# Chapter 2 System Configuration

2.1 Checking Package Components

Check the components in the package against the items shown in the figures below. Inspect each component for damage. If a component is damaged, or if a component is missing, contact your local FUJIFILM dealer.

◆ **Package Components**

Note
- The power cord model CC9-203(US)(S) is provided to markets other than Brazil. The power cord model CC9-003(BR)(S) is provided to the Brazilian market only.

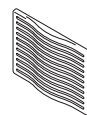- The figure in parentheses indicates the quantity.
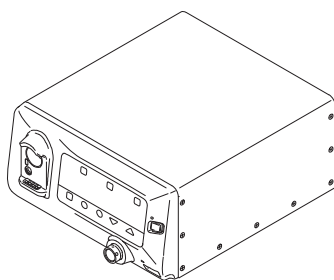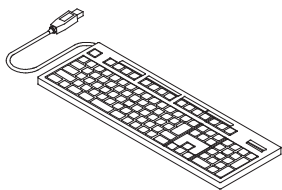

Processor
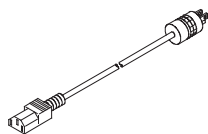EP-6000 (1)

Socket Protection Cap
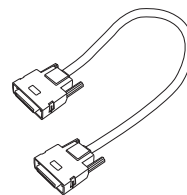CC-203 (1)

LAN connector guard (1)
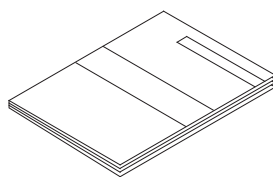
Louver (1)
Dustproof filter (1)

Data Keyboard
DK-6000E (1)

Power Cord (1)

WC-LINK cable (1)

Operation Manual (1)

5.   Shutter Speed
➡ "7.14 Switching the Shutter Speed"

6.   Focus Indicator
Displayed when an optical zoom scope is connected.

7.   Electronic Zoom Ratio
x1.00 to 2.00 or x1.00 to 1.75 (0.05 step)

Note   The zoom ratio of some 530 series scopes is x1.00 to 1.95.

8.   Special Light Observation Mode or Spectral Image Processing function
In special light observation mode, "BLI", "BLI-bright" or "LCI" is displayed.
With the spectral image processing function, "FICE" is displayed.

9.   Patient Name

10. Patient ID or Examination No.
Whether to display the patient ID or the examination No. should be specified by service personnel.

11. Sex

12. Age

13 Login
Displayed when the user logs in to the system.
➡ "4.3 Security Function"

14. Date of Birth

15. Image Setup Page

16. Switch Setting
The function assigned to the scope switch is displayed.
➡"4.2.7 Endoscope Tab <Functions to be assigned to the scope switch>"

17 Light Limit
Displays the status of Light Limit
"L - LIMIT" appears on the monitor screen when pressing the multi button on the front panel to turn on the Light Save Function.
➡ "7.9 Light Save Function"

18. Hospital Name

19. Doctor Name

20. Scope Information

    The scope type or scope serial, minimum diameter of instrument channel, outer diameter of distal end, and outer diameter of insertion tube are displayed.

    Scope information may not be displayed depending on the connected scope.

    ➡ "3.11 Patient Info. + Scope Info. Dialog"

21. Number of Recordable Images in Internal Storage Device

    The display flashes while the internal storage device is accessed. Do not turn off the power while the display flashes.

22. Number of Captured Images

23. Printer Status

    The status is displayed as follows (only for digital printer):

        When the printer is used: ⊡

        Memory status: ⊡ to ⊡

        When the printer is not used: Nothing is displayed.

24. DICOM Server Connection Status

    The connection status with the DICOM server is displayed as follows:

        S: Storage status of a (stored) image

        M: Connection status of the worklist

        P: MPPS (progress of an examination)

25. R, G and B Gain Levels

26. R, G and B Components

27. Tone

    ➡ "7.13 Turning On/Off the Tone"

28. Structure Emphasis

    ➡ "7.11 Turning On/Off Structure Emphasis"

29. Hyper-Tone and Noise Reduction

    Hyper-tone (HT) and noise reduction (NR) are displayed as follows. (The setting is indicated in parentheses.)

