Operating Instructions
for advanced features
Digital Camera

Model No.  DMC-TZ10/DMC-ZS7
           DMC-TZ8/DMC-ZS5

Before use, please read these instructions completely.
Quick start guide

The battery is not charged when the camera is shipped. Charge the battery and set the Clock before use.

When you do not use the card (optional), you can record or play back pictures on the built-in memory (→16).

1. Charge the battery

2. Insert the battery and the card

3. Turn on the power

4. Set REC/PLAY switch to 

5. Set the mode dial to 

6. Press the shutter button and take pictures

Press halfway (press lightly to focus) Press fully (press the button all the way to record)

To play back the pictures
1. Set REC/PLAY switch to .
2. Select the picture you want to view.

Press Previous Next

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Before use

Read first

■ Do a test shot first!
  Check first to see if you can take pictures and record sounds (motion pictures/still pictures with audio) successfully.

■ We will not compensate for failed/lost recording or for direct/indirect damage.
  Panasonic will not provide compensation even if damage is caused by faults with camera or card.

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

■ Certain pictures cannot be played back.
  • Pictures edited on a computer
  • Pictures taken or edited on a different camera
    (Pictures taken or edited on this camera may also not be able to be played back on other cameras)

Software on the CD-ROM supplied
  The following actions are prohibited:
  • Making duplicates (copying) for sale or rent
  • Copying onto networks

To prevent damage, malfunctions, and faults

■ Avoid shocks, vibration, and pressure.
  • Avoid exposing the camera to strong vibration or shock; e.g. dropping or hitting the camera, or sitting down with the camera in your pocket. (Attach hand strap to avoid dropping camera. Hanging any items other than the supplied hand strap from the camera can apply pressure against it.)
  • Do not press the lens or the LCD monitor.

■ Do not get the camera wet or insert foreign objects.
  This camera is not waterproof.
  • Do not expose the camera to water, rain, or seawater.
    (If camera gets wet, wipe with a soft, dry cloth. Wring cloth thoroughly first if wet with seawater, etc.)
  • Avoid exposing lens and socket to dust or sand, and do not allow liquids to leak into gaps around buttons.

■ Avoid condensation caused by sudden changes in temperature and humidity.
  • When moving between places of different temperature or humidity, place camera into a plastic bag and allow to adjust to conditions before use.
  • If the lens clouds up, turn off the camera and leave for about two hours to allow camera to adjust to conditions.
  • If the LCD monitor clouds up, wipe with a soft, dry cloth.

LCD monitor characteristics
  Extremely high precision technology is employed to produce the LCD monitor screen. However there may be some dark or bright spots (red, blue or green) on the screen. This is not a malfunction.
  The LCD monitor screen has more than 99.99% effective pixels with a mere 0.01% of the pixels inactive or always lit. The spots will not be recorded on pictures on the built-in memory or a card.

Unit temperature
  The surface of the camera (especially the grip area, etc.), the battery and memory card may become warm during use. This does not cause a problem with the performance or quality of the camera.

■ Lens
  • If lens is dirty:
    Images may appear slightly white if lens is dirty (fingerprints, etc.). Turn the power on, hold the extracted lens barrel with your fingers, and gently wipe the lens surface with a soft, dry cloth.
  • Do not leave the lens exposed to direct sunlight.

■ When using a tripod or unipod
  • Do not apply excessive force or tighten screws when they are crooked. (This may damage the camera, screw hole, or label.)
  • Ensure that the tripod is stable. (Refer to the tripod instructions.)

■ When transporting
  Turn off the camera.

Please also refer to ‘Usage cautions and notes’ (→163).

This manual provides operating instructions for the DMC-TZ10/DMC-ZS7/DMC-TZ8/DMC-ZS5.
The appearance, specifications, and screen display vary depending on the model that is used. The descriptions in this manual are primarily based on the DMC-TZ10/DMC-ZS7. Details about functions specific to each model are indicated by symbols added to headings or at the end of descriptions, etc.

(Example)
Functions available in the DMC-TZ10/DMC-ZS7 only: [TZ10/ZS7]
Functions available in the DMC-TZ8/DMC-ZS5 only: [TZ8/ZS5]
Before use (Continued)

About GPS TZ10 ZS7

■ About the camera’s location name information
Before using the camera, read “User License Agreement for Location Name Data”. (→165)

■ The GPS function can be used even when the camera’s power is off.
When [GPS SETTING] is [ON], the GPS function works to check your current position periodically even if the camera’s power is OFF.
• When turning off the camera’s power in an airplane, hospital or other restricted area, set [GPS SETTING] to ☑ or [OFF]. (→85)
• When [GPS SETTING] is [ON], power will drain from the battery even if the camera’s power is OFF.

■ Recording location information
• Recording location names and landmarks (such as building names) are current as of February 2010. These will not be updated.
• Depending on the country or area, limited location name and landmark information may be available.

■ Positioning
Because the positions of the GPS satellites are constantly changing, depending on the recording location and conditions, it may not be possible to position such satellites accurately, or positioning discrepancy may occur.

■ When using in another country
• GPS may not work in China or in the border regions of countries neighboring China. (Current as of February 2010)
• Some countries or regions may regulate the use of GPS or related technology. Because this camera has a GPS function, before taking it into another country, check with the embassy or your travel agency whether there are any restrictions on bringing cameras with a GPS function.

Optional accessories
• Cards are optional. You can record or play back pictures on the built-in memory when you are not using a card. (→16)
• Consult the dealer or your nearest servicentre if you lose the supplied accessories. (You can purchase the accessories separately.)

Check that all the accessories are included before using the camera.
• The accessories and their shape will differ depending on the country or area where the camera was purchased.
For details on the accessories, refer to Basic Operating Instructions.
• Battery Pack is indicated as battery pack or battery in the text.
• Battery Charger is indicated as battery charger or charger in the text.
• ‘PHOTOfunSTUDIO 5.1 HD Edition’ is included with the DMC-TZ10/DMC-ZS7 model.
• ‘PHOTOfunSTUDIO 5.0’ is included with the DMC-TZ8/DMC-ZS5 model. In this manual, ‘PHOTOfunSTUDIO’ refers to either version of the software.
• Please dispose of all packaging appropriately.

Standard Accessories

Names of parts

Cursor button

Up cursor button (▲)
• Exposure Compensation (→53)
• Auto Bracket (→54)
• Multi Aspect (→55)
• White Balance fine adjustment (→98)

Left cursor button (◄)
• Self-timer (→52)

Right cursor button (►)
• Flash (→47)

Down cursor button (▼)
• Macro Mode (→49)
• AF Lock (AF Tracking) (→36, 99)

In this manual, the button that is used is shaded or indicated by ▲ ◄ ◄ ► .
Charging battery

Always charge before first use! (not sold pre-charged)

About batteries that you can use with this unit

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

- Use the dedicated charger and battery.
- The camera has a function for distinguishing batteries which can be used safely. The dedicated battery supports this function. The only batteries suitable for use with this unit are genuine Panasonic products and batteries manufactured by other companies and certified by Panasonic. (Batteries which do not support this function cannot be used). Panasonic cannot in any way guarantee the quality, performance or safety of batteries which have been manufactured by other companies and are not genuine Panasonic products.

1 Insert the battery terminals and attach the battery to the charger
Ensure [LUMIX] faces outwards.

2 Connect the charger to the electrical outlet

3 Detach the battery after charging is completed

The appearance, specifications, and screen display vary depending on the model that is used.
Guidelines for number of recordable pictures and recording time

Figures may be reduced if flash, zoom, or [LCD MODE] are used frequently; or in colder climates.
The number of recordable pictures and the recording time will also be reduced if the GPS function is operating. [TZ10/TZ57]

### Recording still pictures

<table>
<thead>
<tr>
<th>Number of recordable pictures</th>
<th>Approx. 300 pictures</th>
<th>Approx. 340 pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recording time</td>
<td>Approx. 150 min</td>
<td>Approx. 170 min</td>
</tr>
</tbody>
</table>

#### Recording conditions by CIPA standard

- CIPA is an abbreviation of [Camera & Imaging Products Association].
- [PROGRAM AE] Mode
- [GPS SETTING] is set to [OFF] [TZ10/TZ57]
- Temperature: 23 °C/Humidity: 50% when LCD monitor is off.
- Using a Panasonic SD Memory Card (32 MB).
- Using the supplied battery.

- Starting recording 30 seconds after the camera is turned on. (When the Optical Image Stabilizer function is set to [AUTO].)
- Recording once every 30 seconds with full flash every second recording.
- Rotating the zoom lever from Tele to Wide or vice versa in every recording.
- Turning the camera off every 10 recordings and leaving it until the temperature of the battery decreases.

Number reduced if intervals are longer – e.g. to approx. one quarter for 2-minute intervals under the above conditions.

#### Recording motion pictures [TZ10/TZ57]

<table>
<thead>
<tr>
<th>Available continuous recording time</th>
<th>About 100 minutes</th>
<th>About 100 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual available recording time</td>
<td>About 50 minutes</td>
<td>About 50 minutes</td>
</tr>
</tbody>
</table>

#### Recording conditions

- Temperature 23°C, humidity 50%
- [PROGRAM AE] Mode
- [GPS SETTING] is set to [OFF]
- Picture quality settings: [AVCHD Lite] [SH]/[MOTION JPEG] [HD]
- A maximum of approx. 2 GB of continuous motion picture can be recorded in [MOTION JPEG] format. (Even if there is more than 2 GB of available space on the card, the available recording time will be calculated for a maximum of 2 GB.)
- The time you can actually record when repeatedly turning the power on and off, starting and stopping recording and using zoom.

### Viewing pictures

<table>
<thead>
<tr>
<th>Playback time</th>
<th>About 300 minutes</th>
</tr>
</thead>
</table>

The number of recordable pictures or available recording time may vary slightly according to battery and usage conditions.

- The time required for charging varies depending on conditions of battery usage. Charging takes longer at high or low temperatures and when the battery has not been used in some time.
- Battery will be warm during charging and for some time thereafter.
- Battery will run out if not used for long periods of time, even after being charged.
- Charge the battery with the charger indoors (10 °C - 35 °C).
- 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.
- Frequently charging up battery is not recommended. (Frequently charging battery reduces maximum usage time and can cause battery to expand.)
- Do not disassemble or modify the charger.
- If available battery power is significantly reduced, battery is reaching end of lifespan. Please purchase a new battery.
- The battery charger is in the standby condition when the AC power is supplied. The primary circuit is always “live” as long as the battery charger is connected to an electrical outlet.
- When charging:
  - Remove any dirt on connectors of charger and battery with dry cloth.
  - Keep at least 1 m (3.28 feet) away from AM radio (may cause radio interference).
  - Noises may be emitted from inside of charger, but this is not a fault.
  - After charging, remove the charger from the wall socket, and then remove the battery from the charger (up to 0.1 W consumed if left in place).
- Do not use a damaged or dented battery (especially connectors), e.g. by dropping (can cause faults).
Inserting and removing the card (optional)/the battery

Set the camera ON/OFF switch to OFF
Slide to the [OPEN] position and open the lid

Release lever

.Set the camera ON/OFF switch to OFF
Slide to the [OPEN] position and open the lid

[OPEN] [LOCK]

Completely insert battery and card
• Battery: Push in until the lever is locked
• Memory card: Push in until it clicks

Close lid
Slide to the [LOCK] position.

■ To remove
• To remove battery:
  move lever in direction of arrow.
• To remove card:
  press down in centre.

Always use genuine Panasonic batteries.
Always use a genuine Panasonic AC adaptor (optional).
If you use other batteries, we cannot guarantee the quality of this product.
Use the AC adaptor and DC coupler specifically for this camera. Using other adaptors or couplers could cause camera failure.
Remove battery from camera after use.
• Store the battery in battery carrying case (supplied).
• If difficult to open, with the card/battery door open, press the coupler cover from the inside to open it.
To remove battery:
• To remove battery:
  move lever in direction of arrow.
• To remove card:
  press down in centre.

Always use genuine Panasonic batteries.
If you use other batteries, we cannot guarantee the quality of this product.
Remove battery from camera after use.
• Store the battery in battery carrying case (supplied).
To remove the card or battery, turn the camera off and wait until the LUMIX indicator on the LCD monitor goes off. (Failure to wait may cause the camera to malfunction and may damage the card or recorded data.)
Keep the Memory Card out of reach of children to prevent swallowing.

Using the DC coupler (optional) instead of battery

By using the AC adaptor (optional) and DC coupler (optional), you can record and playback without worrying about the remaining battery charge.
The optional DC coupler can only be used with the designated Panasonic AC adaptor.

Insert DC coupler instead of battery (previous page)

Open DC coupler cover
• If difficult to open, with the card/battery door open, press the coupler cover from the inside to open it.

Plug AC adaptor into power outlet

Connect AC adaptor to DC IN terminal of DC coupler

Always use a genuine Panasonic AC adaptor (optional).
Use the AC adaptor and DC coupler specifically for this camera. Using other adaptors or couplers could cause camera failure.
It may not be possible to install camera on a tripod or unipod when the DC coupler is connected, depending on the type of tripod or unipod.
The camera cannot be stood up when the AC adaptor is connected. If you are leaving the camera on a surface as you work, it is recommended to set it on a soft cloth.
When the AC adaptor is connected, always remove the AC adaptor when opening the card/battery door.
Remove the AC adaptor and DC coupler when not in use and close the coupler cover.
Also read the AC adaptor and DC coupler operating instructions.
Inserting and removing the card (optional)/the battery (Continued)

**Picture save destination (cards and built-in memory)**

Pictures will be saved to a card if one is inserted, or to the built-in memory if not.

- **Built-in memory (approx. 15 MB)**
  - Pictures may be copied between cards and the built-in memory (→137).
  - The access time for the built-in memory may be longer than the access time for a card.
  - Clip board pictures (→110) are saved to built-in memory.
  - [QVGA] in [REC QUALITY] can only be available to record motion pictures in the built-in memory.

- **Compatible memory cards (optional)**
The following SD standard-based cards (Panasonic brand recommended)

<table>
<thead>
<tr>
<th>Type of Card</th>
<th>Capacity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD memory cards</td>
<td>8 MB – 2 GB</td>
<td>• Can be used with devices compatible with the respective formats.</td>
</tr>
<tr>
<td>SDHC memory cards</td>
<td>4 GB - 32 GB</td>
<td>• Before using SDXC memory cards, check your computer and other devices support this type of card.</td>
</tr>
<tr>
<td>SDXC memory cards</td>
<td>48 GB - 64 GB</td>
<td>• Cards in capacities not listed at left are not supported.</td>
</tr>
</tbody>
</table>

Please reformat the card with this camera if it has already been formatted with a computer or another device. (→28)

- If the write-protect switch is set to ‘LOCK’, the card cannot be used to record or delete pictures, and it cannot be formatted.
- It is recommended that you copy important pictures to your computer (as electromagnetic waves, static electricity, or faults may cause data to be damaged).

**Remaining battery and memory capacity**

- **Remaining battery** (only when using battery)
  - (flashes red)
    - If the battery mark flashes red, recharge or replace battery. (→11)
  - Displayed when no card is inserted (pictures will be saved to built-in memory) (TZ10 [257] →174, TZ8 [255] →176)

- **When in operation**
  - (Card) or (Built-in-memory) are illuminated red.
  - While the light remains lit, an operation is taking place, such as picture writing, reading, deletion or formatting. While the light is lit, do not turn off the power or remove battery, card, AC adaptor (optional) or DC coupler (optional) (this can cause data loss or damage). Do not subject the camera to vibrations, impact, or static electricity. Should any of these cause camera operation to be terminated, attempt to perform the operation again.

**Setting the Clock**

(The Clock is not set when the camera is shipped.)

1. **Turn on the power**
   - The power is turned on.
   - If the language select screen is not displayed, proceed to step 4.

2. **Press [MENU/SET] while the message is displayed**

3. **Press ▲▼ to select the language, and press [MENU/SET]**
   - The [PLEASE SET THE CLOCK] message appears. (This message does not appear in Playback Mode.)

4. **Press [MENU/SET]**

5. **Press ◄► to select the items**
   - (year, month, day, hour, minute, display order or time display format), and press ▲▼ to set

6. **Press [MENU/SET]**

7. **Press [MENU/SET]**
   - To return to the previous screen, press  回 .

(Continued on the next page)
Setting the Clock (Continued)

8. If automatically correcting time of day, select [YES]
   • To manually set date and time → select [NO].
   • To return to the previous screen, press $.  

9. When [PLEASE SET THE HOME AREA] is displayed, press [MENU/SET]
   Set your home area

10. Difference from GMT (Greenwich Mean Time)

About automatic time correction
   (→89)

To change time setting
When resetting date and time, select [CLOCK SET] from the [SETUP] menu.
• Clock settings will be saved for approx. 3 months even after battery is removed, provided a fully-charged battery was installed in the camera for 24 hours beforehand.
• Using the GPS function, you can make settings to automatically correct the current time.  (→89)

1. Select [CLOCK SET] from the [REC] menu or [SETUP] menu (→22)
2. Set the date and time (Perform steps 5 and 6 on the previous page.)
3. Press [MENU/SET]

To set local time at travel destination
[WORLD TIME] (→93)

1. Turn on the power
   The power is turned on.
   If the language select screen is not displayed, proceed to step 4.

2. Press [MENU/SET] while the message is displayed
3. Press ▲▼ to select the language, and press [MENU/SET]
   • The [PLEASE SET THE CLOCK] message appears. (This message does not appear in Playback Mode.)
4. Press [MENU/SET]
5. Press  ► to select the items
   (year, month, day, hour, minute, display order or time display format), and press ▲▼ to set
   • Clock settings will be saved for approx. 3 months even after battery is removed, provided a fully-charged battery was installed in the camera for 24 hours beforehand.
6. Press [MENU/SET]
7. Confirm the setting and press [MENU/SET]
   • To return to the previous screen, press $.
   Turn on the power again and check the time display. (Time and date can be displayed by pressing [DISPLAY] several times.)

Failure to set the date and time will cause the date/time to be improperly printed when printing pictures at a digital photo centre or when using [TEXT STAMP].
Year can be set between 2000 and 2099.
After the time has been set, the date can be printed correctly even if the date is not displayed on the camera screen.
Setting the menu

Refer to the following procedures to operate menus such as the [SETUP] menu, [REC] menu, [TRAVEL MODE] menu and [PLAYBACK] menu.


1. Bring up the menu

   ![Image of menu button](image)

   - Each item’s background colour changes when it is selected.

2. Select the [SETUP] menu

   
   ①Highlight
   
   ②Select and return to menu items

   ![Image of menu options](image)

   - Background colour changes

3. Select the item

   ![Image of menu options](image)

   - Page (Zoom lever can be used to switch to next screen.)

4. Select the setting

   ![Image of menu options](image)

   - Item

5. Close the menu

   • When the REC/PLAY switch is set to , menu can be closed with a half-press of the shutter button.

   ![Image of menu options](image)

   - Settings display may vary according to items.
   - Menu items displayed vary according to mode dial setting.

### Menu type

- **[REC] menu** (REC/PLAY switch: )
  - Changing picture preferences (→95 - 109)
    - Displays settings such as White Balance, Sensitivity, Aspect Ratio, and Picture Size.

- **[MOTION PICTURE] menu** (REC/PLAY switch: )
  - Categorize your travel pictures (→90 - 94)
    - You can set the GPS settings [TZ10/2S7], Travel Date settings and more.

- **[SETUP] menu** (REC/PLAY switch: )
  - Making the camera more convenient to use (→22 - 29)
    - Displays settings for ease of use such as adjusting the Clock and changing the Beep sounds.

- **MODE [PLAYBACK MODE] menu** (REC/PLAY switch: )
  - Viewing recorded pictures (→118 - 125)
    - Choose a playback type to see Slide Shows or just your favourite pictures.
    - When [FAVORITE] (→133) is not set, [FAVORITE PLAY] is not displayed.

- **[PLAYBACK] menu** (REC/PLAY switch: )
  - Using your pictures (→126 - 137)
    - Displays settings for using the pictures you have taken, including protecting, cropping, and handy settings for printing your pictures (DPOF).
Using the [SETUP] menu

For details about the setting procedure in the [SETUP] menu (→20)
Make general camera settings such as adjusting the Clock, extending the battery life, and changing the Beep sounds.
[CLOCK SET], [ECONOMY] and [AUTO REVIEW] are important for Clock setting and battery life. Please check these before use.

<table>
<thead>
<tr>
<th>Item</th>
<th>Settings, notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑️ [CLOCK SET]</td>
<td>Set the date and time.</td>
</tr>
<tr>
<td></td>
<td>(→17, 19)</td>
</tr>
<tr>
<td>■[BEEP]</td>
<td>Change or mute the beep/shutter sounds.</td>
</tr>
<tr>
<td></td>
<td>[BEEP LEVEL]</td>
</tr>
<tr>
<td></td>
<td>[Mute/Low/High]</td>
</tr>
<tr>
<td></td>
<td>[BEEP TONE]</td>
</tr>
<tr>
<td></td>
<td>[Change beep tone]</td>
</tr>
<tr>
<td></td>
<td>[SHUTTER VOL.]</td>
</tr>
<tr>
<td></td>
<td>[Mute/Low/High]</td>
</tr>
<tr>
<td></td>
<td>[SHUTTER TONE]</td>
</tr>
<tr>
<td></td>
<td>[Change shutter tone]</td>
</tr>
<tr>
<td>[VOLUME]</td>
<td>Adjust volume of sound from speakers (7 levels).</td>
</tr>
<tr>
<td></td>
<td>0 • • [LEVEL3] • • [LEVEL6]</td>
</tr>
<tr>
<td></td>
<td>• Cannot be used to adjust TV speaker volume when connected to TV. (We recommend setting camera volume to 0)</td>
</tr>
<tr>
<td>☐️[CUST.SET MEM.]</td>
<td>Register settings on current camera. (→59)</td>
</tr>
<tr>
<td></td>
<td>[C1] / [C2] / [C3]</td>
</tr>
</tbody>
</table>

For details about the setting procedure in the [SETUP] menu (→20)

<table>
<thead>
<tr>
<th>Item</th>
<th>Settings, notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD [LCD MODE]</td>
<td>Make LCD monitor easier to see.</td>
</tr>
<tr>
<td>[OFF]: Normal (cancel setting)</td>
<td></td>
</tr>
<tr>
<td>[AUTO POWER LCD]:</td>
<td>The brightness is adjusted automatically depending on how bright it is around the camera.</td>
</tr>
<tr>
<td>[POWER LCD]:</td>
<td>Makes screen brighter than normal (for outdoor use).</td>
</tr>
<tr>
<td></td>
<td>• [AUTO POWER LCD] does not work in the following cases: During playback, during menu display, when connected to computer/printer.</td>
</tr>
<tr>
<td></td>
<td>• [POWER LCD] returns to ordinary brightness if there is no operation for 30 seconds when recording. (Press any button to make brighter again).</td>
</tr>
<tr>
<td></td>
<td>• Because the picture shown on the LCD monitor screen emphasizes brightness, some subjects may look different than their actual appearance, but this will not affect the recorded picture.</td>
</tr>
<tr>
<td></td>
<td>• Block out sunlight (with hand, etc.) if reflection makes screen difficult to see.</td>
</tr>
<tr>
<td></td>
<td>• Setting [LCD MODE] will reduce the number of pictures that can be recorded and recording time.</td>
</tr>
<tr>
<td></td>
<td>• When [LCD POWER SAVE] is set, the brightness of the LCD monitor follows the setting in [LCD MODE], but the picture quality of the LCD monitor stays at a low level.</td>
</tr>
<tr>
<td>[DISPLAY SIZE]</td>
<td>Change the display size of the menu.</td>
</tr>
<tr>
<td>[STANDARD]/[LARGE]</td>
<td></td>
</tr>
<tr>
<td>[GUIDE LINE]</td>
<td>Select recording information display and types of guidelines. (→46)</td>
</tr>
<tr>
<td>[REC. INFO.]</td>
<td>[OFF]/[ON] (Display recording information with guide lines.)</td>
</tr>
<tr>
<td>[PATTERN]</td>
<td>[OFF]/[ON] (Display guide lines. [OFF]/[ON])</td>
</tr>
<tr>
<td>[HISTOGRAM]</td>
<td>Check subject brightness on graph. (→46)</td>
</tr>
<tr>
<td>[OFF]/[ON]</td>
<td></td>
</tr>
</tbody>
</table>
Using the [SETUP] menu (Continued)

For details about the setting procedure in the [SETUP] menu (→20)

<table>
<thead>
<tr>
<th>Item</th>
<th>Settings, notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>[REC AREA]</td>
<td>[OFF]/[ON]</td>
</tr>
<tr>
<td></td>
<td>Recordable area displayed for motion pictures should be interpreted as a Guideline.</td>
</tr>
<tr>
<td></td>
<td>When using Extra Optical Zoom, the recordable area may not always be displayed for certain zoom ratios.</td>
</tr>
<tr>
<td></td>
<td>This setting cannot be used with Intelligent Auto Mode.</td>
</tr>
<tr>
<td>[ECONOMY]</td>
<td>[OFF]/[ON]</td>
</tr>
<tr>
<td></td>
<td>Turn off the power or make the LCD monitor go dark while not using the camera to minimize battery consumption.</td>
</tr>
<tr>
<td>[SLEEP MODE]</td>
<td>[OFF]/[2 MIN.]/[5 MIN.]/[10 MIN.]:</td>
</tr>
<tr>
<td></td>
<td>Automatically shut off power while not in use.</td>
</tr>
<tr>
<td></td>
<td>To restore  →  Press the shutter button halfway, or turn on the power again.</td>
</tr>
<tr>
<td></td>
<td>Cannot be used in the following cases:</td>
</tr>
<tr>
<td></td>
<td>When using AC adaptor (optional) and DC coupler (optional), when connected to computer/printer, during motion picture recording/playback, during Slide Shows, during automatic demo playback</td>
</tr>
<tr>
<td></td>
<td>Settings fixed to [5 MIN.] in [INTELLIGENT AUTO] Mode or [CLIPBOARD] Mode, or [10 MIN.] while Slide Show is paused.</td>
</tr>
<tr>
<td>[LCD POWER SAVE]</td>
<td>[OFF]/[ON]:</td>
</tr>
<tr>
<td></td>
<td>The LCD monitor goes dark to minimize power consumption.</td>
</tr>
<tr>
<td></td>
<td>Reduces the picture quality of the LCD monitor display during recording to minimize battery consumption (except for the Digital Zoom area). Note, however, that there is no effect on the recorded picture.</td>
</tr>
<tr>
<td></td>
<td>When [LCD MODE] is set, the brightness of the LCD monitor follows the setting in [LCD MODE], but the picture quality of the LCD monitor stays at a low level.</td>
</tr>
<tr>
<td>[AUTO REVIEW]</td>
<td>[OFF]: No auto review</td>
</tr>
<tr>
<td></td>
<td>[1 SEC.]/[2 SEC.]: Automatically display for 1 or 2 seconds.</td>
</tr>
<tr>
<td></td>
<td>[HOLD]: Auto review screen remains until a button (other than the [DISPLAY] button) is pressed</td>
</tr>
<tr>
<td></td>
<td>• In [SELF PORTRAIT], [PANORAMA ASSIST], [HI-SPEED BURST], [FLASH BURST], and [PHOTO FRAME] Scene Modes, [AUTO BRACKET], [MULTI ASPECT], [BURST] Mode, or still pictures with audio, Auto Review performed regardless of setting.</td>
</tr>
<tr>
<td></td>
<td>• Motion pictures cannot be automatically reviewed.</td>
</tr>
<tr>
<td>[ZOOM RESUME]</td>
<td>[OFF]/[ON]:</td>
</tr>
<tr>
<td></td>
<td>Remember the zoom position when turning the power off.</td>
</tr>
<tr>
<td>[NO.RESET]</td>
<td>[YES]/[NO]:</td>
</tr>
<tr>
<td></td>
<td>Reset picture file numbers.</td>
</tr>
<tr>
<td></td>
<td>• The folder number is updated and the file number starts from 0001.</td>
</tr>
<tr>
<td></td>
<td>• A folder number between 100 and 999 can be assigned. Numbers cannot be reset once folder number reaches 999. In this case, save all necessary pictures to your computer, and format the built-in memory/card (→28).</td>
</tr>
<tr>
<td></td>
<td>• To reset folder number to 100:</td>
</tr>
<tr>
<td></td>
<td>First, format the built-in memory or card, and reset the file numbers using [NO.RESET]. Then, select [YES] on the folder number reset screen.</td>
</tr>
<tr>
<td></td>
<td>• File numbers and folder numbers. (→142)</td>
</tr>
</tbody>
</table>

[REC AREA] is not available in the DMC-TZ8/DMC-ZS5.
## Using the [SETUP] menu (Continued)

For details about the setting procedure in the [SETUP] menu (→20)

<table>
<thead>
<tr>
<th>Item</th>
<th>Settings, notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[RESET]</strong></td>
<td>Reset to the default settings.</td>
</tr>
<tr>
<td>[RESET REC. SETTINGS?]</td>
<td>[YES]/[NO]</td>
</tr>
<tr>
<td>[RESET SETUP PARAMETERS?]</td>
<td>[YES]/[NO]</td>
</tr>
<tr>
<td>• Information registered in [FACE RECOG.] is reset if recording settings are reset.</td>
<td></td>
</tr>
<tr>
<td>• Resetting the setup parameters will also reset the following.</td>
<td></td>
</tr>
<tr>
<td>Age in years/months and names in [BABY] and [PET] Scene Modes, any settings in the [TRAVEL MODE] menu (including GPS function) [140], [FAVORITE] in the [PLAYBACK] menu (set to [OFF]), [ROTATE DISP.] (set to [ON])</td>
<td></td>
</tr>
<tr>
<td>• Folder numbers and Clock settings will not be reset.</td>
<td></td>
</tr>
<tr>
<td>• Camera movement may be audible as the lens function is reset. This is not a fault.</td>
<td></td>
</tr>
</tbody>
</table>

| **[USB MODE]** | Select communication method for when connecting camera to a computer or printer with USB connection cable. |
| [SELECT ON CONNECTION]: | Select [PC] or [PictBridge (PTP)] each time you connect to a computer or PictBridge-compatible printer. |
| [PictBridge (PTP)]: | Select when connecting to a PictBridge-compatible printer. |
| [PC]: | Select when connecting to a computer. |

| **[VIDEO OUT]** | Change the video output format when connected to a TV, etc. (Playback Mode only). |
| [NTSC]/[PAL] | If the default setting is changed, AVCHD Lite motion pictures may not be played correctly. [140] |
| • Operates when AV cable is connected. |

| **[TV ASPECT]** | Change the aspect ratio when connected to a TV, etc. (Playback Mode only). |
| 16:9 / 4:3 | • Operates when AV cable is connected. |

### HDMI [HDMI MODE]
- **[AUTO]**: The output resolution is automatically determined based on information from the connected TV. [1080i]: Outputs 1080 effective scanning lines in interlaced format. [720p]: Outputs 720 effective scanning lines in progressive format. [576p]*[480p]*2: Outputs 576 (or 480) effective scanning lines in progressive format.

