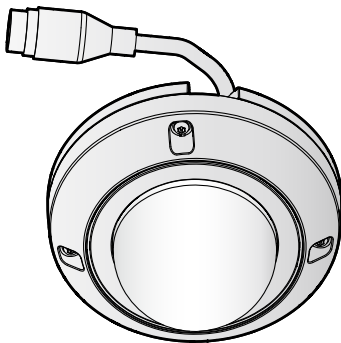


# Panasonic<sup>®</sup>

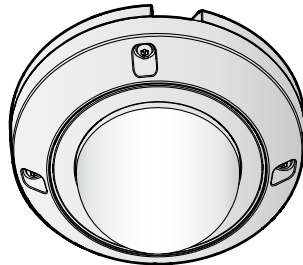
## Basic Information

### Network Camera

Model No. **WV-U2540L, WV-U2530L**  
**WV-U2140L, WV-U2130L**



**WV-U2540L**



**WV-U2140L**

#### About the user manuals

Product documentation is composed of the following documents.

- **Installation Guide (accessory):** Provides information about “Precautions”, “Precautions for installation” and the installation method.
- **Basic Information (this document):** Provides information about “Precautions for use” and “Detail specifications”.
- **Operating Instructions (in the following website):** Explains how to perform the settings and how to operate this camera.  
[https://security.panasonic.com/training\\_support/documentation\\_database/](https://security.panasonic.com/training_support/documentation_database/)

"<Control No.: C\*\*\*\*>" used in these documents should be used to search for information on our support website ([https://security.panasonic.com/training\\_support/support/info/](https://security.panasonic.com/training_support/support/info/)) and will guide you to the right information.

- microSDXC/ microSDHC/ microSD memory card is described as microSD memory card.
- The external appearance and other parts shown in this manual may differ from the actual product within the scope that will not interfere with normal use due to improvement of the product.



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## Limitation of liability

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- (6) ANY CLAIM OR ACTION FOR DAMAGES BROUGHT BY ANY PERSON OR ORGANIZATION AS A PHOTOGRAPHED SUBJECT DUE TO VIOLATION OF PRIVACY CONCERNING A SURVEILLANCE CAMERA’S PICTURE OR SAVED DATA, FOR SOME REASON (INCLUDING USE WHEN USER AUTHENTICATION ON THE AUTHENTICATION SETTING SCREEN IS SET TO OFF), BECOMING PUBLIC OR BEING USED FOR ANY PURPOSE;
- (7) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE (INCLUDING INITIALIZATION OF THE PRODUCT DUE TO FORGOTTEN AUTHENTICATION INFORMATION SUCH AS A USER NAME AND PASSWORD).

## About notations

The following notations are used when describing the functions limited for specified models. The functions without the notations are supported by all models.

- U2540** The functions with this notation are available when using the model WV-U2540L.
- U2530** The functions with this notation are available when using the model WV-U2530L.
- U2140** The functions with this notation are available when using the model WV-U2140L.
- U2130** The functions with this notation are available when using the model WV-U2130L.

## System requirements for a PC

CPU:	Intel® Core™ Processor family*1 - Intel® Core™ i5-6500 or faster - Intel® Core™ i7-6700 or faster recommended
Memory:	4 GB (2 GB x 2, Dual Channel) or more recommended.
Network interface:	10BASE-T/100BASE-TX 1 port
Monitor:	Image capture size: 1024 x 768 pixels or more High-resolution monitoring: 3840 x 2160 pixels or more <b>U2540</b> <b>U2140</b> Color: 24-bit True color or better
OS:	Microsoft Windows 10 Microsoft Windows 8.1
Web browser:	Internet Explorer 11 (32-bit) Microsoft Edge Firefox Google Chrome™
Others:	Adobe® Reader® or Acrobat Reader® (It is necessary to view the PDF file.)

\*1 For details on using the hardware decode function, refer to our support website <Control No.: C0313>.

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### IMPORTANT:

- For information on the operation verification of the supported operating systems and web browsers, refer to our support website <Control No.: C0104, C0122>.
  - When using a PC that does not meet the above requirements, displaying of images may become slower or the web browser may become inoperable.
  - When using Microsoft Windows 8.1, use it in the desktop. The software cannot be used in the Modern UI design.
-

# Network security

As you will use this unit connected to a network, your attention is called to the following security risks.

