mode**	—	—	—	○
SCN **Scene Guide Mode**	[Clear Portrait]	○	○	—	○
	[Silky Skin]	○	○	—	○
	[Backlit Softness]	—	—	—	○
	[Relaxing Tone]	—	—	—	○
	[Sweet Child's Face]	○	○	—	○
	[Distinct Scenery]	—	—	—	○
	[Bright Blue Sky]	—	—	—	○
	[Romantic Sunset Glow]	—	—	—	○
	[Vivid Sunset Glow]	—	—	—	○
	[Glistening Water]	—	—	—	○
	[Clear Nightscape]	—	—	—	○
	[Cool Night Sky]	—	—	—	○
	[Warm Glowing Nightscape]	—	—	—	○
	[Artistic Nightscape]	—	—	—	○
	[Glittering Illuminations]	—	—	—	○
	[Handheld Night Shot]	—	—	—	○
	[Clear Night Portrait]	○	○	—	○
	[Appetizing Food]	○	○	—	○
	[Cute Dessert]	○	○	—	○
	[Freeze Animal Motion]	○	○	—	○
	[Clear Sports Shot]	○	○	—	○
	[Monochrome]	○	○	—	○

- The flash setting may change if the Recording Mode is changed. Set the flash setting again if necessary.
- In the following cases, the flash is fixed to [⊘].
  – When [HDR] is set to [ON]
  – When [Silent Mode] is set to [ON]

83

Operating the control ring

Applicable modes: 🅘🄰 🄰⁺ P A S M C1 C2 SCN ✍ ▭

A function to suit the Recording Mode is assigned to the control ring.

■ Rotating the control ring

Functions assigned by the control ring can be set by directly rotating the control ring from the Recording screen.
The default function assigned to the control ring differs depending on the Recording Mode.
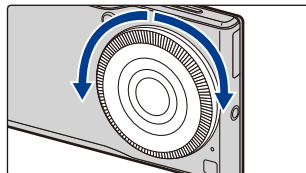
■ Operating the control ring bar with touch operations

Operation of the control ring bar differs depending on the configured function.
● Tap the item on the control ring to configure it.
● Drag the slide bar on the control ring and move it to the value to configure.

×2.0

W   T
IA

Control ring bar

84
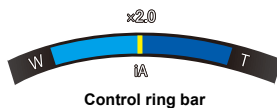
■ **Change various settings with the control ring**

1 **Tap [Q].**
 ● To use the function displayed on the recording screen, rotate the control ring without tapping [Q].
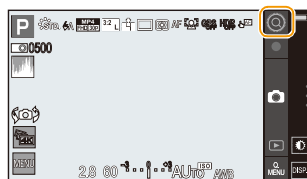
2 **Select the item.**

[Q]	Zoom **(P79)**
[ ]	Defocus Control **(P55)**
[ ]	Fine adjustment of the White Balance **(P56)**
[ ]	Exposure Compensation **(P86)**
[ ]	Program Shift **(P57)**
[ISO]	[Sensitivity] **(P87)**
[WB]	White Balance **(P88)**
[F]	[Aperture] **(P58, 60)**
[SS]	[Shutter Speed] **(P59, 60)**
[ ]	Creative Control selection **(P70)**
[ ]	Scene Guide selection **(P63)**
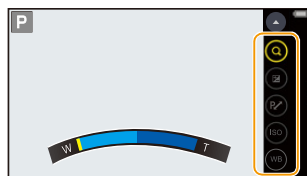
 ● The items and the order they are displayed differ depending on the Recording Mode.

3 **Operating the control ring. (P84)**

4 **Tap [ ] to close the menu.**

Compensating the Exposure

Applicable modes: 🅰 📷 P A S 🅼 C1 C2 SCN ✍ ▭

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

1 **[◎] → [🖽]. (P84)**

2 **Operate the control ring to configure settings.**
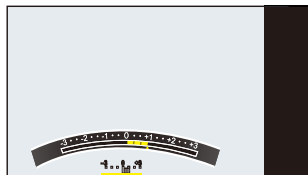
Underexposed	Properly exposed	Overexposed
Compensate the exposure towards positive.		Compensate the exposure towards negative.

● Select [0] to return to the original exposure.

3 **Tap [▲].**

86

Setting the Light Sensitivity

Applicable modes: ⓘA ⓘA⁺ Ⓟ Ⓐ Ⓢ Ⓜ C1 C2 🏖 ✎ ⊏

This allows the sensitivity to light (ISO sensitivity) to be set. Setting to a higher figure enables pictures to be taken even in dark places without the resulting pictures coming out dark.

1 [⊚] → [ⒾⓈⓄ]. (P84)

2 Operate the control ring to configure settings.

AUTO *ISO* *125*
AUTO*ISO*

[AUTO]	The ISO sensitivity is automatically adjusted according to the brightness. ● Maximum [3200]*¹
[**B**ISO] (Intelligent)	The unit detects movement of the subject and then automatically sets the optimum ISO sensitivity and shutter speed to suit the movement of the subject and brightness of the scene to minimize the jitter of the subject. ● Maximum [3200]*¹ ● The shutter speed is not fixed when the shutter button is pressed halfway. It is continuously changing to match the movement of the subject until the shutter button is pressed fully.
[L.100]*²/[125]/[200]/[400]/[800]/ [1600]/[3200]/[6400]/[12800]/ [H.25600]*²	The ISO sensitivity is fixed to various settings. ● When the [ISO Increments] (P114) in [Rec] menu is set to [1/3 EV], items of ISO sensitivity that can be set will increase.

∗1 When the [ISO Limit Set] (P113) of [Rec] menu is set to anything except [OFF], it is set automatically within the value set in [ISO Limit Set].
∗2 Only available when [Extended ISO] is set.

3 Tap [▲].

💡 Characteristics of the ISO sensitivity

	125 ◁════▷ 12800	
Recording location (recommended)	When it is light (outdoors)	When it is dark
Shutter speed	Slow	Fast
Noise	Less	Increased
Jitter of the subject	Increased	Less

87

- For the focus range of flash when [AUTO] is set, refer to **P82**.
- [🔒ISO] is not available in the following cases.
  – Shutter-Priority AE Mode
  – Manual Exposure Mode
- [AUTO] is not available in the following case.
  – Manual Exposure Mode

Adjusting the White Balance

Applicable modes: 🅰 🅰⁺ **P** **A** **S** **M** **C1** **C2** 🆂🅲🅽 ✂ ⤷

In sunlight, under incandescent lights or in other such conditions where the color of white takes on a reddish or bluish tinge, this item adjusts to the color of white which is closest to what is seen by the eye in accordance with the light source.

1 [◎] → [ⓌⒷ]. (P84)

2 **Operate the control ring to select an item.**
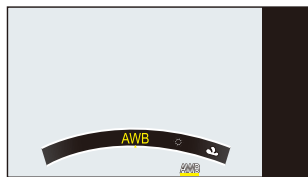
[AWB]	([Auto White Balance])	Automatic adjustment
[☼]	([Daylight])	When taking pictures outdoors under a clear sky
[☁]	([Cloudy])	When taking pictures outdoors under a cloudy sky
[🏠]	([Shade])	When taking pictures outdoors in the shade
[⚙]	([Incandescent])	When taking pictures under incandescent lights
[K]	([Color Temperature])	When using the preset color temperature setting
[🖐]	([White Set])	The manually set value is used

- Under fluorescent lighting, LED lighting fixture etc., the appropriate White Balance will vary depending on the lighting type, so use [AWB] or [🖐].

- The White Balance is only calculated for subjects within the flash range of this unit. **(P82)**
- In Scene Guide Mode, changing the scene or Recording Mode will return White Balance settings (including the White Balance fine adjustment setting) back to [AWB].
- In the Scene Guide Modes listed below, White Balance is fixed to [AWB].
  – [Backlit Softness]/[Relaxing Tone]/[Distinct Scenery]/[Bright Blue Sky]/[Romantic Sunset Glow]/[Vivid Sunset Glow]/[Glistening Water]/[Clear Nightscape]/[Cool Night Sky]/[Warm Glowing Nightscape]/[Artistic Nightscape]/[Glittering Illuminations]/[Handheld Night Shot]/[Clear Night Portrait]/[Appetizing Food]/[Cute Dessert]

■ Auto White Balance

Depending on the conditions prevailing when pictures are taken, the pictures may take on a reddish or bluish tinge. Furthermore, when a multiple number of light sources are being used or there is nothing with a color close to white, Auto White Balance may not function properly. In a case like this, set the White Balance to a mode other than [AWB].

1 Auto White Balance will work within this range.
2 Blue sky
3 Cloudy sky (Rain)
4 Shade
5 Sunlight
6 White fluorescent light
7 Incandescent light bulb
8 Sunrise and sunset
9 Candlelight
K=Kelvin Color Temperature
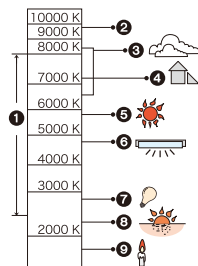
■ Setting the White Balance manually

Set the White Balance value. Use to match the condition when taking photographs.

1 Select [ ]. (P88)

2 Tap [ ].

3 Aim the camera at a sheet of white paper or other object so that only the white object fills the entire screen, and tap [OK].
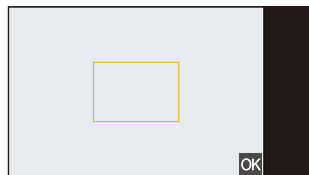
● White Balance may not be set when the subject is too bright or too dark. Set the White Balance again after adjusting to appropriate brightness.

89

■ Setting the color temperature

You can set the color temperature manually for taking natural pictures in different lighting conditions.
The color of light is measured as a number in degrees Kelvin. As the color temperature increases, the picture becomes more bluish. As the color temperature decreases, the picture becomes more reddish.

1   **[(Q)] → [(WB)]. (P84)**

2   **Operate the control ring and align [K] to the center.**

3   **Tap [(FK)].**

4   **Operate the control ring to configure settings.**
   ● You can set a color temperature from [2500] to [10000].
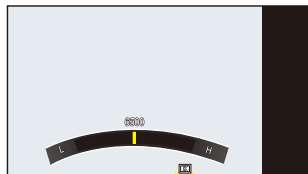
■ Finely adjusting the White Balance

You can finely adjust the White Balance when you cannot acquire the desired hue by setting the White Balance.

1   **[(Q)] → [(WB)]. (P84)**

2   **Tap [ ].**

3   **Operate the control ring to configure settings.**
   Left: Red (If blue is too strong.)
   Right: Blue (If red is too strong.)
   ● Return the White Balance fine adjustment bar to the center
     when no adjustment to the White Balance fine adjustment is
     required.
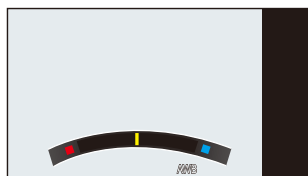
   ● If you finely adjust the White Balance, the White Balance icon on the screen turns red or blue.
   ● The White Balance fine adjustment setting is reflected in the picture when using the flash.
   ● You can finely adjust the White Balance independently for each White Balance item.

Setting the Menu

Various menu options are available for you to set the unit to take pictures the way you want and to use it with ease.

Example: In the [Rec] menu, change [Quality] from [ ] to [ ]

1 **From the Recording screen → [MENU].**

2 **Select the menu.**

🅾	**[Rec] (P96)** This menu lets you set the aspect ratio, number of pixels and other aspects of the pictures you are recording.
🎥	**[Motion Picture] (P93)** This menu lets you set the [Rec Quality], and other aspects for motion picture recording.
🔧c	**[Custom] (P116)** Your favorite operation environment can be configured to suit the recording style.
🔧	**[Setup] (P122)** The unit can be configured for easier use, such as changing the save destination of images.

3 **Select the menu item.**
● Scroll the screen to display hidden items.
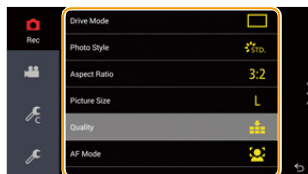
4 **Select the setting.**
● The available settings differ depending on the Recording Mode.
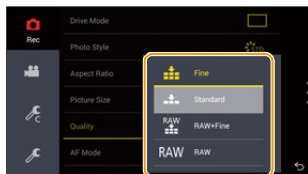
● There are functions that cannot be set or used depending on the modes or menu settings being used on this unit due to the specifications.

Close the menu

Tap [ ] repeatedly to return to the Recording screen.
● The menu screen can also be exited by pressing the shutter button halfway.

91

Menu list

■ [Rec]

This menu lets you set the aspect ratio, number of pixels and other aspects of the pictures you are recording.

● [Photo Style], [Metering Mode], [i.Dynamic] and [i.Resolution] are common to both the [Rec] menu and [Motion Picture] menu. Changing these settings in one of these menus is reflected in other menu.

[Drive Mode]	You can change what this unit will do when you press the shutter button.	**P96**
[Photo Style]	You can select effects to match the type of image you wish to record. You can adjust the color and image quality of the effects.	**P101**
[Aspect Ratio]	Sets the aspect ratio of the image.	**P103**
[Picture Size]	Set the number of pixels.	**P104**
[Quality]	Set the compression rate at which the pictures are to be stored.	**P105**
[AF Mode]	This allows the focusing method that suits the positions and number of the subjects to be selected.	**P106**
[Focus Mode]	The focus method can be selected.	**P106, P108**
[Flash]	The setting of the built-in flash can be selected.	**P81**
[Metering Mode]	Sets the light metering method for measuring brightness.	**P109**
[i.Dynamic] (Intelligent dynamic range control)	Adjusts the contrast and exposure.	**P110**
[i.Resolution]	Records pictures with more defined outlines and sense of clarity.	**P110**
[HDR]	You can combine 3 pictures with different levels of exposure into a single picture with rich gradation.	**P111**
[Shutter Type]	You can select auto shutter (either electronic or mechanical shutter) depending on the recording conditions and shutter speed, or fix the shutter as mechanical shutter only.	**P112**
[Red-Eye Removal]	Automatically detects red-eye caused by the flash and corrects the image data accordingly.	**P113**
[ISO Limit Set]	When the ISO sensitivity is set to [AUTO] or [🔳IS0], an optimal ISO sensitivity is set with the selected value as an upper limit.	**P113**
[ISO Increments]	The ISO sensitivity settings values changes in steps of 1/3 EV or 1 EV.	**P114**
[Extended ISO]	You can extend the available ISO sensitivity values.	**P114**
[Color Space]	Set this when you want to correct the color reproduction of the recorded pictures on a PC, printer etc.	**P115**

92

■ [Motion Picture]

This menu lets you set the [Rec Quality], and other aspects for motion picture recording.

● [Photo Style], [Metering Mode], [i.Dynamic] and [i.Resolution] are common to both the [Rec] menu and [Motion Picture] menu. Changing these settings in one of these menus is reflected in other menu.
  – For details, refer to the explanation for the corresponding setting in the [Rec] menu.

[Rec Quality]	This sets up the picture quality of motion pictures.	P48

■ [Custom]

Your favorite operation environment can be configured to suit the recording style.

[Cust.Set Mem.]	Registers the current camera function settings as custom set.	P62
[Silent Mode]	Disables operational sounds and output of light at once.	P116
[AF/AE Lock]	Sets the fixed content for focusing and exposure when the AF/AE lock is on.	P117
[AF Assist Lamp]	AF assist lamp will illuminate the subject when the shutter button is pressed half-way making it easier for the unit to focus when recording in low light conditions.	P118
[Peaking]	In-focus portions are highlighted when focus is being adjusted manually.	P119
[Peaking Detect Level]	The detection level for in-focus portions is set.	P119
[Histogram]	This allows you to set either to display or not display the histogram.	P120
[Guide Line]	This will set the pattern of guide lines displayed when taking a picture.	P120
[Auto Review]	Set the length of time that the picture is displayed after taking the still picture.	P120
[Touch Settings]	During recording, the focus and/or the brightness can be adjusted and set at the position tapped on the display.	P121
[Touch Shutter Setting]	Sets whether to use the touch shutter or not when using an inward facing camera. Displayed during inward facing camera use only.	—
[Volume Button Setting]	You can assign functions that are used frequently during recording to [▲]/[▼].	P121

93

■ **[Setup]**

The unit can be configured for easier use, such as changing the save destination of images.