#### Interlaced and Progressive Formats
In ‘i’ = interlaced format (interlaced scanning), half of the effective scanning lines are displayed alternately every 1/50*1 (1/60*2) second. In ‘p’ = progressive format (progressive scanning), high-density video signals are sent simultaneously for all effective scanning lines every 1/50*1 (1/60*2) second.

The HDMI socket of this camera supports [1080i] high definition video output.

To enjoy progressive video or high definition video, a TV compatible with these formats is required.

- Even if [1080i] is set, the motion picture is output at 720p during playback.
- If no video appears on the TV even though [AUTO] is set, try switching to [1080i], [720p], or [576p]*1 ([480p]*2) to adjust to a video format that can be displayed on your TV. (See the manual for your TV.)
- This is activated when an HDMI mini cable (optional) is connected.
- For further details (→148)

### VIERA Link [VIERA Link]
- **[OFF]**: Operations must be performed via the camera’s own buttons. [ON]: Operations may be performed via the remote control of the VIERA Link-compatible device. (Not all operations will be available.) Operability of the camera’s own buttons will be limited.
- Works when connected via an HDMI mini cable (optional).
Using the [SETUP] menu (Continued)

For details about the setting procedure in the [SETUP] menu (→20)

### Item Settings, notes

<table>
<thead>
<tr>
<th>Item</th>
<th>Settings, notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>![VERSION DISP.] Check the version of the camera firmware.</td>
<td>Current version is displayed.</td>
</tr>
<tr>
<td>![FORMAT] Use when [BUILT-IN MEMORY ERROR] or [MEMORY CARD ERROR] appears, or when formatting the built-in memory or card.</td>
<td>![YES]/[NO]  &lt;br&gt;• This requires a sufficiently charged battery (→11), or an AC adaptor (optional) and DC coupler (optional). When formatting the built-in memory, remove the cards. (Only inserted card will be formatted if present; built-in memory will be formatted if no card is inserted.)  &lt;br&gt;• Always format cards with this camera.  &lt;br&gt;• All picture data including protected pictures will be deleted. (→135)  &lt;br&gt;• Do not turn off power or perform other operations during formatting.  &lt;br&gt;• Formatting the built-in memory may take several minutes.  &lt;br&gt;• Consult your nearest Service Centre if format cannot be successfully completed.</td>
</tr>
<tr>
<td>![LANGUAGE] Change display language.</td>
<td>Set the language displayed on the screen.</td>
</tr>
</tbody>
</table>

**[DEMO [DEMO MODE]]** View demonstration of functions.

**[STABILIZER DEMO.]:** (Only during recording) Extent of jitter is shown on graph (estimate) Large ← Small → Large  
Extent of jitter after correction  
• During demo screen display, the Optical Image Stabilizer switches ON and OFF every time [MENU/SET] is pressed.  
• Cannot display during Playback Mode.  
• To stop → Press the [DISPLAY] button.  
• Recording and zoom cannot be performed during demo.

**[AUTO DEMO]:** View introductory Slide Show  
[OFF]/[ON]  
• To close → Press [MENU/SET]  
• When a card is not inserted, Automatic Demo Mode will start if there is no operation for about two minutes with the power ON when connected to the AC adaptor (optional) and DC coupler (optional).  
• [AUTO DEMO] cannot be displayed on external devices such as TVs.
Basic shooting operation

1. Turn on the power
   - Press the power button to turn on the camera.

2. Set to the desired Recording Mode
   - Rotate the mode dial to select [INTELLIGENT AUTO], [PROGRAM AE], [APERTURE-PRIORITY], [SHUTTER-PRIORITY], [MANUAL EXPOSURE], [CUSTOM], [MY SCN MODE], or [SCENE MODE].

3. Aim the camera and shoot
   - Compose the shot and press the shutter button.

4. Recording motion pictures
   - Press the motion picture button to start recording.
   - Press the motion picture button again to finish recording.

Motion picture button
- Motion pictures can be recorded immediately by pressing the motion picture button.

For the operating procedures for the DMC-TZ8/DMC-ZS5 (→32)

Please set the Clock before shooting (→17).

Holding the camera

- Stand with your arms close to your body and with your legs apart.
- Do not touch the lens.
- Do not block the microphone when recording audio. (→9)
- Do not block the flash or the lamp. Do not look at it from close range.
- Make sure that the camera does not move at the moment the shutter button is pressed.

Mode dial

- [PROGRAM AE] Mode: Record pictures with your own settings. (→37)
- [APERTURE-PRIORITY] Mode: Determine aperture, then record pictures. (→56)
- [SHUTTER-PRIORITY] Mode: Determine shutter speed, then record pictures. (→57)
- [MANUAL EXPOSURE] Mode: Determine aperture and shutter speed, then record pictures. (→58)
- [CUSTOM] Mode: Record pictures using pre-registered settings. (→59)
- [MY SCN MODE]: Take pictures in frequently-used Scene Modes (→71).
- [SCENE MODE]: Take pictures according to scene (→61).
- [CLIPBOARD] Mode: Take pictures as memos (→110).

Taking still pictures

Press the shutter button
- Gently press the shutter button (Press halfway (Adjust the focus))
- Press and hold the shutter button to take the picture (Press fully)

Press halfway (Adjust the focus)
Press fully
Basic shooting operation

1. Turn on the power
   - OFF
   - ON

2. Set to:
   - : Still pictures and motion pictures can be taken.
   - : The captured still pictures and motion pictures can be played back.

3. Set to the desired Recording Mode
   - [PROGRAM AE] Mode: Record pictures with your own settings. (→37)
   - [APERTURE-PRIORITY] Mode: Determine aperture, then record pictures. (→56)
   - [SHUTTER-PRIORITY] Mode: Determine shutter speed, then record pictures. (→57)
   - [MANUAL EXPOSURE] Mode: Determine aperture and shutter speed, then record pictures. (→58)
   - [CUSTOM] Mode: Record pictures using pre-registered settings. (→59)
   - [MY SCENE MODE] Mode: Take pictures in frequently-used Scene Modes (→71).
   - [SCENE MODE] Mode: Take pictures according to scene (→61).
   - [MOTION PICTURE] Mode: Take motion pictures (→76).
   - [CLIPBOARD] Mode: Take pictures as memos (→110).

4. Aim the camera and shoot
   - [INTELLIGENT AUTO] Mode: Gently press the shutter button
   - [PROGRAM AE] Mode: Gently press the shutter button
   - [APERTURE-PRIORITY] Mode: Gently press the shutter button
   - [SHUTTER-PRIORITY] Mode: Gently press the shutter button
   - [MANUAL EXPOSURE] Mode: Gently press the shutter button
   - [CUSTOM] Mode: Gently press the shutter button
   - [MY SCENE MODE] Mode: Gently press the shutter button
   - [SCENE MODE] Mode: Gently press the shutter button
   - [MOTION PICTURE] Mode: Gently press the shutter button
   - [CLIPBOARD] Mode: Gently press the shutter button

Please set the Clock before shooting (→19).
Taking pictures with automatic settings

[INTELLIGENT AUTO] Mode

Recording Mode: [A]

Optimum settings are made automatically from information such as ‘face’, ‘movement’, ‘brightness’, and ‘distance’ just by pointing the camera at the subject, meaning that clear pictures can be taken without the need to make settings manually.

1. Turn on the power

2. Set to [INTELLIGENT AUTO] Mode

3. Set to [A]

4. Take a picture

To use flash

Select either [A] (Auto) or [8] (Forced Flash Off).

- When [A] is used, [A] [F] (Auto/Red-Eye Reduction), [S] (Slow Sync./Red-Eye Reduction) and [S] (Slow Sync.) are selected automatically according to the subject type and brightness. For details (→47).
- [A] and [S] indicate that digital red-eye correction is activated.
- The shutter speed is slower in [S] and [S].

Focus range (→51).

The following menu items may be set in [INTELLIGENT AUTO] Mode:

- [REC] menu: [PICTURE SIZE]*1, [BURST], [COLOR EFFECT]*1, [FACE RECOG.]
- [MOION PICTURE] menu: [REC MODE], [REC QUALITY]*1
- [TRAVEL MODE] menu: [GPS SETTING], [GPS AREA SELECT], [AREA INFO. SET], [TRAVEL DATE], [AUTO CLOCK SET], [WORLD TIME]
- [SETUP] menu*2
- [CLOCK SET], [BEEP]*1, [LANGUAGE], [STABILIZER DEMO.]

*1 Items that may be set differ from other Recording Modes.
*2 Other items on the [SETUP] menu will reflect settings made in [PROGRAM AE] Mode, etc.

According to the following conditions, different scene types may be determined for the same subject.

- Face contrast, conditions of subject (size, distance, colouring, contrast, movement), zoom ratio, sunset, sunrise, low brightness, jitter
- If desired scene type is not selected, we recommend manually selecting the appropriate Recording Mode. (Scene Mode: →61)
- Backlight compensation: Backlight refers to the light that shines from behind the subject. When this occurs, the subject appears darker, and so backlighting is automatically corrected by increasing the brightness of the entire image.
- We recommend using a tripod and the self-timer with [i NIGHT SCENERY] and [i NIGHT PORTRAIT].
- When jitter is small (e.g. using tripod) with [i NIGHT SCENERY], shutter speed can reach a maximum of 8 seconds. Do not move the camera.

The settings for the following functions are fixed:

- [AUTO REVIEW]: [2 SEC.]
- [SLEEP MODE]: [5 MIN.]
- [GUIDE LINE]: [H]
- [WHITE BALANCE]: [AWB]
- [QUALITY]: [Fine]
- [STABILIZER]: [AUTO]
- [AF MODE]: [Face Detection]*3
- [AF ASSIST LAMP]: [ON]
- [PRE AF]: [Q-AF]
- [METERING MODE]: [Multiple]
- [EXPOSURE]: [STANDARD]
- [RESOLUTION]: [i.ZOOM]
- [RED-EYE REMOVAL]: [ON]
- [CONTINUOUS AF]: [ON]
- [WIND CUT]: [OFF]

*3 [AF] (11-area-focusing) when face cannot be recognised

The following functions cannot be used:
- [HISTOGRAM], [EXPOSURE], [AUTO BRACKET], [MULTI ASPECT], [WB ADJUST.], [DIGITAL ZOOM], [MIN. SHTR SPEED], [AUDIO REC.]
Taking pictures with automatic settings
[INTELLIGENT AUTO] Mode (Continued)
Recording Mode: 

About Happy colours
If [COLOR EFFECT] is set to [Happy], both still and motion pictures are clearer, with more vivid colouring.

<table>
<thead>
<tr>
<th>Happy face with [COLOR EFFECT] set to [Happy]</th>
</tr>
</thead>
</table>

- [Happy] can only be set in [INTELLIGENT AUTO] Mode.

When setting [Happy]

Face Detection and Face Recognition
If the camera automatically identifies the scene and determines that people appear as subjects in the picture ( or ), Face Detection is activated, and the focus and exposure are adjusted for the recognised faces. (→99)

■ Face Recognition
The faces of people who are taken frequently can be registered together with their names, ages, and other information.

<table>
<thead>
<tr>
<th>Picture with Face Recognition turned on</th>
</tr>
</thead>
</table>

If pictures are taken with [FACE RECOG.] (→78) set to [ON], priority is given to the focus and exposure adjustments of the faces close to those that have been registered. Also, the camera memorises detected faces during Face Detection, automatically recognises faces which are taken frequently, and displays them on the face registration screen.

AF Tracking
Even if a subject, where the focus was locked (AF Lock) moves, the camera can continue to keep it in focus.

1. Set [AF MODE] to AF Tracking
   - To cancel AF Tracking → Press ▲ again.
   - AF Tracking frame

2. Align the AF Tracking frame with the subject, and then lock.
   - To cancel AF Lock → Press ▲.
   - The optimum scene is detected for the subject where the focus was locked (AF Lock).
   - AF Lock successful: Yellow
   - AF Lock failed: Red (flash)

- Face Recognition will be inactive while using AF Tracking.
- If AF Lock is not successful for certain objects (→100).

Taking pictures with your own settings
[PROGRAM AE] Mode
Recording Mode: 

Using the [REC] menu to change settings and set up your own recording environment.

1. Turn on the power

2. Set to 

3. Set to P ([PROGRAM AE] Mode)

4. Take a picture

■ To take motion pictures

■ To use zoom

■ To use flash

■ To adjust picture brightness

■ To take close-up pictures

■ To adjust colouring

- If a warning is displayed about jitter, use [STABILIZER], a tripod, or [SELFTIMER].
- If aperture and shutter speed are shown in red, you do not have appropriate exposure. You should either use the flash, change [SENSITIVITY] settings or set [MIN. SHTR SPEED] to a slower speed.
Taking pictures with your own settings
PROGRAM AE Mode (Continued)
Recording Mode: P

Align focus for desired composition

Useful when subject is not in centre of picture.

1 First adjust focus according to subject

Align the AF area with the subject
Hold down halfway

AF area

2 Return to desired composition

Press fully

AF area

Subjects/environments which may make focusing difficult:
• Fast-moving or extremely bright objects, or objects with no colour contrast.
• Taking pictures through glass or near objects emitting light. In dark, or with significant jitter.
• When too close to object or when taking pictures of both distant and close objects together in the same picture.

We recommend using the 'Face Detection' function when taking pictures of people (→99).

Orientation detection function

Still pictures taken with the camera held vertically are automatically played back vertically. (Only when [ROTATE DISP.] is set to [ON])

Still pictures taken with the lens surface facing directly up or down and still pictures taken on other cameras may not be rotated. Additionally, still pictures taken while holding the camera upside down are not rotated automatically.

Motion pictures are not displayed vertically.

The focus display flashes and beep sounds when focus is not aligned.
Use the focus range displayed in red as a reference. Even if the focus display is lit, the camera may be unable to bring the subject into focus if it is out of range.
AF area is displayed larger in dark conditions or when using Digital Zoom.
Most displays are temporarily cleared from screen when the shutter button is pressed halfway.

Taking pictures with zoom

You can zoom in up to 12 times with 'Optical Zoom', and up to 23.4 times with 'Extra Optical Zoom' (pictures only) with lower picture quality. To zoom further, you can use [i.ZOOM] or [DIGITAL ZOOM].

Do not block the lens barrel movement while zooming.

Zoom In/Out

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

W side (wide-angle) T side (telephoto)

Focus range

Zoom ratio (approx.)

Zoom speed can be adjusted. Zoom slowly → turn slightly
Zoom quickly → turn completely
Adjust the focus after adjusting the zoom.

Zoom types

<table>
<thead>
<tr>
<th>Type</th>
<th>Optical Zoom</th>
<th>Extra Optical Zoom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum ratio</td>
<td>12 ×</td>
<td>Up to 23.4 × (Depending on the picture size)</td>
</tr>
<tr>
<td>Picture quality deterioration</td>
<td>No</td>
<td>No (However, the picture size is reduced)</td>
</tr>
<tr>
<td>Operation conditions</td>
<td>None</td>
<td>Set [PICTURE SIZE] in the [REC] menu to a setting for which [Z] is displayed (→95)</td>
</tr>
<tr>
<td>Screen display</td>
<td>[W] [T]</td>
<td>[W] [T] [Z] is displayed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>i.Zoom</th>
<th>Digital Zoom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum ratio</td>
<td>Approx. 1.3 × the Optical Zoom or Extra Optical Zoom</td>
<td>Up to 4 × the original zoom ratio</td>
</tr>
<tr>
<td>Picture quality deterioration</td>
<td>Almost none</td>
<td>Yes</td>
</tr>
<tr>
<td>Conditions, etc.</td>
<td>i.Zoom functions in the following cases.</td>
<td>When [DIGITAL ZOOM] in the [REC] menu is set to [ON] (→43)</td>
</tr>
<tr>
<td>Screen display</td>
<td>[i.ZOOM] W [T] [Z]</td>
<td>[i.ZOOM] is displayed</td>
</tr>
</tbody>
</table>

Digital Zoom area is displayed
Taking pictures with zoom (Continued)

Recording Mode: A P A S M W A P

- Maximum zoom ratios by picture size

<table>
<thead>
<tr>
<th>[PICTURE SIZE]</th>
<th>Optical Zoom</th>
<th>Extra Optical Zoom</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 M</td>
<td>8 M</td>
<td>5 M</td>
</tr>
<tr>
<td>11.5 M</td>
<td>7.5 M</td>
<td>4.5 M</td>
</tr>
<tr>
<td>10.5 M</td>
<td>7 M</td>
<td>4.5 M</td>
</tr>
<tr>
<td>6.6 M</td>
<td>5.7 M</td>
<td>2 M</td>
</tr>
</tbody>
</table>

- What is Extra Optical Zoom (EZ)?
  If, for example, set to ‘3M’ (equivalent to 3 million pixels), a picture will only be taken of a 3M-sized central part of a 12 M (equivalent to 12.1 million pixels) area, meaning that the picture can be enlarged further.

- Display the [REC] menu
- Select [i.ZOOM]
- Select [I.RESOLUTION]
- Close the menu

- When [I.RESOLUTION] is set to [i.ZOOM], super resolution technology is applied to the picture.
- The i.Zoom functions in the following cases:
  - ([INTELLIGENT AUTO] Mode)
  - Scene Mode (except for [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE])
  - ([CLIPBOARD] Mode)

- The camera uses super resolution technology to increase the zoom ratio. Using super resolution technology, the zoom ratio can be increased up to about 1.3 times higher than the original zoom ratio with almost no deterioration of picture quality.

- Extra Optical Zoom cannot be used in the following cases:
  - [MACRO ZOOM], motion picture, [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], and [PHOTO FRAME] Scene Modes

- Extra Optical Zoom cannot be used in the following cases:
  - ([INTELLIGENT AUTO] Mode), ([CLIPBOARD] Mode), Scene Modes

- [ZOOM RESUME] allows zoom ratio to be memorised even if power is turned off.

- The enlargement ratio displayed in the bar on screen is an estimate.

- In certain Recording Modes, ‘Tele macro’ function (→49) is activated when maximum zoom ratio is reached.

- A greater degree of distortion may be generated by taking wider-angled pictures of close objects, while using more telescopic zoom may result in more colouring appearing around the outlines of objects.

- The camera may make a rattling noise and vibrate when the zoom lever is operated - this is not a fault.

- Extra Optical Zoom cannot be used in the following cases:
  - [MACRO ZOOM], motion picture, [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], and [PHOTO FRAME] Scene Modes

- Digital Zoom cannot be used in the following modes:
  - ([INTELLIGENT AUTO] Mode), ([CLIPBOARD] Mode), Scene Modes

- [ZOOM RESUME] allows zoom ratio to be memorised even if power is turned off.
Taking pictures with zoom (Continued)

Recording Mode: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Easy Zoom: For zooming rapidly to maximum ratio

Zoom to max. T in one touch.

Press to change zoom ratio

1. Press to change zoom ratio
E.ZOOM

Each time you press, the ratio changes

Change of zoom ratio

*When the Picture Size is 10.5 M or more
*When the Picture Size is 8 M or less

<table>
<thead>
<tr>
<th>Current recording ratio (or 1 X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical Zoom Maximum ratio</td>
</tr>
<tr>
<td>Extra Optical Zoom Maximum ratio*1</td>
</tr>
<tr>
<td>Digital Zoom Maximum ratio*2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current recording ratio (or 1 X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra Optical Zoom Maximum ratio</td>
</tr>
<tr>
<td>Digital Zoom Maximum ratio*2</td>
</tr>
</tbody>
</table>

*1 The Picture Size temporarily becomes [3M], [2.5M] or [2M].
*2 When [DIGITAL ZOOM] in the [REC] menu is set to [ON].

Easy Zoom does not work while recording motion pictures.

[DIgital Zoom]

Zoom 4 times further than Optical/Extra Optical Zoom.
(Note that, with Digital Zoom, enlarging will decrease picture quality.)

1. Display the [REC] menu
2. Select [DIGITAL ZOOM]
3. Select [ON]
4. Close the menu

Easy Zoom is not available in the DMC-TZ10/DMC-ZS7.
Viewing your pictures [NORMAL PLAY]

Playback Mode: 

When a card is in the camera, pictures are played back from the card, and without a card, pictures are played back from the built-in memory. (Clipboard pictures can only be played back in [CLIPBOARD] Mode → 110.)

To enlarge (Playback Zoom)

Turn to T side

Current zoom position (displayed for 1 sec.)

• Each time you turn the zoom lever toward the T side, the magnification increases through four levels after 1x: 2x, 4x, 8x, and 16x. (The picture quality displayed becomes successively lower.)
• To reduce zoom → Turn lever towards W side
• Move zoom position→ ▲▼◄►

To playback as list
(Multi Playback/Calendar Playback) → 114

To view with different Playback Modes
(Slide Show, Category Playback, etc.) → 118

To playback motion pictures → 115

Deleting pictures

Playback Mode: 

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

To delete multiple (up to 50) or all pictures

(Repeats)

1. Set to

2. Press to delete displayed picture

3. Select [YES]

4. Select the pictures to delete

5. Delete

6. Select [YES]

Hold down to quickly scroll forwards/ backwards.
(Only file numbers change while held down; picture is displayed when released)
Scroll speed increases the longer you press. (Speed may vary according to playback conditions)

If file number is not displayed, press the [DISPLAY] button.

After the final picture, display returns to the first picture.

Some pictures edited on a computer may not be able to be viewed on this camera.

If the REC/PLAY switch is moved from to while the power is on, the lens barrel will be retracted after approx. 15 seconds.

This camera is compliant with the unified DCF (Design rule for Camera File system) standard formulated by the Japan Electronics and Information Technology Industries Association (JEITA), and with Exif (Exchangeable image file format). Files that are not DCF-compliant cannot be played back.

To enlarge (Playback Zoom)

Turn to T side

Current zoom position (displayed for 1 sec.)

• Each time you turn the zoom lever toward the T side, the magnification increases through four levels after 1x: 2x, 4x, 8x, and 16x. (The picture quality displayed becomes successively lower.)
• To reduce zoom → Turn lever towards W side
• Move zoom position→ ▲▼◄►

To playback as list
(Multi Playback/Calendar Playback) → 114

To view with different Playback Modes
(Slide Show, Category Playback, etc.) → 118

To playback motion pictures → 115
Changing recording information display

Change between different LCD monitor displays, such as Histograms.

Press to change display

1. **In Recording Mode**
   - Recording information
   - Motion picture recording information
   - No display
   - Guide lines

2. **In Playback Mode**
   - Recording information
   - Recording information or Histogram
   - No display

- **Histogram**
  - Displays distribution of brightness in picture
  - e.g., if the graph peaks at the right, this means there are several bright areas in the picture. (Guide) A peak in the centre represents correct brightness (correct exposure). This can be used as a reference for exposure correction (~53), etc.
  - Histogram from time of recording is different to Histogram in playback and displayed in orange, when recording with flash or in dark locations. Also, Histogram may differ from Histograms made with image editing software.
  - During Playback Zoom, Motion Picture Playback, Slide Show: Display on/off.

- **Guide lines**
  - Reference for composition (e.g., balance) when recording.
  - [INTELLIGENT AUTO] Mode and [CLIPBOARD] Mode display only.
  - This is not displayed in [MULTI ASPECT] Mode.

- **Display [FLASH]**

- **Select the desired type**

- **Judge balance**
- **Judge centre of subject**

Taking pictures with flash

Recording Mode: 

1. **Display [FLASH]**

2. **Select the desired type**

- **Type, operations**
  - **Uses**
  - **[AUTO]**
    - Automatically judges whether or not to flash
    - Normal use
  - **[AUTO/RED-EYE]**
    - Automatically judges whether or not to flash
    - (reduce red-eye)
    - Taking pictures of subjects in dark places
  - **[FORCED FLASH ON]**
    - Always flash
    - Taking pictures with backlight or under bright lighting (e.g., fluorescent)
  - **[FORCED ON/RED-EYE]**
    - Always flash (reduce red-eye)
    - Taking pictures of subjects against a nightscape (tripod recommended)
  - **[SLOW SYNC./RED-EYE]**
    - Automatically judges whether or not to flash
    - (reduce red-eye; slow shutter speed to take brighter pictures)
    - Taking pictures of subjects against a nightscape (tripod recommended)
  - **[FORCED FLASH OFF]**
    - Never flash
    - Places where flash use is prohibited

- **Shutter speeds are as follows:**
  - \([\text{AUTO}]\)
    - Normal: 1/30 - 1/2000th
  - \([\text{SLOW SYNC./RED-EYE}]\)
    - 1/8 - 1/2000th

- **Two flashes will be emitted. Do not move until after the second flash. Interval between flashes varies according to brightness of subject.**

- **If [RED-EYE REMOVAL] on the [REC] menu is [ON], the \(\text{red-eye}\) is automatically detected and still picture data is corrected. (Only when [AF MODE] is \(\text{Face Detection}\).)**

- **Shutter speeds are as follows:**
  - \([\text{AUTO}]\)
    - Normal: 1/30 - 1/2000th
  - \([\text{SLOW SYNC./RED-EYE}]\)
    - 1/8 - 1/2000th

- **Two flashes will be emitted. Do not move until after the second flash. Interval between flashes varies according to brightness of subject.**

- **When [MIN. SHTR SPEED] is set to [AUTO], it is maximum 1/4 second, and when [STABILIZER] is turned to [OFF] or there is little jitter, maximum 1 second. Also varies according to [INTELLIGENT AUTO] Mode, [SCENE MODE], zoom position.**

- **The effect of red-eye reduction varies depending on the subject and is affected by factors such as distance to the subject, whether the subject is looking at the camera during preliminary flash, and so on. In some cases, the effect of red-eye reduction may be negligible.**
Taking pictures with flash (Continued)

Recording Mode: \[ \text{A P A S M H} \]

- **Available types in each mode** (○: Available, –: Not available, □: Default setting)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Auto</th>
<th>Auto/Red-Eye Reduction</th>
<th>Slow Sync.</th>
<th>Slow Sync./Red-Eye Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. W</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Max. T</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

*Set to \[ \text{A} \] (Auto), \[ \text{A} \] (Auto/Red-Eye Reduction), \[ \text{S} \] (Slow Sync.) depending on the subject and brightness.

The flash cannot be used when recording motion pictures, Scene Modes \[ \text{A} \], \[ \text{P} \], \[ \text{S} \], \[ \text{M} \], \[ \text{H} \], or \[ \text{C} \].

- **Focus range according to ISO Sensitivity and zoom**

<table>
<thead>
<tr>
<th>[Sensitivity] (→97)</th>
<th>[Intelligent ISO] (→96)</th>
<th>[High Sens.] (→66)</th>
<th>[Flash Burst] (→67)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO</td>
<td>ISO80</td>
<td>ISO100</td>
<td>ISO200</td>
</tr>
<tr>
<td>Max. W</td>
<td>0.6-5.3 m (1.97-17.4 feet)</td>
<td>0.6-1.5 m (1.97-4.92 feet)</td>
<td>0.6-1.6 m (1.97-5.24 feet)</td>
</tr>
<tr>
<td>Max. T</td>
<td>1.0-3.5 m (3.28-11.8 feet)</td>
<td>1.0-1.1 m (3.28-3.61 feet)</td>
<td>1.0-1.6 m (3.28-5.25 feet)</td>
</tr>
</tbody>
</table>

Do not put your hands over the light-emitting area of the flash (→9, 10) or look at it from close range (a few centimeters away).
Do not use the flash at close distances to other subjects (heat/light may damage subject).
Flash settings may be changed when changing Recording Mode.
Scene Mode flash settings are restored to default when Scene Mode is changed.
Edges of picture may become slightly dark if using flash at short distances without using zoom (close to max. W). This may be remedied by using a little zoom.
If flash is to be emitted, flash type marks (e.g. \[ \text{AF} \]) will turn red when shutter button is pressed halfway.
No pictures may be taken if these marks (e.g. \[ \text{AF} \]) are flashing (flash is charging).
Insufficient flash reach may be due to inadequately set exposure or White Balance.
Flash effect may not be fully achieved with high shutter speeds.
Flash charging may take time if battery is low, or if using flash repeatedly.

When you want to enlarge the subject, setting to [AF MACRO] \[ \text{AF} \] enables you to take pictures at an even closer distance than the normal focus range (up to 3 cm (0.10 feet)) for max. W.

1. Display [MACRO MODE]
   - Displayed for approx. 5 sec.
2. Select [AF MACRO]
3. Take a picture

Useful for taking close-up pictures of, for example, birds that may fly away if approached, or to blur background and emphasize subject.
‘Tele macro’ operates automatically when Optical or Extra Optical Zoom ratios are close to the maximum T setting (10x or above for Optical Zoom). The focus can be aligned for distances as close as 1 m (3.28 feet).

- It may take some time until distant subjects come into focus.
- When using \[ \text{A} \] ([Intelligent AUTO] Mode), macro recording can be activated by just pointing the camera at the subject. (when \[ \text{AF} \] is displayed)
- \[ \text{AF MACRO} \] automatically activates when \[ \text{AF MODE} \] is set to \[ \text{AF} \] (AF Tracking). (\[ \text{AF} \]) is not displayed.)

Digital Zoom may also be used.
This function also operates when taking pictures in the following Scene Modes. (\[ \text{AF} \] is not displayed) [FOOD], [CANDLE LIGHT], [BABY], [PET], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], [FILM GRAIN], [HIGH DYNAMIC], [UNDERWATER]

Taking close-up pictures without standing close to subject ‘Tele macro’ function

<table>
<thead>
<tr>
<th>Zoom Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Zoom</td>
<td>Useful for taking close-up pictures of, for example, birds that may fly away if approached, or to blur background and emphasize subject. ‘Tele macro’ operates automatically when Optical or Extra Optical Zoom ratios are close to the maximum T setting (10x or above for Optical Zoom). The focus can be aligned for distances as close as 1 m (3.28 feet).</td>
</tr>
<tr>
<td>Digital Zoom</td>
<td>Digital Zoom may also be used.</td>
</tr>
<tr>
<td>Digital Zoom</td>
<td>This function also operates when taking pictures in the following Scene Modes. ([ \text{AF} ] is not displayed) [FOOD], [CANDLE LIGHT], [BABY], [PET], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], [FILM GRAIN], [HIGH DYNAMIC], [UNDERWATER]</td>
</tr>
</tbody>
</table>
Taking close-up pictures (Continued)

Recording Mode: P A S M [MACRO]

Taking pictures at even closer range & [MACRO ZOOM]

To take even larger images of the subject, setting to [MACRO ZOOM] enables the subject to appear even larger than when using [AF MACRO].