- ① Leakage or theft of information through this unit
- ② Use of this unit for illegal operations by persons with malicious intent
- ③ Interference with or stoppage of this unit by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this unit in a network secured by a firewall, etc.
- If this unit is connected to a network that includes PCs, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated anti-virus program, anti-spyware program, etc.).
- To prevent unauthorized access, use user-authentication, set user names and passwords, and limit which users can log in.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data, authentication information (user names and passwords), alarm mail information and DDNS server information.
- After the unit is accessed by the administrator, make sure to close the browser.
- Change the administrator password periodically. Additionally, save user authentication information (user names and passwords) in such a way that it is kept out of the hands of third parties.
- Do not install the camera in locations where the camera or the cables can be destroyed or damaged by persons with malicious intent.

# Precautions for use

## **When the product is accessible from the Internet**

To prevent unauthorized access, note the following.

- Leave user authentication turned on.
- Periodically change passwords that are used to access the product.

Refer to the Operating Instructions for information about how to change passwords.

## **To keep on using with stable performance**

Do not use this product in hot and humid conditions for a long time. Failure to observe this causes component degradation resulting in life shortening of this product. Do not expose this product to direct heat sources such as a heater.

## **Turning the power supply ON and OFF frequently can lead to malfunctions.**

### **Handle this product with care.**

Do not drop this product, nor apply shock or vibration to the product. Failure to observe this may cause trouble.

U2540

U2530

### **Do not subject dome cover to strong impact.**

Doing so may cause damage or immersion.

### **Do not touch the dome cover and the lens with your bare hands.**

A dirty dome cover causes deterioration of picture quality.

### **When an error is detected, this product will restart automatically.**

This product will be inoperable for around 2 minutes after the restart just as when the power is turned on.

## **About the automatic status detection function**

When this product malfunctions due to exogenous noise, etc. for 30 seconds or more, the product will automatically reset and will return to normal state. When the product is reset, initialization will be carried out as when the power of the product is turned on. When the product repeatedly resets, exogenous noise level around the product may be high and that may cause malfunction. Contact your dealer for instructions.

## **Periodically images on the screen appear to be distorted**

When the camera is installed in a location where it is subject to small vibrations (for example, when it is installed near devices that vibrate), images may appear distorted and stretched lengthways. This phenomenon is a characteristic of image pickup devices that use CMOS sensors and is caused by the relationship between the periodic movements of the camera and the timing that the image sensor reads images. This is not a problem with the camera. To reduce the possibility of this phenomenon occurring, install the camera in a secure location.

**We shall not be liable for content compensation, losses of recorded or edited content and any direct or indirect consequent damages caused by failure to record or edit due to faults with this unit or the microSD memory card. In addition, the same provisions apply after unit is repaired.**

### About the CMOS image sensor

- When continuously shooting a bright light source such as a spotlight, the color filter of the CMOS image sensor may become deteriorated and this may cause discoloration. Even when changing the fixed shooting direction after continuously shooting a spotlight for a certain period, the discoloration may remain.
- When shooting fast-moving subjects or objects crossing the shooting area may look to be bending askew.

### Cleaning this product body

Be sure to turn off the power before cleaning.

Failure to observe this may cause injury.

Do not use benzine, thinner, alcohol, or any other types of solvents or detergents. Otherwise, it may cause discoloration. When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.

- Do not loosen or remove screws unless instructed to do so in the product documentation.

### Cleaning the lens

Use a lens cleaning paper (used to clean camera lenses or lenses of spectacles). When using solvent, use an alcohol solvent and do not use a thinner or a glass cleaner.

### Cleaning of the dome cover

Use lens cleaning paper (used to clean camera or spectacles lenses) to remove any dirt on the dome cover.

The mark of light-shielding parts left inside the dome or dirt on the dome cover may influence the reflection of infrared rays. Therefore, likewise remove those marks and dirt using cleaning paper.

**U2540** **U2530**

If dust or the like is adhered at this time, the dome cover may get scratched. We recommend rinsing for stubborn stains.