[Location Logging]	Sets whether to append location information of the recording location to the picture or motion picture during recording.	**P122**
[Store in]	Sets the storage location of recorded images.	**P122**
[Auto Backup]	Sets whether to save a backup copy of the recorded image on the Google drive or not at the end of the camera function.	**P122**
[Auto OFF]	Sets the time until the camera function ends if there is no operation.	**P122**
[High Brightness Mode]	Sets whether to use [High Brightness Mode] or not.	**P122**
[Preview Mode]	Set the frame rate of the recording screen.	**P122**
[Beep]	Sets whether to emit the beep or not.	**P123**
[Shutter]	Sets whether to emit the shutter sound or not.	**P123**
[Tilt sensor adjustment]	You can adjust the tilt of the horizon reference line when the unit is held in a horizontal orientation.	**P123**
[No.Reset]	Returns the image file number to 0001.	**P123**
[Reset]	The recording or setup/custom settings are reset to the default.	**P123**

94

Calling frequently-used menus instantly (Quick Menu)

By using the Quick Menu, some of the menu settings can be easily found.
● The features that can be adjusted using Quick Menu are determined by the mode or a display style the unit is in.

1 **From the Recording screen → [$\frac{Q.}{MENU}$].**

● The menu can also be called by touching the icon you wish to change in the Recording screen.
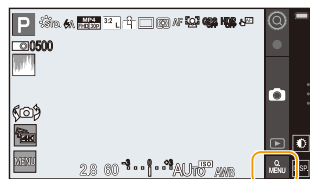
2 **Select the menu item.**
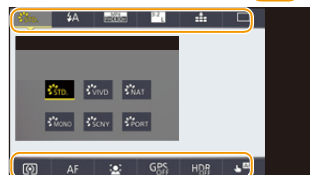
3 **Select the setting.**

4 **Tap [ ] to exit the menu once the setting is complete.**

Using the [Rec] Menu

Select a Drive Mode

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] ⟨⟩ ▭

You can change what this unit will do when you press the shutter button.

From the Recording screen → [MENU] → ⬤[Rec] → [Drive Mode]. (P91)

[☐]	([Single])	When the shutter button is pressed, only one picture is recorded.
[⬜ᵢ]	([Burst]) **(P97)**	Recordings are made in succession while the shutter button is pressed.
[⨳ᵢ]	([Auto Bracket]) **(P99)**	Press the shutter button to take 3 pictures continuously in accordance with the exposure compensation range.
[⟳]	([Self Timer]) **(P100)**	When the shutter button is pressed, recording takes place after the set time has elapsed.

Taking Pictures using Burst Mode

Applicable modes: 🅰 🅰⁺ P A S M C1 C2 SCN ◌ 🖼

Pictures are taken continuously while the shutter button is pressed.

● A maximum of 23 pictures is taken upon pressing the shutter button once when the burst speed is set to [SH].
● Pictures taken with a burst speed will be recorded as a single burst group.

1 **From the Recording screen → [MENU] → [Rec] → [Drive Mode] → [Burst]. (P91)**

2 **Select the burst speed.**

		[SH]*² (Super high speed)	[H] (High speed)	[M] (Middle speed)	[L] (Low speed)
Burst speed (pictures/second)		50	10	5	2
Live View during Burst Mode		None	None	Available	Available
∗1	**With RAW files**∗³	—	Depends on the capacity of the microSD card∗⁴		
	Without RAW files	23			

∗1 Number of recordable pictures
∗2 The electronic shutter will operate.
∗3 Depending on the recording conditions, the number of frames in a burst may be reduced. (For example, when you set [i.Resolution] of the recording menu, the number of frames in a burst may be reduced)
∗4 Pictures can be taken until the capacity of built-in memory or microSD cards becomes full, however the burst speed will become slower halfway. The exact timing of this depends on the aspect ratio, the picture size, the setting for the quality and the type of microSD card used.

● The Burst speed may become slower depending on the following settings.
  – [Picture Size] **(P104)**/[Quality] **(P105)**/[Sensitivity] **(P87)**/[Focus Mode] **(P106**, **108)**
● Refer to **P105** for information about RAW files.

3 **Focus on the subject and take a picture.**

● Hold down the shutter button fully to activate the Burst Mode.

97

- The focus is fixed in the first picture.
- Exposure, White Balance and ISO sensitivity will be fixed to the settings for the first picture when [SH]/[H] is set.
- When [SH]/[H] is set, the recording may be brighter or darker from the second picture depending on changes in the brightness of the subject.
- When set to [H]/[M]/[L], the burst speed may drop midway when the number of pictures taken continuously increases.
- Since the shutter speed becomes slower in dark places, the burst speed (pictures/second) may become slower.
- Depending on the operating conditions, it may take time to take the next picture if you repeat the recording of pictures.
- **It may take time to save pictures taken in Burst Mode on the microSD card.**
  For continuous shooting, use of a high speed microSD card is recommended.

- The Burst Mode is disabled in the following cases.
  – [Glistening Water]/[Glittering Illuminations]/[Handheld Night Shot] (Scene Guide Mode)
  – [Miniature Effect]/[Star Filter] (Creative Control Mode)
  – When recording motion pictures
  – When [HDR] is set to [ON]
- In the following case, [SH] in Burst Mode cannot be used.
  – When [Quality] is set to [$_{\textbf{m}}^{\text{RAW}}$] or [RAW]

Taking Pictures using Auto Bracket

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⌘] ⌐

In this mode, 3 pictures are automatically recorded in the selected exposure compensation range each time the shutter button is pressed.

With Auto Bracket ±1 EV

1st picture	2nd picture	3rd picture
±0 EV	−1 EV	+1 EV

---
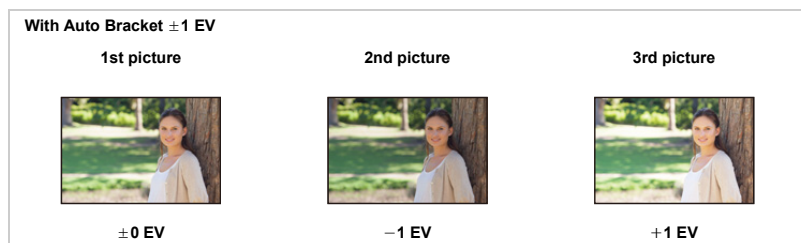
1 **From the Recording screen → [[MENU]] → [◯][Rec] → [Drive Mode] → [Auto Bracket]. (P91)**

2 **Set the exposure compensation range.**

3 **Focus on the subject and take a picture.**
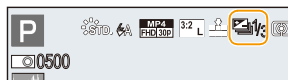
● When taking pictures using Auto Bracket after setting the Exposure Compensation value, the pictures taken are based on the selected Exposure Compensation value.

● Auto Bracket is disabled in the following cases.
  – [Glistening Water]/[Glittering Illuminations]/[Handheld Night Shot] (Scene Guide Mode)
  – [Miniature Effect]/[Star Filter] (Creative Control Mode)
  – When recording motion pictures
  – When [HDR] is set to [ON]

99

Taking Pictures with the Self-timer

Applicable modes: 🅰 🅰⁺ Ⓟ Ⓐ Ⓢ Ⓜ C1 C2 SCN 🅐 ▭

1 **From the Recording screen → [Ⅿᴇɴᴜ] → ⬛[Rec] → [Drive Mode] → [Self Timer]. (P91)**

2 **Select the time of the Self-timer.**

[🕑₂]	([2sec.])	Picture is taken 2 seconds after shutter is pressed. ● This is convenient for preventing camera shake when the shutter button is pressed e.g. when recording with this unit fixed.
[🕑₁₀]	([10sec.])	Picture is taken 10 seconds after shutter is pressed.

3 **Press the shutter button halfway to focus and then press it fully to take the picture.**
● Focus and exposure will be set when the shutter button is pressed halfway.
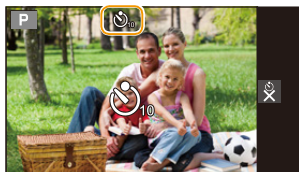
💡 ● We recommend that you fix the unit when using the Self-timer for recording.

🚫 ● Self-timer is disabled in the following case.
– When recording motion pictures

100

Adjusting the Picture Quality by Adding an Effect ([Photo Style])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] ✍ ▢

You can select effects to match the type of image you wish to record.
You can adjust the color and image quality of the effects.

From the Recording screen → [MENU] → ⬤[Rec] → [Photo Style].

[STD.]	([Standard])	This is the standard setting.
[VIVD]	([Vivid])*1	Brilliant effect with high saturation and contrast.
[NAT]	([Natural])*1	Soft effect with low contrast.
[MONO]	([Monochrome])	Monochrome effect with no color shades.
[SCNY]	([Scenery])*1	An effect appropriate for scenes with vivid blue skies and greens.
[PORT]	([Portrait])*1	An effect appropriate for portrait picture with a healthy and beautiful skin tone.

*1 This is disabled when Intelligent Auto Plus Mode is selected.

● In Scene Guide Mode, a Photo Style which matches each scene is fixed.

101

■ **Adjusting the picture quality**

● Picture quality cannot be adjusted in the Intelligent Auto Plus Mode.

1 **Tap the Photo Style that you wish to set.**

2 **Tap the item that you wish to set.**

3 **Tap [◁] or [▷] to adjust.**
● You can also tap the slide bar to adjust.

[◑]	([Contrast])	+	Increases the difference between the brightness and the darkness in the picture.
		−	Decreases the difference between the brightness and the darkness in the picture.
[Ⓢ]	([Sharpness])	+	The picture is sharply defined.
		−	The picture is softly focused.
[◉]	([Saturation])*1	+	The colors in the picture become vivid.
		−	The colors in the picture become natural.
[◉]	([Color Tone])*1	+	Adds a bluish tone.
		−	Adds a yellowish tone.
[NR]	([Noise Reduction])	+	The noise reduction effect is enhanced. Picture resolution may deteriorate slightly.
		−	The noise reduction effect is reduced. You can obtain pictures with higher resolution.

∗1 [Color Tone] is displayed only when [Monochrome] is selected. In other cases, [Saturation] will be displayed.
● Upon adjusting the picture quality, [+] is displayed in the Photo Style icon on the Recording screen.

4 **Tap [↩] to close the menu.**

102

Setting the aspect ratio of pictures

Applicable modes: 🅘🅐 🅘🅜 🄿 🄰 🅂 🄼 🄲🄸 🄲🄸 SCN 🅑

This allows you to select the aspect ratio of the pictures to suit printing or the playback method.
At the time of purchase, it is initially set to [3:2].

From the Recording screen → [MENU] → ● [Rec] → [Aspect Ratio].

[4:3]	[Aspect Ratio] of a 4:3 TV
[3:2]	[Aspect Ratio] of a 35 mm film camera
[16:9]	[Aspect Ratio] of a high-definition TV, etc.
[1:1]	Square aspect ratio

● The ends of the recorded pictures may be cut at printing so check before printing.

103

Setting the number of pixels

Applicable modes: 🅰️ 🅰️ P A S M C1 C2 🆂🅲🅽 ✍ ▭

Set the number of pixels. The higher the numbers of pixels, the finer the detail of the pictures will appear even when they are printed onto large sheets.

From the Recording screen → [MENU] → 📷[Rec] → [Picture Size].

[Aspect Ratio]	Settings		Image size
[4:3]	[**L**]	18M	4864×3648
	[ₑₓ**M**]	9M	3456×2592
	[ₑₓ**S**]	4.5M	2432×1824
	[ₑₓ**XS**]	0.3M	640×480
[3:2]	[**L**]	20M	5472×3648
	[ₑₓ**M**]	10M	3888×2592
	[ₑₓ**S**]	5M	2736×1824
	[ₑₓ**XS**]	2.5M	1920×1280
[16:9]	[**L**]	17M	5472×3080
	[ₑₓ**M**]	8M	3840×2160
	[ₑₓ**S**]	3.5M	2560×1440
	[ₑₓ**XS**]	2M	1920×1080
[1:1]	[**L**]	13M	3648×3648
	[ₑₓ**M**]	7M	2592×2592
	[ₑₓ**S**]	3.5M	1824×1824
	[ₑₓ**XS**]	0.4M	640×640

● The picture size will be fixed to [**S**] when [Burst] is set to [SH].

104

Setting the compression rate of pictures ([Quality])

Applicable modes: ⒤ ⓘ P A S M C1 C2 ⓢⓒ ⓐ ⊡

Set the compression rate at which the pictures are to be stored.

From the Recording screen → [MENU] → ◯[Rec] → [Quality].

Settings		File format	Description of settings
[✦]	([Fine])	JPEG	A JPEG image in which image quality was given priority.
[✦]	([Standard])		A standard image quality JPEG image. This is useful for increasing the number of shots without changing the number of pixels.
[RAW✦]	([RAW+Fine])	RAW+JPEG	You can record a RAW image and a JPEG image ([✦]) simultaneously.
[RAW]		RAW	You can only record RAW images.*1

∗1 It is fixed to maximum recordable pixels ([∐]) for each image aspect ratio.

💡 About RAW

RAW format refers to the original format of data that is not image-processed on the unit.
The Playback screen of this unit plays back simplified thumbnails within the RAW image. Accordingly, the image is displayed rough and has a low enlargement factor.
Special software is needed in the computer to edit RAW images.
Using the dedicated software, you can perform advanced editing, such as adjusting the White Balance after taking a picture. The software also allows you to save pictures in file formats that can display them on a PC (JPEG, TIFF, etc.). Pictures taken in RAW format will have higher image quality than those taken in JPEG format, but the data size will be larger.

● To develop or edit RAW files on a computer, use "SILKYPIX Developer Studio" by Ichikawa Soft Laboratory.

Download method:
Download and install "SILKYPIX Developer Studio" onto your computer from the following website.
http://www.isl.co.jp/SILKYPIX/english/p/
Supported OS:
Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1
Mac OS X v10.5 to v10.10

🚫 ● The following effects are not reflected in RAW images:
　– Intelligent Auto Plus Mode
　– Creative Control Mode
　– White Balance
　– [Photo Style]/[i.Dynamic]/[Red-Eye Removal]/[i.Resolution]/[Color Space] ([Rec] menu)
　– Scene Guide Mode
● In the following case, [RAW✦] and [RAW] cannot be set.
　– [Handheld Night Shot] (Scene Guide Mode)

Select the type of Auto Focus Mode ([AF Mode])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⟲] [□]

This allows the focusing method that suits the positions and number of the subjects to be selected.

From the Recording screen → [MENU] → ◯[Rec] → [AF Mode]. (P91)

[👤]	([Face Detection])	The unit automatically detects the person's face. (max. 15 areas) The focus and exposure can then be adjusted to fit that face no matter what portion of the picture it is in.
[ᕦᓫᓫ]	([AF Tracking])	Focus can be adjusted to a specified subject. Focus will keep on following the subject even if it moves. (Dynamic tracking)
[▦]	([23-Area])	Up to 23 points for each AF area can be focused. This is effective when the subject is not in the center of the screen. (AF area frame will be same as image aspect ratio setting.)
[▪]	([1-Area])	The unit focuses on the subject in the AF area on the center of the screen.

■ **About [👤] ([Face Detection])**

The following AF area frames are displayed when the unit detects the faces.

Yellow	When the shutter button is pressed halfway, the frame turns green when the subject is focused.	
White	Displayed when more than one face is detected. Other faces that are the same distance away as faces within the yellow AF areas are also focused.	
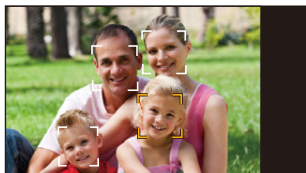
⊘ ● Under certain picture-taking conditions including the following cases, the face detection function may fail to work, making it impossible to detect faces.