Display [MACRO MODE]

Select [MACRO ZOOM]

Displayed for approx. 5 sec.

Adjust the Digital Zoom magnification with the zoom lever

The zoom position is fixed at the Wide end. Focus range is 3 cm (0.10 feet) - ∞.

Return Enlarge

Digital Zoom magnification (1 x to 3 x)

Take a picture

- In [MACRO ZOOM], higher magnification results in lower picture quality.
- When [MACRO ZOOM] is set, Extra Optical Zoom or [i.ZOOM] does not work.
- [MACRO ZOOM] setting cannot be used while recording in [MULTI ASPECT] Mode.
- When [AF TRACKING] is set, zoom macro is cancelled.
- Using a tripod and [SELFTIMER] is recommended. Also, when recording a subject that is close to the camera, setting [FLASH] to [FORCED FLASH OFF] is recommended.
- Moving the camera after aligning the focus is likely to result in poorly focused pictures if subject is close to the camera, due to the margin for focus alignment being severely reduced.
- Resolution may be reduced around the edges of the picture.

Positioning camera and subject within accessible range for focus alignment

Available recording range in P ([PROGRAM AE] Mode)

Focus range

Distance between the lens and the subject

1 x (max.W)

1 x (max.W)

AF 3 cm (0.10 feet) - ∞

AF 3 cm (0.10 feet) - ∞

50 cm (1.64 feet) - ∞

50 cm (1.64 feet) - ∞

2 x

AF 20 cm (0.66 feet) - ∞

AF 20 cm (0.66 feet) - ∞

50 cm (1.64 feet) - ∞

50 cm (1.64 feet) - ∞

3 x

AF 50 cm (1.64 feet) - ∞

AF 50 cm (1.64 feet) - ∞

50 cm (1.64 feet) - ∞

50 cm (1.64 feet) - ∞

4 x

AF 1 m (3.28 feet) - ∞

AF 1 m (3.28 feet) - ∞

1 m (3.28 feet) - ∞

1 m (3.28 feet) - ∞

5 x - 8 x

AF 2 m (6.56 feet) - ∞

AF 2 m (6.56 feet) - ∞

2 m (6.56 feet) - ∞

2 m (6.56 feet) - ∞

9 x

AF 1.5 m (4.92 feet) - ∞

AF 1.5 m (4.92 feet) - ∞

2 m (6.56 feet) - ∞

2 m (6.56 feet) - ∞

10 x - 12 x x2

AF 1 m (3.28 feet) - ∞

AF 1 m (3.28 feet) - ∞

2 m (6.56 feet) - ∞

2 m (6.56 feet) - ∞

*1 Focus range varies depending on the zoom ratio.
*2 The maximum zoom ratio depends on the zoom type.
*3 The focus range is identical under the following settings:
  • ([INTELLIGENT AUTO] Mode) • ([CLIPBOARD] Mode)
  • [FOOD], [CANDLE LIGHT], [BABY], [PET], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], [FILM GRAIN], [HIGH DYNAMIC], [UNDERWATER] in Scene Mode
*4 The focus range is identical under the following settings:
  • [PORTRAIT], [SOFT SKIN], [TRANSFORM], [PANORAMA ASSIST], [SPORTS], [PARTY], [SUNSET], [STARRY SKY], [BEACH], [SNOW], [PHOTO FRAME] in Scene Mode

\* Zoom ratios are approximate.
\* Ranges for focus alignment differ for Scene Modes.
\* Max. W: Zoom lever turned as far as possible to W side (no zoom)
\* Max. T: Zoom lever turned as far as possible to T side (maximum zoom ratio)
Taking pictures with self-timer

Recording Mode: \( \text{A} \ \text{P} \ \text{A} \ \text{S} \ \text{M} \ \text{M} \ \text{N} \ \text{P} \) 

We recommend using a tripod. This is also effective for correcting jitter when pressing the shutter button, by setting the self-timer to 2 seconds.

1. Display [SELFTIMER]

2. Select time duration

   Can also be selected with \( \downarrow \).

   Displayed for approx. 5 sec.

3. Take a picture

   Press the shutter button fully to start recording after the preset time.

   • To cancel while in operation
     \( \rightarrow \) Press [MENU/SET]

   Self-timer indicator
   (Flashes for set duration)

- When set to [BURST], 3 pictures are taken. When set to the [FLASH BURST] Scene Mode, 5 pictures are taken.
- Focus will be automatically adjusted immediately before recording if shutter button is pressed fully here.
- After self-timer lamp stops flashing, it may then be lit for AF Assist Lamp.
- This function cannot be used in the [UNDERWATER] and [HI-SPEED BURST] Scene Modes, or when recording motion pictures.
- [10SEC.] cannot be chosen in ([CLIPBOARD] Mode) or in Scene Mode [SELF PORTRAIT].

Taking pictures with Exposure Compensation

Recording Mode: \( \text{P} \ \text{A} \ \text{S} \ \text{M} \ \text{M} \ \text{N} \ \text{P} \) 

Corrects exposure when adequate exposure cannot be obtained (if difference between brightness of object and background, etc.). Depending on the brightness, this may not be possible in some cases.

1. Display [EXPOSURE]

2. Select a value

   [0] (no compensation)

   Press \( \uparrow \)

   Plus direction
   Minus direction

   Under-exposed
   Optimum exposure
   Over-exposed

- After exposure adjustment, the adjustment value (\( \pm \)) for example) is displayed in the bottom-left corner of the screen.
- The Exposure Compensation value you set is retained even after the camera is turned off.
- Exposure Compensation cannot be used with the [STARRY SKY] Scene Mode.
Taking pictures by automatically changing the aspect ratio [MULTI ASPECT]
Recording Mode: P A S M K

In this mode, pressing the shutter button once automatically takes 3 still pictures in each of 3 Aspect Ratios: 4:3, 3:2, and 16:9. (The shutter sound is made only once.)

1. Display [AUTO BRACKET]
   Press ▲ several times to switch [EXPOSURE] to [AUTO BRACKET]

2. Display [MULTI ASPECT]
   Each time [DISPLAY] is pressed, the displayed indicator switches between [AUTO BRACKET] and [MULTI ASPECT].

3. Select [ON]

<table>
<thead>
<tr>
<th>Picture Size combinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:3</td>
</tr>
<tr>
<td>12 M</td>
</tr>
<tr>
<td>8 M</td>
</tr>
<tr>
<td>5 M*</td>
</tr>
</tbody>
</table>

(Example)
When 3:2 is set to 7.5 M, the picture sizes and corresponding resolutions are 4:3 with 8 M, 3:2 with 7.5 M, and 16:9 with 7 M.
*If a smaller Picture Size is set, the resolution is temporarily set to this value.

- After [MULTI ASPECT] is set,  is displayed on the left side of the screen.
- Shutter speed, aperture, focus, [EXPOSURE], [WHITE BALANCE], and [SENSITIVITY] settings will be constant for all three pictures.
- [MULTI ASPECT] is disabled when the number of recordable pictures is two or less. It is also cancelled when the power is turned off.
- When [MULTI ASPECT] is set, [AUTO BRACKET] and [BURST] are cancelled.
- Cannot be set in the [TRANSFORM], [PANORAMA ASSIST], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [STARRY SKY], [PIN HOLE], [FILM GRAIN], and [PHOTO FRAME] Scene Modes.

- Cancelled when the power is turned off.
- Cannot be used with flash or when there is remaining capacity for only 2 more pictures.
- When [AUTO BRACKET] is set, [MULTI ASPECT] and [BURST] are cancelled.
- Cannot be set in [TRANSFORM], [PANORAMA ASSIST], [HI-SPEED BURST], [FLASH BURST], [STARRY SKY], [PIN HOLE], [FILM GRAIN], and [PHOTO FRAME] Scene Modes or when recording motion pictures.
When recording, you can control the range of focus (depth of field) to meet your recording purposes. Shutter speed is automatically adjusted to be appropriate for the set aperture value.

1. Set to (recording)

2. Set to ([APERTURE-PRIORITY] Mode)

Determine aperture value

- When the aperture value is increased, the range of depth in focus expands, and the picture shows up clearly from the position of the camera to the background.
- When the aperture value is reduced, the range of depth in focus shrinks, and the background can get blurry.
- When the picture is too bright or too dark or there is incorrect exposure, the numbers for the aperture value and shutter speed are shown in red.

Aperture values that can be set

<table>
<thead>
<tr>
<th>Aperture value</th>
<th>Shutter speeds (seconds) set on this camera</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4.0 - F6.3</td>
<td>8 - 1/2000</td>
</tr>
<tr>
<td>F3.5</td>
<td>8 - 1/1600</td>
</tr>
<tr>
<td>F3.3</td>
<td>8 - 1/1300</td>
</tr>
</tbody>
</table>

- Aperture values that can be set vary depending on the zoom position. (The above table is at Max. W.)

- LCD monitor brightness may vary from the actual still picture recorded.
- If too bright, increase the aperture, and if too dark, reduce the aperture.

Determine shutter speed

- At faster shutter speeds, movements by the subject show as if they are still.
- At slower shutter speeds, subjects that are moving show as jittery.
- When the picture is too bright or too dark or there is incorrect exposure, the numbers for the aperture value and shutter speed are shown in red.

Shutter speeds that can be set

<table>
<thead>
<tr>
<th>Shutter speed (seconds)</th>
<th>Aperture values set on this camera</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>6</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>5</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>4</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>3.2</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>2.5</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>2</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1.6</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1.3</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/1.3</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/1.6</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/2</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/2.5</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/3.2</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/4</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/5</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/6</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/8</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/10</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/13</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/15</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/20</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/25</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/30</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/40</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/50</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/60</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/80</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/100</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/125</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/160</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/200</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/250</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/320</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/400</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/500</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/640</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/800</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/1000</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/1300</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/1600</td>
<td>F3.3 - F6.3</td>
</tr>
<tr>
<td>1/2000</td>
<td>F3.3 - F6.3</td>
</tr>
</tbody>
</table>

- Aperture values that are set vary depending on the zoom position. (The above table is at Max. W.)

- LCD monitor brightness may vary from the actual still picture recorded.
- If too bright, increase the aperture, and if too dark, reduce the aperture.

- LCD monitor brightness may vary from the actual still picture recorded.
- When using a slow shutter speed, it is recommended to use a tripod.
- In [SHUTTER-PRIORITY] Mode, cannot be set.
This mode of recording lets you set any aperture value and shutter speed when exposure adjustment prevents you from recording at the desired exposure (brightness/darkness). Also, long-exposure recording of up to 60 seconds is possible.

1. Set to (recording)
2. Set to M ([MANUAL EXPOSURE] Mode)
   - Manual exposure assist is displayed. (About 10 seconds)
3. Determine aperture and shutter speed
   - Adjust aperture value
   - Adjust shutter speed
   - When the picture is too bright or too dark or there is incorrect exposure, the numbers for the aperture value and shutter speed are shown in red.
   - If the shutter is pressed halfway, manual exposure assist is displayed. (About 10 seconds)

![Aperture value/shutter speed]

### Aperture value and shutter speeds that can be set

<table>
<thead>
<tr>
<th>Aperture value</th>
<th>Shutter speed (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4.0 - F6.3</td>
<td>60 - 1/2000</td>
</tr>
<tr>
<td>F3.5</td>
<td>60 - 1/1600</td>
</tr>
<tr>
<td>F3.3</td>
<td>60 - 1/1300</td>
</tr>
</tbody>
</table>

- Aperture values that can be set vary depending on the zoom position. (The above table is at Max. W.)

### Manual exposure assist (estimate)

- Shows pictures with standard brightness.
- Shows brighter pictures. For standard brightness, either use a faster shutter speed or increase aperture value.
- Shows darker pictures. For standard brightness, either use a slower shutter speed or reduce aperture value.

- LCD monitor brightness may vary from the actual still picture recorded.
- In Manual Exposure Mode, cannot be set.

### Register your own settings and record

**[CUSTOM] Mode**

Registering your preferred Recording Mode, [REC] menu settings, etc. to [CUST.SET MEM.] and setting the mode dial to [CUSTOM] allows you to switch quickly to those settings.

1. Select the Recording Mode you wish to register and set the [REC] menu, [SETUP] menu, etc.
2. Select [CUST.SET MEM.] from the [SETUP] menu (→22)
3. Select the custom set to register
4. Select [YES]
5. Close the menu

![Register your own settings]

- The following menus and functions are saved in the custom set.

<table>
<thead>
<tr>
<th>[REC] menu / Recording Functions</th>
<th>[SETUP] menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>[PICTURE SIZE]</td>
<td>[BURST]</td>
</tr>
<tr>
<td>[QUALITY]</td>
<td>[DIGITAL ZOOM]</td>
</tr>
<tr>
<td>[ASPECT RATIO]</td>
<td>[COLOR EFFECT]</td>
</tr>
<tr>
<td>[INTELLIGENT ISO]</td>
<td>[PICT. ADJ.]</td>
</tr>
<tr>
<td>[SENSITIVITY]</td>
<td>[STABILIZER]</td>
</tr>
<tr>
<td>[WHITE BALANCE]</td>
<td>[AUDIO REC.]</td>
</tr>
<tr>
<td>[FACE RECOG.] (ON/OFF only)</td>
<td>[AF ASSIST LAMP]</td>
</tr>
<tr>
<td>[AF MODE]</td>
<td>[RED-EYE REMOVAL]</td>
</tr>
<tr>
<td>[PRE AF]</td>
<td>[REC MODE]</td>
</tr>
<tr>
<td>[METERING MODE]</td>
<td>Exposure Compensation</td>
</tr>
<tr>
<td>[I.EXPOSURE]</td>
<td>[AUTO BRACKET]</td>
</tr>
<tr>
<td>[MIN. SHTR SPEED]</td>
<td>[MULTI ASPECT]</td>
</tr>
<tr>
<td>[GUIDE LINE]</td>
<td>[ZOOM RESUME]</td>
</tr>
</tbody>
</table>
Taking pictures according to the scene
[SCENE MODE]
Recording Mode: [8 9A]

Using [SCENE MODE] enables you to take pictures with optimum settings (exposure, colouring, etc.) for given scenes.

1 Set to : (recording)
2 Set to CUST (Custom Mode)
3 Select and set the scene
   (Press [MENU/SET] and then press ►, if scene menu is not displayed)

To take motion pictures
(72)

Registering commonly used scenes
[MY SCN MODE] (71)

● Selecting a Scene Mode inappropriate for the actual scene may affect the colouring of your picture.
● Following [REC] menu settings will be automatically adjusted and cannot be selected manually (available settings vary according to scene setting).
   [INTELLIGENT ISO], [SENSITIVITY], [METERING MODE], [I.EXPOSURE], [MIN. SHTR SPEED], [I.RESOLUTION], [COLOR EFFECT], [PICT.ADJ.]
● White Balance can only be set in the next scene. (Setting is restored to [AWB] when scene is changed.)
   [PORTRAIT], [SOFT SKIN], [TRANSFORM], [SELF PORTRAIT], [PANORAMA ASSIST] (First picture only), [SPORTS], [BABY], [PET], [HIGH SENS.], [HI-SPEED BURST], [PIN HOLE], [HIGH DYNAMIC], [PHOTO FRAME], [UNDERWATER] (fine adjustment only)
● The types of flash available (→48) vary according to the scene. The Scene Mode flash setting is reset to the default setting when the Scene Mode is changed.
● Guidelines displayed in grey in [NIGHT PORTRAIT], [NIGHT SCENERY], [STARRY SKY], and [FIREWORKS] Scene Modes.

Even if [REC] menu, etc. is changed in [CUSTOM], the content of the custom set does not change. When changing registration content, reset in [CUST.SET MEM.].
● At the time of purchase, [PROGRAM AE] Mode initial settings are registered in the custom set.
Taking pictures according to the scene

[SCENE MODE] (Continued)

Recording Mode: [X 6K]

<table>
<thead>
<tr>
<th>Scene</th>
<th>Uses, Tips</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>[PORTRAIT]</td>
<td>Improves the skin tone of subjects for a healthier appearance in bright daylight conditions.</td>
<td>[AF MODE] default setting is [Face Detection].</td>
</tr>
<tr>
<td>Tips</td>
<td>• Stand as close as possible to subject.</td>
<td></td>
</tr>
<tr>
<td>• Zoom: As telescopic as possible (T side)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[SOFT SKIN]</td>
<td>Smooths skin colours in bright, outdoor daylight conditions (portraits from chest upwards).</td>
<td>Clarify of effect may vary depending on brightness. [AF MODE] default setting is [Face Detection].</td>
</tr>
<tr>
<td>Tips</td>
<td>• Stand as close as possible to subject.</td>
<td></td>
</tr>
<tr>
<td>• Zoom: As telescopic as possible (T side)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[TRANSFORM]</td>
<td>Changes the appearance of the subject by stretching the length or width.</td>
<td>When taking a picture, a process is performed that improves the skin appearance. The picture quality becomes slightly lower. [PICTURE SIZE] will be fixed according to the [ASPECT RATIO] setting, as detailed below.</td>
</tr>
<tr>
<td>① Use ▲▼ to select the Transform level, and press [MENU/SET] to set.</td>
<td>4:3: 3 M</td>
<td></td>
</tr>
<tr>
<td>• The settings can also be changed in the Quick menu. (→112)</td>
<td>16:9: 2.5 M</td>
<td></td>
</tr>
<tr>
<td>② Take the picture.</td>
<td>16:9: 2 M</td>
<td></td>
</tr>
<tr>
<td>[SELF PORTRAIT]</td>
<td>Take pictures of yourself.</td>
<td>When taking a picture, a process is performed that improves the skin appearance. The picture quality becomes slightly lower. [PICTURE SIZE] will be fixed according to the [ASPECT RATIO] setting, as detailed below.</td>
</tr>
<tr>
<td>Tips</td>
<td>• Press shutter button halfway → self-timer indicator illuminates → press shutter button fully → review (if self-timer indicator flashes, focus is not correctly aligned)</td>
<td>4:3: 3 M</td>
</tr>
<tr>
<td>• Focus: 30 cm - 1.2 m (0.99 - 3.94 feet) (Max. W)</td>
<td>16:9: 2.5 M</td>
<td></td>
</tr>
<tr>
<td>• Do not use zoom (harder to focus). (Zoom moved to max. W automatically)</td>
<td>16:9: 2 M</td>
<td></td>
</tr>
<tr>
<td>• 2-second self-timer recommended.</td>
<td>16:9: 2 M</td>
<td></td>
</tr>
</tbody>
</table>

Scene | Uses, Tips | Notes |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[SCENERY]</td>
<td>Takes clear pictures of wide, distant subjects.</td>
<td>Main fixed settings: [FLASH]: [FORCED FLASH OFF] [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td>Tips</td>
<td>• Stand at least 5 m (16.4 feet) away.</td>
<td></td>
</tr>
<tr>
<td>[PANORAMA ASSIST]</td>
<td>Use the supplied software to join multiple pictures into a single panorama picture.</td>
<td>The focus, zoom, Exposure Compensation, White Balance, shutter speed, and ISO Sensitivity are all fixed at the setting for the first picture.</td>
</tr>
<tr>
<td>① Use ▲▼ to select the recording direction, and press [MENU/SET] to set.</td>
<td>Special panorama guidelines will be displayed.</td>
<td>When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds.</td>
</tr>
<tr>
<td>• Stand at least 5 m (16.4 feet) away.</td>
<td>• Alternative, press the shutter button.</td>
<td>Interference may be noticeable with dark scenes.</td>
</tr>
<tr>
<td>• Use a tripod.</td>
<td>• You can take pictures again by selecting [RETAKE].</td>
<td>Shutter may remain closed for up to 8 seconds after taking picture.</td>
</tr>
<tr>
<td>[SPORTS]</td>
<td>Takes pictures of scenes with fast movement, e.g. sports.</td>
<td>The focus, zoom, Exposure Compensation, White Balance, shutter speed, and ISO Sensitivity are all fixed at the setting for the first picture.</td>
</tr>
<tr>
<td>Tips</td>
<td>• Stand at least 5 m (16.4 feet) away.</td>
<td>When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second.</td>
</tr>
<tr>
<td>• Main fixed setting: [INTELLIGENT ISO]: [ISO800 - 800]</td>
<td></td>
<td>Main fixed settings: [AF ASSIST LAMP]: [ON] [AF MODE]: [FACE DETECTION] [STABILIZER]: [MODE 2] [SELFTIMER]: [OFF] [ZOOM RESUME]: [OFF] [MULTI ASPECT]: [STD] [AUDIO REC.]: [OFF] [AF ASSIST LAMP]: [OFF]</td>
</tr>
</tbody>
</table>
## Scene Uses, Tips Notes

<table>
<thead>
<tr>
<th>Scene</th>
<th>Uses, Tips</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[NIGHT PORTRAIT]</strong></td>
<td>Takes pictures of people and nightscapes with close to actual brightness.</td>
<td>- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second (or up to 8 seconds if flash is set to [Forced Flash Off]).</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>- Interference may be noticeable with dark scenes.</td>
</tr>
<tr>
<td></td>
<td>• Use flash.</td>
<td>- Shutter may remain closed for 8 seconds after taking picture.</td>
</tr>
<tr>
<td></td>
<td>• Tripod, self-tier recommended.</td>
<td>- Main fixed setting: [PRE AF]: [OFF]</td>
</tr>
<tr>
<td></td>
<td>Stand at least 1.5 m (4.92 feet) away at the Wide end (wide-angle)</td>
<td>- [AF MODE] default setting is [Face Detection].</td>
</tr>
<tr>
<td></td>
<td>Focus: Max. W: 60 cm (1.97 feet) - 5 m (16.4 feet) Max. T: 1.2 m (3.94 feet) - 5 m (16.4 feet)</td>
<td>- Age and name will be displayed for approx. 5 seconds after setting this mode.</td>
</tr>
<tr>
<td><strong>[NIGHT SCENERY]</strong></td>
<td>Takes clear pictures of night scenes.</td>
<td>- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds.</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>- Interference may be noticeable with dark scenes.</td>
</tr>
<tr>
<td></td>
<td>• Stand at least 5 m (16.4 feet) away.</td>
<td>- Shutter may remain closed for up to 8 seconds after taking picture.</td>
</tr>
<tr>
<td></td>
<td>• Tripod, self-tier recommended.</td>
<td>- Main fixed settings: [FLASH]: [FORCED FLASH OFF]</td>
</tr>
<tr>
<td></td>
<td><strong>[FOOD]</strong></td>
<td>- [SENSITIVITY]: ISO80 - 800</td>
</tr>
<tr>
<td></td>
<td>Takes natural-looking pictures of food.</td>
<td>- [PRE AF]: [OFF]</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>- [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td></td>
<td>• Focus (same as macro recording)</td>
<td>- Main fixed settings: [FLASH]: [FORCED FLASH OFF]</td>
</tr>
<tr>
<td></td>
<td>Max. W: 3 cm (0.10 feet) and above</td>
<td>- [SENSITIVITY]: ISO80 - 800</td>
</tr>
<tr>
<td></td>
<td>Max. T: 1 m (3.28 feet) and above</td>
<td>- [PRE AF]: [OFF]</td>
</tr>
<tr>
<td></td>
<td>(5 x to 8 x is 2 m to (\infty))</td>
<td>- [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td></td>
<td><strong>[PARTY]</strong></td>
<td>- [AF MODE] default setting is [Face Detection].</td>
</tr>
<tr>
<td></td>
<td>Brighten subjects and background in pictures of indoor events, such as weddings.</td>
<td>- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second.</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>- Default settings are as follows. [AF MODE]: [AF Tracking]</td>
</tr>
<tr>
<td></td>
<td>• Stand approx. 1.5 m (4.92 feet) away.</td>
<td>- [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td></td>
<td>• Zoom: Wide (W side)</td>
<td>- Refer to [BABY] for other notes and fixed functions.</td>
</tr>
<tr>
<td></td>
<td>• Use flash.</td>
<td>- [TEXT STAMP] (→128).</td>
</tr>
<tr>
<td></td>
<td>• Tripod, self-tier recommended.</td>
<td>- Date of birth will be displayed as [0 month 0 day].</td>
</tr>
<tr>
<td></td>
<td><strong>[SUNSET]</strong></td>
<td>- Main fixed setting: [INTELLIGENT ISO]: ISOMAX1600</td>
</tr>
<tr>
<td></td>
<td>Takes clear pictures of scenes such as sunsets.</td>
<td>- [AF MODE] default setting is [Face Detection].</td>
</tr>
<tr>
<td></td>
<td><strong>[BABY]</strong></td>
<td>- Age and name will be displayed for approx. 5 seconds after setting this mode.</td>
</tr>
<tr>
<td></td>
<td>Records pet’s age and name when taking pictures.</td>
<td>- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second.</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>- Default settings are as follows. [AF MODE]: [AF Tracking]</td>
</tr>
<tr>
<td></td>
<td>• Same as for [BABY]</td>
<td>- [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td></td>
<td><strong>[PET]</strong></td>
<td>- Refer to [BABY] for other notes and fixed functions.</td>
</tr>
<tr>
<td></td>
<td>Takes clear pictures of scenes such as sunsets.</td>
<td>- [TEXT STAMP] (→128).</td>
</tr>
</tbody>
</table>

### Scene Uses, Tips Notes

<table>
<thead>
<tr>
<th>Scene</th>
<th>Uses, Tips</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[CANDLE LIGHT]</strong></td>
<td>Brings out the atmosphere of a candlelit room.</td>
<td>- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second.</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>- [AF MODE] default setting is [Face Detection].</td>
</tr>
<tr>
<td></td>
<td>• Focus (same as macro recording)</td>
<td>- Age and name will be displayed for approx. 5 seconds after setting this mode.</td>
</tr>
<tr>
<td></td>
<td>Max. W: 3 cm (0.10 feet) and above</td>
<td>- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second.</td>
</tr>
<tr>
<td></td>
<td>Max. T: 1 m (3.28 feet) and above</td>
<td>- Default settings are as follows. [AF MODE]: [AF Tracking]</td>
</tr>
<tr>
<td></td>
<td>(5 x to 8 x is 2 m to (\infty))</td>
<td>- [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td></td>
<td><strong>[BABY]</strong></td>
<td>- Refer to [BABY] for other notes and fixed functions.</td>
</tr>
<tr>
<td></td>
<td>Takes pictures according to the scene</td>
<td>- [TEXT STAMP] (→128).</td>
</tr>
<tr>
<td></td>
<td><strong>[FOOD]</strong></td>
<td>- Date of birth will be displayed as [0 month 0 day].</td>
</tr>
<tr>
<td></td>
<td>Takes natural-looking pictures of food.</td>
<td>- Main fixed setting: [INTELLIGENT ISO]: ISOMAX1600</td>
</tr>
<tr>
<td></td>
<td><strong>[PARTY]</strong></td>
<td>- [AF MODE] default setting is [Face Detection].</td>
</tr>
<tr>
<td></td>
<td>Takes clear pictures of scenes such as sunsets.</td>
<td>- Age and name will be displayed for approx. 5 seconds after setting this mode.</td>
</tr>
<tr>
<td></td>
<td><strong>[SUNSET]</strong></td>
<td>- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 1 second.</td>
</tr>
<tr>
<td></td>
<td>Records pet’s age and name when taking pictures.</td>
<td>- Default settings are as follows. [AF MODE]: [AF Tracking]</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>- [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td></td>
<td>• Same as for [BABY]</td>
<td>- Refer to [BABY] for other notes and fixed functions.</td>
</tr>
</tbody>
</table>
### Taking pictures according to the scene

#### [SCENE MODE] (Continued)

**Recording Mode:** [ ]

#### Taking pictures according to the scene

**Scene** | **Uses, Tips** | **Notes**
--- | --- | ---
[**[FLASH BURST]**](#) | Enables continuous recording in dim locations.
| ① Use ▲▼ to select the picture size and aspect ratio, and press [MENU/SET] to set. | • The picture quality becomes slightly lower. • Main fixed settings: [FLASH]: [FORCED FLASH OFF] [QUALITY]: [Standard] [SENSITIVITY]: ISO200 - 1600 [I.RESOLUTION]: [ON] [MULTI ASPECT]: ISOMAX 3200 [I.RESOLUTION]: [OFF] [AUDIO REC.]: [OFF]
| ② Take pictures (Hold shutter button). Still pictures are taken continuously while the shutter button is held down. Number of continuous shots: Max. 5 | • The following functions cannot be used: Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[BURST]/[AUDIO REC.]
| | • For details about flash (→48) | • The focus, zoom, Exposure Compensation, shutter speed, and ISO Sensitivity are all fixed at the setting for the first picture. • Shutter speed is 1/30 - 1/2000 second.

#### Taking pictures according to the scene

**Scene** | **Uses, Tips** | **Notes**
--- | --- | ---
[**[STARRY SKY]**](#) | Enables clear pictures of starry skies or dark subjects.
| ① Select with ▲▼, and press [MENU/SET]. | The number of seconds can be changed with Quick menu: (→112)
| ② Press shutter button. | • Main fixed settings: [FLASH]: [FORCED FLASH OFF] [SENSITIVITY]: ISO80 [PRE AF]: [OFF] [STABILIZER]: [OFF]
| | • The following functions cannot be used: [EXPOSURE]/[AUTO BRACKET]/[MULTI ASPECT]/[BURST]/[AUDIO REC.]

#### Prevents blurring of subject in dark, indoor conditions.

Select the aspect ratio and the picture size with ▲▼ and press [MENU/SET].

- **Notes:**
  - Pictures may appear slightly grainy due to high sensitivity. • Main fixed settings: [QUALITY]: [Standard] [SENSITIVITY]: ISO1600 - 6400 [I.RESOLUTION]: [ON]
  - The following functions cannot be used: Extra Optical Zoom/[DIGITAL ZOOM]/[MULTI ASPECT]

#### Takes pictures of rapid movement or a decisive moment.

- **Uses:**
  - Use ▲▼ to select [SPEED PRIORITY] or [IMAGE PRIORITY], and press [MENU/SET] to set.
  - Select the aspect ratio and the picture size with ▲▼ and press [MENU/SET].
  - Take pictures. (Hold shutter button)
  - Still pictures are taken continuously while the shutter button is pressed fully.