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### Product disposal/transfer

Data saved on this product or a storage device used with this product may lead to personal information leakage. When it is necessary to dispose or give this product to someone, even when for repair, make sure that there is no data on this product.

When abandoning the memory media, it is recommended to destroy it physically after deleting data by PC.

### Effects on images and image quality

**U2540** **U2530**

Under the following conditions, image quality may deteriorate or images may become difficult to see.

- When there are raindrops on the dome cover due to wind during rainfall.
- When there is snow on the dome cover due to wind during snowfall. (varies depending on the amount and quality of snowfall).
- When the dome cover is dirty due to dust in the air or vehicle exhaust.

**U2140** **U2130**

Depending on the installation location, the dome cover or lens may become dirty, causing image quality to deteriorate or images may become difficult to see.

**Router**

When connecting this product to the Internet, use a broadband router with the port forwarding function (NAT, IP masquerade).

Refer to the Operating Instructions for further information about the port forwarding function.

**Time & date setting**

It is necessary to set the time & date before putting this product into operation. Refer to the Operating Instructions for descriptions of how to perform the settings.



# Troubleshooting

**Before asking for repairs, check the symptoms with the following table.**

Contact your dealer if a problem cannot be solved even after checking and trying the solution in the table or a problem is not described below.

Symptom	Cause/solution	Reference pages
<b>Power is not turned on.</b>	<ul style="list-style-type: none"><li>• Are the PoE device (IEEE802.3af compliant) and the RJ45 Network connector connected using an Ethernet cable? Check whether the connection is appropriately established.</li><li>• Depending on the PoE device, the power supply will stop when the demanded power exceeds its total power limit for all PoE ports. Refer to the operating instructions of the PoE device in use.</li></ul>	Installation Guide
<b>The LINK indicator does not light in orange even when the Ethernet cable is connected to the camera.</b>	<ul style="list-style-type: none"><li>• Is the Ethernet cable connected appropriately? Connect the Ethernet cable appropriately.</li><li>• Is the hub or router connected to the camera operating appropriately? Check if the hub or router in use is operating appropriately.</li><li>• Isn't the Ethernet cable connected to the camera broken? Replace the cable with another one.</li></ul>	Installation Guide

## Detail specifications

### • Basic

	<b>WV-U2540L/WV-U2530L</b>	<b>WV-U2140L/WV-U2130L</b>
Power source*1:	PoE (IEEE802.3af compliant)	
Power consumption*1:	PoE DC 48 V: 110 mA/ Approx. 5.3 W (Class 2 device) <b>U2540</b>	<b>U2140</b>
	PoE DC 48 V: 100 mA/ Approx. 4.8 W (Class 2 device) <b>U2530</b>	<b>U2130</b>
Operating environment		
Ambient operating temperature:	-30 °C to +50 °C {-22 °F to +122 °F} (Power On range: -20 °C to +50 °C {-4 °F to +122 °F})	-10 °C to +50 °C {14 °F to 122 °F} (Power On range: 0 °C to 50 °C {32 °F to 122 °F})
Ambient operating humidity:	10 % to 100 % (no condensation)	10 % to 90 % (no condensation)
Storage environment		
Storage temperature:	-30 °C to +60 °C {-22 °F to +140 °F}	
Storage humidity:	10 % to 95 % (no condensation)	
Waterproof*2:	IP66 (IEC 60529), Type 4X (UL50E) NEMA 4X compliant	Not support
Shock resistance:	IK10 (IEC 62262)	Not support
Wind resistance:	Up to 40 m/s {approx. 89 mph}	Not support
Dimensions:	ø109 mm × 62 mm (H) {ø4-9/32 inches × 2-7/16 inches (H)} Dome radius 30.5 mm {1-3/16 inches}	
Mass:	Approx. 270 g {0.60 lbs}	Approx. 250 g {0.55 lbs}
Finish:	<b>Main body:</b> Aluminum die cast, i-PRO white Polycarbonate resin, i-PRO white <b>Outer fixing screws:</b> Stainless steel (Corrosion-resistant treatment) <b>Dome cover:</b> Polycarbonate resin, Clear	<b>Main body:</b> Aluminum die cast, i-PRO white Polycarbonate resin, i-PRO white <b>Dome cover:</b> Polycarbonate resin, Clear
Others:	Tamper-resistant enclosure*3	Not support

\*1 Refer to our support website <Control No.: C0106> for further information about Power source and Power consumption information.