[AF Mode] is switched to [▦].
– When the face is not facing the unit
– When the face is at an angle
– When the face is extremely bright or dark
– When the facial features are hidden behind sunglasses, etc.
– When the face appears small on the screen
– When there is little contrast on the faces
– When there is rapid movement
– When the subject is other than a human being
– When the unit is shaking

106

■ **Setting up [![icon]] ([AF Tracking])**

When operating the shutter button
● Place the subject in the AF tracking frame, and press the shutter button halfway to lock the subject.

Ⓐ AF tracking frame

– AF area will turn green when the unit detects the subject.
– The AF area turns yellow when the shutter button is released.

When operating the touch screen
● You can lock the subject by tapping it.
– Set the [Touch Settings] to [Touch AF].
– The AF area turns yellow while the subject is locked.
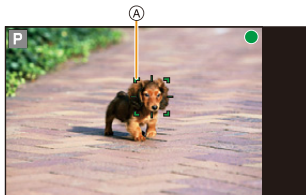
● Lock is canceled when [![icon]] is touched.
● If it fails to lock, AF area will flash in red, and disappear. Try to lock again.
● When AF tracking fails, [![icon]] is set.
● The setting is fixed to [![icon]] in the following case.
– When recording motion pictures
● The setting is fixed to [![icon]] in the following case.
– [Miniature Effect] (Creative Control Mode)

● It cannot be set to [![icon]] in the following cases.
– [Clear Nightscape]/[Cool Night Sky]/[Warm Glowing Nightscape]/[Artistic Nightscape]/[Glittering Illuminations]/[Handheld Night Shot]/[Appetizing Food]/[Cute Dessert] (Scene Guide Mode)
● It cannot be set to [![icon]] in the following cases.
– [Glistening Water]/[Glittering Illuminations]/[Monochrome] (Scene Guide Mode)
– [Sepia]/[Monochrome]/[Dynamic Monochrome]/[Star Filter] (Creative Control Mode)
– [Monochrome] ([Photo Style])
● It cannot be set to [![icon]] in the following cases.
– Intelligent Auto Mode
– Intelligent Auto Plus Mode
● It cannot be set to [![icon]] in the following cases.
– Intelligent Auto Mode
– Intelligent Auto Plus Mode
● Dynamic tracking function may not work in the following cases:
– When the subject is too small
– When the recording location is too dark or bright
– When the subject is moving too fast
– When the background has the same or similar color to the subject
– When jitter is occurring

107

Taking Pictures with Manual Focus

Applicable modes: 🄸🄰 🄸🄼 P A S M C1 C2 SCN ✍ 🖼

Use this function when you want to fix the focus or when the distance between the lens and the subject is determined and you do not want to activate Auto Focus.

1 **From the Recording screen → [** MENU **] → [**📷**][Rec] → [Focus Mode] → [MF]. (P91)**

2 **Tap [** MF **].**
   ● Switches to the MF adjustment screen.

3 **Tap the enlarged display area.**
   Ⓐ MF adjustment screen
   Ⓑ Peaking
   Ⓒ MF Guide

   ● You can tap [MF🔍] to display/hide the enlarged display area.
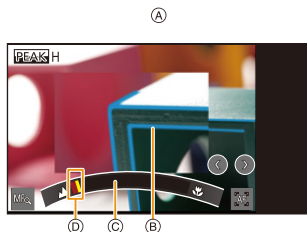
4 **Operate the control ring to set the focus.**
   ● You can also tap [<]/[>] to focus.
   ● Tap and hold [<]/[>] to adjust the focus.
   The focus will stop adjusting at position Ⓓ. However, if you then tap [<], you can further adjust the focus for objects far away.
   ● Tapping [🏔] or [🌷] to quickly adjust the focus.
   The focus will stop adjusting at position Ⓓ. However, if you then tap [<], you can further adjust the focus for objects far away.
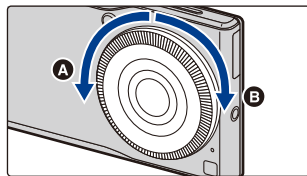
   Rotate to Ⓐ side:
   Focuses on nearby subject
   Rotate to Ⓑ side:
   Focuses on faraway subject

   ● The in-focus portions will be highlighted. (Peaking) **(P119)**
   ● You can check whether the point of focus is to the near side or to the far side. (MF Guide)

■ **About the MF adjustment screen**

Moving the enlarged area.

● Tap the area that you want to enlarge, or you can also drag the enlarged screen to move it.
● The following will return the MF assistance to the original position.
   – When the camera function is terminated

Closing the MF adjustment screen.

● It will close when the shutter button is pressed halfway.

108

💡 Achieving focus quickly using Auto Focus

Tap [🔲] in the MF adjustment screen to activate the Auto Focus.

● Enabling Auto Focus in the MF adjustment screen adjusts the focus to the center of the enlarged screen.

🚫 ● [MF] is not available in the following cases.
   – [Miniature Effect] (Creative Control Mode)
   – When recording motion pictures

Selecting the Method for Measuring Brightness ([Metering Mode])

Applicable modes: 🅰 🅰⁺ **P** **A** **S** **M** **C1** **C2** 🅢🅒🅝 🅐 ▭

Type of optical measurement to measure brightness can be changed.

From the Recording screen → [MENU] → ⚫[Rec] → [Metering Mode].

[📷]	([Multi Metering])	This is the method in which the unit measures the most suitable exposure by judging the allocation of brightness on the whole screen automatically. Usually, we recommend using this method.
[📷]	([Center Weighted])	This is the method used to focus on the subject on the center of the screen and measure the whole screen evenly.
[📷]	([Spot])	This is the method to measure the subject in the spot metering target Ⓐ.

🖉 ● Those menu items are shared by the [Rec] menu and the [Motion Picture] menu. When the setting for either of the two is changed, the setting for the other is also changed.

109

Compensating the contrast and exposure ([i.Dynamic])

Applicable modes: 🅰 🅰⁺ **P** **A** **S** **M** **C1** **C2** **SCN** ✍ ▭

Contrast and exposure are compensated when the brightness difference between the background and subject is great, etc.

From the Recording screen → [MENU**] →** 📷**[Rec] → [i.Dynamic].**

Settings: [Auto]/[High]/[Standard]/[Low]/[OFF]

● [Auto] automatically sets the intensity of the effect according to the recording conditions.

● This feature may be automatically disabled, depending on the lighting conditions.
● This function is not available in the following case:
 – When [HDR] is set to [ON]

Raising the resolution ([i.Resolution])

Applicable modes: 🅰 🅰⁺ **P** **A** **S** **M** **C1** **C2** **SCN** ✍ ▭

Pictures with sharp profile and resolution can be taken by using the Intelligent Resolution Technology.

From the Recording screen → [MENU**] →** 📷**[Rec] → [i.Resolution].**

Settings: [ON]/[OFF]

110

Combining pictures with different exposures ([HDR])

Applicable modes: 🅰 🅰⁺ **P** **A** **S** **M** **C1** **C2** 🅢🅒🅜 ✂ ⊏

You can combine 3 pictures with different levels of exposure into a single picture with rich gradation. You can minimize the loss of gradations in bright areas and dark areas when, for example, the contrast between the background and the subject is large. An image combined by HDR is recorded in JPEG.

From the Recording screen → [MENU] → 📷[Rec] → [HDR].

[ON]	Records HDR pictures.
[OFF]	Does not record HDR pictures.

What Is HDR?
HDR stands for High Dynamic Range and refers to a technique for expressing a wide contrast range.

- Do not move the unit during the continuous shooting after pressing the shutter button.
- You cannot take the next picture until the combination of pictures is complete.
- If jitter occurs, or if you record a moving subject, an unnatural effect similar to an afterimage may appear on the recorded picture.
- Flash is fixed to [⊛].

- [HDR] does not work for the pictures taken during a motion picture recording.
- [HDR] is not available in the following case.
  – When [Quality] is set to [RAW] or [RAW]

111

Setting the Shutter Type ([Shutter Type])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [🎨] ▭

There are two types of shutters, a mechanical shutter and an electronic shutter. Pictures can be taken with a fixed mechanical shutter or with the shutter system selected automatically.

From the Recording screen → [MENU] → ○[Rec] → [Shutter Type].

	[AUTO] ([Auto])	**[MSHTR]** ([Mechanical Shutter])
Function	Depending on the recording condition and the shutter speed, the shutter type is switched automatically. ● With less functional constraints, the use of the mechanical shutter system is preferred. ● When the shutter speed is faster than 1/2000, pictures are recorded in electronic shutter mode.	Takes pictures using only the mechanical shutter method.
Shutter Speed (Sec.)	60 to 1/16000th	60 to 1/2000th

Mechanical shutter	The unit starts an exposure electronically, and ends it with the mechanical shutter.
Electronic Shutter	The unit starts and ends an exposure electronically.

● When burst rate is set to [SH], pictures will be taken with the electronic shutter.
● **When a moving subject is recorded with the electronic shutter, the subject may appear distorted on the picture.**
● **When the electronic shutter is used under fluorescent or LED lighting, etc., horizontal stripes may appear on the picture. In such cases, lowering the shutter speed may reduce the effect of the horizontal stripes. (P59)**

112

Correcting red eyes ([Red-Eye Removal])

Applicable modes: 🄰 🄰⁺ **P** **A** **S** **M** **C1** **C2** **SCN** 🅰 ▭

The Red-Eye Removal function works when the flash is activated to automatically detect red eyes and correct the image data.

From the Recording screen → [▭] → ⬤[Rec] → [Red-Eye Removal].

Settings: [ON]/[OFF]

● Under certain circumstances, red-eye cannot be corrected.

Setting the upper limit on ISO sensitivity ([ISO Limit Set])

Applicable modes: 🄰 🄰⁺ **P** **A** **S** **M** **C1** **C2** **SCN** 🅰 ▭

It will select optimal ISO sensitivity with set value as limit depending on the brightness of the subject.

From the Recording screen → [▭] → ⬤[Rec] → [ISO Limit Set].

Settings: [200]/[400]/[800]/[1600]/[3200]/[6400]/[12800]/[OFF]

● It will work when the [Sensitivity] is set to [AUTO] or [�︎ISO].

● [ISO Limit Set] is disabled in the following cases:
  – [Clear Nightscape]/[Cool Night Sky]/[Warm Glowing Nightscape]/[Handheld Night Shot] (Scene Guide Mode)
  – When recording motion pictures

113

Setting the step increment of ISO sensitivity ([ISO Increments])

Applicable modes: 🅰 🆎 P A S M C1 C2 SCN ⟲ ⊟

You can adjust the ISO sensitivity settings for every 1/3 EV.

From the Recording screen → [MENU] → ◯ [Rec] → [ISO Increments].

[1/3 EV]	[L.100]*1/[125]/[160]/[200]/[250]/[320]/[400]/[500]/[640]/[800]/[1000]/[1250]/[1600]/[2000]/[2500]/[3200]/[4000]/[5000]/[6400]/[8000]/[10000]/[12800]/[H.16000]*1/[H.20000]*1/[H.25600]*1
[1 EV]	[L.100]*1/[125]/[200]/[400]/[800]/[1600]/[3200]/[6400]/[12800]/[H.25600]*1

✳1 Only available when [Extended ISO] is set.

> ● When the setting is changed from [1/3 EV] to [1 EV], [Sensitivity] will be set to value closest to the value set during the [1/3 EV].

Extending ISO sensitivity ([Extended ISO])

Applicable modes: 🅰 🆎 P A S M C1 C2 SCN ⟲ ⊟

You can extend the available ISO sensitivity values.

From the Recording screen → [MENU] → ◯ [Rec] → [Extended ISO].

Settings: [ON]/[OFF]

114

Setting the color space ([Color Space])

Applicable modes: ⒤ ⒨ P A S M C1 C2 SCN ✋ ▭

Set this when you want to correct the color reproduction of the recorded pictures on a PC, printer etc.

From the Recording screen → [MENU] → ◯[Rec] → [Color Space].

[sRGB]	Color space is set to sRGB color space. This is widely used in computer related equipment.
[AdobeRGB]	Color space is set to AdobeRGB color space. AdobeRGB is mainly used for business purposes such as professional printing because it has a greater range of reproducible colors than sRGB.

- Set to sRGB if you are not very familiar with AdobeRGB.
- The setting is fixed to [sRGB] in the following case.
  – When recording motion pictures

115

Using the [Custom] Menu

Disabling Operational Sounds and the Output of Light at once ([Silent Mode])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⚘] ⊏

This function is useful for recording images in a quiet environment, public facility, etc. or recording images of subjects such as babies or animals.

From the Recording screen → [MENU] → [Custom] → [Silent Mode].

Settings: [ON]/[OFF]

● Operational sounds are muted, and the flash and the AF Assist lamp are forced off.
  The following settings are fixed.
  – [Flash]: [⊛]
  – [AF Assist Lamp]: [OFF]
  – [Beep]: [OFF]
  – [Shutter]: [OFF]

● Operational sounds of the unit, such as the sound of the lens aperture being adjusted, are not muted.
● [Silent Mode] cannot be set in the Panorama Shot Mode. Setting of other Recording Mode will be reflected.

116

Fixing the Focus and the Exposure ([AF/AE Lock])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⌀] [▭]

This is useful when you want to take a picture of a subject outside the AF area or the contrast is too strong and you cannot achieve appropriate exposure.

1 **From the Recording screen → [[MENU]] → [Custom] → [AF/AE Lock]. (P91)**

[AE Lock]	Only the exposure is locked. ● Fixing the exposure turns on the [AEL] display.
[AF Lock]	Only the focus is locked. ● Fixing the focus turns on the [AFL] display.
[AF/AE Lock]	Both focus and exposure are locked. ● Fixing the focus and exposure turns on the [AFL] and [AEL] display.
[OFF]	—

2 **Align the screen with the subject.**

3 **Tap the AF/AE Lock icon ([AFL/AEL] etc.) to fix the focus and exposure.**

● Tap the lock release icon ([AFL/AEL/OFF] etc.) to release the lock.

4 **Move the unit to the composition you wish to take, and press the shutter button fully.**

● When [AE Lock] is set, after pressing the shutter button halfway to focus, press the shutter button fully.

● AF Lock only is effective when taking pictures in Manual Exposure Mode.
● AE Lock only is effective when taking pictures with Manual Focus.
● The subject can be focused again by pressing the shutter button halfway even when AE is locked.
● Program Shift can be set even when AE is locked.

● This function is not available in the following case:
– When recording motion pictures

117

Turning on the AF Assist Lamp ([AF Assist Lamp])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⌘] [⊡]

AF assist lamp will illuminate the subject when the shutter button is pressed halfway, making it easier for the unit to focus when recording in low light conditions.
(Larger AF area is displayed depending on the recording conditions.)

From the Recording screen → [MENU] → [Custom] → [AF Assist Lamp].

Settings: [ON]/[OFF]

● The effective distance of the assist lamp is a maximum of approximately 1.5 m (4.9 feet).
● The AF Assist Lamp is valid only for the subject in the center of the screen. Use it by positioning the subject in the center of the screen.
● When you do not want to use the AF Assist Lamp (e.g. when taking pictures of animals in dark places), set the [AF Assist Lamp] to [OFF]. In this case, it will become more difficult to focus on the subject.

● The setting is fixed to [OFF] in the following cases.
 – [Distinct Scenery]/[Bright Blue Sky]/[Romantic Sunset Glow]/[Vivid Sunset Glow]/[Glistening Water]/[Clear Nightscape]/[Cool Night Sky]/[Warm Glowing Nightscape]/[Artistic Nightscape]/[Handheld Night Shot] (Scene Guide Mode)
 – When [Silent Mode] is set to [ON]

118

Highlighting in-focus portions ([Peaking])

Applicable modes: 🅰 🎦 Ⓟ Ⓐ Ⓢ Ⓜ C1 C2 SCN ⊘ ▭

Works when focusing manually in the Manual Focus Mode.