        Not displayed (no setting), white (Low), green (Mid), and yellow (Hi)

        Installation should be performed by service personnel.

30. Procedure or Comment

<Example of information displayed on the video output screen>

| Note | • When the monitor is connected to the RGB TV, Video, or S Video connector, do not use such an image for the main observation. |

• Depending on the monitor type, the periphery of the screen may not be displayed. In this case, set the monitor in the under scan mode.

In the case of Normal mode:

In the case of BLI, BLI-bright or LCI:

1. Hyper-Tone and Noise Reduction

Hyper-tone (HT) and noise reduction (NR) are displayed as follows. (The setting is indicated in parentheses.)

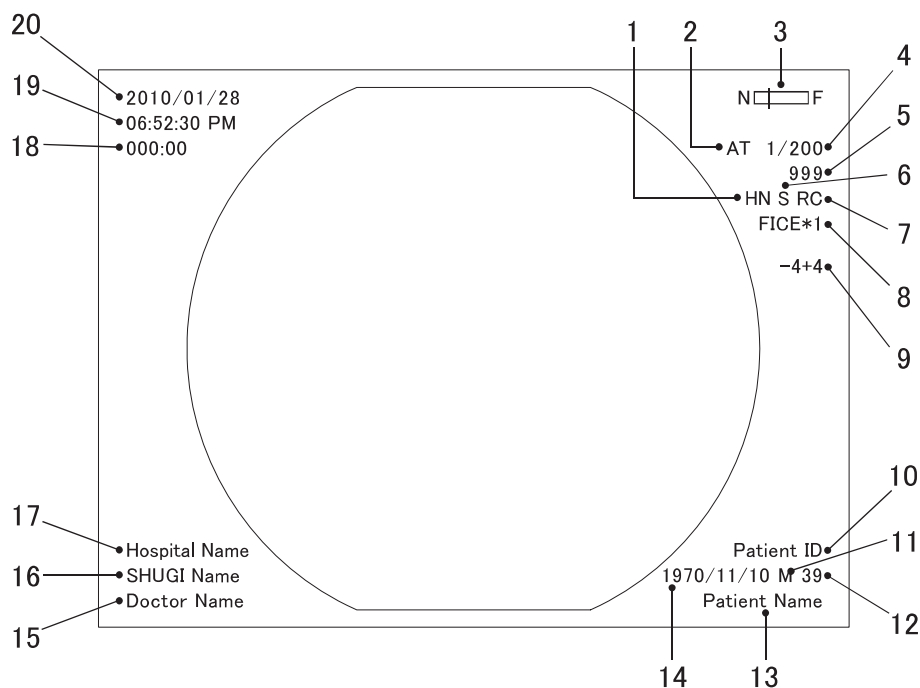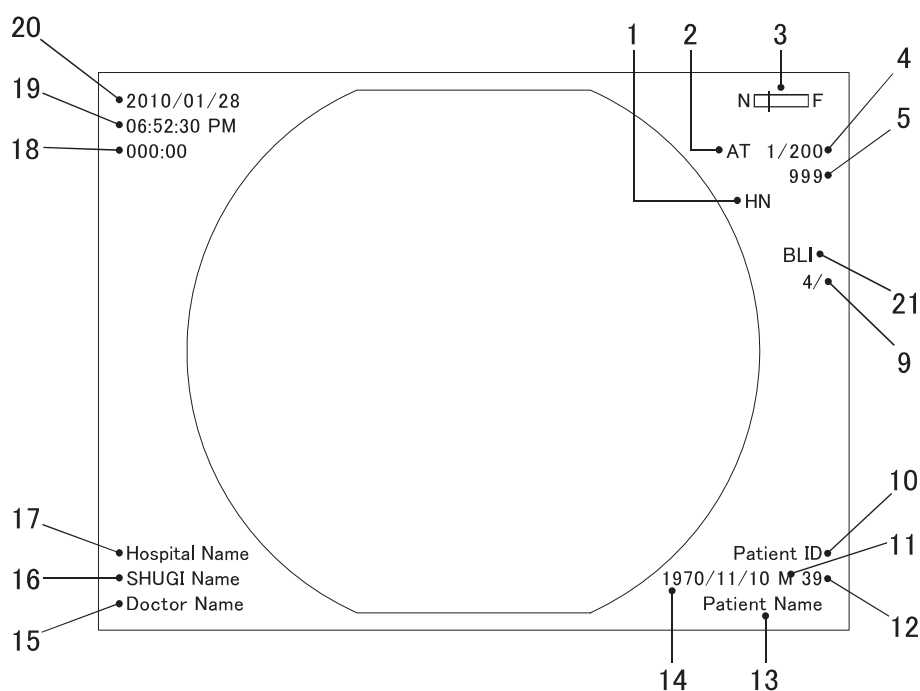Not displayed (no setting), white (Low), green (Mid), and yellow (Hi)