- **Notes:**
  - The number of burst recording pictures increases immediately after formatting.
  - The picture quality becomes slightly lower.
  - Main fixed settings: [FLASH]: [FORCED FLASH OFF] [QUALITY]: [Standard] [SENSITIVITY]: Speed priority ISO200 - 1600 Image priority ISO500 - 800 [I.RESOLUTION]: [ON]
  - The focus, zoom, exposure, White Balance, shutter speed and ISO Sensitivity are fixed to the settings for the first picture.
  - The following functions cannot be used: Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[SELF TIMER]/[AUDIO REC.]/[BURST]
  - Shutter speed is 1/30 - 1/2000 second.
  - The burst speed and number of recordable pictures change according to the recording conditions or types of cards.
  - The number of burst recording pictures increases immediately after formatting.
  - The picture quality becomes slightly lower.
  - Main fixed settings: [FLASH]: [FORCED FLASH OFF] [QUALITY]: [Standard] [SENSITIVITY]: Speed priority ISO200 - 1600 Image priority ISO500 - 800 [I.RESOLUTION]: [ON]
  - The focus, zoom, exposure, White Balance, shutter speed and ISO Sensitivity are fixed to the settings for the first picture.
  - The following functions cannot be used: Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[SELF TIMER]/[AUDIO REC.]/[BURST]
  - Shutter speed is 1/30 - 1/2000 second.
  - The following functions cannot be used: Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[SELF TIMER]/[AUDIO REC.]/[BURST]

#### Prevents blurring of subject in dark, indoor conditions.

Select the aspect ratio and the picture size with ▲▼ and press [MENU/SET].

- **Tips:**
  - Focus (same as macro recording)
  - Max. W: 3 cm (0.10 feet) and above
  - Max. T: 1 m (3.28 feet) and above
  - (5 × to 8 × is 2 m to ∞)
  - The picture quality becomes slightly lower. • Main fixed settings:
  - [FLASH]: [FORCED FLASH OFF] [QUALITY]: [Standard] [SENSITIVITY]: ISO1600 - 6400 [I.RESOLUTION]: [ON] [MULTI ASPECT]: ISOMAX 3200 [I.RESOLUTION]: [OFF]
  - The focus, zoom, Exposure Compensation, shutter speed, and ISO Sensitivity are all fixed at the setting for the first picture.
  - Shutter speed is 1/30 - 1/2000 second.
  - The following functions cannot be used:
  - Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[SELF TIMER]/[AUDIO REC.]
  - [EXPOSURE]/[AUTO BRACKET]/[MULTI ASPECT]/[BURST]/[AUDIO REC.]

#### Takes pictures of rapid movement or a decisive moment.

- **Uses:**
  - Use ▲▼ to select [SPEED PRIORITY] or [IMAGE PRIORITY], and press [MENU/SET] to set.
  - Select the aspect ratio and the picture size with ▲▼ and press [MENU/SET].
  - Take pictures. (Hold shutter button)
  - Still pictures are taken continuously while the shutter button is pressed fully.

- **Notes:**
  - The number of burst recording pictures increases immediately after formatting.
  - The picture quality becomes slightly lower.
  - Main fixed settings:
  - [FLASH]: [FORCED FLASH OFF] [QUALITY]: [Standard] [SENSITIVITY]: Speed priority ISO200 - 1600 Image priority ISO500 - 800 [I.RESOLUTION]: [ON]
  - The focus, zoom, exposure, White Balance, shutter speed and ISO Sensitivity are fixed to the settings for the first picture.
  - The following functions cannot be used:
  - Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[SELF TIMER]/[AUDIO REC.]/[BURST]

#### Takes pictures of rapid movement or a decisive moment.

- **Uses:**
  - Use ▲▼ to select [SPEED PRIORITY] or [IMAGE PRIORITY], and press [MENU/SET] to set.
  - Select the aspect ratio and the picture size with ▲▼ and press [MENU/SET].
  - Take pictures. (Hold shutter button)
  - Still pictures are taken continuously while the shutter button is pressed fully.

- **Notes:**
  - The number of burst recording pictures increases immediately after formatting.
  - The picture quality becomes slightly lower.
  - Main fixed settings:
  - [FLASH]: [FORCED FLASH OFF] [QUALITY]: [Standard] [SENSITIVITY]: Speed priority ISO200 - 1600 Image priority ISO500 - 800 [I.RESOLUTION]: [ON]
  - The focus, zoom, exposure, White Balance, shutter speed and ISO Sensitivity are fixed to the settings for the first picture.
  - The following functions cannot be used:
  - Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET]/[MULTI ASPECT]/[SELF TIMER]/[AUDIO REC.]/[BURST]
## Taking pictures according to the scene

### [SCENE MODE] (Continued)

**Recording Mode:** [SCENE MODE]

<table>
<thead>
<tr>
<th>Scene</th>
<th>Uses, Tips</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[FIREWORKS]</strong></td>
<td>Takes clear pictures of fireworks in the night sky.</td>
<td>• Shutter speed can be set to 1/4 second or 2 seconds (if there is a little jitter or if Optical Image Stabilizer is [OFF]). (when not using Exposure Compensation)</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>• Main fixed settings: [FLASH]: [FORCED FLASH OFF] [SENSITIVITY]: ISO80 [PRE AF]: [OFF] [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td></td>
<td>• Stand at least 10 m (32.8 feet) away.</td>
<td>• Shutter speed can be set to 1/4 second or 2 seconds (if there is a little jitter or if Optical Image Stabilizer is [OFF]). (when not using Exposure Compensation)</td>
</tr>
<tr>
<td></td>
<td>• Tripod recommended.</td>
<td>• Main fixed settings: [FLASH]: [FORCED FLASH OFF] [SENSITIVITY]: ISO80 [PRE AF]: [OFF] [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td><strong>[BEACH]</strong></td>
<td>Brings out the clear blues of the sky and the sea without darkening subject.</td>
<td>• [AF MODE] default setting is [Face Detection].</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>• Do not touch camera with wet hands.</td>
</tr>
<tr>
<td></td>
<td>• Beware of sand and sea water.</td>
<td>• WAUTER of sand and sea water.</td>
</tr>
<tr>
<td><strong>[SNOW]</strong></td>
<td>Brings out the natural colour of snow in ski slope and mountain scenes.</td>
<td>• Battery life is reduced in lower air temperatures.</td>
</tr>
<tr>
<td><strong>[AERIAL PHOTO]</strong></td>
<td>Takes pictures of the view from aircraft windows.</td>
<td>• Main fixed settings: [FLASH]: [FORCED FLASH OFF] [AF ASSIST LAMP]: [OFF]</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>• Angle the camera towards areas of contrasting colours when aligning the focus.</td>
</tr>
<tr>
<td></td>
<td>• Check that the interior of the aircraft is not reflected in the window.</td>
<td>• When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds.</td>
</tr>
<tr>
<td></td>
<td>• Stand at least 5 m (16.4 feet) away.</td>
<td>• Depending on recording conditions, the correction effect may not work.</td>
</tr>
<tr>
<td><strong>[PIN HOLE]</strong></td>
<td>Darkens the area around the screen for a retro effect.</td>
<td>• After recording, the shutter may stay closed (up to 8 seconds) to process the signal. This is not a defect.</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>• Because dark areas are corrected to be lighter, there may be more noticeable noise on the LCD screen than with ordinary recording.</td>
</tr>
<tr>
<td></td>
<td>• Focus (same as macro recording)</td>
<td>• The Face Detection function (→99) may not work properly in the darkened area around the screen.</td>
</tr>
<tr>
<td></td>
<td>Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 x 8 x is 2 m to ∞)</td>
<td>• [I.RESOLUTION] is fixed to [OFF].</td>
</tr>
<tr>
<td></td>
<td>(5 x 8 x is 2 m to ∞)</td>
<td>• The following functions cannot be used: Extra Optical Zoom/ [DIGITAL ZOOM][AUTO BRACKET][MULTI ASPECT]/ [BURST]</td>
</tr>
</tbody>
</table>

### How to select a scene (→61)

**Using flash in Scene Modes (→48)**

<table>
<thead>
<tr>
<th>Scene</th>
<th>Produces black and white pictures with a grainy texture.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[FILM GRAIN]</strong></td>
<td><strong>Tips</strong></td>
<td>• Main fixed settings: [SENSITIVITY]: ISO1600</td>
</tr>
<tr>
<td></td>
<td>• Focus (same as macro recording)</td>
<td>• The following functions cannot be used: [DIGITAL ZOOM][AUTO BRACKET][MULTI ASPECT]/ [BURST]</td>
</tr>
<tr>
<td></td>
<td>Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 x 8 x is 2 m to ∞)</td>
<td>• The following functions cannot be used: [DIGITAL ZOOM][AUTO BRACKET][MULTI ASPECT]/ [BURST]</td>
</tr>
<tr>
<td></td>
<td><strong>Use ▲▼ to select the effect and press [MENU/SET].</strong></td>
<td>• When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds.</td>
</tr>
<tr>
<td></td>
<td>STD Natural colouring effect</td>
<td>• Depending on recording conditions, the correction effect may not work.</td>
</tr>
<tr>
<td></td>
<td>ART An impressionistic effect emphasizing contrast and colour</td>
<td>• After recording, the shutter may stay closed (up to 8 seconds) to process the signal. This is not a defect.</td>
</tr>
<tr>
<td></td>
<td>B&amp;W Monochrome effect</td>
<td>• Because dark areas are corrected to be lighter, there may be more noticeable noise on the LCD screen than with ordinary recording.</td>
</tr>
<tr>
<td></td>
<td><strong>Tips</strong></td>
<td>• The following functions cannot be used: Extra Optical Zoom/ [DIGITAL ZOOM][AUTO BRACKET][MULTI ASPECT]/ [BURST]</td>
</tr>
<tr>
<td></td>
<td>• You can also change the settings in the Quick menu. (→112)</td>
<td>• The following functions cannot be used: Extra Optical Zoom/ [DIGITAL ZOOM][AUTO BRACKET][MULTI ASPECT]/ [BURST]</td>
</tr>
</tbody>
</table>
### Taking pictures according to the scene

**[SCENE MODE] (Continued)**

**Recording Mode: MS**

<table>
<thead>
<tr>
<th>Scene</th>
<th>Uses, Tips</th>
<th>Notes</th>
</tr>
</thead>
</table>
| ![PHOTO FRAME] | A frame is superimposed over the image. Press ◄► to select the frame, and then press [MENU/SET]. | - The recording pixel level is 2 M (6M).   
- The following function is fixed: [AUTO REVIEW]: [2 SEC.]   
- The colour of the frame displayed on the screen may differ slightly from the colour of the frame on the still picture that is recorded.   
- Guide lines cannot be displayed.   
- The following functions are not available. Extra Optical Zoom/[DIGITAL ZOOM]/[AUTO BRACKET] [MULTI ASPECT]/[BURST]   |
| ![UNDERWATER] | Achieve natural colours under water. **Tips:**   
- For fast moving subjects, align with the AF area and press ◄ (AF Lock). (Press ◄ again to release.)   
- If the zoom is operated after AF Lock is set, the AF Lock setting will be cancelled and must be set again.   
- AF Lock cannot be set if [AF MODE] is set to ◄.   
- Adjust red and blue levels with 'White Balance fine adjustment' (→98).   
- Focus (same as macro recording) Max. W: 3 cm (0.10 feet) and above Max. T: 1 m (3.28 feet) and above (5 × to 8 × is 2 m to ∞) | - Always use marine case (optional).   
- Positioning is not possible underwater, because the GPS signals cannot reach the camera.   
- Self-timer: Cannot be used |

#### Registering commonly used scenes

**[MY SCN MODE]/[MY SCENE MODE]**

**Recording Mode: MS**

You can register a commonly used Scene Mode in MS1/MS2 (MS for [TZ41/TZ5]) on the mode dial. After the settings are made, pictures can be taken in the preset Scene Mode by simply setting the mode dial to MS1/MS2 (MS for [TZ41/TZ5]).

1. Set to ◄
2. Set to MS1/MS2 (MS for [TZ6/TZ5])
3. Select and set the scene

![Scene menu](image)

- **Scene Uses:**
- **Notes:**
- **Tips:**
- Always use marine case (optional).
- Positioning is not possible underwater, because the GPS signals cannot reach the camera.
- Self-timer: Cannot be used

#### Taking pictures in registered Scene Modes

Set the mode dial to MS1/MS2 (MS for [TZ6/TZ5]), and take a picture.

- Functions, tips for each scene (→62 - 70)

#### Changing registered Scene Modes

Perform the registration operation again

#### Taking motion pictures

**[TZ41/TZ5]**

(→72)
Taking motion pictures

Recording Mode: APASM

Enables motion pictures to be recorded with (stereo) audio. (Recording with muted sound is not possible.) Zoom can also be used during recording.

1. Set to \(
2. Set to a position other than \)
3. Press to start recording

There is no halfway pressing operation. Recording is started after switching to the motion picture recording screen.

Switching motion picture mode

Motion picture recording screen

* Actual screen displayed may vary according to [REC MODE].

You can also use zoom while recording motion pictures.
• The zoom speed will be slower than normal. Also, the zoom speed changes according to the zoom range.
• When using zoom while recording motion pictures, it may take some time to focus.

Press the motion picture button again to end recording

Switching still picture mode

Still picture recording screen

About the motion picture recording screen

Remaining recording time (approx.)
[REC MODE] (→108)/[REC QUALITY] (→108)
[CONTINUOUS AF] (→109)
Elapsed recording time

Changing motion picture settings
(→108)

Playing back motion pictures
(→115)

Motion picture recording format ([REC MODE])
The camera can be changed between motion picture recording formats ([REC MODE]) when recording. [REC MODE] Mode can be set from the motion picture recording menu. (→108)

<table>
<thead>
<tr>
<th>Motion picture recording format ([REC MODE])</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>[AVCHD Lite(GPS REC)]*1</td>
<td>• Can record high-definition motion pictures. • Can record high-definition motion pictures longer than [MOTION JPEG] on cards of the same size. • Pictures can be played back by inserting the card in an AVCHD-compatible device.*2</td>
</tr>
<tr>
<td>[AVCHD Lite]**1</td>
<td>• You can record high-definition motion pictures or small QVGA size motion pictures, etc, by changing picture quality settings. • Recorded motion pictures can be played back with ‘QuickTime’ on a PC, etc. • Continuous recording time is available until the motion picture data volume reached 2 GB. To continue recording, press the motion picture button and begin recording again.</td>
</tr>
<tr>
<td>[MOTION JPEG]</td>
<td></td>
</tr>
</tbody>
</table>

*1 When the term “AVCHD Lite motion picture” is used in this manual, it means a motion picture recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite].
*2 Correct playback may not be possible with some compatible devices. Also, motion pictures recorded in [AVCHD Lite(GPS REC)] cannot be played back with Panasonic digital cameras (LUMIX) compatible with AVCHD (Lite) recording that were sold in or before 2009.
• When [GPS SETTING] is [ON] or \, the location name information from the start of recording is recorded on motion pictures that are recorded in [AVCHD Lite(GPS REC)] or [MOTION JPEG]. (When positioning succeeds and location name information is acquired)

Recording motion pictures in A
The camera automatically detects the scene to record motion pictures with optimal settings.

When scene does not correspond to any on the right.
[ \] [I PORTRAIT]  [ \] [I LOW LIGHT]  [ \] [I SCENERY]  [ \] [I MACRO]

• If brightness or other conditions change during recording, the Scene Mode will be changed automatically.
• In \ mode, focus and exposure will be set according to the face detected.
• \ will be selected for nightscapes and other dark scenes. Flash cannot be used with this mode.
• If conditions do not allow scenes to be detected easily (→35).
• If the camera does not select your desired Scene Mode, choosing an appropriate mode manually is recommended.
• The following menu options in the [MOTION PICTURE] menu can be set:
  • [REC MODE]  • [REC QUALITY]
  • The following functions are fixed:
    • [DIGITAL ZOOM]: [OFF]  • [WIND CUT]: [OFF]  • [WHITE BALANCE]: [AWB]  • [AF MODE]: [Face Detection]*  • [CONTINUOUS AF]: [ON]
  • 1-area-focusing turns on when faces cannot be detected.
  • [I.EXPOSURE] is activated automatically based on the conditions.

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For the operating procedures for the DMC-TZ8/DMC-ZS5 (→76)
Taking motion pictures (Continued)

Recording Mode: \[ \text{PASM} \] \[ \text{M} \]

- **Recording motion pictures in \[ \text{PASM} \]**
  - Records a motion picture at your preferred settings.
    - Aperture and shutter speed are automatically set.
    - The Recording Mode icon changes to \[ \text{●} \].

- **Recording motion pictures in \[ \text{M} \]**
  - Records a motion picture at the optimum settings for the selected scene.
    - Some scenes are switched to the following scenes:
      - \[ \text{BABY} \]
      - \[ \text{NIGHT PORTRAIT}, \text{NIGHT SCENERY}, \text{STARRY SKY} \]
      - \[ \text{PANORAMA ASSIST}, \text{SPORTS}, \text{PET}, \text{HI-SPEED BURST}, \text{FLASH BURST}, \text{FIREWORKS}, \text{PHOTO FRAME} \]
  - \[ \text{I.EXPOSURE} \] is activated automatically, based on conditions depending on the Scene Mode.
  - The following items cannot be set in some Scene Modes:
    - \[ \text{WHITE BALANCE} \]
    - \[ \text{DIGITAL ZOOM} \]

- **Recording motion pictures in \[ \text{G} \]**
  - Records motion pictures in registered Recording Mode.

### Recordable time on 2 GB SD memory card

<table>
<thead>
<tr>
<th>[REC MODE]</th>
<th>[REC QUALITY]</th>
<th>Recording picture capacity (estimate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ \text{AVCHD Lite(GPS REC)} ]/ [ \text{AVCHD Lite} ]</td>
<td>[ \text{GSH}/\text{SH} ]</td>
<td>Approx. 15 min</td>
</tr>
<tr>
<td></td>
<td>[ \text{GH}/\text{H} ]</td>
<td>Approx. 20 min</td>
</tr>
<tr>
<td></td>
<td>[ \text{GL}/\text{L} ]</td>
<td>Approx. 29 min</td>
</tr>
<tr>
<td>[ \text{MOTION JPEG} ]</td>
<td>[ \text{HD} ]</td>
<td>8 min 20 s</td>
</tr>
<tr>
<td></td>
<td>[ \text{WVGA} ]</td>
<td>20 min 50 s</td>
</tr>
<tr>
<td></td>
<td>[ \text{VGA} ]</td>
<td>21 min 40 s</td>
</tr>
<tr>
<td></td>
<td>[ \text{QVGA} ]</td>
<td>1 h</td>
</tr>
</tbody>
</table>

- Press [DISPLAY] before recording to display the recordable time in the current Recording Mode and the picture quality.
Taking motion pictures [MOTION PICTURE] Mode

Recording Mode: 

This records motion pictures with audio. (Recording with muted sound is not possible. Sound recording is monaural.) Zoom can also be used during recording.

- For information on the available recording time (→176)
- Depending on the type of card used, a card-access display may appear for a while after motion picture recording. This does not indicate a problem.
- Immediately release the shutter button after pressing it all the way.
- Easy zoom cannot be used while recording a motion picture.
- The following functions are not available.
  - Extra Optical Zoom, flash, [FACE RECOG.] and [ROTATE DISP.] for still pictures taken vertically.
- Sounds of camera operations, such as zoom movement and beeps may be recorded.
- In [AF MODE], (1-area-focusing) is fixed:
- In [STABILIZER], [MODE 1] is fixed.
- To fix the focus setting, set [CONTINUOUS AF] to [OFF]
- When there is no space left to store the motion picture, recording automatically ends. Additionally, recording in progress may be stopped, depending on the card used.
- Depending on the motion picture recording environment, static electricity or electromagnetic waves may cause the screen to go black momentarily or noise to be recorded.

Microphone

(Do not cover with your finger)

1. Set to

2. Set the mode dial to

3. Start recording

   Press halfway (adjust the focus)  Press fully (start recording)

You can also use zoom while recording motion pictures.
- The zoom speed will be slower than normal. Also, the zoom speed changes according to the zoom range.
- When using zoom while recording motion pictures, it may take some time to focus.

4. End recording

   Press fully

Remaining recording time (approx.)

Elapsed recording time

Playing back motion pictures (→115)

[REC QUALITY]

Changing the motion picture size. When recording a motion picture, use a card rated with an SD speed class* of 'Class 6' or higher.

* SD speed class refers to a specification for sustained write speeds.

1. Display the [REC] menu

2. Select [REC QUALITY]

3. Select the desired picture quality

4. Close the menu

<table>
<thead>
<tr>
<th>Picture Quality</th>
<th>Picture Size</th>
<th>No. of Frames</th>
<th>Picture Aspect Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>[HD]</td>
<td>1280 × 720 pixels</td>
<td>30 fps</td>
<td>16:9</td>
</tr>
<tr>
<td>[WVGA]</td>
<td>848 × 480 pixels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[VGA]</td>
<td>640 × 480 pixels</td>
<td></td>
<td>4:3</td>
</tr>
<tr>
<td>[QVGA]²</td>
<td>320 × 240 pixels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*² [QVGA] is fixed when recording to built-in memory.

- When recording motion pictures, it is recommended to use a sufficiently charged battery or an AC adaptor (optional) and DC coupler (optional).
- When recording motion pictures using an AC adaptor, if you unplug the AC adaptor or a power outage occurs, power to the camera is cut, and the motion picture in progress is no longer recorded.
- If you attempt to play motion pictures recorded with the camera on other devices, playback may not be possible, or the picture or sound quality may be poor. Additionally, incorrect recording information may be indicated.
- Motion pictures recorded with the camera cannot be played on Panasonic LUMIX digital cameras sold before July 2008. (However, motion pictures recorded with LUMIX digital cameras sold before this date can be played on this camera.)

For the operating procedures for the DMC-TZ10/DMC-ZS7 (→72)
Recording with the Face Recognition function

[FACE RECOG.]
Recording Mode: A P A S M M8 M8

To enable the Face Recognition function, register a face picture (→79), or set the automatic registration of face pictures (→82) to [ON]. (The Face Recognition function is not enabled at the time of purchase.)

■ How the Face Recognition function works

During recording
- The camera recognises a registered face and adjusts focus and exposure
- When registered faces that have set names are recognised, the names are displayed (up to 3 people)
- When [AUTO REGISTRATION] is [ON], faces that have been recorded many times are recognised and the registration screen is displayed

During playback
- The name and age are displayed (if information is registered)
- During recording, the names that have been set for the recognised faces are displayed (up to 3 people)
- Only pictures of the selected registered people are played back ([CATEGORY PLAY])

Registering face pictures

Up to 6 people’s face pictures can be registered along with such information as name and birth date. You can facilitate Face Recognition by the way you register faces: for example, register multiple face pictures of the same person (up to 3 pictures in one registration).

■ Recording tips when registering face pictures
- Make sure the subject’s eyes are open and mouth closed; have the subject face the camera directly, and make sure the outline of the face, the eyes and eyebrows are not hidden by hair.
- Make sure there are no heavy shadows on the face. (During registration, the flash is not used).

■ If the camera seems to have difficulty recognizing faces when recording
- Register additional pictures of the same person’s face, indoors and outdoors or with different expressions or angles.
- Register additional pictures at the place you are recording.
- Change the [SENSITIVITY] settings.
- If a registered person is no longer recognised, re-register that person.

● In some cases, the camera cannot recognise or incorrectly recognises even registered people depending on their expression or the environment.
  - The eyes or eyebrows are hidden by hair
  - The subject is not facing the camera directly
  - The subject’s eyes are closed
  - The subject is dark or lit from a vertical angle
  - The subject is facing up or down
  - It is extremely bright or dark
  - The image of the subject is too small
  - The subject’s facial features have changed with age
  - The subject’s expression is very different
  - The subject’s entire face is not in the screen
  - The subject has very similar facial features as a family member, etc.
  - There is little shadow on the face
  - The subject is moving rapidly
  - The photographer is jittering
  - Digital Zoom is being used
  - The subject’s face is hidden by sunglasses, eyeglasses reflecting light, hair, a hat, etc.
Recording with the Face Recognition function
[FACE RECOG.] (continued)
Recording Mode:  

1. Select [FACE RECOG.] from the [REC] menu (→20)
2. Select [MEMORY] with ▲▼, and then press [MENU/SET]
3. Select the frame for the unregistered face picture
   - If 6 people are already registered, first delete a registered person. (→81)
4. Record the face picture
   ① Align the face with the guide and record.
   ② Select [YES] with ▲▼, and then press [MENU/SET].
   - If re-recording, select [NO]
   - Faces of subjects other than people (e.g. pets) cannot be registered.
   - If recognition fails, a message is displayed and the display returns to the recording screen. Try recording again.
   - When [DISPLAY] is pressed, an explanation is displayed.
5. Select the item to edit and make the setting
<table>
<thead>
<tr>
<th>Item</th>
<th>About settings</th>
</tr>
</thead>
</table>
   | [NAME]     | ① Select [SET] with ▲▼, and then press [MENU/SET]  
   |            | ② Enter the name (text input procedure: →113) |
   | [AGE]      | ① Select [SET] with ▲▼, and then press [MENU/SET]  
   |            | ② Use ►◄ to select year, month and day, set with ▲▼, and press [MENU/SET] |
   | [FOCUS ICON] | Change the icon that is displayed when the subject is in focus.  
   |            | ① Select the focus icon with ▲▼, and then press [MENU/SET] |
   | [ADD IMAGES] | Up to 3 face pictures of the person can be registered.  
   |            | ① Select an unregistered frame and press [MENU/SET]  
   |            | ② When a registered face picture is selected with ►◄, a screen to confirm deletion is displayed. Select [YES] to delete the face picture. (If only one picture is registered, it cannot be deleted.)  
   |            | ③ Record the picture (Step 4 above.)  
5. Press the shutter button halfway to close the menu

To set the Face Recognition function to [OFF]
① Select [FACE RECOG.] from the [REC] menu (→20)
② Select [OFF] with ▲▼, and then press [MENU/SET]
- When a face picture is registered or automatic registration of face pictures is set, the [FACE RECOG.] setting is switched to [ON] automatically.

Editing or deleting information about registered persons
Information about registered people can be edited or deleted.

1. Select [FACE RECOG.] from the [REC] menu (→20)
2. Select [MEMORY] with ▲▼, and then press [MENU/SET]
3. Select the person whose information you wish to edit or delete
   - When an unregistered frame is selected, a new registration occurs.
4. Select the item
<table>
<thead>
<tr>
<th>Item</th>
<th>About settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information editing</td>
<td>Edit name or other registered information. (→80)</td>
</tr>
</tbody>
</table>
   | Registration order | Set priority order for focus and exposure.  
   |            | ① Select the registration order with ▲▼◄►, and then press [MENU/SET] |
   | Deleting | Deletes information and face pictures of registered persons. |
5. Press the shutter button halfway to close the menu
Recording with the Face Recognition function
[FACE RECOG.] (continued)

Recording Mode:

Automatically register face pictures
You can set the camera so that the registration screen automatically displays after recording a subject that is recorded many times.

1. Select [FACE RECOG.] from the [REC] menu (→20)
2. Select [SET]
3. Select [AUTO REGISTRATION]
4. Select [ON]
5. Press the shutter button halfway to close the menu

- In some cases it may be very difficult to recognise faces that have only been registered by automatic registration.
- From the [REC] menu’s [FACE RECOG.], register face pictures in advance.

Register face pictures from the automatic registration screen
Select [YES] from the registration confirmation screen
- If Face Recognition is not registered, proceed to 3.
- If [NO] is selected, a re-confirmation screen is displayed. If [YES] is selected here, [AUTO REGISTRATION] is turned to [OFF].

2. Select [NEW PERSON] or [ADDITIONAL IMAGE]

<table>
<thead>
<tr>
<th>Item</th>
<th>About settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NEW PERSON]</td>
<td>If 6 people are already registered, select a person to replace.</td>
</tr>
<tr>
<td>[ADDITIONAL IMAGE]</td>
<td>Select the person for which you are registering additional face pictures. If 3 face pictures are already registered, select a picture to replace.</td>
</tr>
</tbody>
</table>

3. Select the item to edit and make the setting (Step 5) (→80)

- The registration screen is displayed for the third time (estimate). (This does not occur in [SELF PORTRAIT] Scene Mode, [BURST], [AUDIO REC.], [AUTO BRACKET] or [MULTI ASPECT].)
- If the registration screen is not displayed easily, recording in the same environment and with the same expression will make it display more easily.
- If a face is not recognised despite being registered, re-registering the person from [REC] menu’s [FACE RECOG.] at that location will make it easier for the camera to recognise the person.
- If the registration screen is displayed for a person already registered, making additional registration of the person in that status will make it easier for the camera to recognise the person.
- If a picture recorded with a flash is registered, it may be difficult for the camera to recognise the person.
- When [AUTO REGISTRATION] is set to [ON], the [FACE RECOG.] setting is also switched to [ON] automatically.

Setting recognition sensitivity
The Sensitivity setting of the camera can be set if it is having difficulty with Face Recognition or making mistakes.

1. Select [FACE RECOG.] from [REC] menu (→20)
2. Select [SET]
3. Select [SENSITIVITY]
4. Select the level of a sensitivity setting
   - [HIGH]: Set when camera is having difficulty recognizing faces
   - [NORMAL]: The usual setting
   - [LOW]: Set when the camera frequently recognises a face as that of a different person
5. Press the shutter button halfway to close the menu

- Setting [SENSITIVITY] at [HIGH] makes it easier for the camera to recognise faces but also increases the possibility of recognizing the face as that of a different person.
Recording the place of recording with GPS

Recording Mode: A  P  S  M  B  R  K  CC*  
* Record only (Cannot set)

What is GPS?
GPS is an abbreviation for Global Positioning System, which enables people to find their locations using GPS satellites.
Receiving signals that include orbit information and time information from multiple satellites to calculate one’s current location is referred to as “Positioning.”
This camera can perform positioning when it receives signals from three or more GPS satellites.

■ GPS functions
When GPS is used, the camera performs the following functions:
• Records location name information and the latitude and longitude for the positioned location on the recorded pictures
• Corrects automatically to the current time
• Corrects the time to the local time after moving to a country or region in a different time zone
Still pictures or motion pictures recorded in [AVCHD Lite(GPS REC)] or [MOTION JPEG]
When [AUTO CLOCK SET] or [WORLD TIME] is set to [AUTO]

■ Receiving signals from GPS satellites
• Set [GPS SETTING] to [ON] or
When using the GPS, we recommend holding the camera still for a while with the GPS antenna facing upward in an outdoor location where you can see the entire sky.
Positioning usually takes less than two minutes, but because the positions of the GPS satellites change over time, it may take longer depending on the recording location and environment.
• In the following types of locations, it may not be possible to correctly receive the signals from the GPS satellites. In such cases, positioning may not be possible, or significant positioning discrepancy may occur.
  • Indoors
  • Near high-voltage power lines
  • Underground or underwater (when using a marine case)
  • In tunnels
  • Near 1.5 GHz mobile phones, etc.
  • Near buildings or in valleys
  • Do not cover the GPS antenna with your hands or anything else.
  • If you are carrying the camera during positioning, do not carry it in a metal carrier or similar container.
Positioning cannot be performed when the camera is covered by a material such as metal.