From the Recording screen → [MENU] → ⚙[Custom] → [Peaking].

[ON]	In-focus portions are highlighted with color.
[OFF]	In-focus portions are not highlighted.

Sets the detection level of the area in focus ([Peaking Detect Level])

Applicable modes: 🅰 🎦 Ⓟ Ⓐ Ⓢ Ⓜ C1 C2 SCN ⊘ ▭

From the Recording screen → [MENU] → ⚙[Custom] → [Peaking Detect Level].

[Detect Level High]	When [Detect Level High] is set, portions to be highlighted are reduced, allowing you to achieve a more precise focus. ● Sets the highlighting color used for [Peaking]. [ ] ([Light blue])/[ ] ([Yellow])/[ ] ([Green])
[Detect Level Low]	● Sets the highlighting color used for [Peaking]. [ ] ([Blue])/[ ] ([Orange])/[ ] ([White])

● The detection level setting does not affect the focus range.
● Sets the Peaking to display the [PEAK H] ([Detect Level High]) or [PEAK L] ([Detect Level Low]) in the MF adjustment screen.
● Since portions with clear outlines on the screen are highlighted as in-focus portions, portions to be highlighted vary depending on the recording conditions.
● The color used for highlighting does not affect recorded images.

Displaying the histogram ([Histogram])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⟳] ⊏

From the Recording screen → [MENU] → [Custom] → [Histogram].

Settings: [ON]/[OFF]

● A Histogram is a graph that displays brightness along the horizontal axis (black to white)
and the number of pixels at each brightness level on the vertical axis.
It allows you to easily check a picture's exposure.
Ⓐ dark
Ⓑ bright

Ⓐ ← → Ⓑ
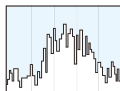
● **When the recorded picture and the histogram do not match each other under the following conditions, the histogram is displayed in orange.**
  – When the Manual Exposure Assistance is other than [0] during exposure compensation or in the Manual Exposure Mode
  – When the flash is activated
● The Histogram is an approximation in Recording Mode.
● The Histogram displayed in this unit does not match Histograms displayed by picture editing software used in PCs etc.

Displaying the guide lines ([Guide Line])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⟳] ⊏

From the Recording screen → [MENU] → [Custom] → [Guide Line].

Settings: [9-split]/[8-split]/[OFF]

Displaying a picture right after it is taken ([Auto Review])

Applicable modes: [iA] [iA+] [P] [A] [S] [M] [C1] [C2] [SCN] [⟳] ⊏

From the Recording screen → [MENU] → [Custom] → [Auto Review].

[1 sec.]/[2 sec.]	Displays the picture taken during the set timing and then returns to the Recording screen automatically.
[Hold]	Display until [⟵] is tapped.
[OFF]	—

● This function is not available in the following case:
  – When recording motion pictures

120

Sets the touch operations during recording ([Touch Settings])

Applicable modes: 🅰🅰 P A S M C1 C2 SCN 🅰 ▭

The focus and brightness can be set to the specified subject and position using the touch screen.

From the Recording screen → [MENU] → [Custom] → [Touch Settings].

[Touch AF]	It is possible to set the focus to the subject specified on the touch screen. ● This is not available when [Focus Mode] is set to [MF]. ● Tap [ ] to cancel the setting.
[Touch Shutter]	Just by touching the subject you want as your point of focus, the unit will focus on the subject and take the picture automatically. ● Focus adjustment will not be carried out if the [Focus Mode] is [MF].
[Touch AE Lock]∗1	You can tap to adjust and fix the brightness to suit the specified subject. ● This cannot be used when setting the Manual Exposure Mode. ● [Metering Mode] changes to the specialized [ ] mode. ● Fixing the exposure turns on the [AEL] display. ● Tap [ ] to cancel the lock.
[Touch AF Lock]∗1	You can tap to adjust and fix the focus to suit the specified subject. ● This is not available when [Focus Mode] is set to [MF]. ● The focus will be adjusted to the tapped position by [[■]] regardless of the setting of [AF Mode]. ● Fixing the focus turns on the [AFL] display. ● Tap [ ] to cancel the lock.
[Touch AF/AE Lock]∗1	You can tap to adjust and fix the focus and brightness to suit the specified subject. ● AF Lock only is effective when taking pictures in Manual Exposure Mode. ● The focus will be adjusted to the tapped position by [[■]] regardless of the setting of [AF Mode]. ● Focus adjustment will not be carried out if the [Focus Mode] is [MF]. ● [Metering Mode] changes to the specialized [ ] mode. ● Fixing the focus and exposure turns on the [AFL] and [AEL] display. ● Tap [ ] to cancel the lock.
[OFF]	You can also disable AF and AE operations by tapping the screen.

∗1 This is disabled when Intelligent Auto Mode or Intelligent Auto Plus Mode is selected.

● The setting is fixed to [OFF] in the following cases.
– [Miniature Effect]/[One Point Color] (Creative Control Mode)

Assigning frequently-used functions ([Volume Button Setting])

Applicable modes: 🅰🅰 P A S M C1 C2 SCN 🅰 ▭

You can assign functions that are used frequently during recording to [▲]/[▼].

From the Recording screen → [MENU] → [Custom] → [Volume Button Setting].

Settings: [Zoom]/[Exposure]/[Sensitivity]/[White Balance]/[OFF]

● Functions assigned to [▲]/[▼] may not work, depending on the modes or menu settings being used.
For details on each function, refer to [Zoom] **(P79)**, [Exposure] **(P86)**, [Sensitivity] **(P87)** or [White Balance] **(P88)**.

Basic camera settings ([Setup] menu)

From the Recording screen → [[MENU]] → [Setup] → select the item.

Item	Setting/Notes
[Location Logging]	Tags of the recording location can be appended to pictures and motion pictures.
	[ON]/[OFF]
	● **Cautions for Use:** **Be sure to pay special attention to the privacy, the likeness rights, etc. of the subject when you use this function. Use at your own risk.**
[Store in]	Sets the storage location of recorded pictures and motion pictures.
	[Internal Storage]/[microSD]
[Auto Backup]	A backup of the recorded image is automatically taken when the camera function is terminated.
	[ON]/[OFF]
	● Refer to **P128** for details.
[Auto OFF]	The camera function is terminated automatically if there are no operations during the set time.
	[1Min.]/[2Min.]/[5Min.]/[10Min.]
[High Brightness Mode]	The display becomes brighter and easier to see even when taking pictures outdoors.
	[ON]/[OFF]
	● The brightness of pictures displayed on the display is enhanced, so some subjects on the display may appear different from the actual subjects. However, this enhancement does not affect recorded pictures.
[Preview Mode]	Set the frame rate of the recording screen.
	[Standard]/[Economy]

122

Item	Setting/Notes
[Beep]	Sets whether to emit the beep or not. **[ON]/[OFF]** ● When [Silent Mode] is set to [ON], [Beep] is set to [OFF].
[Shutter]	Sets whether to emit the shutter sound or not. **[ON]/[OFF]** ● When [Silent Mode] is set to [ON], [Shutter] is set to [OFF].
[Tilt sensor adjustment]	You can adjust the tilt of the horizon reference line when the unit is held in a horizontal orientation. ● Adjust the tilt of the horizon reference line, and tap [OK]. ● To reset the tilt of the reference line to the default, tap [RESET].
[No.Reset]	Reset the file number of the next recording to 0001. ● The folder number is updated and the file number starts from 0001. ● A folder number between 100 and 999 is created. The folder number cannot be reset if it reaches 999. Therefore we recommend that you delete all the "DCIM" folder in the storage after saving the data in a PC etc. ● To reset the folder number to 100, delete all folders within the "DCIM" folder on the storage media.
[Reset]	The settings are reset to the default.

123

5. *Viewer*

Gallery

Display pictures, motion pictures or other items that have been taken.
Playback slideshows, edit still pictures or capture still pictures from motion pictures.
● Data can be synchronized using your Google account.

Viewing pictures and motion pictures

1 **From the Home screen → [　] → [　].**
● The Album list screen is displayed.
● When using the camera function, tapping [▶] on the Recording screen plays back the most recently recorded image.
● During initial start-up, a screen to confirm whether to turn on the automatic backup to the Google drive is displayed.
Refer to **P156** for details on the Google drive.

2 **Select album.**
● The File list screen is displayed.

3 **Tap picture or motion picture.**
● The picture or motion picture is displayed in full screen.
● Flick in a horizontal direction to display the next/previous picture or motion picture.
● Pinch out/pinch in or double tap to zoom in/zoom out of a picture.
● Tap [　] to set the screen brightness to the highest level.
● Tap [　] to display the picture information.
● Tap [　] to playback a motion picture.
● Continuous picture shots are summarized and displayed as a single file in the File list screen.
Select the thumbnail of an image with continuous shots in the File list screen to display a list of the continuous images.

■ Switching display method

Display by categorizing location, time or other properties.

From the Album list screen → [Albums] → select the item.

■ Viewing in slideshow

Playback pictures in an album using a slideshow.

From the File list screen/Full screen display → [⋮] → [Slideshow].
● Tapping the screen while playing back a slideshow ends the slideshow.

■ Setting pictures as wallpaper, etc

Set a picture as the Home screen wallpaper or the image for contacts.

From the Full screen display → [⋮] → [Set picture as].

■ Sharing pictures and motion pictures

Send pictures or motion pictures by email, or upload them to websites.

From the Full screen display → [◁] → selecting app.

125

Managing pictures and motion pictures

∎ Copying, moving

Copy or move pictures or motion pictures to the unit or microSD card, or create folders.

1 **From the Full screen display → [ ] → [Move]/[Copy].**
   ● Tapping [ ] from the Album list screen or File list screen → [Select album] or [Select item] can move/copy multiple items.

2 **Select move or copy destination.**
   ● Create a new folder to move or copy items to.

∎ Deleting pictures and motion pictures

From the Full screen display → [ ] → [OK].
   ● Tapping [ ] from the Album list screen or File list screen → [Select album] or [Select item] can delete multiple items.

Editing pictures

1 **From the Full screen display → [ ] → [Edit].**
   ● Tap [ ] to edit pictures.

2 **Select item to edit, and edit it → [SAVE].**

[ ]	Change the color.
[ ]	Add a frame.
[ ]	Crop or rotate pictures.
[ ]	Adjust brightness, contrast and other properties.
[ ]/[ ]	Delete or redo the editing that has been carried out.

∎ Resizing, reducing

Reduce the size of pictures so that they use less space.

1 **From the Full screen display → [ ] → [Resize].**
2 **Select size → [Resize].**
   ● Selecting [User specified] resizes pictures by setting the size.

∎ Rotating

Rotate pictures left or right.
From the Full screen display → [ ] → [Rotate left]/[Rotate right].

∎ Cropping

Select any area of the picture to crop it.

1 **From the Full screen display → [ ] → [Crop].**
2 **Drag the circles on each side to set the area to crop → [SAVE].**

126

Capturing still pictures from motion pictures

Still pictures can be captured from motion pictures recorded with this unit.

1 **From the Home screen → [   ] → [   ].**

2 **Tap a motion picture.**

3 **Drag the slide bar and move it to the position to capture.**

4 **Tap [   ].**
● Still pictures before and after the selected position are displayed.

5 **Select frame to capture and tap [   ].**
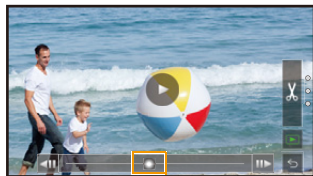
Using "Swipe & Share"

Tap and hold an album or file to use "Swipe & Share".
Drag albums or files to the menu displayed on the edge of the screen to active each function.

1 **From the Album list screen/File list screen/Full screen display → tap and hold an album or file.**

2 **Drag to the menu in each direction.**
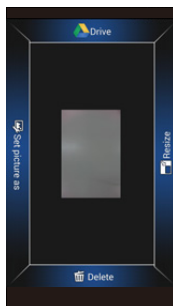
■ **Changing menu displayed with "Swipe & Share"**
Change the menu displayed on the edge of the screen.

1   **From the Album list screen/File list screen/Full screen display → [ ] → [Swipe & Share settings].**
2   **Tap and hold the desired function → drag to the desired location.**

Configuring various settings

Performs the settings for auto backup of pictures and display of pictures stored in the Google drive.

From the Album list screen → [ ] → [Auto Backup settings].

128

6. Photo Search

Launching Photo Search

Search for photography locations in the current location or travel destinations, or use pictures taken by other people in those locations as a reference.
The walking route from the current location to the desired photography location can also be displayed.

From the Home screen → [⬚] → [🖥].
● During initial start-up, read the terms of use and tap [Agree] if you agree to the terms.

■ Map view screen
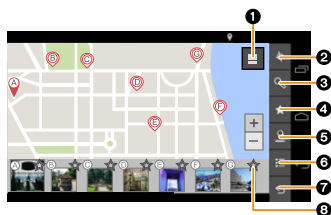
❶ Display the Grid view screen.
❷ Move map to current location.
❸ Search place names or landmark names. **(P130)**
❹ Display only favorite pictures.
❺ Show/hide walking route. **(P130)**
❻ Display the settings menu. **(P131)**
❼ Close [Photo Search].
❽ Tap [☆] to register/cancel your favorite pictures.

● Tapping any location on the map searches for pictures from nearby that location.
● Tap the thumbnail to display the picture in full-screen. **(P130)**

■ Grid view screen
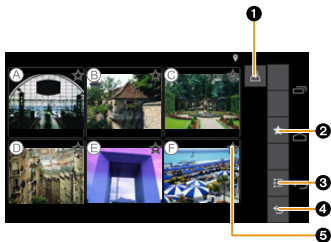
❶ Display the Map view screen.
❷ Display only favorite pictures.
❸ Display the settings menu. **(P131)**
❹ Close [Photo Search].
❺ Tap [☆] to register/cancel your favorite pictures.

129

Viewing pictures

From the Map view screen/Grid view screen → tap the picture to view.
● The picture is displayed in full screen.
● The control icons and thumbnail images are switched from show/hide each time the screen is tapped.
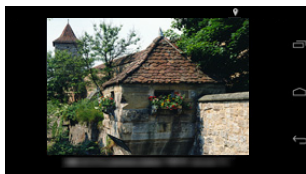
Saving a favorite

Up to 50 favorites can be saved.

From the Map view screen/Grid view screen → tap [ ] at the top right of the thumbnail.
● Saving a picture as a favorite displays [ ] in the thumbnail images.
● You can register your favorite pictures by tapping [ ] in the full screen display as well.

Searching shooting location

Search for place names or landmark names, and move the map to the search location.

1 **From the Map view screen → [ ].**

2 **Enter place name or landmark name → select destination from resulting list.**
● The map moves to the selected location, and nearby pictures are displayed.

Displaying routes

Display the walking route to the selected location.

From the Map view screen → select destination or thumbnail image → [ ].
● You can also display them by tapping [ ] in the full screen display of the picture.

Configuring various settings

■ Configuring how location information is used

Use the unit's location information.

1 **With [Photo Search] launched → [ ].**

2 **Turn the [Use Location services] checkbox on.**

🖉 ● If you turn the [Use Location services] checkbox off, functions such as route display and favorite notification that make use of the current location information will be disabled.

■ Configuring favorite notifications

Enabling [Favorites Notification] emits a sound, vibrates the unit or sends a message to notify you when you are near a location where a picture that is saved as a favorite was taken.

1 **With [Photo Search] launched → [ ].**

2 **Turn the [Favorites Notification] checkbox on.**

🖉 ● [Favorites Notification] can only be configured when [Use Location services] is enabled.

131

7. Phone

Calls can be made/received using the phone app, and voicemail services can be used. Usable services vary depending on your mobile network operator. For more information, contact your contracted mobile network operator.