\*2 Only when installation work is properly performed according to the Installation Guide and appropriate waterproof treatment is performed.

\*3 Component that has a structure on which the screws that are accessible after installation cannot be screwed or unscrewed using an ordinary screwdriver.

• **Camera**

Image sensor:	Approx. 1/2.7 type CMOS image sensor <b>U2540</b> <b>U2140</b> Approx. 1/3 type CMOS image sensor <b>U2530</b> <b>U2130</b>
Effective pixels:	Approx. 5.2 megapixels <b>U2540</b> <b>U2140</b> Approx. 2.4 megapixels <b>U2530</b> <b>U2130</b>
Scanning area:	<b>U2540</b> <b>U2140</b> 5.38 mm (H)×3.02 mm (V) {7/32 inches (H) × 1/8 inches (V)} <b>U2530</b> <b>U2130</b> 5.28 mm (H)×2.97 mm (V) {7/32 inches (H) × 1/8 inches (V)}
Scanning system:	Progressive
Minimum illumination:	<b>U2540</b> <b>U2140</b> Color: 0.3 lx {0.0279 footcandle} (50IRE, F2.0, Maximum shutter: Off (1/30 s), AGC: 11) 0.019 lx {0.0018 footcandle} (50IRE, F2.0, Maximum shutter: max. 16/30 s, AGC: 11)* BW: 0 lx {0 footcandle} (50IRE, F2.0, Maximum shutter: OFF (1/30 s), AGC: 11, when the IR LED is lit) 0.12 lx {0.0111 footcandle} (50IRE, F2.0, Maximum shutter: Off (1/30 s), AGC: 11) 0.0075 lx {0.0007 footcandle} (50IRE, F2.0, Maximum shutter: max. 16/30 s, AGC: 11)* <b>U2530</b> <b>U2130</b> Color: 0.1 lx {0.0093 footcandle} (50IRE, F2.0, Maximum shutter: Off (1/30 s), AGC: 11) 0.006 lx {0.0006 footcandle} (50IRE, F2.0, Maximum shutter: max. 16/30 s, AGC: 11)* BW: 0 lx {0 footcandle} (50IRE, F2.0, Maximum shutter: OFF (1/30 s), AGC: 11, when the IR LED is lit) 0.04 lx {0.0037 footcandle} (50IRE, F2.0, Maximum shutter: Off (1/30 s), AGC: 11) 0.0025 lx {0.0002 footcandle} (50IRE, F2.0, Maximum shutter: max. 16/30 s, AGC: 11)* * Converted value
Intelligent Auto:	On/Off
Super Dynamic:	On/Off The level can be set in the range of 0 to 31.
Dynamic range:	Max. 102 dB <b>U2540</b> <b>U2140</b> Max. 120 dB <b>U2530</b> <b>U2130</b> (Super Dynamic: On, Level: 31)
Maximum gain:	The level can be set in the range of 0 to 11.
Back light compensation (BLC)/ High light compensation (HLC):	BLC/ HLC/ Off (only when Super Dynamic / Intelligent auto: Off)