■ Using in locations such as airplanes or hospitals
When [GPS SETTING] is set to [ON], the GPS function operates even when the camera’s power is off.
When turning off the camera’s power in an airplane, hospital or other restricted area, set [GPS SETTING] to [OFF] or
If the status indicator flashes periodically while the camera’s power is off, [GPS SETTING] is set to [ON].

Before use, read “About GPS” (→8) and “User License Agreement for Location Name Data” (→165).

[GPS SETTING]: Using GPS

1. Select [GPS SETTING] from the Travel Mode menu (→20)

2. Select [ON] or

3. Close the menu

• To cancel, select [OFF]

When checking GPS reception
Select [INFO] in Step 2 to check the current reception.
• Set [GPS SETTING] to [ON] or

Number of GPS satellite signals received

Latitude and longitude

Press [MENU/SET] to start positioning

[GPS SETTING] Description Positioning operation timing

[ON] ∗ Positioning continues even when the camera’s power is off, so you can record pictures with location name information recorded on them as soon as you turn on the power again.
• Because the positioning continues even when the camera’s power is off, battery power is consumed.
• When the camera’s power is off, the positioning stops in the following cases. If the positioning stops, the positioning will take some time, after turning on the camera’s power.
  • When the battery level is low, comes on, or the battery is replaced
  • When positioning is not successful for 2 hours after the camera’s power is turned off
  • When the camera’s power has not been turned on for 3 hours

When the camera’s power is on
• Immediately after the power is turned on
• Every 5 minutes

When the camera’s power is off
• Every 15 minutes
• The status indicator flashes when positioning.

∗ The positioning may take some time, after turning on the camera’s power. Location name information will not be recorded for pictures recorded at this time while positioning is in progress.

When the camera’s power is on
• Immediately after the power is turned on
• Every 5 minutes
• Positioning is not performed when the camera’s power is off.

∗ Positioning is not possible unless signals are received from three or more GPS satellites. Move to a location where the sky is as clear as possible before performing positioning.
Recording the place of recording with GPS (continued)

Recording Mode: * Record only (Cannot set)

When [GPS SETTING] is set to [ON] or [ ], In Recording Mode, an icon that indicates the positioning status is displayed on the LCD monitor. Then, if positioning is successful, the location name information is displayed.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Icon" /></td>
<td>Location name information exists (information from the last 5 minutes).</td>
</tr>
<tr>
<td><img src="image2.png" alt="Icon" /></td>
<td>Location name information exists (information from 5 minutes to 1 hour ago).</td>
</tr>
<tr>
<td><img src="image3.png" alt="Icon" /></td>
<td>Location name information exists (information from 1 hour to 2 hours ago).</td>
</tr>
<tr>
<td><img src="image4.png" alt="Icon" /></td>
<td>Location name information exists (information from more than 2 hours ago).</td>
</tr>
<tr>
<td><img src="image5.png" alt="Icon" /></td>
<td>Positioning failed (no location name information).</td>
</tr>
</tbody>
</table>

Location name Positioning (5 minutes maximum) information

When using the camera for the first time or after not using it for a while, positioning may take several minutes, because it may take some time to acquire the orbit information from the GPS satellites.

- If positioning is successful, the current position is saved.
  However, note that the saved position information is deleted in the following cases:
  - When [GPS SETTING] is set to [OFF]
  - When [GPS SETTING] is set to [ ] and then the camera’s power is turned off
  - When the setup settings are reset with [RESET]
- In the following cases, the location name information that will be recorded on the picture may vary significantly from the current position. Check the location name and other information before recording.
  - Immediately after turning on the camera’s power • When the icon is something other than [ ]
- Positioning is not performed in the following situations:
  - During motion picture recording • During audio recording

Information recorded on recorded pictures

When positioning is successful, the current position is saved in the camera and the latitude, longitude and location name information are recorded on the recorded still pictures and motion pictures recorded in [AVCHD Lite(GPS REC)] or [MOTION JPEG].

- Information recorded on recorded pictures
  - Latitude/longitude
  - Location name information (country or region name/prefecture, state or province name/city or town name/landmark name)*
  * You can use the camera or the ‘PHOTOfunSTUDIO’ software on the supplied CD-ROM to check the recording location of pictures or display them by location of recording.

The location name information consists of location names and landmarks that are found via a search of the camera’s database based on the latitude and longitude that were acquired in positioning, and the most appropriate items are displayed in the following order of priority. (Sometimes the nearest items are not displayed.)

1. Landmark names and the corresponding location names within 1 km of the current position
2. Location names for places with landmarks or other points of interest within 10 km of the current position
   - If there are no location names or landmarks that comply with the conditions above, “---” is displayed. Even when “---” is displayed, in some cases location name information can be selected in [GPS AREA SELECT].
   - In some cases, the landmark that you are looking for may not have been registered. Landmarks and other location name information are current as of February 2010. (Landmark types → 173)

The location name information (location name or landmark name) may be different from the official name.

Change the recorded place name information

If positioning results and current position are different from each other, or if there are other candidate locations, you can change the information to nearby place names or landmarks.

1. Select [GPS AREA SELECT] (→ 20), from the [TRAVEL MODE] menu
2. Select the item to change display
3. From the displayed candidates, select the desired place name or landmark to be recorded
4. Return to the menu screen

![Image](image6.png)

[GPS SETTING] is not available in the DMC-TZ8/DMC-ZS5.
Recording the place of recording with GPS
(continued)
Recording Mode: Aperture-priority AE * Record only (Cannot set)

If you do not wish to record place names and landmarks
In step 2, select [DELETE ALL PLACE-NAMES] and place names and landmarks will not be recorded.
Or, in step 3, if you select [YES] when a message asking whether to delete place names and landmarks lower than the selected place name, information of the place name will not be recorded (e.g., city and town names and landmarks if specifying a prefecture name).

It is recommended that you record the place name information for city and town names and landmarks if specifying a prefecture name.

In large public parks or similar locations, landmarks may not be displayed, or incorrect landmarks may be displayed. If you cannot select the desired landmark in [GPS AREA SELECT], perform [PLACE-NAME EDIT] after recording. (→127)

Changing the display of location name information
The screen display of location name information found by positioning can be changed.

1 Select [AREA INFO. SET] (→20) from the [TRAVEL MODE] menu

2 Select the item to change the display

3 Turn items to be displayed [ON] and items not to be displayed [OFF]

Select [AUTO CLOCK SET] (→20) from the [TRAVEL MODE] menu

4 Select [ON]

Perform the operations from step 6 in “Setting the Clock” (first time only) (→17)

During positioning, if there is a difference of 1 minute or more between the GPS time information and the [CLOCK SET] time, the time is corrected automatically.

When [AUTO CLOCK SET] is turned on, [WORLD TIME] is set to [AUTO].

When [WORLD TIME] is set to something other than [AUTO], [AUTO CLOCK SET] is turned off.

Time and date corrected by [AUTO CLOCK SET] is not as accurate as radio clocks. If the time and date are not properly corrected, reset with [CLOCK SET].

Using GPS to set the Clock
Using the date and time information in the GPS signal, the camera can automatically update its [CLOCK SET]. Also, after moving from your home area to one in a different time zone, the time is changed to the local time automatically when positioning is successful. Perform [CLOCK SET] in advance.

Select [AUTO CLOCK SET] (→20) from the [TRAVEL MODE] menu

Select [ON]

Perform the operations from step 6 in “Setting the Clock” (first time only) (→17)

During positioning, if there is a difference of 1 minute or more between the GPS time information and the [CLOCK SET] time, the time is corrected automatically.

When [AUTO CLOCK SET] is turned on, [WORLD TIME] is set to [AUTO].

When [WORLD TIME] is set to something other than [AUTO], [AUTO CLOCK SET] is turned off.

Time and date corrected by [AUTO CLOCK SET] is not as accurate as radio clocks. If the time and date are not properly corrected, reset with [CLOCK SET].

In the following cases, “- - -” is displayed.

• There is no location name information to display
• There are no nearby landmarks (It may be possible to select landmarks in [GPS AREA SELECT].)
• When the text of the location name information is long, such as when multiple items are set for display, a scroll display is used.

GPS SETTING is not available in the DMC-TZ8/DMC-ZS5.
Useful features for travel [TRAVEL MODE]

Recording Mode: M, Av, S, M, X, K, X, E

If items have been set, the settings for each item are displayed.

The menu name for the selected item is displayed.

If you set your travel schedule and record pictures, which day of your trip the picture was recorded will be recorded.

Set-up: • Clock must be set in advance (→17).

1] Select [TRAVEL DATE] from the [TRAVEL MODE] menu (→20)

2] Select [TRAVEL SETUP]

3] Select [SET]

4] Set the departure date

5] Set the return date in the same way

6] Close the menu

Clearing the information

After the return date, the information is automatically cleared. To clear the information before this date, select [OFF] in step 5.
• If [TRAVEL SETUP] is turned [OFF], [LOCATION] is also automatically turned [OFF].

The number of days elapsed is displayed for approx. 5 sec. when switching from Playback to Recording Mode or when power is turned on. (displayed at bottom-right of screen)
The travel date is calculated from the set departure date and the date set in the camera’s Clock. When destination is set in [WORLD TIME], days elapsed are calculated based on local destination time.
The set travel date is saved even when the camera’s power is turned off.
• When [TRAVEL SETUP] is set to [OFF], the number of days elapsed is not recorded. It is not displayed even if [TRAVEL SETUP] is set to [SET] after recording.
• If settings are made before departure date, number of days to departure are displayed in orange with a minus sign (but not recorded).
Useful features for travel [TRAVEL MODE] (Continued)

Recording Mode:  
Recording only. (Cannot set.)

[LOCATION]

Record your destination.

1. Select [LOCATION] in step 2 on the previous page
2. Select [SET]
3. Enter your destination • Entering text (→113)
4. Close the menu

To clear
In step 2, select [OFF] and press [MENU/SET]

- If [TRAVEL SETUP] is recorded, [LOCATION] is recorded at the same time.
- If [TRAVEL DATE] is recorded, [LOCATION] is recorded at the same time.
- It is recorded separately from the place name information recorded for pictures by the [GPS SETTING].
- [LOCATION] cannot be recorded on motion pictures recorded in [AVCHD Lite].
- To print the destination, either use [TEXT STAMP] or print using the software on the supplied CD-ROM 'PHOTOfunSTUDIO'.

[LOCATION] screen

[TZ10] [ZS7]
Once the [TRAVEL SETUP] is set, you can set the destination.

Enter your destination • Entering text (→113)

Close the menu • The destination you set is displayed on the [TRAVEL MODE] menu screen.

[WORLD TIME]

Set the recording date and time with the local time at your destination. Perform [CLOCK SET] in advance.

1. Select [WORLD TIME] from the [TRAVEL MODE] menu (→20)
   - [PLEASE SET THE HOME AREA] will be displayed when setting for the first time. In this case, press [MENU/SET] and skip to step 6.
2. Select [HOME]
   - When [HOME] is changed after it has already been set, the display returns to the [TRAVEL MODE] menu. To continue and set [DESTINATION], press ➤.
3. Set your home area
   - City/area name
   - Current time
   - Difference with GMT (Greenwich Mean Time)
3. Set destination area
   - City/area name
   - Current time
   - Difference with home time
5. Close the menu

To set summer time

Do this in Step 3 or 5 (Press again to release)

- When summer time is set in [DESTINATION], the current time is advanced by 1 hour. If the setting is cancelled, the time automatically returns to the current time. Even if you set summer time in [HOME], current time will not be changed. Please advance the current time by 1 hour in [CLOCK SET].
Using the [REC] menu

- For [REC] menu setting procedures (→20)
- ‘Quick menu’ (→112) is useful to easily call up frequently-used menus.

### [PICTURE SIZE]

Set size of picture. Number of pictures which can be recorded depends on this setting and on [QUALITY] (→96).

**Settings:**

<table>
<thead>
<tr>
<th>Picture Size ([ASPECT RATIO]:</th>
<th>16:9</th>
<th>16:10</th>
<th>4:3</th>
<th>3:2</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 M</td>
<td>4000×3000</td>
<td>3264×2448</td>
<td>2560×1920</td>
<td>2048×1536</td>
</tr>
<tr>
<td>8 M [Z]</td>
<td>4176×2784</td>
<td>3392×2264</td>
<td>2656×1768</td>
<td>2048×1360</td>
</tr>
<tr>
<td>5 M [Z]</td>
<td>4320×2432</td>
<td>3552×2000</td>
<td>2784×1568</td>
<td>1920×1080</td>
</tr>
<tr>
<td>3 M [Z]</td>
<td>4000×3000</td>
<td>3264×2448</td>
<td>2560×1920</td>
<td>2048×1536</td>
</tr>
<tr>
<td>0.3 M [Z]</td>
<td>640×480</td>
<td>640×480</td>
<td>640×480</td>
<td>640×480</td>
</tr>
</tbody>
</table>

*1 This setting is not available in [A] ([INTELLIGENT AUTO] Mode).

- Number of recordable pictures (→174, 176)
- Extra Optical Zoom can be used for picture sizes indicated with [Z].
- Extra Optical Zoom is not available during motion picture recording, when using [MACRO ZOOM], or in the Scene Modes [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [PIN HOLE], or [PHOTO FRAME].
- Mosaic effect may appear depending on subject and recording conditions.

**Setting guide**

<table>
<thead>
<tr>
<th>Larger picture size</th>
<th>Smaller picture size*2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crisper picture</td>
<td>Coarser picture</td>
</tr>
<tr>
<td>Lower recording</td>
<td>Higher recording capacity</td>
</tr>
</tbody>
</table>

*2 For example, ‘0.3 M [Z]’ is suitable for e-mail attachments or longer recording.

---

### Recording Mode: [REC] [TRAVEL MODE] (Continued)

**Recording Mode:** [A] [P] [S] [M] [K] [K]

- Using GPS to make automatic settings [TZ10/257]
  Following step 2 of the previous page, you can select [AUTO] to use the GPS function to set the local time for your destination automatically.
  This is the same function as [AUTO CLOCK SET]. For details (→89)

- When you have returned from your destination, follow steps 1 and 2 and set [HOME].
  - If [HOME] is already set, change only [DESTINATION] before using.
  - If you cannot find your destination in the area displayed on the screen, set based on difference with home time.
  - ![i] is displayed on the screen for pictures recorded at the destination when they are played back.
For [REC] menu setting procedures (→20)

**[QUALITY]**

Set quality of picture.

- **Recording Mode:** \( \mathbb{P} \mathbb{A} \mathbb{S} \mathbb{M} \mathbb{M} \mathbb{S} \mathbb{K} \)
- **Settings:**
  - Fine (High quality, priority to picture quality)
  - Standard (Standard quality, priority to the number of pictures)

**[ASPECT RATIO]**

Aspect ratio of still picture can be changed according to printing or playback format.

- **Recording Mode:** \( \mathbb{P} \mathbb{A} \mathbb{S} \mathbb{M} \mathbb{M} \mathbb{S} \mathbb{K} \)
- **Settings:**
  - 4:3
  - 3:2
  - 16:9

- Same as 4:3 TV or computer
- Same as normal film camera
- For playback on widescreen/high definition TV

- Edges may be cut off when printing – be sure to check in advance.
- In \( \mathbb{A} \) ([INTELLIGENT AUTO] Mode), 3:2 (11.5M) and 16:9 (10.5M) may be selected by changing the [PICTURE SIZE].

**[INTELLIGENT ISO]**

Camera automatically adjusts ISO Sensitivity and shutter speed according to movement of subject to avoid blur. Higher ISO Sensitivity reduces subject blur and jitter but can increase interference. Please select maximum ISO Sensitivity according to table below.

- **Recording Mode:** \( \mathbb{P} \mathbb{A} \)
- **Settings:** [OFF] / [ ] / [ ] / [ ] / [ ]

**Setting guide**

<table>
<thead>
<tr>
<th>Movement of subject</th>
<th>Slow</th>
<th>Fast</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Sensitivity</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Shutter speed</td>
<td>Slow</td>
<td>Fast</td>
</tr>
<tr>
<td>Interference</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ISO Sensitivity 200</th>
<th>(Shutter speed 1/30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Sensitivity 800</td>
<td>(Shutter speed 1/125)</td>
</tr>
</tbody>
</table>

- Shutter speed and ISO Sensitivity are displayed in the screen for a few seconds after recording.
- If interference becomes noticeable, we recommend reducing the setting, or setting [NOISE REDUCTION] in [PICT.ADJ.] in the + direction.
- Blurring may occur depending on brightness, size, position, and speed of movement of the subject (e.g. if subject is too small, is on edge of picture, or starts moving as soon as shutter button is pressed).
- Scope of flash recording (→48)

**[SENSITIVITY]**

Set ISO Sensitivity (sensitivity to lighting) manually. We recommend higher settings to take clear pictures in darker locations.

- **Recording Mode:** \( \mathbb{P} \mathbb{A} \mathbb{S} \mathbb{M} \)

**Setting guide**

<table>
<thead>
<tr>
<th>[SENSITIVITY]</th>
<th>[80]</th>
<th>[1600]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Bright (outdoors)</td>
<td>Dark</td>
</tr>
<tr>
<td>Shutter speed</td>
<td>Slow</td>
<td>Fast</td>
</tr>
<tr>
<td>Interference</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

- [AUTO] is automatically set in a range up to 400 (1000 when flash is used) based on subject movement and brightness.
- Scope of flash recording (→48)
- Cannot be set when [INTELLIGENT ISO] is used ( \( \mathbb{I} \mathbb{S} \mathbb{O} \mathbb{I} \mathbb{S} \) is displayed)
- If interference becomes noticeable, we recommend reducing the setting, or setting [NOISE REDUCTION] in [PICT.ADJ.] in the + direction.
For [REC] menu setting procedures (→20)

### [WHITE BALANCE]
Adjust colouring to suit light source if colours otherwise appear unnatural.

**Recording Mode:**


**Settings:**


**[AWB] operational range:***

- 10000K: Blue sky
- 9000K: Cloudy sky (rain)
- 8000K: Shade
- 7000K: TV screen
- 6000K: Sunlight
- 5000K: White fluorescent lighting
- 4000K: Incandescent lighting
- 3000K: Sunset/sunrise
- 2000K: Candlelight
- 1000K: Cloudy sky (rain)

- **■ White Balance fine adjustment (excluding [AWB])**
  - White Balance settings can be individually fine tuned if colours still do not appear as anticipated.
  1. Press ▲ several times until [WB ADJUST.] is displayed.
  2. Adjust with ► if reds are strong, adjust with ◄ if blues are strong.
  3. Press [MENU/SET].
  - Settings are remembered even if power is turned off.
  - Even though the [AWB] setting is fixed in [UNDERWATER] Scene Mode, fine adjustments may still be made.
  - Fine adjustments cannot be made when [COLOR EFFECT] (→104) is set to [B/W], [SEPIA], [COOL], or [WARM].

- **■ Setting White Balance manually** ([SET])
  1. Select [SET] and press [MENU/SET].
  2. Point the camera towards a white object (e.g. paper) and press [MENU/SET].
  3. Press [MENU/SET].
  - Only takes pictures of white objects within frame (step 2).
  - White Balance is set to [AWB].
  - Making this setting will reset White Balance fine adjustment.
  - Even if the camera’s power is OFF, the set White Balance is remembered.
  - It may not be possible to set the correct White Balance if subjects are too bright or too dark. In this case, adjust the brightness and try to set the White Balance again.

- **■ Setting White Balance manually ([set manually])**
  - Changes to red (blue) when making fine adjustment

- **■ [FACE RECOG.]**
  - Registering people that appear frequently in your pictures allows them to be given priority when aligning focus, and allows all pictures featuring them to be viewed collectively.
  - For details (→78).

- **■ [AF MODE]**
  - Method of aligning focus can be changed according to position and number of subjects.
  - **Settings:** [ ] / [ ] / [ ] / [ ]

- **Taking front-on pictures of people**
  - [Face Detection]
  - Recognises faces (up to 15 people) and adjusts exposure and focus accordingly. When [METERING MODE] (→101) is set to ‘Multiple’.

- **AF area**
  - Yellow: When the shutter button is pressed halfway, the frame turns green when the camera 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 area are also focused.

- **Automatically locking the focus on a moving subject**
  - [AF Tracking]
  - Align the AF Tracking frame with the subject, and then press ▼.

- **AF Tracking frame**
  - When the subject is recognised, the AF Tracking frame changes from white to yellow, and the subject is automatically kept in focus.
  - If AF Lock fails, a red frame flashes.

- **Subject not centred in picture**
  - [11-area-focusing]
  - Automatically focuses on any of 11 points.
Using the [REC] menu (Continued)

Determined position for focus
- [1-area-focusing (High speed) ▶]
- [1-area-focusing)
- (Spot-focusing)

1-area-focusing (High speed)/1-area-focusing: Focuses on AF area in centre of picture. (Recommended when focus is difficult to align)

Spot-focusing: Focuses on smaller, limited area.

- When using [ ], picture may freeze momentarily before focus is aligned.
- AF area becomes larger in dark locations or when using Digital Zoom or Macro Zoom, etc.
- Use [ ] or [ ] if focus is difficult to align with [ ]
- Cannot set to ‘Face Detection’ in the following cases: [PANORAMA ASSIST], [NIGHT SCENERY], [FOOD], [STARRY SKY], [FIREWORKS], [AERIAL PHOTO], [UNDERWATER] Scene Modes
- If the camera misinterprets a non-human subject as a face in the ‘Face Detection’ setting, switch to another setting.
- The Face Detection function may fail to work under the following conditions. (AF mode setting is switched to [ ])
  - When the face is not facing the camera or the face is at an angle
  - When the facial features are hidden behind sunglasses, etc.
  - When there is little shadow on the face
  - When the face is extremely bright or dark
- In AF Tracking, the AF lock can fail, lose the subject, or track another subject or following conditions.
  - The subject is too small
  - There is rapid movement
  - The camera is shaking
  - The location is too bright or dark
- When AF Tracking does not work, focus will be on ( [ ] 1-area-focusing)
- Cannot set to [ ] in the following cases.
  - [PANORAMA ASSIST], [STARRY SKY], [FIREWORKS], [PIN HOLE], [FILM GRAIN], or [HIGH DYNAMIC] Scene Modes.
  - [B/W], [SEPIA], [COOL], and [WARM] in [COLOR EFFECT]
- While recording motion pictures and the setting is other than (Face Detection), focus will be on ( [ ] 1-area-focusing).

Focus is continually aligned according to movement of subject even when shutter button is not pressed. (Increases battery consumption)

- Recording Mode: [ ]
- Settings:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>[OFF]</td>
<td>Focus is not adjusted until the shutter button is pressed halfway.</td>
</tr>
<tr>
<td>[Q-AF] (Quick AF)</td>
<td>The focus is automatically adjusted when camera blurring is small even when the shutter button is not pressed.</td>
</tr>
<tr>
<td>[C-AF] (Continuous AF)</td>
<td>The focus is adjusted continuously based on subject movement, even when the shutter button is not pressed.</td>
</tr>
</tbody>
</table>

Focus alignment may take time if zoom is suddenly changed from max. W to max. T, or if suddenly moving closer to subject.
- Press shutter button halfway if focus is difficult to align.
- The function will turn [OFF] in the following cases.
  - In Scene Modes [NIGHT PORTRAIT], [NIGHT SCENERY], [STARRY SKY] or [FIREWORKS]
  - [Q-AF] will not work while AF Tracking is operating.

You can change the position for measuring brightness when correcting exposure.

- Recording Mode: [ ]
- Settings:

<table>
<thead>
<tr>
<th>Brightness measurement position</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Multiple</td>
<td>Whole screen</td>
</tr>
<tr>
<td>[ ] Centre weighted</td>
<td>Centre and surrounding area</td>
</tr>
<tr>
<td>[ ] Spot</td>
<td>Centre and close surrounding area</td>
</tr>
</tbody>
</table>

Spot metering target
- Great difference between brightness of subject and background (e.g. person in spotlight on stage, backlighting)
For [REC] menu setting procedures (→20)

### [I.EXPOSURE]

Automatically adjusts contrast and exposure to give more lifelike colours when there is significant contrast between background and subject.

- **Recording Mode:** [T|Z|1|Z|2|S|7| P | A | S | M | L|Z|1|Z|2|S|7| P | A | S | M | E
- **Settings:** [OFF]/[LOW]/[STANDARD]/[HIGH]

- [LOW], [STANDARD] and [HIGH] indicate the amount of correction.
- If the setting is other than [OFF], iØ is displayed on the screen.
- When [I.EXPOSURE] works, the colour of iØ changes.
- Even if [SENSITIVITY] is set to [80] or [100], when [I.EXPOSURE] is activated, pictures may be taken at a higher sensitivity than the setting.
- Correction effects may not be achieved under certain conditions.

### [MIN. SHTR SPEED]

Sets shutter speed to minimum. We recommend using slower shutter speeds to take brighter pictures in dark locations.

- **Recording Mode:** [P]
- **Settings:** [AUTO] [1/250] [1/125] [1/60] [1/30] [1/15] [1/8] [1/4] [1/2] [1]

- Slower shutter speeds allow for brighter pictures but increase risk of jitter, so we recommend using a tripod and the self-timer.
- As still pictures may become dark when using faster values such as [1/250], we recommend that still pictures are taken in bright locations (Ø flashes red when shutter button is half-pressed if still picture will be dark).
- Ø displayed on screen for settings other than [AUTO].

### [BURST]

Enables a rapid succession of still pictures to be taken. Succession of still pictures taken while shutter button is held down.

- **Recording Mode:** [P] [A] [S] [M] [MS] [K]
- **Settings:**

<table>
<thead>
<tr>
<th>[BURST] setting</th>
<th>Speed</th>
<th>No. of pictures*</th>
</tr>
</thead>
<tbody>
<tr>
<td>[OFF]</td>
<td>No burst</td>
<td></td>
</tr>
<tr>
<td>[Burst]</td>
<td>2.3 pictures/sec.</td>
<td>Fine: Max. 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standard: Max. 5</td>
</tr>
</tbody>
</table>

- When using self-timer: Fixed at 3 pictures
- Focus, exposure and White Balance are fixed in the first picture.
- Burst speed may be reduced if [SENSITIVITY] is set to high, or if shutter speed is reduced in darker locations.
- When burst setting is used, flash is set to [FORCED FLASH OFF], and [AUTO BRACKET], [MULTI ASPECT], and [AUDIO REC.] settings are cancelled.
- When burst is performed with the built-in memory, writing will take some time.
- Settings will be stored even if power is turned off.
- Auto Review performed regardless of [AUTO REVIEW] setting.
- Burst is not available in the Scene Modes [TRANSFORM], [PANORAMA ASSIST], [HI-SPEED BURST], [FLASH BURST], [STARRY SKY], [PIN HOLE], [FILM GRAIN], [HIGH DYNAMIC], and [PHOTO FRAME].
- Using the [HI-SPEED BURST] Scene Mode allows a faster succession of still pictures to be taken. [FLASH BURST] is convenient to take continuous still pictures using flash in dark places.

### [i.RESOLUTION]

Super resolution technology can be used to record still pictures with sharper outlines and clearer resolution. Also, when [i.ZOOM] is set, the zoom ratio can be increased to about 1.3 with almost no deterioration of picture quality.

- **Recording Mode:** [P] [A] [S] [M]
- **Settings:** [OFF]/[ON]/[i.ZOOM]

- About i.ZOOM (→41)
- The setting is fixed to [ON] in [HIGH SENS.] and [HI-SPEED BURST] Scene Modes, [OFF] in [FLASH BURST] and [PIN HOLE] Scene Modes, and [i.ZOOM] in other Scene Modes.
Using the [REC] menu (Continued)

[DIGITAL ZOOM]
Multiplies effect of Optical Zoom or Extra Optical Zoom by up to 4 times. For details (→43)
- **Recording Mode:** P A S M K M \n- **Settings:** [OFF]/[ON]
- This is fixed to [ON] when [MACRO ZOOM] is set.

[CONTINUOUS AF]
Either allow the focus to be constantly adjusted during motion picture recording, or fix the focus position at the start of recording.
- **Recording Mode:** [ ]
- **Settings:** [OFF]: Fix focus position at the start of motion picture recording. [AF] appears on the screen.
  - [ON]: Adjust focus according to movement of subject during motion picture recording.
- The setting is fixed to [OFF] in [STARRY SKY] and [FIREWORKS] Scene Modes.

[COLOR EFFECT]
Set colour effects.
- **Recording Mode:** [ ]
- **Settings:** [STANDARD]/[B/W]/[SEPIA]/[COOL] (more blue)/[WARM] (more red)/[Happy] (only)
- In [ (INTELLIGENT AUTO)], only [STANDARD], [Happy], [B/W] or [SEPIA] can be set (these are set separately from other modes).

[PICT.ADJ.]
The elements that determine picture quality are set for each item and the pictures you record are adjusted to your preferred picture quality.
- **Recording Mode:** P A S M
- **Settings:**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>[CONTRAST]</td>
<td>The difference in brightness and darkness in pictures</td>
</tr>
<tr>
<td>[SHARPNESS]</td>
<td>Outlines in pictures</td>
</tr>
<tr>
<td>[SATURATION]</td>
<td>Change of colour saturation</td>
</tr>
<tr>
<td>[NOISE REDUCTION]</td>
<td>Noise processing</td>
</tr>
</tbody>
</table>

- If you are concerned about noise when you record a dark scene, it is recommended to move [NOISE REDUCTION] to the plus side, or to adjust items other than [NOISE REDUCTION] to the minus side before recording.

[STABILIZER]
Automatically detects and prevents jitter.
- **Recording Mode:** P A S M K M
- **Settings:**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>[OFF]</td>
<td>Pictures deliberately taken with no jitter correction</td>
</tr>
<tr>
<td>[AUTO]</td>
<td>The optimum image stabilizer is performed automatically based on the recording conditions.</td>
</tr>
<tr>
<td>[MODE 1]</td>
<td>Constant correction (Monitor image stable, composition easy to determine)</td>
</tr>
<tr>
<td>[MODE 2]</td>
<td>Correction when shutter button is pressed (More effective than [MODE 1])</td>
</tr>
</tbody>
</table>

- Setting fixed to [MODE 2] in [SELF PORTRAIT] and [OFF] in [STARRY SKY] Scene Modes.
- Cases where Optical Image Stabilizer may be ineffective:
  - Heavy jitter, high zoom ratio (including Digital Zoom range), fast-moving objects, indoors or in dark locations (due to low shutter speed)
  - This is fixed at [MODE 1] during motion picture recording.
For [REC] menu setting procedures (→20)

[AUDIo REC.]