Emergency calls

1 **From the Home screen → [📞] → [⊞].**

2 **Enter telephone number for the emergency call → [📞].**
   ● If the incorrect telephone number has been entered, tap [✕] to clear the entered number.

3 **Tap [📞] after the call has ended.**

   ● Emergency calls can be made even when the screen is locked, by tapping [EMERGENCY CALL].
   ● You can make emergency calls even if there is no microSIM card inserted, as long as the phone is in range of a network and the region you are in allows emergency calling with no microSIM card inserted.

Making a call

1 **From the Home screen → [📞] → [⊞].**

2 **Enter the telephone number → [📞].**
   ● If the incorrect telephone number has been entered, tap [✕] to clear the entered number.

3 **Tap [📞] after the call has ended.**

132

Making an international call

1 **From the Home screen → [📞] → [▦].**

2 **Enter the telephone number in order of:**
+ (tap and hold [0]) → country number → region number (area code) →
telephone number.
● If the region number (area code) starts with "0", omit the first "0" and enter the number.

3 **Tap [📞].**

4 **Tap [📞] after the call has ended.**

Operations while on a call

◻ **Adjusting the call volume**
When during a call → Press [▲]/[▼].

◻ **Displaying the screen during a call**
The screen will fade out when pressing the unit against your ear during a call due to the proximity sensor. This not only helps to limit battery consumption, but also prevents unintended operations during a call.
The screen is displayed when moving the unit away from your ear.
Press [(¹)] if the unit is during sleep.

◻ **Putting a call on hold**
When during a call → [▮▮].

◻ **Muting a call**
The other person will not be able to hear your voice during the call.

When during a call → [🔇].

◻ **Using speakerphone**
The other person's voice will audible over the speakerphone.

When during a call → [🔊].

◻ **Entering numbers during a call**
Operation required if numbers need to be entered during a call, such as when sending a key signal to navigate through voice guidance menus or other purposes.

When during a call → [▦] → enter the number.

133

Answering a call

1 **When a call is being received, drag [🔵] to [🟢].**
● To reject the call, drag [🔵] to [🔴].

2 **Tap [🔴] after the call has ended.**

■ **Turning the ringer off temporarily**
The ringer can be turned off temporarily when receiving a call.

When receiving a call → press [▲]/[▼], or [(¹)].

● For details on configuring silent mode or vibration mode in advance, refer to **P30**.

■ **Using a headset (optional)**
Telephone calls can be answered and calls ended with the stereo headset (optional) button.

1 **When receiving a call → press the headset (optional) button.**
● To reject calls, press the headset (optional) button for a few seconds.
2 **When the call has ended, press the headset (optional) button for a few seconds.**

Displaying missed calls

[✉] is displayed on the notification panel if there was a missed call.

Open the notifications panel → [Missed call].

134

Call log

Making a call from the call log

1 **From the Home screen → [📞] → [🕐].**
- The Call log screen is displayed.
- The following icons are used in the call log to indicate different types of calls.

  [↗]: Outgoing calls

  [↙]: Answered calls

  [↙]: Missed calls
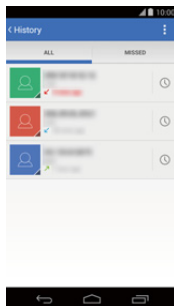
2 **Tap the phone number or name of the person to call.**

Save number to contact list from call log

1 **From the Call log screen → tap [🕐] of the telephone number to save.**

2 **[Add to contacts] → [CREATE NEW CONTACT].**

3 **Enter required details → [DONE].**

Clearing the call log

1 **From the Call log screen → tap [🕐] of the telephone number to delete.**

2 **[⋮] → [Remove from call log].**

- To clear the entire call log, Call log screen → tap [⋮] → [Clear call log] → [OK].

135

Voicemail

The voicemail service can be used depending on the mobile network operator.
A message is stored on the voicemail center if a call is missed.
For information, contact your contracted mobile network operator.

Configure voicemail number

Configure the number to connect to the voicemail center.
For information on the number to enter, contact your mobile network operator.

1 **From the Home screen → [📞] → [⋮] → [Settings].**

2 **[Voicemail] → [Setup] → [Voicemail number].**

3 **Enter voicemail number → [OK].**

Playing back voicemail

[📼] is displayed in the notification panel when receiving a voice mail.

Open the notifications panel → [New voicemail].
● Follow the guidance for subsequent steps.

Caller ID information

Configure whether to show/hide your phone number to other person when making a call.

1 From the Home screen → [📞] → [⋮] → [Settings].

2 [GSM call settings] → [Additional settings].

3 [Caller ID] → select the item.

Fixed Dialing Numbers

Configuring Fixed Dialing Number (FDN) means calls cannot be made to telephone numbers that are not saved on the FDN list.

✎ ● You must enter the PIN 2 code assigned to you by your mobile network operator in order to use this feature.

Turning on Fixed Dialing Number

1 From the Home screen → [📞] → [⋮] → [Settings].

2 [Fixed Dialing Numbers] → [Enable FDN].

3 Enter PIN 2 code → [OK].

Adding contact to Fixed Dialing Number list

1 From the Home screen → [📞] → [⋮] → [Settings].

2 [Fixed Dialing Numbers] → [FDN list].

3 [⋮] → [Add contact].

4 Enter the name and telephone number → [Save] → enter PIN 2 code → [OK].

8. **People**

Saving contacts

The name, telephone numbers, email addresses and other contact details of friends and family members can be saved to contacts.

● Data can be synchronized using your Google account.

1 **From the Home screen → [🔳] → [🔲].**

2 **[👤] → enter required details → [DONE].**
   ● Tapping [⬤] saves an image.

■ Importing contacts from storage

1 From the Home screen → [🔳]→ [🔲].

2 [⋮] → [Import/export] → [Import from storage] → [OK].
   ● Select the account and file if there are several accounts and files.

■ Importing contacts using Bluetooth wireless technology

To import contacts using Bluetooth wireless technology, read "Bluetooth® wireless technology" on **P167**.

■ Importing contacts from email

Import contacts from vCards attached to email.

1 Tap an email with a vCard attached.

2 Tap the attached vCard → [Contacts].
   ● Select the account if there are multiple accounts.

Saving profiles

Save your own name, telephone number or other details.

1 **From the Home screen → [🔳] → [🔲] → tap the profile name.**
   ● The Profile screen is displayed.

2 **[⋮] → [Edit].**

3 **Enter required details → [DONE].**
   ● Tapping [⬤] saves an image.

138

Displaying contacts

From the Home screen → [⬚] → [🔵].
● The Contact list screen is displayed.
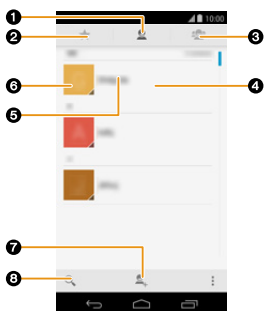
① Contact list
  Display all saved contacts.
  ● To display contacts for each account, tap [⋮] → [Contacts to display].
② Favorite contact list/Frequently used contact list
  Display contacts saved as favorites or frequently used contacts.
③ Group list
  Display contacts in each group.
④ Profile **(P138)**
⑤ Contacts name
  Tap to display the Contacts detail screen.
⑥ Image icon
  Tap to call or send an email.
⑦ Save new contact **(P138)**
⑧ Search contacts
  Enter a search keyword to filter contacts.

Making calls/sending emails

From the Contact list screen → tap contact → tap telephone number or email address.
● Tap the image icon of the contact, and tap the phone or email icons to make a call or send an email.

Managing contacts

Editing contacts

1 **From the Contact list screen → tap the contact to edit.**

2 **[⋮] → [Edit].**

3 **Edit the required details → [DONE].**
   ● Tapping [ ] saves an image.

Deleting contacts

1 **From the Contact list screen → tap the contact to delete.**

2 **[⋮] → [Delete] → [OK].**

Saving a contact in the favorite list

1 **From the Contact list screen → tap the contact to save in favorites.**

2 **Tap [☆].**
   ● Appears as [★] when saving in favorites.
   Tap [★] again to remove the contact from the favorites.

140

Creating groups

1 **From the Contact list screen → [👥] → [👥].**
● Select the account if there are multiple accounts.

2 **Enter group name → [DONE].**
● Entering the contact name in the [Type person's name] column and selecting the contact saves the contact in the group.

Backing up contacts

1 **From the Contact list screen → [⋮] → [Import/export].**

2 **Tap [Export to storage]/[Share visible contacts].**

3 **Follow the guidance on the screen.**

Synchronizing contacts

1 **From the Contact list screen → [⋮] → [Accounts].**

2 **Turn the [Auto-sync app data] checkbox on.**
● Tapping the account configures synchronization of each type of data.
For details, refer to "Account settings" on **P31**.

9. Email/Messaging

Email

Configuring an email account

1 **From the Home screen → [⊞] → [✉].**

2 **Enter the email address and password → [Next].**

3 **Follow the guidance on the screen.**

✐ ● When configuring an account manually, consult your email service provider for details about settings.

Creating an email and sending

1 **From the Home screen → [⊞] → [✉].**

2 **Tap [✉].**

3 **Tap [To] and enter the email address of the recipient.**
● Tap [⋮] → [Add Cc/Bcc] to enter Cc or Bcc.

4 **Tap [Subject] and enter a subject.**

5 **Tap [Compose email] and enter a message.**
● To send an email with attachments, tap [⋮] → [Attach picture]/[Attach video], and select the file to attach.

6 **Tap [➤].**

✐ ● If the recipient's unit or email service provider rejects emails that were sent from a computer, emails sent from the unit will also be rejected.

142

Reading received email

1 **From the Home screen → [　] → [　].**
- ● The Email inbox list screen is displayed.
- ● To update the email inbox, tap [　] → [Refresh].
- ● If there are multiple accounts, tap [Inbox] to switch accounts. Tapping [Combined view] displays all emails.

2 **Tap the email to display.**

■ Displaying attachments

1 From the Email inbox list screen → tap email to display.

2 Tap the attachment.
- ● To save the attachment, tap [　] → [Save].

■ Saving the sender's email address

1 From the Email inbox list screen → tap the email to save.

2 Tap the image icon → [OK].

3 Tap an existing contact or [CREATE NEW CONTACT].

4 Enter required details → [OK]/[DONE].

■ Replying to emails

1 From the Email inbox list screen → tap the email to reply to.

2 Tap [　].
- ● To reply to all, tap [　] → [Reply all].

3 Enter message → [　].

■ Forwarding emails

1 From the Email inbox list screen → tap the email to forward.

2 [　] → [Forward].

3 Enter the email address of the recipient → [　].

■ Deleting emails

1 From the Email inbox list screen → tap the email to delete.

2 Tap [　].
- ● Delete emails by flicking horizontally through the Email inbox list screen to the email to delete.

143

Switching folders

From the Email inbox list screen → [Inbox] → tap folder to display.

Configure email settings

■ Configure general email settings

From the Email inbox list screen → [⋮] → [Settings] → [General settings].

■ Adding an email account

1 **From the Email inbox list screen → [⋮] → [Settings] → [ADD ACCOUNT].**

2 **Follow the guidance on the screen.**

■ Changing email account settings

Change settings for [Account name], [Signature], [Sync frequency] or other options.

1 **From the Email inbox list screen → [⋮] → [Settings].**

2 **Tap the email account to change settings.**

■ Deleting an email account

1 **From the Home screen → [⊞] → [⚙].**

2 **Tap the account type → tap the email account to delete.**

3 **[⋮] → [Remove account] → [Remove account].**

144

Gmail™

Gmail can be sent and received using a Google account.

● Each Gmail operation is similar to email.
  For details about the operating method, refer to "Email" on **P142**.

Creating a Gmail and sending

1 **From the Home screen → [▦] → [▼].**

2 **Tap [✉].**

3 **Tap [To] and enter the email address of the recipient.**
  ● Tap [⋮] → [Add Cc/Bcc] to enter Cc or Bcc.

4 **Tap [Subject] and enter a subject.**

5 **Tap [Compose email] and enter a message.**
  ● To send Gmail with attachments, tap [⋮] → [Attach file].

6 **Tap [➤].**

Reading received Gmail

1 **From the Home screen → [▦] → [▼].**
  ● The Gmail inbox list screen is displayed.
  ● To update the Gmail inbox, tap [⋮] → [Refresh].
  ● If there are multiple accounts, tap [▼] to switch accounts.

2 **Tap the Gmail to display.**

145

Google Hangouts™

Send and receive messages, pictures and other files with friends, or hold video conversations with a group.

● A Google account is required to use all functions.

Launching [Hangouts]

From the Home screen → [▦] → [💬].
● If the setting screen is displayed when launching it for the first time, configure it as required.

Sending messages

1 **From the Hangout screen → [➕].**

2 **Enter the name, email address or telephone number of the other person and select the contact.**
● Saved contacts can also be selected.
● To send an SMS, tap the number displayed under [SEND SMS TO...].
● The Chat screen is displayed.
● Tapping [Anyone else?] adds a person to chat to.

3 **Enter message → [➤].**
● Tapping [😊] can enter pictograms.
● Tapping [📎] can attach pictures or other files.

Reading messages

From the Hangout screen → tap the received Hangout.
● The Chat screen is displayed. Enter a message to reply.
● If [Hangouts] is not running, launch [Hangouts] from the notification panel or the app list.
● For video chat, the Call screen is displayed. Responding to this starts the video chat.

Starting a video chat

1 **From the Hangout screen → [+].**

2 **Enter the name, email address or telephone number of the other person and select the contact.**
● Saved contacts can also be selected.
● The Chat screen is displayed.
● Tapping [Anyone else?] adds a person to chat to.

3 **Tap [ ].**
● The other person responding to this starts the video chat.

Responding to a video chat

From the Call screen → drag [ ] to [ ].
● Start the video chat.

● Refer to [Help & feedback] for details on using [Hangouts].

147

10. Web browser

Launching the web browser

The unit can be used to browse web pages, manage bookmarks and download images and other files.

● Contact your mobile network operator regarding data plans and rates.
● Additional charges may be incurred for accessing the internet or downloading media files from the internet. For information, contact your contracted mobile network operator.

Viewing a web page

1 **From the Home screen → [ ] → [ ].**

2 **Enter the web address in the address bar → [Go].**

Searching for a web page

1 **From the Home screen → [ ] → [ ].**

2 **Enter the search text in the address bar → [Go].**

Viewing a web page from the history

1 **From the Home screen → [ ] → [ ].**

2 **[ ] → [History] → tap the web page.**

Navigating while web pages are displayed

■ Zooming in/zooming out

Pinch out to zoom in, pinch in to zoom out.
Double-tapping the screen also zooms in/out.

■ Returning to the previous page

[⋮] → [←].

● Tapping [▬] will also return to the previous page.

■ Jumping to the previous page

[⋮] → [→].

● Tapping after using the [←] or [←] to return to the previous page jumps to the page that was being viewed immediately before.

■ Opening a link in a new tab

Tap and hold the link → [Open in new tab].

■ Opening a link in an incognito tab

Tap and hold the link → [Open in incognito tab].

● An incognito tab allows browsing of web pages without retaining history or search history.

■ Opening a new tab

[🗔] → [+ New tab].

■ Switching tabs

[②] → tap the tab to display.

■ Downloading images or links from web pages

1 **Displaying web pages to download images or links.**

2 **Tap and hold the image or link.**

3 **Tap [Save link]/[Save image].**

149

Using the browser options menu

Tapping [⋮] displays the options menu.

[New tab]	Opens a new tab.
[New incognito tab]	Opens a new incognito tab.
[Bookmarks]	Opens a bookmark. **(P151)**
[Recent tabs]	Displays tabs opened with computers or other devices.
[History]	Opens the history. **(P148)**
[Share...]	Sends web pages (URLs) via email or Bluetooth wireless technology.
[Print...]	Prints the web page. **(P172)**
[Find in page]	Searches for words within the web page.
[Add to home screen]	Adds the web page to the Home screen.
[Request desktop site]	Displays the PC version of the site.
[Settings]	Displays the Chrome settings screen.
[Help & feedback]	Displays help and feedback.