Fog compensation:	On/Off The level can be set in the range of 0 to 8. (only when Intelligent Auto / auto contrast adjust: Off)
Light control mode setting:	ELC/ Indoor scene (50 Hz)/ Indoor scene (60 Hz)
Maximum shutter:	<b>[30 fps mode]</b> Max. 1/10000s, Max. 1/4000 s, Max. 1/2000 s, Max. 1/1000 s, Max. 1/500 s, Max. 1/250 s, Max. 1/120 s, Max. 1/100 s, Max. 2/120 s, Max. 2/100 s, Max. 3/120 s, Max. 1/30 s, Max. 2/30 s, Max. 4/30 s, Max. 6/30 s, Max. 10/30 s, Max. 16/30 s <b>[25 fps mode]</b> Max. 1/10000s, Max. 1/4000 s, Max. 1/2000 s, Max. 1/1000 s, Max. 1/500 s, Max. 1/250 s, Max. 1/100 s, Max. 2/100 s, Max. 3/100 s, Max. 1/25 s, Max. 2/25 s, Max. 4/25 s, Max. 6/25 s, Max. 10/25 s, Max. 16/25 s
Color/BW:	Off/ On(IR Light Off)/ On(IR Light On)/ Auto1(IR Light Off)/ Auto2(IR Light On)/ Auto3(SCC)
White balance:	ATW1/ ATW2/ AWC
IR LED Light:	High/ Middle/ Low Maximum irradiation distance: 20 m {Approx. 65 ft} <b>U2540</b> <b>U2140</b> Maximum irradiation distance: 30 m {Approx. 100 ft} <b>U2530</b> <b>U2130</b>
Digital noise reduction:	The level can be set in the range of 0 to 255.
Privacy zone:	On/Off Up to 8 zones available
VIQS:	On/Off Up to 8 zones available
Camera title on screen:	On/Off Up to 20 characters (alphanumeric characters, marks)
Video Motion Detection (VMD):	On/Off 4 areas available
Scene change detection (SCD):	On/Off 1 area available
Image rotation:	0° (Off)/ 90°/ 180° (Upside-down)/ 270°

• **Lens**

Zoom ratio:	Optical zoom 1x Extra optical zoom <b>U2540</b> <b>U2140</b> max 4.0 x (1.0x – 1.3 x when resolution is 1920x1080) (1.0x – 4.0 x when resolution is 640x360) <b>U2530</b> <b>U2130</b> max 3.0 x (1.0x – 1.5x when resolution is 1280x720) (1.0x – 3.0x when resolution is 640x360)
Digital (electronic) zoom:	Choose from 3 levels of x1, x2, x4
Focal length:	3.2 mm {1/8 inches}
Maximum aperture ratio:	1:2.0
Focus range:	1 m {39-3/8 inches} – ∞
Angular field of view:	<b>U2540</b> <b>U2140</b> [16:9 mode*] *[4:3 mode] is not supported. Horizontal: 100° Vertical: 54° <b>U2530</b> <b>U2130</b> [16:9 mode] Horizontal: 100° Vertical: 54° [4:3 mode] Horizontal: 81° Vertical: 60°
Adjusting angle:	Horizontal (PAN) angle: -175° to +175° Vertical (TILT) angle: -30° to +80° Azimuth (YAW) angle: ±100°