Sounds can also be recorded with pictures. This is useful for conversation or memo recording.

- **Recording Mode:** [P A S M MS]
- **Settings:** [OFF]/[ON] (Record approx. 5 seconds of sound (Displayed on screen))

- To cancel recording → Press [MENU/SET].
- To play audio (→115)
- Recording is not possible in [BURST], [AUTO BRACKET], [MULTI ASPECT], and the [PANORAMA ASSIST], [HI-SPEED BURST], [FLASH BURST], and [STARRY SKY] Scene Modes.
- [TEXT STAMP], [RESIZE], [CROPPING], [LEVELING], and [ASPECT CONV.] cannot be used with still pictures with audio.
- Separate setting to [AUDIO REC.] in [CLIPBOARD] menu (→111).
- Do not block microphone (→9, 10) with fingers.

[AF ASSIST LAMP]

Illuminates lamp when dark to facilitate focus alignment.

- **Recording Mode:** [P A S M MS]
- **Settings:** [OFF]: Lamp off (taking pictures of animals in dark, etc.)
  [ON]: Lamp illuminated with halfway press of shutter button (and larger AF area displayed)

- When [CONTINUOUS AF] is set to [OFF], the AF Assist Lamp illuminates even when the motion picture button is pressed.

  Lamp: Effective distance: 1.5 m (4.92 feet)
  (Do not cover or look at lamp from close range)

[RED-EYE REMOVAL]

Automatically detects red-eye and corrects still picture data when recording with flash red-eye reduction (Face Detection).

- **Recording Mode:** [P A S M MS]
- **Settings:** [OFF]/[ON]

- Disabled when [AF MODE] is other than (Face Detection).
- Depending on the circumstances, it may not be possible to correct red eye.
- When the function setting is [ON], a appears with the flash icon. (→47)

[CLOCK SET]

Set the Clock. Same function as that in [SETUP] menu (→22).
Using the [MOTION PICTURE] menu

For [MOTION PICTURE] menu setting procedures (→20)

Quick menu (→112) is useful to easily call up frequently-used menus.

[REC MODE]

Sets the data format of the motion picture that is recorded.

Recording Mode: [P] [A] [S] [M] [O] [B] [A]

Settings:

**[AVCHD Lite (GPS REC)]**

*These are AVCHD Lite motion pictures to which location name information from the start of recording has been added.*

**[AVCHD Lite]**

*This is a data format suitable for playback on high-definition TVs.*

**[MOTION JPEG]**

*This is a data format suitable for playback on computers that allows even small picture sizes to be recorded. Location name information from the start of recording can also be recorded.*

*When the term “AVCHD Lite motion picture” is used in this manual, it means a motion picture recorded in [AVCHD Lite (GPS REC)] or [AVCHD Lite].

The [REC QUALITY] options vary based on the setting.

If a card is not loaded in the camera, the motion picture is automatically recorded in [MOTION JPEG] ([REC QUALITY]: [QVGA]).

Even when devices are compatible with motion pictures recorded with this camera, the playback may have poor picture or sound quality, or playback may not be possible. Also, the recording information may not be displayed properly. In this case, use this unit.

For details on AVCHD compatible devices, refer to the support sites below.
http://panasonic.jp/support/global/cs/dsc/
(This Site is English only.)

AVCHD Lite motion pictures cannot be played back on devices not compatible with AVCHD (such as conventional DVD recorders). Also, motion pictures recorded in [AVCHD Lite (GPS REC)] cannot be played back with Panasonic digital cameras (LUMIX) compatible with AVCHD (Lite) recording that were sold in or before 2009.

If positioning fails and location name information is not saved, the location name information is not recorded.

Because AVCHD Lite motion pictures do not conform to DCF and Exif, some information (such as picture number, White Balance, etc.) is not displayed during playback.

Using a card of SD speed 'Class 4' or above is recommended for recording motion pictures in [AVCHD Lite (GPS REC)]/[AVCHD Lite].

Using a card of SD speed 'Class 6' or above is recommended for recording motion pictures in 'MOTION JPEG'.

* The SD speed class is a speed rating for continuous writing.

To play back AVCHD Lite motion pictures using a computer, please use the ‘PHOTOfunSTUDIO’ software on the CD-ROM supplied.

[REC QUALITY]

Sets the picture quality of the motion picture that is recorded.

Recording Mode: [P] [A] [S] [M] [O] [B] [A]

**[AVCHD Lite (GPS REC)]**

*These are AVCHD Lite motion pictures to which location name information from the start of recording has been added.*

**[AVCHD Lite]**

*This is a data format suitable for playback on high-definition TVs.*

**[MOTION JPEG]**

This is a data format suitable for playback on computers that allows even small picture sizes to be recorded. Location name information from the start of recording can also be recorded.

*The bit rate is the amount of data per unit time. A higher value translates into a higher image quality. This camera uses the VBR (Variable Bit Rate) recording system and the available recording time is shorter when recording a subject with rapid movements.

*2 The frame rate is the number of frames per second.


[QVGA] only can be recorded to the built-in memory.

[CONTINUOUS AF]

Either allow the focus to be constantly adjusted during motion picture recording, or fix the focus position at the start of recording.

Recording Mode: [P] [A] [S] [M] [O] [B] [A]

Settings: [ON]: Adjust focus according to movement of subject during motion picture recording. ([CAF] appears on the screen.)

[OFF]: Fix focus position at the start of motion picture recording.

Use this setting to keep the same focus position for subjects with little forward/backward movement.

The setting is fixed to [OFF] in [STARRY SKY] and [FIREWORKS] Scene Modes.

[WIND CUT]

Reduces recording of wind sounds (wind noise) when recording in a strong wind.

Recording Mode: [P] [A] [S] [M] [O] [B] [A]

Settings: [OFF]/[ON] ([WIND CUT] appears on the screen.)

When [WIND CUT] is set to [ON], lower sounds will be eliminated and the sound quality will differ from that of normal recordings.
Taking/viewing clipboard pictures

**[CLIPBOARD] Mode**

Useful for taking pictures of timetables and maps instead of taking memos. Regardless of the presence of a card, pictures will always be saved to the clipboard folder of the built-in memory, so they can be distinguished from normal pictures and viewed immediately. Beware of copyrights, etc. (→6)

### Taking clipboard pictures

1. **Set to:**
   - Press halfway (press lightly to focus)

2. **Set to:**
   - Press fully (press the button all the way to record)

3. **Take a clipboard picture**

- Represents built-in memory used entirely for clipboard pictures (approx.)

<table>
<thead>
<tr>
<th>Picture Size</th>
<th>2 M</th>
<th>1 M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pictures</td>
<td>[TZ40] 26</td>
<td>40</td>
</tr>
</tbody>
</table>

### Viewing clipboard pictures

1. **Set REC/PLAY switch to:**
2. **Set mode dial to:**
   - Can be viewed with the same operations as with pictures taken in other modes (→44).
   - (30-picture and calendar displays cannot be used.)

- **To delete clipboard pictures**
  - Press in step 2 above. (→45)

- **If built-in memory is full**
  - Non-clipboard pictures can be deleted from the built-in memory by removing the card from the camera, setting the mode dial to a setting other than [CLIPBOARD] Mode, and pressing.

- **Copy clipboard pictures onto memory cards in order to print** (→111).
- **Motion pictures cannot be recorded in [CLIPBOARD] Mode.**
- **Playback Mode functions cannot be used.**
- **[STABILIZER] setting made in [REC] menu will be reflected in Clipboard Mode.**
- **Functions unavailable:**
  - [INTELLIGENT ISO], [FACE RECOG.], [PRE AF], [i.EXPOSURE], [MIN. SHTR SPEED], [BURST], [DIGITAL ZOOM], [COLOR EFFECT], [PICT.ADJ.], [AUTO BRACKET], [MULTI ASPECT], [WB ADJUST.], [LCD POWER SAVE], [HISTOGRAM]

- **The settings for the following functions are fixed:**
  - [QUALITY]: [Standard]
  - [ASPECT RATIO]: [3:2]
  - [SENSITIVITY]: [AUTO]
  - [WHITE BALANCE]: [AWB]
  - [AF ASSIST LAMP]: [ON]
  - [AF MODE]: [1-area-focusing]
  - [GUIDE LINE]: [ ]
  - [SLEEP MODE]: [5 MIN.]
  - [I.RESOLUTION]: [i.ZOOM]

- **Other items on the [SETUP] menu will reflect settings made in the [PROGRAM AE] Mode, etc.
Using Quick menu

Recording menu items can be called up easily.

1 Set to Quick menu

2 Display Quick menu

Press the button until the Quick menu is displayed

3 Select item and setting

Press (Finished)

Select

Quick menu

Select item and setting

Display Quick menu

Set to

GPS function operations

When [ON] or [GPS] is selected in the [GPS SETTING] item, the following operations are available:

- [GPS AREA SELECT] → Press [DISPLAY]

Entering Text

Use the cursor buttons to enter names with the Face Recognition function and in Scene Modes [BABY] and [PET], or to register destinations in [TRAVEL DATE] etc.

1 (On the setting screen of each menu)

Display the character selection screen

2 Select characters and press [MENU/SET] (repeat)

- Text is inserted at the cursor position.

■ To change the character type

1 Press [DISPLAY]

(Changes each time you press the button)

- [A-Z]: Upper/lower case alphabet
  - [0-9]: Symbols/numbers

3 When you are finished entering text, select [SET] and press [MENU/SET]

For [REC] menu setting procedures (→20)

Setting items displayed vary depending on Recording Mode.

GPS function operations

When [ON] or [GPS] is selected in the [GPS SETTING] item, the following operations are available:

- [GPS AREA SELECT] → Press [DISPLAY]

- For [REC] menu setting procedures (→20)

- Setting items displayed vary depending on Recording Mode.

- A maximum of 30 characters can be entered. (Maximum of 9 characters for [FACE RECOG.] names)

- The entry position cursor can be moved left and right with the zoom lever.

- Press [DISPLAY] to return to the menu screen.

- Text is scrolled if it does not fit on the screen.

- To print the text you have specified, use [TEXT STAMP] (→128) or use the ‘PHOTOfunSTUDIO’ software on the CD-ROM (supplied).
Viewing as list (Multi Playback/Calendar Playback)

Playback Mode: 

You can view 12 (or 30) pictures at once (Multi Playback), or view all pictures taken on a certain date (Calendar Playback).

1. Set to 
2. Set multiple screen display
   - To view pictures: press 
3. Set to multiple screen display
   - Date recorded Picture no.
   - Total no.
   - Scroll bar
   - Picture type
   - [FAVORITE] ★
   - [AVCHD Lite] [TZ10/TZ27]
   - [MOTION JPEG]
   - [BABY] 
   - [PET]
   - [TRAVEL DATE]
   - [WORLD TIME]
   - [TITLE EDIT]
   - [TEXT STAMP]

4. Selected date (First picture from date)
   - Select week with ▲▼ and date with ◄►, and press [MENU/SET] to display that date’s pictures on a 12-screen display.

- Only months when pictures were taken are shown on the calendar screen. Pictures taken without Clock settings are displayed with the date 1st January, 2010.
- Cannot be displayed rotated.
- [ROTATE DISP.] cannot be performed in the 12-screen and 30-screen displays.
- Pictures taken with destination settings made in [WORLD TIME] are displayed in the calendar screen using the appropriate date for the destination’s time zone.

Watching motion pictures/still pictures with audio

Playback Mode: 

Motion pictures and still pictures with audio can be played back just as you view still pictures.

1. Set to 
2. Set to a position other than 
3. Select the picture and start playback

- [AVCHD Lite(GPS REC)] [AVCHD Lite] [TZ10/TZ27]
- [TZ10/TZ27] [TZ20/TZ35] [MOTION JPEG]

- Still picture with audio
  - The motion picture recording time display changes to the playback elapsed time when playback is started. Example: 1 hour 2 minutes and 30 seconds is 1h2m30s

- Operations during motion picture playback
  - ▲:Pause/play
  - ▼:Stop
  - ◄:Fast rewind (2 steps)
  - ►:Fast forward (2 steps)
  - Single-frame rewind (while paused)
  - Single-frame forward (while paused)

  - If ▲ is pressed during fast forward or rewind, it will return to normal playback speed.
  - Volume can be adjusted with zoom lever (motion picture only).

- Deleting
  - 

- The volume for still pictures with audio can be adjusted by the speaker volume (→22).
- Motion pictures or still pictures with audio recorded on other devices may not be played correctly.
- When using a large-volume memory card, the rewind function may take some time.
- Some information (picture number, White Balance, etc.) will not be displayed for motion pictures recorded in [AVCHD Lite(GPS REC)] and [AVCHD Lite] [TZ10/TZ27]
- Motion pictures recorded with [AVCHD Lite] can be viewed on your computer using ‘PHOTOfunSTUDIO’ on the supplied CD-ROM. [TZ10/TZ27]
Capturing still pictures from motion pictures

Playback Mode: 

Save a scene from a motion picture as a still picture.

1 Display the picture that you want to capture as a still picture by pausing a motion picture during playback

- [▲]: Pause/playback
- ◀: Fast rewind (2 steps)
  (during pause) single-frame rewind
- ►: Fast forward (2 steps)
  (during pause) single-frame forward

2 Capture still picture

3 Select [YES]

A still picture is created.

Splitting up motion pictures

Playback Mode: 

A single motion picture can be split into 2 parts. This is convenient when you want to keep just the necessary scenes, or if you wish to delete unnecessary scenes to increase free space on your card, such as when traveling.

1 Select [VIDEO DIVIDE] from [PLAYBACK] menu (→20)

2 Select the motion picture to split with ◀►, and then press [MENU/SET]

3 Play back the motion picture and pause at the place to split

- [▲]: Pause / playback
- ◀: Fast rewind (2 steps)
  (during pause) single-frame rewind
- ►: Fast forward (2 steps)
  (during pause) single-frame forward

4 Decide the point to split the motion picture

5 Select [YES]

The motion picture is split.
- The original motion picture that was split does not remain. (There will only be the 2 motion pictures that were created after the split.)
- Splitting may take some time.

- After setting, press  ■  to return to the menu screen.

- Use a sufficiently charged battery (→11) or AC adaptor (optional) and DC coupler (optional).
- When there is extremely little free space left on the card, it may not be possible to split the motion picture.
- The following motion pictures cannot be split.
  - Motion pictures set as [FAVORITE]
  - Motion pictures protected by [PROTECT]
- Splits cannot be made that would leave a motion picture of less than 1 second after the split.
- Split points are set at time increments of 0.5 seconds. (There may be a slight difference from the specified point)
- During splitting, do not turn off the camera’s power or remove the card or battery. If you do so, the motion picture will be deleted.
- It may not be possible to split motion pictures that were recorded with a different camera.
- [PRINT SET] is cancelled after splitting.

- The picture size is 2M [640]. (Except for still pictures captured from motion pictures where the [REC QUALITY] is [VGA] or [QVGA], when the size is 0.3M [160].)
- The picture quality becomes slightly lower because of the picture quality setting of the original motion picture.
- It may not be possible to capture still pictures from motion pictures that were recorded with a different camera.

This function is not available in the DMC-TZ8/DMC-ZS5.

[VIDEO DIVIDE] is not available in the DMC-TZ8/DMC-ZS5.
Different playback methods [PLAYBACK MODE]

Playback Mode: 

Recorded pictures can be played back in a variety of ways.

1. Set to 
2. Set a position other than 
3. Display the screen for Playback Mode selection
4. Select the Playback Mode from MODE

- [NORMAL PLAY] (→44)
- [SLIDE SHOW] (→119)
- [MODE PLAY] TZ40|257 (→120)
- [GPS AREA PLAY] TZ40|257 (→121)
- [TRAVEL PLAY] (→122)
- [CATEGORY PLAY] (→124)
- [FAVORITE PLAY] (→125)

● When no card is inserted, pictures (except [CLIPBOARD] pictures) are played back from the built-in memory.
● The [PLAYBACK MODE] automatically becomes [NORMAL PLAY] when the REC/PLAY switch is set to and the power is turned on, or when switching from Recording Mode to Playback Mode.
● [FAVORITE PLAY] is only displayed when pictures have been set as [FAVORITE] and the setting is [ON].

[SLIDE SHOW]

Automatically play pictures in order and to music. Recommended when viewing on TV screen.

1. Select the playback method
   - [ALL]: Play all
   - [PICTURE ONLY]: Plays back still pictures and still pictures with audio
   - [VIDEO ONLY]: Playback of motion pictures only
   - [GPS AREA PLAY] TZ40|257: Selects place name or landmark to play back pictures recorded in the same place. (Use ▲▼◄► to select place name or landmark and press [MENU/SET]) (→121)
   - [TRAVEL]: Play only pictures that were recorded with the [TRAVEL DATE] or [LOCATION] (→122)
   - [CATEGORY SELECTION]: Select category and playback still pictures only. (Select category with ▲▼◄► and press [MENU/SET].) (→124)
   - [FAVORITE]: Play pictures set as [FAVORITE] (displayed only when [FAVORITE] pictures have been set and setting is [ON]).

2. Set playback effects
   - [EFFECT] (Select music and effects according to picture atmosphere)
     - [AUTO]: Camera selects optimum effect from [NATURAL], [SLOW], [SWING], and [URBAN] (only available with [CATEGORY SELECTION] setting)
     - [NATURAL]: Play with relaxed music and screen transition effects
     - [SLOW]: Play with livelier music and screen transition effects
     - [SWING]: Play with livelier music and screen transition effects
     - [URBAN]: Play with relaxed music and screen transition effects
     - [OFF]*: No effects

   - [REPEAT]: [OFF]/[ON] (Repeat)
   - [SOUND]: [OFF]: Music and audio will not play back.
     - [AUTO]: With still pictures, music will play back, and with motion pictures or still pictures with audio, audio will play back.
     - [MUSIC]: Music effect will play back.
     - [AUDIO]: Audio is played back from motion pictures or still pictures with audio.

   - Press to return to the menu screen during Slide Show.
Different playback methods [PLAYBACK MODE]  
(Continued)

Operations during Slide Show

During motion picture playback
Pause/play
(When paused)
Previous
(During playback)
To start of motion picture being played*
Stop
Volume down
Volume up

During still picture playback
Pause/play
(While paused)
Previous
(While paused)
Next
Stop
Volume down
Volume up

* The previous picture is displayed if less than 3 seconds of the motion picture has been played.

When [URBAN] has been selected, the picture may appear in black and white as a screen effect.
Certain playback effects cannot be used when displaying pictures on television using HDMI mini cables.  
Music effects cannot be added.
The duration setting is disabled during motion picture playback.
Pictures with different aspect ratios have their edges cut so they can be displayed on the entire screen.

[MODE PLAY] TZ10 ZS7

This Playback Mode is useful for playing back still pictures only or only motion pictures recorded in [AVCHD Lite] (or [MOTION JPEG]).

1 Select the type of data

2 View pictures

• To delete the picture → Press (delete).

[MODE PLAY] is not available in the DMC-TZ8/DMC-ZS5.
Different playback methods [PLAYBACK MODE]
(Continued)
Playback Mode: ➤

For switching [PLAYBACK MODE] procedure (→118)

■ [TRAVEL PLAY]
Play back only pictures recorded at your destination.

■ Play back by travel date
Pictures can be played back by travel date if [TRAVEL SETUP] [TRAVEL DATE] was set at the time of their recording.

1 Select [TRAVEL DATE]

- If [ALL] is selected, all pictures for which [TRAVEL SETUP] [TRAVEL DATE] has been set are displayed.

2 Select the date to play back

- If there are many pictures, display may take some time.
- Of those pictures for which [LOCATION] has been set, the one with the lowest file number is displayed as the representative picture.

3 View pictures

- To delete picture → Press (delete).

Select [LOCATION]

Select the item

Select the picture

[CLIPBOARD] pictures are not displayed even if [TRAVEL MODE] is set.
- Only the following playback menu items can be used during [TRAVEL PLAY], [PLACE-NAME EDIT], [ROTATE DISP.], [PRINT SET], [PROTECT].
Different playback methods [PLAYBACK MODE]
(Continued)
Playback Mode: [CATEGOR] [FAVORITE]

For switching [PLAYBACK MODE] procedure (→118)

[CATEGORY PLAY]
Pictures can be classified automatically and viewed by category. Automatic classification starts when [CATEGORY PLAY] is selected from the Playback Mode selection menu.

1 Select the Category

Icons of categories with pictures
No. of pictures (appears after a few seconds)
- For [Playback by Person], use ▲▼◄► to select the person, and then press [MENU/SET].

See pictures

2 View pictures

- To delete pictures
  ❮ Press ❮.

<table>
<thead>
<tr>
<th>[CATEGORY]</th>
<th>Recording information such as Scene Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="portrait" alt="Category" /></td>
<td>Pictures taken using Face Recognition</td>
</tr>
<tr>
<td><img src="scenery" alt="Category" /></td>
<td>[PORTRAIT]/i PORTRAIT]/[SOFT SKIN]/[TRANSFORM]/SELF PORTRAIT]/[NIGHT PORTRAIT]/[BABY]/i BABY]</td>
</tr>
<tr>
<td><img src="event" alt="Category" /></td>
<td>[SCENERY]/[SCENERY]/[SUNSET]/[AERIAL PHOTO]/[SUNSET]</td>
</tr>
<tr>
<td><img src="occasion" alt="Category" /></td>
<td>[NIGHT PORTRAIT]/i NIGHT PORTRAIT]/[NIGHT SCENERY]/i NIGHT SCENERY]/[STARRY SKY]</td>
</tr>
<tr>
<td><img src="sports" alt="Category" /></td>
<td>[SPORTS]/[PARTY]/[CANDLE LIGHT]/[FIREWORKS]/BEACH]/[SNOW]/[AERIAL PHOTO]</td>
</tr>
<tr>
<td><img src="baby" alt="Category" /></td>
<td>[BABY]/i BABY]</td>
</tr>
<tr>
<td><img src="food" alt="Category" /></td>
<td>[PET]</td>
</tr>
<tr>
<td><img src="pet" alt="Category" /></td>
<td>[FOOD]</td>
</tr>
<tr>
<td><img src="underwater" alt="Category" /></td>
<td>[UNDERWATER]</td>
</tr>
<tr>
<td>![Category](motion picture)</td>
<td>[MOTION PICTURE]</td>
</tr>
</tbody>
</table>

- Calendar display cannot be used.
- Pictures taken without name settings in [FACE RECOG.] are not categorized.
- The following playback menus can only be set:
  - [PLACE-NAME EDIT], [ROTATE DISP.], [PRINT SET], [PROTECT]
- To close [CATEGORY PLAY], select [NORMAL PLAY].

[FAVORITE PLAY]
Manually play pictures set in [FAVORITE] (displayed only when [FAVORITE] pictures are present and setting is [ON]).

View pictures

- Calendar display cannot be used.
- The following playback menus can only be set:
  - [PLACE-NAME EDIT], [ROTATE DISP.], [PRINT SET], [PROTECT]
- To close [FAVORITE PLAY], select [NORMAL PLAY].
Using the [PLAYBACK] menu

Playback Mode: Set mode dial to any except "

You can edit or protect recorded pictures.
• Depending on the Playback Mode, some [PLAYBACK] menu items are not displayed.
• New pictures are created after editing pictures with tools such as [TEXT STAMP] and [RESIZE]. Before starting to edit, make sure that there is enough free space in the built-in memory or memory card.

[CALENDAR]
Select the date from the calendar screen to view only the pictures taken on that day (→114).

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [CALENDAR]
This setting can only be made when the Playback Mode is [NORMAL PLAY].

[TITLE EDIT]
You can give titles, etc. to your favourite still pictures.

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [TITLE EDIT]

1 Press ▲▼ to select [SINGLE] or [MULTI], and then press [MENU/SET]
2 Select still picture
   ● [SINGLE]
   ● [MULTI] (up to 50 pictures with the same text)
3 Enter characters (Entering text (→113))
   (After confirmation, press [DISPLAY] to return to the menu screen in [SINGLE] setting.)

To edit

● Cannot be used with still pictures taken on other devices, protected still pictures, or motion pictures.
● To print text, use [TEXT STAMP] or the supplied CD-ROM ‘PHOTOfunSTUDIO’.

[PLACE-NAME EDIT]
You can edit place name information recorded by GPS function.


1 Select the picture
2 Select the location name or landmark name to edit.
3 Select [REPLACE]
4 Enter characters (Entering text (→113))
5 Select [YES]
6 If you want to edit another location name or landmark name, repeat steps 2 to 5
   • After setting, press [DISPLAY] to return to the menu screen.

To delete a location name or landmark name
In step 3, select [DELETE] with▼, and then select [YES].

[VIDEO DIVIDE]
Motion pictures can be split to delete unnecessary scenes.
For details (→117)
Using the [PLAYBACK] menu (Continued)

Playback Mode: (Set mode dial to any except )

For the [PLAYBACK] menu setting procedure (→20).

- The recording date and time, location name information and the text registered in the [BABY], [PET] Scene Modes, [TRAVEL DATE] and [TITLE EDIT] are stamped on the still picture.

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [TEXT STAMP]

1 Press ▲▼ to select [SINGLE] or [MULTI], and then press [MENU/SET]

2 Select still picture

- [SINGLE]

![Image]

- [MULTI] (up to 50 pictures)

![Image]

- To cancel → Press [DISPLAY] button again.
- To execute → Press [MENU/SET].

3 Select items and make settings for each

![Image]

- [OFF] items are not stamped

4 Select whether to stamp age

- If [NAME] is [OFF] in Step 3, this screen will not be displayed.

5 Select [YES]

(Screen varies according to picture size, etc.)

![Image]

- When you have selected [SINGLE], after step 6, press [MENU/SET] to return to the menu screen.
- Picture size will be reduced if greater than 3M. Picture will become slightly grainier.

<table>
<thead>
<tr>
<th>Aspect ratio</th>
<th>After [TEXT STAMP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 : 3</td>
<td>3 M</td>
</tr>
<tr>
<td>3 : 2</td>
<td>2.5 M</td>
</tr>
<tr>
<td>16 : 9</td>
<td>2 M</td>
</tr>
</tbody>
</table>

- Characters may be cut off on certain printers.
- Text is difficult to read when stamped on pictures of 0.3M or less.
- [LEVELING], [ASPECT CONV.], [TEXT STAMP] and date printing settings cannot be changed on pictures.
- Text is difficult to read when stamped on pictures of 0.3M or less.
- Do not request date printing in store or make date printing on printer for still pictures with date stamps. (Date printing may be overlapping.)

- The item cannot be stamped when function is turned [OFF].

- If text such as the location name or landmark name is long, it may not be possible to stamp all the text.

- • If [LOCATION] is set, it cannot be canceled.

- Cannot be used with still pictures taken on other devices, still pictures taken without setting Clock, motion pictures, or still pictures with audio.

- After [TEXT STAMP] is applied, pictures cannot be resized or cropped, and [LEVELING], [ASPECT CONV.], [TEXT STAMP] and date printing settings cannot be changed on pictures.

- Text is difficult to read when stamped on pictures of 0.3M or less.

- Do not request date printing in store or make date printing on printer for still pictures with date stamps. (Date printing may be overlapping.)
Using the [PLAYBACK] menu (Continued)

Playback Mode: (Set mode dial to any except )

For the [PLAYBACK] menu setting procedure (→20).

### [RESIZE]

Picture size can be reduced to facilitate e-mail attachment and use in web pages, etc. (Still pictures recorded at the smallest recording pixel level cannot be further reduced.)

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [RESIZE]

**[SINGLE]**

1. **Select [SINGLE]**
   - 
   - 

2. **Select still picture**
   - 
   - 

3. **Select size**
   - Current size
   - Size after change

   - 

4. **Select [YES]**
   - 

   - After confirmation, press to return to the menu screen.

**[MULTI]**

1. **Select [MULTI] in step 1 above**

2. **Select size**
   - To see description of resize: Press the [DISPLAY] button
   - 
   - Select number of pixels after resizing

3. **Select still picture**
   - (up to 50 pictures)
   - 
   - To cancel → Press [DISPLAY] button again.
   - To execute → Press [MENU/SET].

4. **Press ▲ to select [YES], and then press [MENU/SET]**

   - After confirmation, press to return to the menu screen.

   - Picture quality is reduced after resizing.
   - Cannot be used with motion pictures, still pictures with audio, or still pictures with text stamp. May not be compatible with still pictures taken on other devices.

### [CROPPING]

Enlarge your still pictures and crop unwanted areas.

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [CROPPING]

1. **Press ◄► to select a still picture, and then press [MENU/SET]**

2. **Select area to crop**

3. **Press ▲ to select [YES], and then press [MENU/SET]**
   - After confirmation, press to return to the menu screen.
   - Picture quality is reduced after cropping.
   - Cannot be used with motion pictures, still pictures with audio, or still pictures with text stamp. May not be compatible with still pictures taken on other devices.
   - Original Face Recognition information will not be copied when still pictures are cropped.

### [LEVELING]

Slight slanting in the still picture can be corrected.

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [LEVELING]

1. **Press ◄► to select a still picture, and then press [MENU/SET]**

2. **Adjust the slant**

3. **Press ▲ to select [YES], and then press [MENU/SET]**
   - After confirmation, press to return to the menu screen.
   - Picture quality is reduced when leveling is performed.
   - The resulting still picture may have fewer recording pixels than the original still picture when leveling is performed.
   - May not be compatible with still pictures taken on other devices.
   - Cannot be used with motion pictures, still pictures with audio, or still pictures with text stamp.
   - Original Face Recognition information will not be copied when still pictures are leveled.
Using the [PLAYBACK] menu (Continued)

Playback Mode: (Set mode dial to any except 

For the [PLAYBACK] menu setting procedure (→20).

[ASPECT CONV.]

Convert still pictures taken in 16:9 to 3:2 or 4:3 for printing.

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [ASPECT CONV.]

Select [3:2] or [4:3]

Select still picture taken in 16:9

Select horizontal position

and convert

(Move portrait pictures using ▲▼)

Changes to outlined size

Press ▲ to select [YES], and then press [MENU/SET]

• After confirmation, press ▼ to return to the menu screen.

Picture size may be increased after Aspect Ratio is changed.

Cannot be used with motion pictures, still pictures with audio, still pictures with text stamp, or non-DCF files (→44). May not be compatible with still pictures taken on other devices.