150

Bookmarks

Adding bookmarks

1 From the Home screen → [⊞] → [🔴].

2 Display web page to add → [⋮] → [☆].

3 Edit the required details → [Save].

Opening bookmarks

1 From the Home screen → [⊞] → [🔴].

2 [⋮] → [Bookmarks].

3 Select the bookmark.

Editing bookmarks

1 From the Home screen → [⊞] → [🔴].

2 [⋮] → [Bookmarks].

3 Tap and hold the bookmark to edit → [Edit bookmark].

4 Edit the required details → [Save].

Deleting bookmarks

1 From the Home screen → [⊞] → [🔴].

2 [⋮] → [Bookmarks].

3 Tap and hold the bookmark to delete → [Delete bookmark].

11. Music

Google Play Music™

[Play Music] launches the app to play music.

Copying music from a computer or other devices

1 **Connect the computer and unit with a microUSB cable (commercially available).**
   ● For details on how to connect to a computer, refer to **P170**.

2 **Copy music data to the unit.**

Listening to music

1 **From the Home screen → [⊞] → [🎧].**

2 **Tap an album.**

3 **Tap a song.**

■ Operations while playing music

After playing a song, tap the song name at the bottom of the screen for operations while playing music.

[❚❚]/[▶]	Pause/Play
[◄◄]/[►►❙]	Skips to start of song (Skips to previous song if playback is less than 2 seconds)/Skips to next song
[↻]	Repeats all songs → 1 song → cancels repeat with each tap
[⤨]	Plays songs randomly/cancels random play with each tap

■ Playing music in the background

While playing music, tap [🏠] to return to the Home screen. You can use other apps while playing music in the background.
To return to the [Play Music] app, tap the playback notification from the notification panel.

Displaying My Library

Display My Library to search for songs by [GENRES]/[ARTISTS]/[ALBUMS]/
[SONGS] categories.

1 **From the Home screen → [▦] → [🎧].**

2 **Flick the left edge of the screen to the right → [My Library].**

Using playlists

Create playlists and management your favorite songs.

■ Creating a playlist and saving a song

1 **From the Home screen → [▦] → [🎧].**
2 **Tap an album → tap [⋮] on the right of the song name.**
3 **Tap [Add to playlist].**
4 **[New playlist] → enter name → [Create playlist].**
   ● If playlists have already been created, select a created playlist to add songs to.

■ Playing songs from playlists

1 **From the Home screen → [▦] → [🎧].**
2 **Flick the left edge of the screen to the right → [Playlists].**
3 **Tap a playlist → tap a song.**

■ Deleting songs saved in playlists

1 **From the Home screen → [▦] → [🎧].**
2 **Flick the left edge of the screen to the right → [Playlists].**
3 **Tap a playlist → tap [⋮] on the right of the song name → [Remove from playlist].**

■ Deleting playlists

1 **From the Home screen → [▦] → [🎧].**
2 **Flick the left edge of the screen to the right → [Playlists].**
3 **Tap [⋮] on the right edge of the playlist name → [Delete] → [OK].**

12. Maps

Location information service

This unit is compatible with location information services that use GPS.
Various apps can be used, including searching for nearby shops or restaurants, adding location information to pictures, or displaying your current location on maps.

1 **From the Home screen → [⌗] → [🔅].**

2 **[Location] → turn location information [ON].**

- The location information service does not guarantee a high level of accuracy for locations.
- Errors may occur due to the weather, surrounding buildings or other factors.

Configuring Location information mode

1 **From the Home screen → [⌗] → [🔅].**

2 **[Location] → [Mode] → select the item.**

[High accuracy]	Specifies location using GPS, Wi-Fi communications or mobile networks.
[Battery saving]	Specifies location using Wi-Fi communications or mobile networks.
[Device only]	Specifies location using GPS only.

Google Maps™

Check current location with the [Maps] app, or search for locations or routes.

From the Home screen → [🔛] → [🗺].

Search box	Enter search words into the search box to display the destination on the map. Tap the search box to select nearby spots by category.
[◎]	Displays a map around the current location.
[👤]	Displays the information around the current location.

> ● To use [Maps], a mobile network or Wi-Fi communication is required.
> ● [Maps] may not operate in all countries or regions.

Searching routes to a destination

1 **From the Home screen → [🔛] → [🗺].**

2 **Tap [🍴].**

3 **Select [🚗] (car)/[🚆] (public transport)/[🚶] (walking).**

4 **Enter the departure point and destination.**

> ● Route searches are retained in the history, so departure points and destinations can be selected easily for future searches.

13. Other apps and functions

NFC

The NFC function can be used to transfer data with other NFC-compatible devices, or directly display websites on the unit by swiping it over devices with integrated NFC modules or smart posters.

● Refer to **P6** for details on the NFC antenna.

1 **From the Home screen → [ ] → [ ].**

2 **[More...] → Turn the [NFC] checkbox on.**

Google Drive™

The [Drive] app is an online storage service for creating, browsing and sharing files. Files using the [Drive] app are stored on the web via the Google account, and can be accessed from anywhere.

Uploading files

1 **From the Home screen → [ ] → [ ].**

2 **[ ] → select files to upload.**

Creating files

1 **From the Home screen → [ ] → [ ].**

2 **[ ] → select files to create.**

Displaying files

1 **From the Home screen → [⊞] → [◢].**

2 **Tap the file to display.**
- Tapping [🔍] searches for files.
- Tapping [ⓘ] displays file information, and individual settings can be changed.

Scanning files

1 **From the Home screen → [⊞] → [◢].**

2 **[📷] → [🔵] → [✓].**

Configuring drives

1 **From the Home screen → [⊞] → [◢].**

2 **Flick the left edge of the screen to the right → [Settings].**

157

Google Keep™

Notes can be created easily.
Notes are managed on the web via the Google account, and can be accessed from anywhere.

Creating notes

1 **From the Home screen → [▦] → [▨].**

2 **[Add quick note] → enter note.**
   ● Tapping [🎨] configures the note color.
   ● Tapping [🔔] configures notifications.
   ● Tapping [▤] also creates notes.

Adding images to notes

1 **From the Home screen → [▦] → [▨].**

2 **Select note.**

3 **[📷] → [Take photo]/[Choose image].**
   ● Home screen → tapping [▦] → [▨] → [📷] creates notes after adding images.

Creating voice notes

1 **From the Home screen → [▦] → [▨].**

2 **Tap [🎤].**

Create list items

Create list items with check boxes.
A strike-through line is displayed in list items when the check box is selected, and is convenient for checking whether items have been completed.

1 **From the Home screen → [▦] → [💡].**

2 **[☰] → enter list items.**

Searching notes

1 **From the Home screen → [▦] → [💡].**

2 **[🔍] → enter text to search.**

Sharing notes

1 **From the Home screen → [▦] → [💡].**

2 **Select note.**

3 **[⋮] → [Share].**

4 **Select application.**

Switching display

1 **From the Home screen → [▦] → [💡].**

2 **[▤] → [Single-column view]/[Multi-column view].**

Moving notes to archive

1 **From the Home screen → [⬜] → [🟡].**

2 **Select note.**

3 **Tap [◻].**
● Horizontally flicking notes to move also sends them to the archive.

Displaying archives

1 **From the Home screen → [⬜] → [🟡].**

2 **Flick the left edge of the screen to the right → [Archive].**

Deleting notes

1 **From the Home screen → [⬜] → [🟡].**

2 **Select note.**

3 **[⋮] → [Delete].**

Displaying recycle bin

1 **From the Home screen → [⬜] → [🟡].**

2 **Flick the left edge of the screen to the right → [Trash].**

Tap and hold to control

[🔔]	Adds notification.
[🎨]	Changes note color.
[◻]	Moves notes to archive.
[⋮]	[Delete]/[Share]

● Control multiple notes at the same time.

160

Calendar

Manage schedules with the [Calendar] app.
● Data can be synchronized using your Google account.

Changing the calendar display

1 **From the Home screen → [ ] → [ ].**

2 **Tap the date area.**

3 **Tap [Day]/[Week]/[Month]/[Agenda].**

Display multiple calendars

1 **From the Home screen → [ ] → [ ].**

2 **[ ] → [Calendars to display].**

3 **Select calendar to display.**

Creating schedules

1 **From the Home screen → [ ] → [ ].**

2 **[ ] → [New event].**

3 **Enter schedule → [DONE].**
● [ ] is displayed in the status bar if a notification is configured and it reaches that time.

Displaying schedule details

Tap the schedule in day display/week display.
● Change calendar displays to schedule list, and tap the schedule to display details.

Editing schedules

1 **From the Home screen → [⊞] → [31].**

2 **Tap the schedule in day display/week display.**

3 **Tap [✎].**

4 **Edit schedules → [DONE].**

Deleting schedules

1 **From the Home screen → [⊞] → [31].**

2 **Tap the schedule in day display/week display.**

3 **[🗑] → [OK].**

Canceling scheduled notifications, configuring snooze

Open the notification panel when [🔳] is displayed in the status bar → tap the schedule.
● Tapping [Snooze] under schedules in the notification panel configures the snooze settings.

Changing calendar settings

1 **From the Home screen → [⊞] → [31].**

2 **[⋮] → [Settings] → [General settings].**

162

YouTube™

Play YouTube videos or post motion pictures.

Viewing motion pictures

1 **From the Home screen → [▦] → [▶].**

2 **Tap the motion picture to view.**
● This unit displays in landscape viewing mode.

Searching motion pictures

1 **From the Home screen → [▦] → [▶].**

2 **Tap [🔍].**

3 **Enter the search text → [🔍].**

Uploading

1 **From the Home screen → [▦] → [▶].**

2 **Flick the left edge of the screen to the right → [Uploads] → [⬆].**

3 **Follow the guidance on the screen.**

163

14. Google Play

Google Play™ Store

Search for fun games or useful apps in the [Play Store], and install them on the unit.

1 **From the Home screen → [ ] → [ ].**

2 **Searching and installing apps.**
● Google Wallet™ can be used for the payment of paid apps.

● The [Play Store] may not be available for use in some regions.

Deleting apps

Deleting all data within apps

Delete app data if the unit has become full in order to free up space on the unit.

1 **From the Home screen → [　] → [　] → [Apps].**

2 **[ALL] tab → tap the app to delete.**

3 **[Clear data] → [OK].**

✎ ● Data may not be able to be deleted depending on the app.

Deleting installed apps

1 **From the Home screen → [　] → [　] → [Apps].**

2 **[DOWNLOADED] tab → tap the app to delete.**

3 **[Uninstall] → [OK].**

✎ ● Apps may not be able to be deleted depending on the app.

Access permissions

Access permissions define what information or functions apps on the unit that apps can access.
Unauthorized apps that steal personal or other information and send them to external locations may misuse access permissions. When installing apps, download them from trusted sits and check the access permissions.

1 **From the Home screen → [⬚] → [⬚] → [Apps].**

2 **Tap the app to check → check the [PERMISSIONS] items.**

Installing apps from unknown sources

Apps from sites, emails or sources other than the [Play Store] may be allowed installation.

1 **From the Home screen → [⬚] → [⬚] → [Security].**

2 **Turn the [Unknown sources] checkbox on.**

3 **Read the message and tap [OK].**

15. Connecting to external devices

Bluetooth® wireless technology

Use Bluetooth wireless technology with this unit and Bluetooth-compatible devices.
Transfer data with Bluetooth-compatible devices, or connect to wireless headsets to listen to music.

Turning on the Bluetooth function

1 **From the Home screen → [⊞] → [⚙].**

2 **Turn on [Bluetooth].**
  ● [🅱] is displayed in the status bar when the Bluetooth function is turned on.

Configuring pairing with Bluetooth devices

  ● Turn on device's Bluetooth function, and check that it can be connected via Bluetooth.

1 **From the Home screen → [⊞] → [⚙].**

2 **Tap [Bluetooth].**
  ● The unit searches for Bluetooth devices, and detected Bluetooth devices are displayed in the [AVAILABLE DEVICES] column.
  ● Tap [SEARCH FOR DEVICES] to search again.
  ● Tapping the unit name sets whether or not it is discoverable by other Bluetooth devices.
    The discoverable time can be configured with [⋮] → [Visibility timeout].

3 **Select the detected Bluetooth device and configuring pairing.**

4 **If required, enter the passcode (PIN).**
  ● This completes the pairing configuration, and the Bluetooth device is connected.

Changing the unit's name

The name of this unit displayed on the other device can be changed.

1 **From the Home screen → [⊞] → [⚙] → [Bluetooth].**

2 **[⋮] → [Rename phone].**

3 **Enter the name → [Rename].**

Unpairing a Bluetooth device

1 **From the Home screen → [⊞] → [⚙] → [Bluetooth].**

2 **Select the currently connected Bluetooth device in the [PAIRED DEVICES] column → [OK].**

✐ ● Pairing settings will not be deleted when unpairing a device.

Connecting to Bluetooth device that has already been paired

1 **From the Home screen → [⊞] → [⚙] → [Bluetooth].**

2 **Select the Bluetooth device to connect to in the [PAIRED DEVICES] column.**

✐ ● Only one Bluetooth device can be connected at the same time, even if multiple Bluetooth devices have been configured for pairing.

168

Deleting paired Bluetooth devices

1 From the Home screen → [　] → [　] → [Bluetooth].

2 Tap [　] of the Bluetooth device to delete from the [PAIRED DEVICES] column.

3 Tap [Unpair].

Sending data to a Bluetooth device

1 Select the data to send from the app.

2 Open the send/share menu in the app.

3 Tap [Bluetooth].

4 Select the destination Bluetooth device.

Receiving data from a Bluetooth device

1 Send the data from the sending Bluetooth device.
 ● Refer to the operating instructions of the sending Bluetooth device for details on operations.

2 Open the notifications panel → [Bluetooth share: Incoming file] → [Accept].

USB connections

Using USB storage

Connect the unit and a computer with a microUSB cable (commercially available), and use it as a removable disk.
This allows data to be backed up to the computer, or transfer data with the unit as USB storage.

1 **From the Home screen → [🔲] → [⚙] → [Storage].**

2 **[⋮] → [USB computer connection].**

3 **Turn the [Media device (MTP)] checkbox on.**
● Configure [Camera (PTP)] when connected to a computer that does not support MTP.

4 **Connected the unit to a computer with a microUSB cable (commercially available).**

5 **Access the unit from the computer when it is recognized as a removable disk.**

■ **Connecting to a Mac**
If you are using Mac OS X, software must be installed on the computer in advance to establish a media device (MTP) connection.
For details, check the website below.
https://www.android.com/filetransfer/

■ **Disconnecting**
Check that no data is being transferred, and remove the microUSB cable (commercially available).
● Do not remove the microUSB cable (commercially available) while data is being transferred. Doing so may cause the data to become corrupted.

170

Using USB tethering

You can connect the unit and computer with a microUSB cable (commercially available) to connect your computer to the internet via the unit.

1 **Connected the unit to a computer with a microUSB cable (commercially available).**

2 **From the Home screen → [▦] → [⚙] → [More...].**

3 **[Tethering & portable hotspot] → turn the [USB tethering] checkbox on.**
  ● [⟱] is displayed in the status bar when USB tethering is enabled.
    [◉] is displayed when a portable Wi-Fi access point is configured.

  ● After using USB tethering, turn off the [USB tethering] checkbox.
  ● You cannot access data within the unit from a computer while using USB tethering.
  ● To connect your computer to the internet using USB tethering, see the latest information at
    https://www.android.com/tether .

171

Printing

Turn registered print services on/off or configure them.
This allows printing from anywhere when combined with a cloud-compatible printer.

● Printing services are not registered at the point of purchase.
Please download these separately.

1 **From the Home screen → [▦] → [⚙] → [Printing].**

2 **Select registered print service → turn on/off.**

Changing print service settings

1 **From the Home screen → [▦] → [⚙] → [Printing].**

2 **Select registered print service → [⋮] → [Settings].**

Printing

1 **[⋮] in each app → [Print].**

2 **Select printer type.**
● Selecting [Save as PDF] can save data as a PDF file.