• **Network**

Network:	10BASE-T/100BASE-TX, RJ45 connector
Resolution: H.265 JPEG (MJPEG)	<p><b>U2540</b> <b>U2140</b>          [16:9 mode*] *[4:3 mode] is not supported.          2560×1440/ 1920×1080/ 640×360/ 320×180</p> <p><b>U2530</b> <b>U2130</b>          [16:9 mode]          1920×1080/ 1280×720/ 640×360/ 320×180          [4:3 mode]          1600×1200/ 1280×960/ VGA/ QVGA</p>
Image compression method: H.265*1	<p><b>Transmission priority:</b>          Constant bit rate/ VBR/ Frame rate/ Best effort</p> <p><b>Frame rate:</b>          [30 fps mode]          1 fps/ 3 fps/ 5 fps*/ 7.5 fps*/ 10 fps*/ 12 fps*/ 15 fps*/ 20 fps*/          30 fps*          [25 fps mode]          1 fps/ 3.1 fps/ 4.2 fps*/ 6.25 fps*/ 8.3 fps*/ 12.5 fps*/ 20 fps*/          25 fps*          (The frame rate is limited to “bit rate”. When a value with an asterisk (*) is selected, the actual frame rate may be lower than the value selected.)</p> <p><b>Bit rate per client:</b>          64 kbps/ 128 kbps*/ 256 kbps*/ 384 kbps*/ 512 kbps*/          768 kbps*/ 1024 kbps*/ 1536 kbps*/ 2048 kbps*/ 3072 kbps*/          4096 kbps*/ 6144 kbps*/ 8192 kbps*/ 10240 kbps*/          12288 kbps*/ 14336 kbps*/ 16384 kbps*/ 20480 kbps*/          24576 kbps*/ --FREE ENTRY--          (The available range of the bit rate varies depending on the setting selected for “image capture size”.)</p> <p><b>Image quality:</b></p> <ul style="list-style-type: none"> <li>• For “Constant bit rate”, “Frame rate”, and “Best effort”:              Low(Motion priority)/ Normal/ Fine(Image quality priority)</li> <li>• “VBR”:              0 Super fine/ 1 Fine/ 2/ 3/ 4/ 5 Normal/ 6/ 7/ 8/ 9 Low</li> </ul> <p><b>Transmission type:</b>          Unicast port (AUTO)/ Unicast port (MANUAL)/ Multicast</p>
JPEG (MJPEG)	<p><b>Image quality:</b>          0 SUPER FINE/ 1 FINE/ 2/ 3/ 4/ 5 NORMAL/ 6/ 7/ 8/ 9 LOW          (10 steps: 0-9)</p> <p><b>Transmission type:</b> Pull (Refresh interval)/Push (MJPEG)</p> <p><b>Refresh interval:</b>          [30 fps mode]          0.1 fps/ 0.2 fps/ 0.33 fps/ 0.5 fps/ 1 fps/ 2 fps/ 3 fps/ 5 fps/ 6 fps/          10 fps/ 12 fps/ 15 fps/ 30 fps          [25 fps mode]          0.08 fps/ 0.17 fps/ 0.28 fps/ 0.42 fps/ 1 fps/ 2.1 fps/ 3.1 fps/          4.2 fps/ 5 fps/ 8.3 fps/ 12.5 fps/ 25 fps          (JPEG frame rates are limited when using JPEG and H.265 simultaneously.)</p>

Smart coding:	<b>GOP(Group of pictures) control</b> On(Frame rate control)/ On(Advanced)/ On(Mid)/ On(Low)/ Off <b>AUTO VIQS</b> On/Off
Bandwidth control:	Unlimited/ 64 kbps/ 128 kbps/ 256 kbps/ 384 kbps/ 512 kbps/ 768 kbps/ 1024 kbps/ 2048 kbps/ 4096 kbps/ 6144 kbps/ 8192 kbps/ 10240 kbps/ 15360 kbps/ 20480 kbps/ 25600 kbps/
Protocol:	<b>IPv6:</b> TCP/IP, UDP/IP, HTTP, HTTPS, SMTP, DNS, NTP, SNMP, DHCPv6, RTP, MLD, ICMP, ARP, IEEE 802.1X, DiffServ <b>IPv4:</b> TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP, IEEE 802.1X, DiffServ
Security:	User authentication, Host authentication, HTTPS
OS*2:	Microsoft Windows 10 Microsoft Windows 8.1
Browser*2:	Internet Explorer 11 (32-bit) Microsoft Edge Firefox Google Chrome
Maximum concurrent access number:	14* (Number of sessions that can connect to cameras at the same time) * Depends on network conditions
Compatible microSD memory card*3, *4, *5, *6, *7:	Manufactured by Panasonic (microSD speed class 6 or higher) <b>microSDXC memory card:</b> 64 GB <b>microSDHC memory card:</b> 32 GB
Mobile terminal/ Tablet terminal compatibility:	iPad / iPhone (iOS 8 or later), Android™ mobile terminals

- \*1 Transmission for 3 streams can be individually set. (The frame rate is limited to 15 fps or less at multiple stream transmission.)
- \*2 For information on the operation verification of the supported operating systems and web browsers, refer to our support website <Control No.: C0104, C0122>.
- \*3 When recording video on a microSD memory card, only use H.265 compression.
- \*4 For possible number of images and duration (an indication) that can be saved on the microSD memory card, refer to our support website <Control No.: C0307>.
- \*5 Refer to our support website <Control No.: C0107> for latest information about the compatible microSD memory cards.
- \*6 When repeatedly recording images on a microSD memory card using the auto overwrite function, make sure to use a microSD memory card with high reliability and durability.
- \*7 The replacement cycle (target) of a microSD memory card differs from that of a standard size SD memory card. For details, check the content of our support website <Control No.: C0117>.

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