Original Face Recognition information will not be copied when Aspect Ratios are converted.

[FAVORITE]

By labeling your favourite pictures with a star (★), you can enjoy [SLIDE SHOW] or [FAVORITE PLAY] of these pictures only, or you can delete all pictures except your favourites (→45).

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [FAVORITE]

Select [ON]

Close the menu

Select picture and make setting (repeat)

Displayed when set (not displayed when [OFF]).

• Up to 999 pictures can be selected.

(For AVCHD Lite motion pictures, 999 or more pictures can be set.

TZ10/257)

• To release → Press ▼ again.

To clear all

Select [CANCEL] in step 1 and select [YES].

• It may not be possible to set pictures taken with certain other devices as favourites.

• Setting/release can also be made with supplied software ‘PHOTOfunSTUDIO’.

[ROTATE DISP.]

Automatically rotate portrait still pictures.

Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [ROTATE DISP.]

Select [ON]

[ON] [OFF]

[ROTATE DISP.] cannot be used with motion pictures.

Some pictures taken facing up or facing down may not be rotated automatically.

It may not be possible to rotate still pictures taken with certain other devices.

Pictures cannot be rotated during Multi Playback.

Will only be displayed rotated on computer if in Exif-compatible (→44) environment (OS, software).
Using the [PLAYBACK] menu  (Continued)

Playback Mode:  (Set mode dial to any except  )

For the [PLAYBACK] menu setting procedure (→20).

[PRINT SET]
Picture/picture no./date printing settings can be made for when printing with DPOF print-compatible shops or printers. (Ask at shop to check compatibility)
Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [PRINT SET]

1. Select [SINGLE] or [MULTI]

2. Select picture

3. Set number of pictures
(repeat steps 2 and 3 when using [MULTI] (up to 999 pictures))

- [SINGLE]

- [MULTI]

• Date print setting/release → Press [DISPLAY] button.
• After confirmation, press  to return to the menu screen.

■ To clear all
Select [CANCEL] in step 1 and select [YES].

- When using PictBridge-compatible printers, check settings on actual printer as these may take priority over camera settings.
- To print from built-in memory at a shop, first copy pictures to card (→137) before making settings.
- Cannot be set for files that are not compliant with the DCF standard (→44).
- Some DPOF information set by other equipment cannot be used. In such cases, delete all of the DPOF information and then set it again with this camera.
- Date printing settings cannot be made for pictures with a [TEXT STAMP] applied. These settings will also be cancelled if a [TEXT STAMP] is applied later.
- Motion pictures recorded in [AVCHD Lite] format cannot be set.

[PROTECT]
Set protection to disable picture deletion. Prevents deletion of important pictures.
Set-up: Press [MENU/SET] → [PLAYBACK] menu → Select [PROTECT]

1. Select [SINGLE] or [MULTI]

2. Select picture and make setting

- [SINGLE]

- [MULTI]

• To cancel → Press [MENU/SET] again.
• After confirmation, press  to return to the menu screen.

■ To clear all
Select [CANCEL] in step 1 and select [YES].

- To cancel while releasing all
Press [MENU/SET].

- May not be effective when using other devices.
- Formatting will cause even protected files to be deleted.
- If the write-protect switch is set to ‘LOCK,’ pictures cannot be deleted even if they are not protected with the camera setting.
Using the [PLAYBACK] menu (Continued)

Playback Mode: ➜ (Set mode dial to any except ➜)

For the [PLAYBACK] menu setting procedure (→20).

[FACE REC EDIT]

Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

4 Select the person to replace for another

5 Select [YES]

• After setting, press ➜ to return to the menu screen.

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.

[COPY]

You can copy pictures between built-in memory and memory card.
Set-up: Press [MENU/SET] → ➜ [PLAYBACK] menu → Select [COPY]

1 Select the copy method (direction)

2 Select picture with ➜ and ➜ and press [MENU/SET] (for ➜ and ➜)

3 Select [YES]

• To cancel → Press [MENU/SET].
• After confirmation, press ➜ to return to the menu screen.
• After all the pictures are copied from the built-in memory to the memory card, the display returns automatically to the playback screen.

(Screen shown is example)

● If there is not enough space on the built-in memory for copying to be performed, turn off the power, remove the card, and delete pictures from the built-in memory (to delete clipboard pictures, set the mode dial to Clipboard Mode).
● Copying of picture data from the built-in memory to memory cards will be terminated midway if there is insufficient space on the card. Using memory cards with higher capacities than the built-in memory (approx. 15 MB 1/2 G, approx. 40 MB 1/2 G) is recommended.
● Copying pictures may take several minutes. Do not turn off power or perform other operations during copying.
● If identical names (folder/file numbers) are present in the copy destination, a new folder for copying will be created when copying from built-in memory to card (⇒). Identically-named files will not be copied from card to built-in memory (⇒). The print settings and protection settings are not copied. Set them again after copying.
● Only pictures from Panasonic digital cameras (LUMIX) may be copied.
● Original pictures will not be deleted after copying (to delete pictures (⇒45)).
● This setting can only be made when the Playback Mode is in [NORMAL PLAY].
● Motion pictures recorded in [AVCHD Lite] format cannot be set.

Face Recognition information cannot be edited in protected pictures.

[FACE REC EDIT]

Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.

[FACE REC EDIT]

Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.

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Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.

FACE REC EDIT

Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.

FACE REC EDIT

Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.

FACE REC EDIT

Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.

FACE REC EDIT

Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.

FACE REC EDIT

Edit or delete the recognition information for pictures with mistaken Face Recognition.
Operation: On the playback screen, press [MENU/SET] and select ➜ [PLAYBACK] menu → ➜ [FACE REC EDIT]

1 Select [REPLACE] or [DELETE]

2 Select the picture

3 Select a person

• If [DELETE], go to step 5

• People whose Face Recognition information has not been registered cannot be selected.
Keep the recorded still pictures and motion pictures

The methods for copying still and motion pictures recorded with this camera to other devices vary according to the file format (JPEG, AVCHD Lite, Motion JPEG). Follow the correct method for your device.

**For DMC-TZ10/DMC-ZS7 only**

### Dubbing playback pictures via AV cables

**Available file types:** Motion AVCHD Lite, Motion JPEG

Videos that are played on this camera can be dubbed to media such as a DVD disc, hard disk or video tape using a device such as a DVD recorder or video recorder. This method is useful as it allows dubbing to be performed even with devices that are not compatible with high definition (AVCHD) images. Picture quality will be reduced from high definition to standard definition.

Example of DMC-TZ10/DMC-ZS7
AV cable (always use cable supplied)

1. **Connect camera to recorder**
2. **Start playback on camera**
3. **Start recording on recorder**
   - To stop recording (dubbing), stop the recording on your recorder first before stopping the playback on the camera.

- Do not use any other AV cables except the supplied one.
- When using a TV with a 4:3 aspect ratio, always change the camera's [TV ASPECT] setting (→26) to [4:3] before dubbing. Motion pictures copied in the [16:9] setting will appear vertically stretched when viewed on a 4:3 TV screen.
- Pressing the camera’s [DISPLAY] button and turning the LCD display off is recommended during dubbing operations. (→46)
- For details on dubbing and playback methods, refer to your recorder’s operating instructions.

### Use ‘PHOTOfunSTUDIO’ to copy to your computer

**Available file types:** Still JPEG, Motion AVCHD Lite, Motion JPEG

With the ‘PHOTOfunSTUDIO’ software on the supplied CD-ROM, a computer can be used to manage the recorded pictures.

- **Main ‘PHOTOfunSTUDIO’ functions**
  - Copying recorded still pictures or motion pictures to a computer
  - Backing up still pictures or motion pictures that have been copied to a computer to media such as a DVD
  - Editing still pictures on a computer
  - Converting motion pictures recorded in [AVCHD Lite] to standard picture quality to create a DVD video (→25)
  - Stitching still pictures recorded in Scene Mode [PANORAMA ASSIST] into a panorama
  - Attaching recorded still pictures to e-mail
  - Uploading recorded motion pictures to YouTube

1. **Install ‘PHOTOfunSTUDIO’ to your computer**
2. **Connect the camera to your computer**
   - For connection procedures (→141)
3. **Use ‘PHOTOfunSTUDIO’ to copy pictures to your computer**
   - For details on how to use ‘PHOTOfunSTUDIO’, see the ‘PHOTOfunSTUDIO’ manual (PDF).

Files and folders containing copied AVCHD Lite motion pictures cannot be played back or edited if they have been deleted, modified, or moved using Windows Explorer or similar methods. Always use ‘PHOTOfunSTUDIO’ when handling AVCHD Lite motion pictures.

The ‘PHOTOfunSTUDIO’ software on the CD-ROM (supplied) can be used to copy still pictures and motion pictures to your computer and to play them back.
Using with your PC

Still/motion pictures can be copied from the camera to your computer by connecting the two together.

- If your computer does not support SDXC memory cards, a message will be displayed requesting you to format the card. (Do not format the card. This will erase recorded pictures.) If the card is not recognised, refer to the following support website. http://panasonic.net/avc/sdcard/information/SDXC.html
- Copied pictures can then be printed out or sent by e-mail using the ‘PHOTOfunSTUDIO’ software on the CD-ROM (supplied).

### Computer specifications

<table>
<thead>
<tr>
<th>Windows</th>
<th>Macintosh</th>
</tr>
</thead>
<tbody>
<tr>
<td>98/98SE</td>
<td>Me/2000</td>
</tr>
<tr>
<td>XP/Vista/7</td>
<td>OS 9/OS X</td>
</tr>
</tbody>
</table>

| Can I use ‘PHOTOfunSTUDIO’?
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Can I copy AVCHD Lite motion pictures to my computer?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Can I copy still pictures and Motion JPEG motion pictures from my camera to my computer via USB connection cable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

- USB connection cables cannot be used with Windows 98/98SE, Mac OS 8.x, or older versions of either, but still/motion pictures may still be copied with compatible SD memory card reader/writers.
- *Internet Explorer 6.0 or above must be installed.
- Correct playback and operation depends on your computer’s environment and cannot always be guaranteed.
- *Always use ‘PHOTOfunSTUDIO’ when copying AVCHD Lite motion pictures.

### Copying still pictures and motion pictures

#### Getting Ready:
- Charge the battery sufficiently. Or, connect the AC adaptor (optional) and DC coupler (optional). (→14, 15)
- Insert card and set mode dial to any except . When importing pictures from the built-in memory, remove any memory cards.

#### Example of DMC-TZ10/DMC-ZS7

- USB connection cable (always use cable supplied)
- Check socket direction and insert straight in. (Damage to socket shape can lead to faulty operation.)

#### To cancel connection

Click ‘Safely Remove Hardware’ in the Windows System Tray → disconnect USB connection cable → turn off camera power → disconnect AC adaptor

---

Some computers can read directly from the camera’s memory card. For details, see the manual for your computer.
You can save pictures to use on your computer by dragging and dropping folders and files into separate folders on your computer.

**Folder and file names on computer**

- **Windows** Drives are displayed in ‘My Computer’ or ‘Computer’ folder.
  - DCIM (Still/motion pictures)
  - 100_PANA (Up to 999 pictures/folder)
  - P1000001.JPG
  - P100999.JPG
  - 101_PANA
  - 999_PANA
  - MISC (DPOF files, Favourite)
  - PRIVATE1 (clipboard pictures)
  - MEMO0001.JPG
  - PRIVATE
  - AVCHD (Motion pictures in AVCHD Lite)
  - MODELINF (VIERA Link information)

- **Macintosh** Drives are displayed on the desktop.
  - (Displayed as ‘LUMIX’, ‘NO_NAME’, or ‘Untitled’.)

*New folders are created in the following cases:
- When pictures are taken to folders containing files numbered 999.
- When using cards already containing the same folder number (including pictures taken with other cameras, etc.).
- When recording after performing [NO.RESET] (→25).
- File may not be able to be played back on camera after changing file name.
- If mode dial is set to [P], built-in memory data (including clipboard pictures) are displayed even when card is inserted. Data in card is not displayed.
- Do not delete or modify folders or data in the AVCHD folder using Windows Explorer or other tools. The camera may be unable to play back the motion pictures correctly if any of these files are deleted or modified. For data management and editing of motion pictures recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite], use the ‘PHOTOfunSTUDIO’ software on the supplied CD-ROM. [Z10] [Z57]

**When using Windows XP, Windows Vista, Windows 7, or Mac OS X**

The camera can be connected to your computer even if [USB MODE] (→26) is set to [PictBridge (PTP)].
- Only picture output can be performed from the camera. (Picture deletion can also be performed with Windows Vista and Windows 7.)
- It may not be possible to import if there are 1000 or more pictures on the card.
- Motion pictures recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite] format cannot be read. [Z10] [Z57]

**Playing motion pictures recorded in [AVCHD Lite(GPS REC)] or [AVCHD Lite] on your computer**
- Use the ‘PHOTOfunSTUDIO’ software on the supplied CD-ROM.
- Save the motion picture to your computer, and play it back.

**Playing motion pictures recorded in [MOTION JPEG] on your computer**
- Use the ‘QuickTime’ software on the supplied CD-ROM.
  - Installed as standard on Macintosh
  - Save motion pictures to your computer before viewing.

- Do not use any other USB connection cables except the supplied one.
- Turn off power before inserting or removing memory cards.
- When the battery begins to run out during communication, a warning beep sounds. Cancel communication via your computer immediately (recharge the battery before reconnecting).
- Setting the [USB MODE] (→26) to [PC] removes the need to make the setting each time the camera is connected to the computer.
- For more details, consult your computer operating manual.
Printing

You can connect directly to a PictBridge-compatible printer for printing.

Getting Ready:
- Charge the battery sufficiently. Or, connect the AC adaptor (optional) and DC coupler (optional).
- Insert card and set mode dial to any setting except [ ]: When copying pictures from the built-in memory, remove any memory cards. (Copy [CLIPBOARD] pictures to the card in advance)
- Adjust the print quality or other settings on your printer, as needed.

Some printers can print directly from the camera’s memory card. For details, see the manual for your printer.

1 Turn on power of camera and printer
2 Connect camera to printer
   • Please make sure you use the supplied USB connection cable. Use of cables other than the supplied USB connection cable may cause malfunction.

3 Select [PictBridge (PTP)] on the camera
   When [CONNECTING TO PC…] is displayed, cancel the connection and set [USB MODE] (→26) to either [SELECT ON CONNECTION] or [PictBridge (PTP)].

4 Press ◄► to select a picture to print and press [MENU/SET]

5 Select [PRINT START]

To cancel print Press [MENU/SET]

Print with date and text

■ With [TEXT STAMP]
Recording date and following information can be embedded into still pictures (→128):
- Recording date
- [NAME] and [AGE] from [BABY] and [PET] Scene Modes
- [TRAVEL DATE] elapsed days and destination
- Text registered in [TITLE EDIT]
- Names registered in [FACE RECOG.]
- Location name information recorded with the GPS function

• Do not add date printing in stores or with printers to still pictures where [TEXT STAMP] is applied (text may overlap).

■ Printing date without [TEXT STAMP]
Printing in store: Only recording date can be printed. Request date printing in store.
• Making [PRINT SET] settings on the camera in advance allows settings for numbers of copies and date printing to be designated before giving the card to the store.
• When printing still pictures of 16:9 Aspect Ratio, check in advance that the store can accept this size.

• Using computer: Print settings for recording date and text information can be made using the supplied CD-ROM ‘PHOTOfunSTUDIO’.
• Using printer: Recording date can be printed by setting [PRINT SET] on the camera, or by setting [PRINT WITH DATE] to [ON] when connecting to a printer compatible with date printing.

Printing multiple pictures
1 Select [MULTI PRINT] in step 4 on the previous page
2 Select item (See below for details)
3 Print (Previous page 66)

- [MULTI SELECT]: ◄► Scroll between pictures with ▲▼◄►, select pictures to print with the [DISPLAY] button. (Press [DISPLAY] button again to release selection.)
- Press [MENU/SET] when selection is complete.
- [SELECT ALL]: Print all pictures.
- [PRINT SET (DPOF)]: Print pictures selected in [PRINT SET]. (→134)
- [FAVORITE]: Print pictures selected as [FAVORITE]. (displayed only when [FAVORITE] pictures are present and setting is set to [ON]).

Select [YES] if print confirmation screen is displayed.
An orange ● displayed during printing indicates an error message.
Print may be divided into several times if printing a large amount of pictures.
(Remaining sheets display may differ from set number.)
Printing (Continued)

Making print settings on camera

(Make settings before selecting [PRINT START])

① Select item

② Select setting

<table>
<thead>
<tr>
<th>Item</th>
<th>Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>[PRINT WITH DATE]</td>
<td>[OFF]/[ON]</td>
</tr>
<tr>
<td>[NUM.OF PRINTS]</td>
<td>Set number of pictures (up to 999 pictures)</td>
</tr>
<tr>
<td>[PAPER SIZE]</td>
<td>(printer takes priority)</td>
</tr>
<tr>
<td></td>
<td>[L/3.5”×5”] (89×127 mm)</td>
</tr>
<tr>
<td></td>
<td>[2L/5”×7”] (127×178 mm)</td>
</tr>
<tr>
<td></td>
<td>[POSTCARD] (100×148 mm)</td>
</tr>
<tr>
<td></td>
<td>[16:9] (101.6×180.6 mm)</td>
</tr>
<tr>
<td></td>
<td>[A4] (210×297 mm)</td>
</tr>
<tr>
<td>[PAGE LAYOUT]</td>
<td>(printer takes priority)</td>
</tr>
<tr>
<td></td>
<td>(1 picture, no border)</td>
</tr>
<tr>
<td></td>
<td>(2 pictures)</td>
</tr>
<tr>
<td></td>
<td>(4 pictures)</td>
</tr>
</tbody>
</table>

Items may not be displayed if incompatible with printer.

To arrange 2 pictures’ or 4 pictures’ in the same still picture, set the number of prints for the still picture to 2 or 4.

To print to paper sizes/layouts not supported by this camera, set to [ ] and make settings on the printer. (Consult your printer’s operating manual.)

[PRINT WITH DATE] and [NUM.OF PRINTS] are not shown when you have selected [PRINT SET] settings.

Even with completed [PRINT SET] settings, dates may not be printed, depending on the shop or printer used.

When setting [PRINT WITH DATE] to [ON], check the date printing settings on the printer (printer settings may be prioritized).

Viewing on TV screen

You can view pictures on a TV screen by connecting your camera to your TV with the AV cable (supplied) or HDMI mini cable (optional [ZS7]).

Also consult TV operating manual.

Getting Ready:
- Set [TV ASPECT]. (→26)
- Turn off both camera and TV.

Getting Ready:
- Set [TV ASPECT]. (→26)
- Turn off both camera and TV.

Set REC/PLAY switch to ■

Check socket direction and insert straight in. (Damage to socket shape can lead to faulty operation.)

When TVs or DVD recorders have an SD card slot
Insert the SD memory card into the SD card slot
- Still pictures only can be played back. [ZS7]

AVCHD Lite motion pictures can be played back on Panasonic televisions (VIERA) displaying the AVCHD logo. [ZS7]

To play motion pictures on other televisions, please connect the camera to the television with the AV cable (supplied).

When using both SDHC and SDXC memory cards, be sure to play each type of card in equipment compatible with the particular format.

Do not use any other AV cables except the supplied one.

You can play back pictures on TVs in other countries (regions) which use the NTSC or PAL system when you set [VIDEO OUT] in [SETUP] menu.

[LCD MODE] setting is not reflected on TV.

Some televisions may cut off the edges of pictures, or not display them full screen.

Pictures rotated to portrait may be blurred slightly.

Change picture mode settings on TV if aspect ratios are not displayed correctly on widescreen or high-definition televisions.

Getting Ready:
- Set [TV ASPECT]. (→26)
- Turn off both camera and TV.

Set REC/PLAY switch to ■

Check socket direction and insert straight in. (Damage to socket shape can lead to faulty operation.)

When TVs or DVD recorders have an SD card slot
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Do not use any other AV cables except the supplied one.

You can play back pictures on TVs in other countries (regions) which use the NTSC or PAL system when you set [VIDEO OUT] in [SETUP] menu.

[LCD MODE] setting is not reflected on TV.

Some televisions may cut off the edges of pictures, or not display them full screen.

Pictures rotated to portrait may be blurred slightly.

Change picture mode settings on TV if aspect ratios are not displayed correctly on widescreen or high-definition televisions.
### Viewing on TV screen (Continued)

**Viewing on a TV with HDMI Socket**

An HDMI mini cable (optional) can be used to enable viewing of still and motion pictures in high resolution.

#### What is HDMI?

High-Definition Multimedia Interface (HDMI) is an interface for digital video devices. Digital video and audio signals can be output by connecting the camera to an HDMI-compatible device. This camera can be connected to a High-definition TV compatible with HDMI to enjoy recorded pictures and motion pictures at high resolution. Connecting the camera to a Panasonic TV (VIERA) compatible with VIERA Link (HDMI) enables linked operation (VIERA Link). (→149)

#### Preparation:

- Check the [HDMI MODE]. (→27)
- Turn off the camera and TV.

Do not use any other cables except a genuine Panasonic HDMI mini cable (optional).

Playback cannot be performed in [CLIPBOARD] Mode.

Blank stripes may appear at the sides or at the top and bottom of the screen, depending on Aspect Ratio setting.

Cables that do not comply with HDMI standards will not work.

When an HDMI mini cable is connected, pictures are not displayed on the LCD monitor.

The following functions are not available: [TITLE EDIT], [VIDEO DIVIDE], [TEXT STAMP], [RESIZE], [CROPPING], [LEVELING], [ASPECT CONV.], [FACE REC EDIT], [COPY], multiple selection (delete, etc.). etc.

HDMI output will be cancelled if a USB connection cable is connected simultaneously.

No picture output will occur through AV cables connected.

When playing motion pictures/still pictures with audio recorded with other devices, video/audio may not always be played back correctly.

Pictures may be momentarily distorted immediately after commencing playback or pausing on certain televisions.

Always read your television’s operating instructions.

Audio output is stereo.

#### VIERA Link (HDMI) (HDAVI Control™)

**What is VIERA Link (HDMI)?**

VIERA Link is a function that automatically links this camera to VIERA Link-compatible devices by connecting HDMI mini cables (optional) for enabling easy operation with the VIERA remote control. (Some operations are not available.)

VIERA Link (HDMI) is an exclusive Panasonic function added to the industry-standard HDMI control functions known as HDMI CEC (Consumer Electronics Control). Operation is not guaranteed when connecting with non-Panasonic HDMI CEC-compatible devices. Refer to your product manual to verify compatibility with VIERA Link (HDMI).

This camera supports VIERA Link (HDMI) Version 5. This is the latest Panasonic standard that also supports previous Panasonic VIERA Link devices. (As of December 2009)

#### Preparation:

- Set [VIERA Link] to [ON]. (→27)

Perform the following operations with the VIERA remote control.

1. Connect the camera to a VIERA Link (HDMI)-compatible Panasonic television (VIERA) with an HDMI mini cable (optional) (→148).
2. Turn on camera
3. Set REC/PLAY switch to 

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The DMC-TZ8/DMC-ZS5 does not support VIERA Link.
Select a picture with ▲▼◄►, and press [OK]

- When operating, refer to the VIERA Link operating panel.

Types of pictures displayed (switch between them with the red button)

Operating panel

Switching Playback Mode

You can press [OPTION] to switch between Playback Modes.

<table>
<thead>
<tr>
<th>Playback Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NORMAL PLAY]</td>
<td>Plays back all subject pictures.</td>
</tr>
<tr>
<td>[SLIDE SHOW]</td>
<td>Plays back pictures as a Slide Show.</td>
</tr>
<tr>
<td>[GPS AREA PLAY]</td>
<td>Plays back pictures for which place name information has been recorded, by place name.</td>
</tr>
<tr>
<td>[TRAVEL PLAY]</td>
<td>Plays back pictures for which [TRAVEL DATE] has been set.</td>
</tr>
<tr>
<td>[CATEGORY PLAY]</td>
<td>Plays back pictures by category.</td>
</tr>
<tr>
<td>[CALENDAR]</td>
<td>Displays calendar screen and plays back pictures by recording date.</td>
</tr>
<tr>
<td>[FAVORITE PLAY]</td>
<td>Plays back pictures that have been set as [FAVORITE].</td>
</tr>
</tbody>
</table>

Refer to camera operations for operations and settings. (These may differ partially.)

View pictures

- The operating panel turns off automatically if it has not been operated for about 5 seconds. (If any button is pressed, the panel will be displayed again.) If you wish to dim the operating panel, press [RETURN].
- Playback of motion pictures/still pictures with audio → press [OK].
- Slide Show playback → press the red button.
- Slide Show settings → press [OPTION].
- To display the picture information → press ▲.
- To return to the previous screen → press ▼.

Other related operations

- Power OFF
  The camera’s power can also be switched off when switching the television’s power off with the remote control.
- Automatic input select
  - This function automatically switches the television input to the camera screen whenever the camera’s power is switched on while it is connected via the HDMI mini cable. The television can also be switched on via the camera from Standby Mode (if ‘Power on link’ on the television is set to ‘on’).
  - The input setting may not be able to be changed automatically with certain television HDMI sockets. In this case, please change the input setting with your television remote control (consult your television operating instructions for details).
  - If VIERA Link (HDMI) does not function correctly (→161)

- Do not use any other cables except a genuine Panasonic HDMI mini cable (optional).
- The shape of remote control will differ depending on the country or area where the TV was purchased.
- Cables that do not comply with HDMI standards will not work.
- If you are unsure whether or not the TV you are using is compatible with VIERA Link, read the operating instructions for the TV.
- If the [VIERA Link] setting on the camera is [ON], operations via the camera buttons will be limited.
- Ensure that the television you are connecting to has been set up to enable VIERA Link (HDMI) (consult your television operating instructions for details).
- If you do not wish to use VIERA Link (HDMI), turn the camera’s [VIERA Link] setting [OFF].
- When operating with VIERA Link, the [HDMI MODE] (→27) of the camera is selected automatically.
- When playing back AVCHD Lite motion pictures on this camera that were recorded with another camera, the resolution may change automatically. If this happens, the screen may go dark for a while, but this is not a malfunction.
- If the ▶ tab on the TV screen is selected, it will not be possible to select either lescope ([AVCHD Lite]), or [MOTION JPEG]) in [SLIDE SHOW] [CATEGORY SELECTION].
List of LCD monitor displays

In recording

Press the [DISPLAY] button to change display (→46).

In playback

1 Recording Mode
   Flash (→47)
   Recording quality (→108)
   AF Tracking (→36, 99)
   Wind cut (→49)
   Macro recording (→49)

2 AF area (→37)
   Spot AF area (→100)
   Spot metering target (→101)

3 Focus (→34)

4 Picture Size (→95)
   Quality (→96)

5 Battery capacity (→16)

6 Number of recordable pictures (→174, 176)

7 Save destination (→16)

8 Recording state

9 Histogram (→46)

10 Travel Date (→90)

11 Exposure Compensation (→53)
   Aperture value/Shutter speed (→37, 56, 57, 58)
   ISO Sensitivity (→97)
   Intelligent ISO (→96)

12 Focus range (→51)
   Zoom (→39)/Macro Zoom (→50)

13 Optical Image Stabilizer (→105)/
   Jitter alert (→37)
   Metering Mode (→101)
   Pre AF (→101)
   Burst Mode (→103)
   Auto Bracket (→54)
   Multi Aspect (→55)
   i.resolution (→102)
   LCD Mode (→23)
   LCD power save (→24)

14 White Balance (→98)
   ISO Sensitivity (→97)/ISO max (→96)
   Colour effect (→104)

15 Available recording time
   (→72, 126, 255)

16 GPS (→84)

17 Self-timer Mode (→52)

18 Elapsed recording time
   (→72, 126, 255)

19 Minimum shutter speed (→102)

20 Travel elapsed days
   (→90, 126, 255)
   Age in years/months (→65, 80)
   Destination settings (→92)
   Place name information (→84)
   Current date/time (→17, 19)

21 Audio recording (→106)

22 AF Assist Lamp (→106)

13 Optical Image Stabilizer (→105)/
   Jitter alert (→37)
   Metering Mode (→101)
   Pre AF (→101)
   Burst Mode (→103)
   Auto Bracket (→54)
   Multi Aspect (→55)
   i.resolution (→102)
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17 Self-timer Mode (→52)

18 Elapsed recording time
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19 Minimum shutter speed (→102)

20 Travel elapsed days
   (→90, 126, 255)
   Age in years/months (→65, 80)
   Destination settings (→92)
   Place name information (→84)
   Current date/time (→17, 19)

21 Audio recording (→106)

22 AF Assist Lamp (→106)

The order of priority for display is location name information, title, destination, name ([BABY]/[PET]), name ([FACE RECOG.]).

Screens shown here are only examples. The actual display may vary.
Message displays

Meanings of and required responses to major messages displayed on LCD monitor.

**[THIS MEMORY CARD CANNOT BE USED]**
- A MultiMediaCard was inserted.
  - Not compatible with the camera. Use a compatible card.

**[THIS MEMORY CARD IS WRITE-PROTECTED]**
- Unlock the write-protect switch on the card. (→16)

**[NO VALID PICTURE TO PLAY]**
- Take pictures, or insert a different card already containing pictures.

**[THIS PICTURE IS PROTECTED]**
- Release the protection before deleting, etc. (→135)

**[SOME PICTURES CANNOT BE DELETED] [THIS PICTURE CANNOT BE DELETED]**
- Non-DCF pictures (→44) cannot be deleted.
  - Save needed data on a computer or other device, and then use [FORMAT] on the camera to erase the card. (→28)

**[NO ADDITIONAL SELECTIONS CAN BE MADE]**
- The number of pictures that can be deleted at once has been exceeded.
- More than 999 pictures have been set as favourites. (Other than AVCHD Lite motion pictures)
- The number of pictures allowing [TITLE EDIT], [TEXT STAMP] or [RESIZE] (multiple settings) at once has been exceeded.

**[CANNOT BE SET ON THIS PICTURE]**
- [PRINT SET], [TITLE EDIT], or [TEXT STAMP] cannot be made for non-DCF pictures (→44).

**[PLEASE TURN CAMERA OFF AND THEN ON AGAIN] [SYSTEM ERROR]**
- The lens is not working correctly.
  - Turn on power again.
  - (Consult the dealer or your nearest Service Centre if display still remains)

**[SOME PICTURES CANNOT BE COPIED] [COPY COULD NOT BE COMPLETED]**
- Pictures cannot be copied in following cases.
  - Picture of same name already exists in built-in memory when copying from card.
  - File is not of DCF standard.
  - Picture taken or edited on a different device.