3 **Configure print settings as required → [Print].**

172

16. Synchronize/Backup/Reset

Synchronize and delete accounts

Configure synchronization settings for each account, such as calendars and contacts.
● For details on how to add accounts, refer to **P31**.

Configuring synchronization items

1 **From the Home screen → [▦] → [⚙].**

2 **Tap account type → tap account to configure.**

3 **Turn on the checkbox for the data to synchronize.**

Synchronizing manually

1 **From the Home screen → [▦] → [⚙].**

2 **Tap account type → tap account to configure.**

3 **[⋮] → [Sync now].**

Deleting an account

1 **From the Home screen → [▦] → [⚙].**

2 **Tap account type → tap the account to delete.**

3 **[⋮] → [Remove account] → [Remove account].**

Backup

Backup app data, settings and other items to a Google server.

1 **From the Home screen → [ ] → [ ] → [Backup & reset].**

2 **Turn the [Back up my data] checkbox on.**

Reset

Reset the unit to factory default settings.
● Resetting deletes all saved data, downloaded apps and other content.

1 **From the Home screen → [ ] → [ ] → [Backup & reset].**

2 **[Factory data reset] → [Reset phone] → [Erase everything].**

174

17. Security

Screen lock

Configure the screen lock when recovering from sleep mode or other actions.
Configuring the screen lock prevents unauthorized access to the unit.

Configuring the screen lock

1 **From the Home screen → [ ] → [ ] → [Security] → [Screen lock].**

2 **Select the screen unlock method.**

[None]	Does not set the screen lock.
[Slide]	Release the screen lock by sliding [ ] to the guide (white line on the outer circumference).
[Face Unlock]	Release the screen lock using facial recognition.
[Pattern]	Release the screen lock by connecting 4 or more points.
[PIN]	Release the screen lock by entering a 4 to 16 digit number.
[Password]	Release the screen lock by entering a 4 to 16 alphanumeric character password.

3 **Save an unlock pattern following the screen prompts.**

● Attempting to unlock the screen lock 5 times will disable operations for 30 seconds.
● Emergency calls can be made even when the screen is locked, by tapping [EMERGENCY CALL].

Changing the screen lock

1 **From the Home screen → [ ] → [ ] → [Security] → [Screen lock].**

2 **Unlock the screen using the configured method.**

3 **Select the unlock method.**

4 **Save an unlock pattern following the screen prompts.**

SIM card lock

The microSIM card can be locked to prevent unauthorized access to the unit.
Once the SIM card is locked, the SIM PIN code must be entered every time the unit is turned on.

● Incorrectly entering the SIM PIN code 3 times locks the SIM PIN code and it can no longer be used.
  If this happens, enter a PUK (Personal Unblocking Key) to unlock the SIM PIN code.
● For details on the PIN code/PUK code, contact your mobile network operator.

Locking the microSIM card

1 **From the Home screen → [   ] → [   ] → [Security] → [Set up SIM/RUIM card lock].**

2 **Turn the [Lock SIM card] checkbox on.**

3 **Enter SIM PIN code → [OK].**

Changing the SIM PIN code

● The SIM PIN code can only be changed only when the microSIM card is locked.

1 **From the Home screen → [   ] → [   ] → [Security] → [Set up SIM/RUIM card lock].**

2 **Tap [Change SIM PIN].**

3 **Enter the current SIM PIN code → [OK].**

4 **Enter the new SIM PIN code → [OK].**

5 **Enter the new SIM PIN code again → [OK].**

18. Updates

System updates

If the software needs to be updated, update files can be obtained to update the unit.

● The unit must be connected to a network when you perform a system update. (Except when using [Update from microSD])
● Perform system update in an area with good reception without moving around.
● Perform system update with sufficient battery strength remaining.
● During system update, telephone calls, messages, various communication functions and other functions cannot be used.
● Update files cannot be obtained during international roaming, or when outside the sphere of communications.
● System update may take a while.
● Do not turn off the unit during system update. System update may fail.
● During system update, information specific to this unit (e.g. model, manufacturing number etc.) will be sent to the system update server of Panasonic.
  Panasonic will not use the information sent for purposes other than system update.
● The unit will restart after a system update.
  If a PIN code has been set, this has to be entered in the PIN code input screen displayed during start-up.
● Some of the settings may be initialized when a system update is performed. In this case, configure the settings one more time.
● You cannot return to the previous version if a system update is performed.
● System update can be carried out with data such as the contact list, pictures, mails, download data, etc. that is registered in the unit remaining intact. However, data protection may not be possible depending on the condition of the customer's terminal (malfunctions, damages, water ingress, etc.). We recommend that you take a backup copy of necessary data.
  However, please note that there is some data such as download data etc. for which backup copies cannot be taken.
● If system update fails, the unit may not start up and all functions indicated as [Software update failed.] may be disabled. Contact the dealer or Panasonic in this case.

When an update is required

[☐] is displayed on the notification panel if system update is required.

1 **Open the notifications panel → tap the notification.**

2 **Follow the guidance on the screen.**

Searching for software updates manually

Check whether or not software updates are required, and if so, download the update file over the network.

1 **From the Home screen → [ ] → [ ].**

2 **[About phone] → [System updates] → [Update over the network].**

3 **Follow the guidance on the screen.**

Updating using a microSD card

Download the update files using a computer and save them to a microSD card, then insert the microSD card into the unit to update the software.
● Save the update file in the "Download" folder of the microSD card.

1 **From the Home screen → [ ] → [ ].**

2 **[About phone] → [System updates] → [Update from microSD].**

3 **Follow the guidance on the screen.**

178

19. Settings list

Settings list

Tap Home screen → [⊞] → [⚙] to configure various settings on the unit.
Settings are grouped into the following categories.

[Wi-Fi]		Refer to **P34** for details.
[Bluetooth]		Refer to **P167** for details.
[Date usage]		The data usage management screen is displayed, and the mobile data network usage (as a guideline) is displayed for each period of time or app.
[More...]		
	[Airplane mode]	Disables all wireless features of the unit.
	[Default SMS app]	Configures the default SMS app.
	[NFC]	Refer to **P156** for details.
	[Android Beam]	Configure whether or not to transfer app contents to other NFC-compatible devices.
	[Tethering & portable hotspot]	Refer to **P37**, **P171** for details.
	[VPN]	Refer to **P36** for details.
	[Mobile networks]	Refer to **P32** for details.
	[Mobile plan]	Check your mobile plan.
	[Cell broadcasts]	Configures emergency warnings.
[Sound]		
	[Volumes]	Refer to **P30** for details.
	[Phone ringtone]	Refer to **P30** for details.
	[Vibrate when ringing]	Refer to **P30** for details.
	[Default notification sound]	Configures the default notification sound.
	[Dial pad touch tones]	Turns the telephone touch tones on/off.
	[Touch sounds]	Refer to **P30** for details.
	[Screen lock sound]	Configures whether a sound is emitted when locking/unlocking the screen.
	[Vibrate on touch]	Refer to **P30** for details.
	[Hearing aids]	Refer to **P30** for details.

[Display]

	[Brightness]	Refer to **P31** for details.
	[Display adjustment]	Adjusts the display color tones.
	[Wallpaper]	Configures the wallpaper of the Home screen.
	[Auto-rotate screen]	Automatically switches from vertical/horizontal display to suit the orientation of the unit.
	[Sleep]	Refer to **P31** for details.
	[Daydream]	Configures whether or not to display the screen saver when sleep mode starts while charging.
	[Font size]	Configures the font size.
	[Pulse notification light]	Configure whether or not to flash the ringtone lamp when there is a missed call or new email.
	[Cast screen]	Configure settings to output the unit's video or audio to external devices.

[Storage]	Displays storage details.
[Battery]	Displays battery usage status.
[Apps]	Displays the app management screen. Deletes or performs other operations on app data or cache.

[Location]

	[Mode]	Refer to **P154** for details.
	[Google Location Reporting]	Configures Google location information.

[Security]

	[Screen lock]	Refer to **P175** for details.
	[Improve face matching]	Add face shots to improve the recognition accuracy. ● Displayed when [Screen lock] is set to [Face Unlock].
	[Liveness check]	Sets whether a blink is required when unlocking. ● Displayed when [Screen lock] is set to [Face Unlock].
	[Make pattern visible]	Configures whether or not a finger trace is displayed on the screen when unlocking the screen with a pattern. ● Displayed when [Screen lock] is set to [Pattern], or when the spare unlocking method under [Face Unlock] is set to [Pattern].
	[Automatically lock]	Configures the time before the screen locks when automatically entering sleep mode. ● Displayed when [Screen lock] is not set to [None] or [Slide].
	[Power button instantly locks]	Configures whether or not the screen is locked immediately when pressing the [⏻]. ● Displayed when [Screen lock] is not set to [None] or [Slide].
	[Enable widgets]	Enables the screen lock with the widget.
	[Owner info]	Configures whether or not to display owner information in the locked screen.

[Encrypt phone]	Encrypts all data on the unit.
[Set up SIM/RUIM card lock]	Refer to **P176** for details.
[Make passwords visible]	Configures whether or not to display characters when entering the password.
[Device administrators]	Enables/disables administrator rights of the unit.
[Unknown sources]	Refer to **P166** for details.
[Verify apps]	Displays a warning before installing apps that may be harmful to the unit, or prohibits installations.
[Storage type]	Displays the storage type.
[Trusted credentials]	Enables/disables or deletes certificate settings.
[Install certificates]	Installs an encrypted certificate.
[Clear credentials]	Deletes all authentication information, certificates and VPN settings from the authentication information storage.

[Language & input]

[Language]	Refer to **P31** for details.
[Spell checker]	Enables/disables the spell checker.
[Personal dictionary]	Saves words to the word list.
[KEYBOARD & INPUT METHODS]	Enables/disables the keyboard installed on the unit and configures its various settings. For details, refer to **P28**.
[Voice Search]	Configures voice searches.
[Text-to-speech output]	Configures the default text-to-speech output.
[Pointer speed]	Configures the pointer speed.

[Backup & reset]

[Back up my data]	Refer to **P174** for details.
[Backup account]	Configures the account to use for backing up data.
[Automatic restore]	Restores backed up settings and data when re-installing apps.
[Factory data reset]	Refer to **P174** for details.

[Add account]	Refer to **P31** for details.

[Date & time]

[Automatic date & time]	Refer to **P29** for details.
[Automatic time zone]	
[Set date]	
[Set time]	
[Select time zone]	
[Use 24-hour format]	Refer to **P29** for details.
[Choose date format]	Switches the date display method.

[Power]

[Fast Start-up]	Increases the start speed within 24 hours after turning the unit off.
[Starting the Camera]	Starts the camera in fast startup.

[Accessibility] — The unit provides a variety of settings that allow you to change how the user and unit interact.

[TalkBack]	Turns [TalkBack] on/off.
[Captions]	Configures subtitles.
[Magnification gestures]	Configures zoom in/zoom out of the screen when tapping the screen 3 times in a row.
[Large text]	Increases the text size.
[Power button ends call]	Allows the call to be ended by pressing the [(¹)].
[Auto-rotate screen]	Automatically switches from vertical/horizontal display to suit the orientation of the unit.
[Speak passwords]	Reads out the entered password.
[Accessibility shortcut]	Allows you to quickly enable accessibility features.
[Text-to-speech output]	Configures the text-to-speech output settings.
[Touch & hold delay]	Configures the time required for tapping and holding screen.

[Printing] — Refer to **P172** for details.

[About phone]

[System updates]	Refer to **P177** for details.
[Device Error Infomation]	Configures diagnosis information.
[Status]	Checks the remaining battery level, telephone number and other information.
[Legal information]	Checks the open source license or Google terms of use.
[Model number]	Checks the model number.
[Android version]	Checks the software version.
[Baseband version]	
[Kernel version]	
[Build number]	

182

20. **Others**

Troubleshooting

First, try out the following procedures **(P183−P188)**.

Cannot turn the unit on.

● Check that the battery is adequately charged.

Touch screen does not operate even when tapping it.

● Check that the unit is not in sleep mode.
→ If the unit is in sleep mode, press the [⏻] to release sleep mode.

The unit does not operate as expected.

● Check the following methods.
→ Turn the unit on/off.
→ Turn the unit off, remove the microSIM card and reinsert it.
→ Run an update. **(P177)**
→ With the microUSB terminal disconnected from an AC adaptor or other devices, press and hold the [⏻] for approximately 10 seconds until the unit restarts. The unit vibrates as it restarts.
→ Reset the unit. **(P174)**

Forgot how to release the screen lock.

● If [Pattern] has been set as the method to release the screen lock:
→ If a Google account has been configured, the [FORGOT PATTERN] is displayed if the incorrect pattern is entered 5 times.
After tapping [FORGOT PATTERN], enter the Google account and password to release the lock.
● If a Google account has been configured, the lock can be released by accessing the following site with a computer or other device.
→ https://www.google.com/android/devicemanager
After logging in, check the device to release and select [Lock], and follow the instructions on the screen to set a new password.
Entering the new password into the unit will release the lock.

Cannot charge the battery.

● Check the connection of the AC adaptor. **(P14)**
● Check the surrounding temperature.

The battery charging icon is not displayed.

● It takes time from when charging starts to when the icon is displayed.

The battery usage time is short.

● The usage time becomes shorter due to various factors, including how often the unit is used, the configuration settings in the unit, the network status, and the apps used.
→ In such cases, please check the [Battery] setting (From the Home screen → [▦] → [✦] → [Battery]) to determine what installed component is consuming the most power.

The unit becomes warm.

● The unit may become warm during use or while charging. This is not a problem from an operational perspective, and should be left as is.

Cannot use voice calls or LTE networks.

- Check to see if the microSIM card is inserted correctly.
- Check the terms and conditions of your SIM card.
- Check to see if the unit is connected to the mobile network correctly.
- High speed LTE networks may not be available in some countries and regions.
- ✳ When you make a voice call or connect to a packet data network with the SIM card, charges imposed by your mobile network operator may apply. For details, contact the operator.

Cannot receive calls.

- The reception may be weak in the area.
    - → Move to another area.
- Check that you are connected properly to the mobile network.

Calls are being dropped.

- The reception may be weak in the area.
    - → Move to another area.

Cannot make calls to numbers in contacts.

- Check that the correct number has been saved in contacts.

Can only make emergency calls.

- Check that the microSIM card has been inserted correctly.
- Check that you are connected properly to the mobile network.

Other party cannot hear your voice.

- Check that mute has not been enabled.
- Check that the mouthpiece has not been covered up.
- Check that you are not talking too far from the mouthpiece during a call.
- If you are using a headset (optional), check that it is connected properly to the unit.
- The reception may be weak in the area.
    - → Move to another area.

Cannot open received files.

- Check that the file is supported by the unit.
- The memory capacity of the unit may be full.
    - → Check the available capacity.

Cannot play music.

- Check that the file is supported by the unit.

Cannot connect to the internet.

- Check whether the access points specified by the mobile network operator have been correctly set up.
- Check that the unit is connected to a Wi-Fi access point.
- Check that the correct time has been set for the unit, then turn on the unit.

The microSIM card is locked.

● If [Set up SIM/RUIM card lock] has been configured, the microSIM card is locked when the unit is turned on.
  → Enter SIM PIN code.

The microSIM card is PUK-locked.

● Contact your mobile network operator.

The screen is no displayed.

● Check that an object is not placed near the proximity sensor, or that the proximity sensor is not covered.
● Check that there are no protective films or covers interfering with the touch screen's functionality.

No sound is heard.

● Check that the unit is not in silent mode.
● Check that the volume has not been turned down.

Connected Bluetooth devices do not operate.

● Check that the Bluetooth device is turned on.
● Check that the distance between the unit and the Bluetooth device is within 10 m (33 feet).
● Refer to the operating instructions of the Bluetooth device.

■ Recording

The picture cannot be recorded.

● Is there any memory remaining on the built-in memory or the microSD card?
  → Delete the pictures which are not necessary to increase available space in the memory. **(P126)**
● You may not be able to record for a short while after turning this unit on when using a large capacity microSD card.

The recorded picture is whitish.

● Picture might look whitish when lens gets dirty with fingerprints or similar.
  → If the lens is dirty, lightly wipe the surface with a soft, dry cloth.

The recorded picture is too bright or dark.

● Check that the exposure is correctly compensated. **(P86)**
● Is the AE Lock **(P117, 121)** applied incorrectly?

Multiple pictures are taken at one time.

● Cancel the following settings:
  – [Burst]/[Auto Bracket] **(P96)**

The subject is not focused properly.

● The subject is beyond the focus range of the unit.
● There is camera shake (jitter) or the subject is moving slightly.
● Is the AF Lock **(P117, 121)** applied incorrectly?

The recorded picture is blurred.

● The shutter speed becomes slower when pictures are taken in dark places so hold the unit firmly with both hands to take the pictures. **(P40)**
● When taking pictures at a slow shutter speed, use the Self-timer. **(P100)**

The recorded picture looks rough.
Noise appears on the picture.

● Try the following:
  → Take pictures in bright places.
  → Decrease the ISO sensitivity. **(P87)**
  → Increase the setting for [Noise Reduction] in [Photo Style] or lower the setting for each of the items other than [Noise Reduction]. **(P102)**
  → Is the [Picture Size] **(P104)** or the [Quality] **(P105)** set low?

Striping or flicker may appear under lighting such as fluorescent lighting and LED lighting fixture.

● This is characteristic of MOS sensors which serve as the unit's pickup sensors. This is not a malfunction.
  → Lowering the shutter speed may reduce the effect of the horizontal stripes.

The brightness or the hue of the recorded picture is different from the actual scene.

● When recording under fluorescent or LED lighting fixture, etc., increasing the shutter speed may introduce slight changes to brightness and color. These are a result of the characteristics of the light source and do not indicate a malfunction.
● When recording subjects in extremely bright locations or recording under fluorescent lighting, LED lighting fixture, mercury lamp, sodium lighting, etc., the colors and screen brightness may change or horizontal striping may appear on the screen.
● Color in recorded images may be uneven depending on the light source or subject. These are a result of the characteristics of the light source and do not indicate a malfunction.

Reddish horizontal streaks appear on the monitor during recording.

● This is characteristic of MOS sensors which serve as the unit's pickup sensors. It appears when the subject has a bright part. Some unevenness may occur in the surrounding areas, but this is not a malfunction.
  It is recorded in still pictures or motion pictures.
● It is recommended that when you take pictures you take care not to expose the screen to sunlight or any other source of strong light.

Subject cannot be locked.
(AF tracking not possible)

● Set the AF area to the distinctive color of the subject if there is a part that is different from the surrounding color. **(P107)**

Recording motion pictures is not possible.

● You may not be able to record for a short while after turning this unit on when using a large capacity microSD card.

Motion picture recording stops in the middle.

● Depending on the [Rec Quality] of a motion picture, the speed class rating required for the microSD card differs. Use a microSD card that meets the rating. For details, refer to "About the motion picture recording and SD speed class" on **P11**.
● When a microSD card with a slow data writing speed is used, motion picture recording may stop midway.
  → For microSD cards which have been repeatedly recorded and deleted, or microSD cards which have been formatted by PCs or other devices, we recommend that backup copies of the files inside be made before they are deleted.

When recording a motion picture, the screen may go dark.

● When recording a motion picture, the screen may go dark after a certain period to reduce battery consumption, but this will not affect the recorded motion picture.

The screen may be blacked out momentarily, or the unit may record noise.

● Depending on the environment at the time of motion picture recording, the screen may be blacked out momentarily or the unit may record noise due to static electricity or powerful electromagnetic waves (radio towers, high voltage power lines, etc.).

Striping or flicker appears under lighting such as a fluorescent or LED lighting fixture.
The subject appears distorted.

● This is characteristic of MOS sensors which serve as the unit's pickup sensors.
This is not a malfunction.
When a subject moves across the image very fast, the subject may appear slightly distorted.

A clicking sound is recorded in the motion pictures.
The recorded sound is very quiet.

● This unit automatically adjusts the aperture during motion picture recording. At such times, a clicking sound is heard, and this sound may be recorded on the motion pictures. This is not a malfunction.
● The operational sound of the zoom or button operation may be recorded when it is operated during the recording of a motion picture.
● While recording motion pictures, plugging the aperture of the microphone with a finger may reduce the level of audio recording or audio may not record at all. Also be careful because the operation sound of lenses can easily be recorded at this time.

The flash is not activated.

● Is the flash setting set to [⚡]?
→ Change the flash setting. **(P81)**
● When [Silent Mode] is set to [ON], the flash is not activated. **(P116)**
→ Set [Silent Mode] to [OFF].

The screen is too bright or dark.

● Check [High Brightness Mode] setting. **(P122)**

It may flicker for an instant or the brightness of the screen may change significantly for an instant.

● This occurs due to the aperture of the lens changing when the shutter button is pressed halfway, or when the brightness of the subject changes. This is not a malfunction.

Black, white, red, blue and green dots appear on the screen.

● This is not a malfunction.
These pixels do not affect the recorded pictures.

Noise appears on the screen.

● In dark places, noise may appear to maintain the brightness of the screen.

There is a sound from lens unit.

● This sound is made when the lens is moved or the aperture adjusted e.g. when a camera function is started, and it is not a malfunction.
● This sound is made during automatic aperture adjustment due to changes in the brightness e.g. when the unit is moved, and it is not a malfunction.

The lamp may light up if the shutter button is pressed halfway.

● The AF Assist Lamp **(P118)** lights up to make focusing easier in dark places.

The AF Assist Lamp does not turn on.

● Is [AF Assist Lamp] set to [ON]? **(P118)**
● The AF Assist Lamp does not turn on in bright places.

Cautions for Use

■ About the operating environment

Do not leave the unit in the following areas, as there is the risk of damage.

● Near electronic products. The image may become distorted, and static may be introduced.

● Extremely hot or cold areas.

■ Optimal use of this unit

● **Do not drop or subject the unit to shock when carrying it around.**

● **Do not place the unit in the back pocket of your trousers.**
  Doing so may cause damage to the unit when sitting down.

● **This unit is not dust/splash/water proof.**
  Avoid using this unit in places with a lot of dust, water, sand, etc.
  Liquid, 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 also become irreparable.
  – 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 at the beach.

● **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 smartphones or other 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 affected and does not operate correctly, disconnect the AC adaptor, reconnect it and turn on the unit.

● **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.

● **Do not connect the unit to products or parts that it is not compatible with.**

● **Do not paint the unit, or cover it with thick stickers.**
  Doing so may interfere with correct operation.

● **Do not spray this unit with insecticides or volatile chemicals.**
  – If the unit is sprayed with such chemicals, the body of the unit may be damaged and the surface finish may peel off.

● **Do not keep rubber or plastic products in contact with this unit for a long period of time.**

● **This unit is equipped with GPS functionality, however must not be used as aircraft, vehicle or personal navigation device, or precision surveying device.**
  Panasonic shall not be liable for all damages suffered as a result of inaccurate measurements and information that are caused by external factors (including running out of battery power) e.g. use of this unit outside of its intended purpose, or malfunctions and wrong operations of this unit etc.

● **When the unit OS is updated, the functions or operation procedures of the unit may change, or certain apps may cease operating.**

● **Check the safety and security of software before downloading or installing software.**
  There is the risk of damage or information leakage due to malware or viruses, and the volume of the unit may increase significantly.

189

■ About the lens, screen

- **If there is liquid or sand on the unit, wipe it with a soft, dry cloth.**
- **If the lens is dirty, lightly wipe the surface with a soft dry cloth.**
- **Do not press the lens with excessive force.**
- **Do not leave the unit with the lens facing the sun as rays of light from the sun may cause it to malfunction. Also, be careful when placing the unit outside or near a window.**
- **Do not place objects on top of the screen, or press sharp objects against it.**
  Doing so may scratch the surface of the screen.
- **About Condensation (When the lens or screen is fogged up)**
  Condensation occurs when the ambient temperature or humidity changes. Be careful of condensation since it causes lens and screen stains, fungus and malfunction.
  If condensation occurs, turn the unit off and leave it for about 2 hours. The fog will disappear naturally when the temperature of the unit becomes close to the ambient temperature.

■ When using peripheral devices

To prevent damage to peripheral devices, adhere to the following points.
**Also refer to the operating instructions of peripheral device for details.**
- Use peripheral devices that comply with the specifications of the unit.
- Check the shape and direction of the connector and connect it correctly.
- If a device has difficulty connecting, do not force the terminal, but instead check the shape, orientation, pin layout or other features of the terminal.

■ Removing the lens front ring

Remove lens front ring Ⓐ that is attached to the unit.
- End the camera function in advance.
- As shown in the right figure, turning the lens front ring together with the surrounding control ring makes it easier to remove.
- Take care not to lose the lens front ring.

Ⓐ
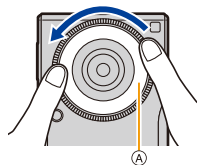
■ Cleaning

When cleaning the unit, remove the AC adaptor cable terminal from the unit and wipe the unit with a dry, soft cloth.
- When the unit is soiled badly, it can be cleaned by wiping the dirt off with a wrung wet cloth, and then with a dry cloth.
- Do not use solvents such as benzine, thinner, alcohol, kitchen detergents, etc., to clean the unit, since it may deteriorate the external case or the coating may peel off.
- When using a chemical cloth, be sure to follow the accompanying instructions.

■ Beware of copyright

Material or sounds that you have recorded may enjoyed personally, but cannot be used without the permission of the right holder in accordance with the Copyright Act.
Take note that recording or some material may be restricted, even if it is for personal enjoyment.

■ About the personal information

- **Always check the recipient before sending messages or attachments, in order to prevent leakage of personal information.**
- **This unit is equipped with GPS. If enabled, the location information is embedded into photographs taken with this unit. If these photos are shared on social media, the location where the photos were taken can be determined. Where privacy is desired, GPS should be disabled.**
- **When uploading images on web services**
  Images may contain information that can be used for identifying individuals such as titles, recording dates, and location information. When uploading images on web services, check carefully, and then upload.

190

■ Battery

- **The battery is a consumable item.**
  While performance depends on the usage status of the unit, if the amount of time that the unit can be used becomes drastically shorter even after charging it, the battery may require replacement.
  Contact the dealer or Panasonic for replacement of the battery.
- **When the battery is replaced, your personal information will be deleted and settings will return to their default settings. We recommend that you take a backup copy of important information.**
- **The charging and usage time of the battery differs with the usage environment.**
- **Charge the battery in an area where the temperature is between 5 °C and 35 °C (41 °F and 95 °F).**
- **If the unit is not used for an extended period of time (1 month or more), discharge the battery (by using the unit) until the battery level is 30% to 40%, and store in a cool, dry place.**
- **The unit's battery is a rechargeable lithium ion battery.**
  Battery used for this unit
  Name: Lithium ion (Li-ion) rechargeable battery
  Nominal voltage: DC 3.8 V

■ Returning the unit for repair

- **Contact the dealer or Panasonic for repair.**
- **When the unit is repaired, your personal information will be deleted and settings will return to their default settings. We recommend that you take a backup copy of important information.**
- **To protect your personal information, before returning the unit for repair, reset it from the Home screen → [▦] → [⚙] → [Backup & reset] → [Factory data reset].**
  Refer to P174 for details.

■ Disposing of this unit

- **When disposing of the used product, perform [Factory data reset] to completely erase all data, remove the built-in battery and recycle it.**
  For details on how to remove the battery, see "Disposing of this unit" in the "Basic Owner's Manual".
- **Please make sure that the battery is disposed of at an officially assigned location, if there is one in your country.**
- **The unusable battery should be discarded in accordance with battery recycling laws. Call the RBRC hotline at 1-800-822-8837 for information.**

■ When used during overseas travel etc.

- **The usage of GPS etc., may be restricted depending on the country or the region.**
  This unit 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.

■ AC adaptor

- **Remove the AC adaptor from the power outlet after completely charging the battery in order to save power and maintain battery performance.**

■ About the microSIM card, microSD card

- **Do not place magnetic cards or devices with data stored magnetically near the microSIM card or microSD card.**
  Doing so may cause data loss on the microSIM card, microSD card or magnetic card, or affect the operation of the device.
- **Do not touch the connection terminals of the microSIM card or microSD card.**
- **Turn the unit off when removing the microSIM card or microSD card.**
  Failure to do so may cause data loss, or damage to the microSIM card, microSD card or the unit.
- **Making backups of the data stored on the microSIM card or microSD card is recommended to prevent data loss.**

- microSDXC Logo is a trademark of SD-3C, LLC.
- Adobe is a trademark or registered trademark of Adobe Systems Incorporated in the United States and/or other countries.
- Windows and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Mac and Mac OS are trademarks of Apple Inc., registered in the U.S. and other countries.
- Google, Android, Google Play and other marks are trademarks of Google Inc.
- The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Panasonic Corporation is under license. Other trademarks and trade names are those of their respective owners.
- The Wi-Fi CERTIFIED™ Logo is a certification mark of Wi-Fi Alliance®.
- The Wi-Fi Protected Setup™ Identifier mark is a certification mark of Wi-Fi Alliance®.
- "Wi-Fi®" is a registered trademark of Wi-Fi Alliance®.
- "Wi-Fi Protected Setup™", "WPA™", and "WPA2™" are trademarks of Wi-Fi Alliance®.
- Other names of systems and products mentioned in these instructions are usually the registered trademarks or trademarks of the manufacturers who developed the system or product concerned.

- This product is licensed under the MPEG-4 patent portfolio license and AVC patent portfolio license for the personal use of a consumer or other uses in which it does not receive remuneration to (i) encode video in compliance with the MPEG-4 Visual Standard and AVC Standard ("MPEG-4/AVC Video") and/or (ii) decode MPEG-4/AVC Video that was encoded by a consumer engaged in a personal activity and/or was obtained from a video provider licensed to provide MPEG-4/AVC Video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA, L.L.C. See http://www.mpegla.com .
- This product is manufactured or sold under license from InterDigital Technology Corporation.

- This product contains open source software licensed in compliance with GNU General Public License, Version 2 (GPL v2), GNU Lesser General Public License (LGPL), and other licenses.
  The program is free software; you can copy it, redistribute it, and modify it under the terms of the GPL v2 or LGPL as published by the Free Software Foundation.
  At least three (3) years from delivery of products, Panasonic Corporation will give to any third party who contacts us at the contact information provided below, for a charge no more than our cost of physically performing source code distribution, a complete machine-readable copy of the corresponding source code covered under GPL v2 and LGPL.
  Contact Information
  oss-cd-request@gg.jp.panasonic.com
  Source code is also freely available to the public via the web site listed below.
  http://panasonic.net/avc/oss/index.html
  Please note that we cannot respond to any inquiries regarding the source code. You cannot download the source code from a mobile phone. Use your PC to download the source code.
  For more details on the relevant software (including license information of GPL v2 and LGPL), refer to the information included in your product on the following screen:
  From the Home screen → [▦] → [⚙] → [About phone] → [Legal information] → [Open source licenses].
- Furthermore, this product contains the following software:
  – the software developed by Apache Software Foundation and licensed under Apache License (v.2.0)
  – the software licensed under the Free Type Project License
  – ICU License-ICU 1.8.1 and later Copyright © 1995–2011 International Business Machines Corporation and others
  – the software licensed under the MIT-License
  – the software developed by the Independent JPEG Group
  For more details on the relevant software (including license information), follow these steps:
  From the Home screen → [▦] → [⚙] → [About phone] → [Legal information] → [Open source licenses].