**[NOT ENOUGH SPACE ON BUILT-IN MEMORY] [NOT ENOUGH MEMORY ON THE CARD]**
- There is no space left on the built-in memory or the card. When you copy pictures from the built-in memory to the card (batch copy), the pictures are copied until the capacity of the card becomes full.

**[BUILT-IN MEMORY ERROR] [FORMAT BUILT-IN MEMORY]??**
- Displayed when formatting built-in memory via computer, etc.
  - Reformat directly using camera. Data will be deleted.

**[MEMORY CARD ERROR] [FORMAT THIS CARD]??**
- The card format cannot be used with this camera.
  - Save needed data on a computer or other device, and then use [FORMAT] on the camera. (→28)

**[INSERT SD CARD AGAIN] [TRY ANOTHER CARD]**
- Access to card has failed.
  - Insert card again.
  - Try with a different card.

**[MEMORY CARD ERROR] [MEMORY CARD PARAMETER ERROR]**
- Card is not of SD standard.
  - When cards in capacities of 4 GB or more are used, only SDHC or SDXC memory cards are supported.

**[READ ERROR]/[WRITE ERROR] [PLEASE CHECK THE CARD]**
- Data read has failed.
  - Check whether card has been inserted correctly (→14).
- Data write has failed.
  - Turn off power and remove card, before re-inserting and turning on power again.
  - Card may possibly be damaged.
  - Try with a different card.

**[CANNOT RECORD DUE TO INCOMPATIBLE FORMAT(NTSC/PAL) DATA ON THIS CARD.]**
- A card that has been used in another camera to record an AVCHD motion picture in a different broadcast system cannot be used to record AVCHD Lite motion pictures with this camera.
  - Format the card with this camera. The data will be deleted.

**[MOTION RECORDING WAS CANCELLED DUE TO THE LIMITATION OF THE WRITING SPEED OF THE CARD]**
- Using a card of SD speed ‘Class 4’ or above is recommended for recording motion pictures in [AVCHD Lite(GPS REC)]/[AVCHD Lite].
  - * The SD speed class is a speed rating for continuous writing.
  - If recording stops even when using the card above, the data writing speed is low. We recommend backing up the data on the memory card and reformating it (→28).
  - Motion picture recording may be automatically terminated with certain cards.

**[A FOLDER CANNOT BE CREATED]**
- Folder numbers in use have reached 999.
  - Save all necessary data to computer (or other device), and [FORMAT] (→28).
  - Folder number is reset to 100 when performing [NO.RESET] (→25).

**[PICTURE IS DISPLAYED FOR 16:9 TV] [PICTURE IS DISPLAYED FOR 4:3 TV]**
- AV cable is connected to camera.
  - To remove message immediately → Press [MENU/SET].
  - To change aspect ratio → Change [TV ASPECT] (→26).
- USB connection cable is only connected to camera.
  - Message disappears when cable is also connected to another device.

**[THIS BATTERY CANNOT BE USED]**
- Use a genuine Panasonic battery.
- Battery cannot be recognised as terminal is dirty.
  - Wipe any dirt away from the battery terminal.

**[NO BATTERY POWER REMAINS]**
- The battery level is low.
  - Charge the battery before use. (→11)

**[GPS FEATURE IS NOT AVAILABLE IN THIS REGION.]**
- GPS may not work in China or in the border regions of countries neighboring China. (Current as of February 2010)
Q&A  Troubleshooting

Battery, power
Camera does not work even if power is turned on.
● Battery is not inserted correctly (→14), or needs recharging.

LCD monitor shuts off even if power is turned on.
● [SLEEP MODE] is activated. (→24)
  → Press shutter button halfway to release.
● Battery needs recharging.

Camera switches off as soon as power is turned on.
● Battery needs recharging.
● Camera is set to [SLEEP MODE]. (→24)
  → Press shutter button halfway to release.

This unit is turned off automatically.
● If you connect to a TV compatible with VIERA Link with an HDMI mini cable (optional) and turn off the power on the TV with the remote control for the TV, the power on this unit also turns off.
  → If you are not using VIERA Link, set [VIERA Link] to [OFF]. (→27) TZ10, ZS7

GPS TZ10, ZS7

Cannot perform positioning.
● When [GPS SETTING] is set to [OFF]. (→85)
  → Depending on the recording environment, such as when indoors or near buildings, it may not be possible to correctly receive the signals from the GPS satellites. (→84)
  → When using the GPS, we recommend holding the camera still for a while with the GPS antenna facing upward in an outdoor location where you can see the entire sky.

The status indicator flashes while the camera's power is off.
● [GPS SETTING] is [ON].
  → When turning off the camera's power in an airplane, hospital or other restricted area, set [GPS SETTING] to [OFF] or 3.

Positioning takes time.
● When using the camera for the first time or after not using it for a while, positioning may take several minutes.
  → Positioning usually takes less than two minutes, but because the positions of the GPS satellites change, it may take longer depending on the recording location and environment.
  → Positioning will take time in environments where it is difficult to receive the signals from the GPS satellites. (→84)

The location name information is different from the recording location.
● Immediately after the camera's power is turned on or when the GPS icon is something other than 36, the location name information that is recorded in the camera may vary significantly from the current position.

The location name information is not displayed.
● “- - - -” is displayed if there is no nearby landmark or other points, or no information registered in the camera's database. (→87)
  → During playback, a location name or other information can be entered with [PLACE-NAME EDIT]. (→127)

Recording

Cannot record pictures.
● REC/PLAY switch is not set to (record).
  → Built-in memory/card is full. → Free space by deleting unwanted pictures (→45).

Cannot record to cards.
● The card was formatted with a different device.
  → Please format cards with this camera. (→28)
● For details about compatible cards (→16).

Recording capacity is low.
● Battery needs recharging.
  → Use a fully charged battery (not sold pre-charged). (→11)
  → If you leave the camera on, the battery will be exhausted. Turn the camera off frequently by using [SLEEP MODE] (→24) etc.

Please check the recording picture capacity for cards and built-in memory. (TZ10 ZS7 → 174, ZS5 → 176)

Recorded pictures look white.
● Lens is dirty (fingerprints, etc.).
  → Turn on power to extract lens barrel, and clean lens surface with a soft, dry cloth.
● Lens is foggy (→7).

Recorded pictures are too bright/too dark.
● Pictures taken in dark locations, or bright subjects (snow, bright conditions, etc.) occupy most of the screen. (Brightness of LCD monitor may differ from that of actual picture)
  → Adjust the exposure (→53).
  → [MIN. SHTR SPEED] is set to fast speeds, e.g. [1/250] (→102).

2-3 pictures are taken when I press the shutter button just once.
● Camera set to use [AUTO BRACKET] (→54), [MULTI ASPECT] (→55), [BURST] (→103), or the [HI-SPEED BURST] (→66) or [FLASH BURST] (→67) Scene Modes.

Focus not aligned correctly.
● Not set to mode appropriate for distance to subject. (Focus range varies according to Recording Mode.)
  → Subject outside of focus range.
  → Caused by jitter or subject movement (→96, 105).

Recorded pictures are blurred. Optical Image Stabilizer ineffective.
● Shutter speed is slower in dark locations and Optical Image Stabilizer is less effective.
  → Hold camera firmly with both hands, keeping arms close to body.
  → Use a tripod and the self-timer (→52) when using slower shutter speed with [MIN. SHTR SPEED].

Cannot use [AUTO BRACKET] or [MULTI ASPECT].
● Only enough memory for 2 pictures or fewer.

Recorded pictures appear coarse, or there is interference.
● ISO Sensitivity is high, or shutter speed is low.
  → [SENSITIVITY] setting is [AUTO] – interference may appear with indoor pictures.
  → Hold camera firmly with both hands, keeping arms close to body.
  → Set [NOISE REDUCTION] in [PICT.ADJ.] in the + direction. (→105)

Pictires appear dark or have poor colouring.
● Colours may appear unnatural due to the effects of light source.
  → Use [WHITE BALANCE] to adjust the colouring. (→98)
Q&A Troubleshooting (Continued)

Recording (continued)

Brightness or colouring of recorded picture different from real life.
- Taking pictures under fluorescent lighting may require a faster shutter speed and result in slightly changed brightness or colouring, but this is not a fault.

Red banding may appear on the LCD monitor or part or the entire screen may have a reddish tint, when recording or pressing the shutter button halfway.
- This is a characteristic of CCD and may appear if subject contains brighter areas. Some blurring may occur around these areas, but this is not a fault. This will be recorded in motion pictures, but not in still pictures.
- We recommend keeping the screen away from strong light sources such as sunlight when taking pictures.

Motion picture recording stops midway.
- With some cards, access display may appear briefly after recording, and recording may end midway.
- Using a card of SD speed 'Class 4' or above is recommended for recording motion pictures in [AVCHD Lite(GPS REC)]/[AVCHD Lite].
- Using a card of SD speed 'Class 6' or above is recommended for recording motion pictures in 'MOTION JPEG'.
- The SD speed class is a speed rating for continuous writing.
- If recording stops even when using the card above, the data writing speed is low. We recommend backing up the data on the memory card and reformattting it (→28).

The subject cannot be locked. (AF track fails)
- If the subject has different colours as the periphery, set the AF area to those colours specific to the subject by aligning that area with the AF area. (→100)

LCD monitor

LCD monitor dims during motion picture recording.
- LCD monitor may dim if continuing motion picture recording for long periods.

Brightness is unstable.
- Aperture value is set while shutter button is pressed halfway.
  (Does not affect recorded picture.)

Monitor flickers indoors.
- Monitor may flicker after turning on (prevents influence from fluorescent lighting).

Monitor is too bright/too dark.
- Camera set to [LCD MODE] (→23).

Black/blue/red/green dots or interference appears. Monitor looks distorted when touched.
- This is not a fault, and will not be recorded on the actual pictures, so there is no need to worry.

Date/age is not displayed.
- Current date, travel elapsed days (→90), and names and ages in [BABY] and [PET] (→65) Scene Modes are only displayed for approx. 5 sec. when the camera is turned on, after these settings are made, or after switching from Playback Mode to Recording Mode, etc. They cannot be always displayed.

Flash

No flash emitted.
- Flash set to [FORCED FLASH OFF] (→47).
- When set to [AUTO] (→14), flash may not be emitted in certain conditions.
- Flash cannot be emitted in the [SCENERY], [PANORAMA ASSIST], [NIGHT SCENERY], [SUNSET], [HI-SPEED BURST], [STARRY SKY], [FIREWORKS], and [AERIAL PHOTO] Scene Modes, or when using [AUTO BRACKET] or [BURST].
- No flash is emitted when recording a motion picture.

Multiple flashes are emitted.
- Red-eye reduction is active (→47). (Flashes twice to prevent eyes appearing red.)
- The Scene Mode is set to [FLASH BURST].

Playback

Pictures have been rotated.
- [ROTATE DISP.] is set to [ON]. (Automatically rotates pictures from portrait to landscape. Some pictures taken facing up or facing down may be interpreted as being portrait.)
  → Set [ROTATE DISP.] to [OFF] (→132).

Cannot view pictures. There are no recorded pictures.
- REC/PLAY switch is not set to (play).
- No pictures in built-in memory or card (pictures played from card if inserted, from built-in memory if not).
- The Playback Mode has been changed.
  → Set Playback Mode to [NORMAL PLAY] (→118).

Folder/file number displayed as [-]. Picture is black.
- Picture edited on computer or taken on different device.
- Battery removed immediately after picture taken, or picture taken with low battery.
  → Use [FORMAT] to delete (→28).

Incorrect date displayed in Calendar Playback.
- Picture edited on computer or taken on different device.
- [CLOCK SET] is incorrect (→17, 19).
  (Incorrect date may be displayed in Calendar Playback on pictures copied to computer and then back to camera, if computer and camera dates differ.)

Depending on the subject, an interference fringe may appear on the screen.
- This is called moire. This is not a malfunction.

White round spots like soap bubbles appear on the recorded picture.
- If you take a picture with the flash in a dark place or indoors, white round spots may appear on the picture caused by the flash reflecting particles of dust in the air. This is not a fault. A characteristic of this is that the number of round spots and their position differ in every picture.

[THUMBNAIL IS DISPLAYED] is shown on the screen.
- The pictures may have been recorded on another device. If so, they may be displayed with poor picture quality.
Q&A Troubleshooting (Continued)

**Playback (continued)**

Blacken red areas of recorded pictures.
- When digital red-eye correction is operating, if a subject is recorded that has skin-coloured areas with red areas inside, the digital red-eye correction function may blacken the red areas.
  → We recommend setting the flash to 
  → [RED-EYE REMOVAL] to [OFF] before recording.

Sounds of camera operations will be recorded in motion pictures.
- Camera operation sounds may be recorded as camera automatically adjusts lens aperture during motion picture recording; this is not a fault.

Motion pictures still and pictures with audio taken by this camera cannot be played in other cameras.
- Motion pictures and pictures with audio taken with this camera may not always be able to be played back with cameras by other manufacturers. Playback may also not be possible with certain Panasonic digital cameras (LUMIX).
  → If the 
  → Camera launched before December 2008, and some cameras launched in 2009 (FS, LS Series).
  → Motion pictures recorded in [AVCHD Lite]* format cannot be played in devices that do not support AVCHD. In some cases, motion pictures cannot be played back correctly in AVCHD-compatible devices.
  → Motion pictures recorded in [AVCHD Lite(GPS REC)] cannot be played back with Panasonic digital cameras (LUMIX) compatible with AVCHD (Lite) recording that were sold in or before 2009.
  → In some cases, motion pictures and pictures with audio taken by this camera cannot be played back by digital cameras from other companies, and they also cannot be played in Panasonic digital cameras (LUMIX) that were sold before July 2008.

**TV, computer, printer**

No image appears on TV. Image blurred or not coloured.
- Not connected correctly (→147, 148).
  → The television does not support the type of card used.
  → Check the [VIDEO OUT] setting (NTSC/PAL) on the camera. (→26)

TV screen display different to LCD monitor.
- Aspect ratio may be incorrect or edges may be cut off with certain televisions.

Cannot play motion pictures on TV.
- Card is inserted into TV.
  → Connect with AV cable (supplied) or HDMI mini cable (optional) and play on camera (→147, 148).

Picture is not displayed on full TV screen.
- Check [TV ASPECT] settings (→26).

Cannot send pictures to computer.
- Not connected correctly (→141).
  → Check whether computer has recognised camera.
  → Set [USB MODE] to [PC] (→26).

Computer does not recognise card (only reads built-in memory).
- Disconnect USB connection cable and reconnect with card in place.
  → Set mode dial to any except 

Computer does not recognise card. (When using an SDXC memory card)
- If the [ACCESS] indicator on the LCD monitor does not go off, turn off the camera's power before disconnecting the USB connection cable.
  → Turn the 'VIERA Link control (HDMI device control)' setting on your television (VIERA) to 'off', and then to 'on' again. (Consult your VIERA's operating instructions for details.)

I want to play computer pictures on my camera.
- Use the supplied software 'PHOTOfunSTUDIO' to copy pictures from computer to camera.
  → To save to clipboard, use software to copy from computer to card, then copy to clipboard folder with [COPY] (→137) in [PLAYBACK] menu.

Cannot print when connecting to printer.
- Printer not compatible with PictBridge.
  → Set [USB MODE] to [PictBridge (PTP)] (→26).

Cannot get the date printing.
- Make date printing settings before printing.
  → In shop: Make [PRINT SET] settings (→134), and request printing 'with dates'.
  → With printer: Make [PRINT SET] settings, and use a printer compatible with date printing.
  → With supplied software: Select 'with dates' within print settings.
  → Use [TEXT STAMP] before printing (→128).

Edges cut off pictures when printing.
- Release any trimming or edgeless printing settings on printer before printing.
  → The pictures were recorded in [16:9] aspect ratio.
  → If printing in shop, check if 16:9 sizes can be printed.
Others

Menu not displayed in desired language.

● Change [LANGUAGE] setting (→28).

Camera rattles if shaken.

● This sound is made by the lens movement and is not a fault.

Cannot set [AUTO REVIEW].

● Cannot be set when any of the following are in use: [AUTO BRACKET], [MULTI ASPECT], [BURST], [SELF PORTRAIT], [HI-SPEED BURST], and [FLASH BURST] Scene Modes, and [AUDIO REC].

Red lamp illuminated when pressing shutter button halfway in dark locations.

● [AF ASSIST LAMP] set to [ON] (→106).

AF Assist Lamp is not illuminated.

● [AF ASSIST LAMP] is set to [OFF].

● Not illuminated in bright locations or when using [SELF PORTRAIT], [SCENERY], [NIGHT SCENERY], [SUNSET], [FIREWORKS], [AERIAL PHOTO], or [UNDERWATER] Scene Modes.

Camera is hot.

● Camera may become a little warm during use, but this does not affect performance or quality.

Lens makes a clicking noise.

● When brightness changes, the lens may make a clicking noise and the monitor brightness may also change, but this is due to aperture settings being made. (Does not affect recording.)

Clock is incorrect.

● Camera has been left for a long period.
  → Reset the Clock (→17, 19).

● Long time was taken to set Clock (Clock behind by this amount).

When using zoom, picture becomes slightly warped and the edges of the subject become coloured.

● Pictures may be slightly warped or coloured around the edges, depending on the zoom ratio, but this is not a fault.

Zoom movement stops momentarily.

● The zoom movement stops momentarily during Extra Optical Zoom and i.Zoom operation, but this is not a malfunction.

Zoom does not reach the maximum ratio.

● If the zoom ratio stops at 3 ×, [MACRO ZOOM] has been set. (→50)

File numbers are not recorded in sequence.

● File numbers are reset when new folders are created (→142).

File numbers have jumped backwards.

● Battery was removed/inserted with power on.
  (Numbers may jump backwards if folder/file numbers are not correctly recorded.)

When in use

● Camera may become warm if used for long periods of time, but this is not a fault.

● To avoid jitter, use a tripod and place in a stable location.
  (Especially when using telescopic zoom, lower shutter speeds, or self-timer)

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

● If you use the camera on top of or near a TV, the pictures and sound on the camera may be disrupted by electromagnetic wave radiation.

● Do not use the camera near cell phones because doing so may result in noise adversely affecting the pictures and sound.

● Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.

● Electromagnetic wave radiation generated by microprocessors may adversely affect the camera, disturbing the pictures and sound.

● If the camera is adversely affected by electromagnetic equipment and stops functioning properly, turn the camera off and remove the battery or disconnect AC adaptor (optional). Then reinsert the battery or reconnect AC adaptor and turn the camera on.

Do not use the camera near radio transmitters or high-voltage lines.

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

● Do not extend the supplied cord or cable.

● Do not allow camera to come into contact with pesticides or volatile substances (can cause surface damage or coating to peel).

● Never leave the camera and the battery in a car or on a car hood in the summer.
  It may cause leakage of the battery electrolyte, a generation of heat, and may cause a fire and the battery to burst due to the high temperature.

Caring for your camera

To clean your camera, remove the battery or disconnect the power plug from the outlet, and wipe with a soft, dry cloth.

● Use a damp cloth to remove stubborn stains, before wiping with a dry cloth.

● Do not use benzene, thinners, alcohol, or kitchen detergent, as these may damage the outer casing and finish of the camera.

● If using a chemically-treated cloth, read the supplied instructions carefully.

● Do not touch the lens barrier.

When not using for a while

● Turn off camera power before removing battery and card (ensure that battery is removed to prevent damage through over-discharge).

● Do not leave in contact with rubber or plastic bags.

● Store together with a drying agent (silica gel) if leaving in drawer, etc. Store batteries in cool (15 °C - 25 °C) places with low humidity (40 % - 60 %) and no major temperature changes.

● Charge battery once per year and use completely before storing again.
Shortcuts and notes (Continued)

Memory cards

- To prevent damage to cards and data
  - Avoid high temperatures, direct sunlight, electromagnetic waves, and static electricity.
  - Do not bend, drop, or expose to strong impacts.
  - Do not touch connectors on reverse of card or allow them to become dirty or wet.

- When disposing of/transfering memory cards
  - If using the 'format' or 'delete' functions on your camera or computer, this only changes the file management information, and does not completely delete the data from within the memory card.
  - When disposing of or transferring your memory cards, we recommend physically destroying the memory card itself, or using commercially available computer data erasing software to completely delete the data from the card. Data within memory cards should be managed responsibly.

LCD Monitor

- Do not press hard on the LCD monitor. This may cause uneven display and damage the monitor.
- In cold climates or other situations when the camera becomes cold, the LCD monitor may be slightly less responsive than normal immediately after startup. Normal brightness will return once the internal components have warmed up.

Personal Information

- If names or birthdays are set in [BABY] Mode or in the [FACE RECOG.] function, personal information will be included in the camera and the pictures that have been taken.

Disclaimer

- Data containing personal information can be altered or lost due to malfunction, static electricity, accidents, breakdowns, repairs, or other operations. Panasonic will not be liable for any damage that occurs, direct or indirect, as a result of the alteration or loss of data containing personal information.

- When ordering repairs or transferring/disposing of the camera
  - To protect your personal information, please reset the settings. (→26)
  - If any pictures are contained in the built-in memory, copy (→137) them to a memory card if necessary, and then format (→28) the built-in memory.
  - Remove the memory card from the camera.
  - When ordering repairs, the built-in memory and other settings may be returned to the initial purchase state.
  - If the above operations cannot be performed because of a camera malfunction, consult with the dealer or nearest Service Centre.

When transferring or disposing of your memory card, see 'When disposing of/transfering memory cards' in the previous section.

Important! Be sure to read the following before using the location names that are stored in this product.

User License Agreement for Location Name Data

Personal Use Only.
You agree to use this Data together with this digital camera for the solely personal, non-commercial purposes for which you were licensed, and not for service bureau, time-sharing or other similar purposes. Accordingly, but subject to the restrictions set forth in the following paragraphs, you may copy this Data only as necessary for your personal use to (i) view it, and (ii) save it, provided that you do not remove any copyright notices that appear and do not modify the Data in any way. You agree not to otherwise reproduce, copy, modify, decompile, disassemble or reverse engineer any portion of this Data, and may not transfer or distribute it in any form, for any purpose, except to the extent permitted by mandatory laws. Multi-disc sets may only be transferred or sold as a complete set as provided by Panasonic Corporation and not as a subset thereof.

Restrictions.
Except where you have been specifically licensed to do so by Panasonic Corporation, and without limiting the preceding paragraph, you may not (a) use this Data with any products, systems, or applications installed or otherwise connected to or in communication with vehicles, capable of vehicle navigation, positioning, dispatch, real time route guidance, fleet management or similar applications; or (b) with or in communication with any positioning devices or any mobile or wireless-connected electronic or computer devices, including without limitation cellular phones, palmtop and handheld computers, pagers, and personal digital assistants or PDAs.

Warning.
The Data may contain inaccurate or incomplete information due to the passage of time, changing circumstances, sources used and the nature of collecting comprehensive geographic data, any of which may lead to incorrect results.
No Warranty.
This Data is provided to you “as is,” and you agree to use it at your own risk. Panasonic Corporation and its licensors (and their licensors and suppliers) make no guarantees, representations or warranties of any kind, express or implied, arising by law or otherwise, including but not limited to, content, quality, accuracy, completeness, effectiveness, reliability, fitness for a particular purpose, usefulness, use or results to be obtained from this Data, or that the Data or server will be uninterrupted or error-free.

Disclaimer of Warranty:
PANASONIC CORPORATION AND ITS LICENSORS (INCLUDING THEIR LICENSORS AND SUPPLIERS) DISCLAIM ANY WARRANTIES, EXPRESS OR IMPLIED, OF QUALITY, PERFORMANCE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. Some States, Territories and Countries do not allow certain warranty exclusions, so to that extent the above exclusion may not apply to you.

Export Control.
You agree not to export from anywhere any part of the Data provided to you or any direct product thereof except in compliance with, and with all licenses and approvals required under, applicable export laws, rules and regulations.

Entire Agreement.
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About the geographical coordinate system
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About navigation functions
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## Countries and regions for which landmarks can be displayed and recorded

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### Countries and regions for which landmarks can be displayed and recorded

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- Some location name information is available, such as country name, region name, and city or town name.

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### Landmark types

The following points of interest, such as tourist spots and public facilities, are displayed as landmarks.
- Although about 30,000 landmarks are registered for Japan and about 500,000 are registered for countries other than Japan, note that some landmarks are not registered. (Current as of February 2010. Will not be updated.)

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<td>Golf course</td>
<td>Famous site, tourist attraction, beauty spot</td>
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<td>Castle, ruins</td>
<td>Shrine</td>
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<tr>
<td>Buddhist temple</td>
<td>Church</td>
<td>Tomb, monument, mound, historic site, palace</td>
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- **Zoo**
- **Botanical garden**
- **Aquarium**
- **Amusement park**
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- **Town or village office**
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- **History museum**
- **Other museum**
- **Theater**
Recording picture/time capacity

- Varies according to [ASPECT RATIO] (→96), [PICTURE SIZE] (→95), or [QUALITY] (→96) settings.

- When the number of recordable pictures exceeds 99,999, '+99999' is displayed.

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<td>4 min</td>
<td>7 min</td>
<td>2 min</td>
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<td>1 GB</td>
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<td>14 min</td>
<td>4 min</td>
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<td>29 min</td>
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<tr>
<td>16 GB</td>
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<td>2 h</td>
<td>2 h 54 min</td>
<td>33 min 30 s</td>
<td>1 h 23 min</td>
<td>1 h 27 min</td>
</tr>
<tr>
<td>32 GB</td>
<td>1 h</td>
<td>1 h 20 min</td>
<td>1 h 54 min</td>
<td>33 min 30 s</td>
<td>1 h 23 min</td>
<td>1 h 27 min</td>
</tr>
<tr>
<td>64 GB</td>
<td>1 h</td>
<td>1 h 20 min</td>
<td>1 h 54 min</td>
<td>33 min 30 s</td>
<td>1 h 23 min</td>
<td>1 h 27 min</td>
</tr>
<tr>
<td>Memory card</td>
<td>2 h</td>
<td>4 min</td>
<td>6 h</td>
<td>1 h</td>
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</tr>
<tr>
<td>128 GB</td>
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<tr>
<td>256 GB</td>
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<td>4 h</td>
<td>6 h</td>
<td>1 h 38 min</td>
<td>4 h 4 min</td>
<td>4 h 14 min</td>
</tr>
<tr>
<td>512 GB</td>
<td>4 h</td>
<td>5 h 20 min</td>
<td>8 h</td>
<td>2 h 15 min</td>
<td>5 h 38 min</td>
<td>5 h 51 min</td>
</tr>
<tr>
<td>1 TB</td>
<td>6 h</td>
<td>8 h</td>
<td>12 h</td>
<td>3 h 19 min</td>
<td>8 h 17 min</td>
<td>8 h 37 min</td>
</tr>
<tr>
<td>2 TB</td>
<td>8 h</td>
<td>10 h 40 min</td>
<td>16 h*</td>
<td>4 h 30 min</td>
<td>11 h 14 min</td>
<td>11 h 41 min</td>
</tr>
</tbody>
</table>

* Figures given are estimates. May vary according to conditions, card type, and subject.
* Recording capacities/times displayed on LCD monitor may not be reduced regularly.

A maximum of approx. 2 GB of continuous motion picture can be recorded in [AVCHD Lite] format. (Even if there is more than 2 GB of available space on the card, the available recording time will be calculated for a maximum of 2 GB.) The time displayed in the table is the total time.

- Figures given are estimates. May vary according to conditions, card type, and subject.
# Recording picture/time capacity

## Recording picture capacity (still pictures)

- Varies according to [ASPECT RATIO] (→96), [PICTURE SIZE] (→95), or [QUALITY] (→96) settings.

<table>
<thead>
<tr>
<th>[ASPECT RATIO]</th>
<th>[PICTURE SIZE]</th>
<th>432</th>
<th>169</th>
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<tbody>
<tr>
<td>12 M 4000×3000</td>
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<td>5 M EZ 2560×1920</td>
<td>0.3 M EZ 640×480</td>
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<td>[QUALITY]</td>
<td>[REC QUALITY]</td>
<td>Built-in memory</td>
<td>Memory card</td>
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<td>8</td>
<td>11.5 M 4170×2784</td>
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<tr>
<td>12</td>
<td>7.5 M EZ 3329×2264</td>
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<td>10</td>
<td>10.5 M EZ 3552×2500</td>
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</tbody>
</table>

## Recording time capacity (motion pictures)

- Varies according to [REC QUALITY] (→77) setting.

<table>
<thead>
<tr>
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<th>[HD]</th>
<th>[WVGA]</th>
<th>[VGA]</th>
<th>[QVGA]</th>
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<td>1 min 24 s</td>
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<tr>
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<td>5 min 20 s</td>
<td>15 min 40 s</td>
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<tr>
<td>1 GB 4 min</td>
<td>10 min 20 s</td>
<td>10 min 50 s</td>
<td>31 min 20 s</td>
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</tr>
<tr>
<td>2 GB 8 min 20 s</td>
<td>21 min 20 s</td>
<td>22 min 10 s</td>
<td>1 h 3 min</td>
<td></td>
</tr>
<tr>
<td>4 GB 16 min 30 s</td>
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<tr>
<td>6 GB 25 min 10 s</td>
<td>1 h 3 min</td>
<td>1 h 6 min</td>
<td>3 h 11 min</td>
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</tr>
<tr>
<td>8 GB 33 min 40 s</td>
<td>1 h 25 min</td>
<td>1 h 28 min</td>
<td>4 h 15 min</td>
<td></td>
</tr>
<tr>
<td>12 GB 50 min 50 s</td>
<td>2 h 8 min</td>
<td>2 h 14 min</td>
<td>6 h 26 min</td>
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</tr>
<tr>
<td>16 GB 1 h 8 min</td>
<td>2 h 52 min</td>
<td>2 h 59 min</td>
<td>8 h 35 min</td>
<td></td>
</tr>
<tr>
<td>24 GB 1 h 38 min</td>
<td>4 h 9 min</td>
<td>4 h 19 min</td>
<td>12 h 27 min</td>
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</tr>
<tr>
<td>32 GB 2 h 16 min</td>
<td>5 h 45 min</td>
<td>5 h 59 min</td>
<td>17 h 13 min</td>
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</tr>
<tr>
<td>48 GB 3 h 20 min</td>
<td>8 h 27 min</td>
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<td>64 GB 4 h 32 min</td>
<td>11 h 28 min</td>
<td>11 h 56 min</td>
<td>34 h 21 min</td>
<td></td>
</tr>
</tbody>
</table>

- Figures given are estimates. May vary according to conditions, card type, and subject.
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