Installation should be performed by service personnel.

2. Iris Mode

➡ "7.15 Switching the Iris Mode"

3. Focus Indicator

Displayed when an optical zoom scope is connected.

4. Shutter Speed

➡ "7.14 Switching the Shutter Speed"

5. Shooting Counter

6. Structure Emphasis

➡ "7.11 Turning On/Off Structure Emphasis"

7. Tone

➡ "7.13 Turning On/Off the Tone"

8. FICE

Spectral image processing function (FICE)

Note   In the BLI, BLI-bright or LCI mode, FICE is not available.

➡ "7.12 Turning On/Off FICE"

9. Contour Emphasis

➡ "7.11 Turning On/Off Structure Emphasis"

10. Patient ID or Examination No.

11. Sex

12. Age

13. Patient Name

14. Date of Birth

15. Doctor Name

16. Procedure or Comment

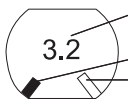17. Hospital Name

18. Timer

19. Time

20. Date

21. Special Light Observation Mode
        "BLI", "BLI-bright" or "LCI" is displayed.

3.11 Patient Info. + Scope Info. Dialog

When registering the new patient information or switching the patient information, the Patient Info. + Scope Info. dialog is displayed.

In the patient information area, the information registered in the Patient Information Entry screen is displayed.

➡ "5.2 Registering and Editing Patient Information"

In the scope information area, the minimum diameter of instrument channel, outer diameter of distal end or outer diameter of insertion tube may not be displayed depending on the date of manufacture when the 600 system scope or 500 system scope is connected.
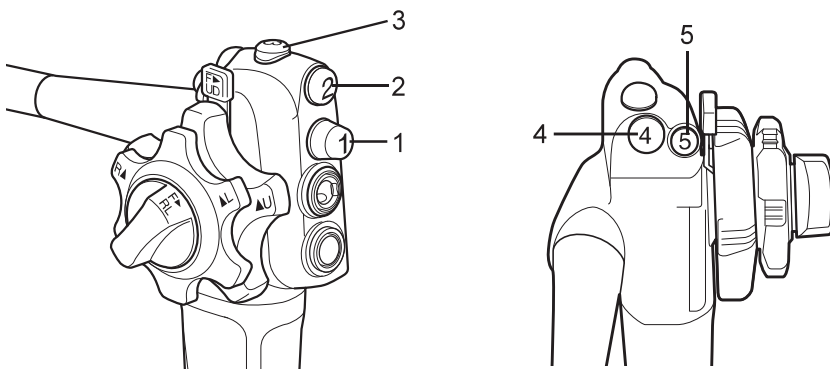The water jet nozzle position is displayed only when some models of the 700 system scope are connected.

<Scope Switch Setting>

The functions available for each scope switch are described in the following chart.
The setting is performed by service personnel.

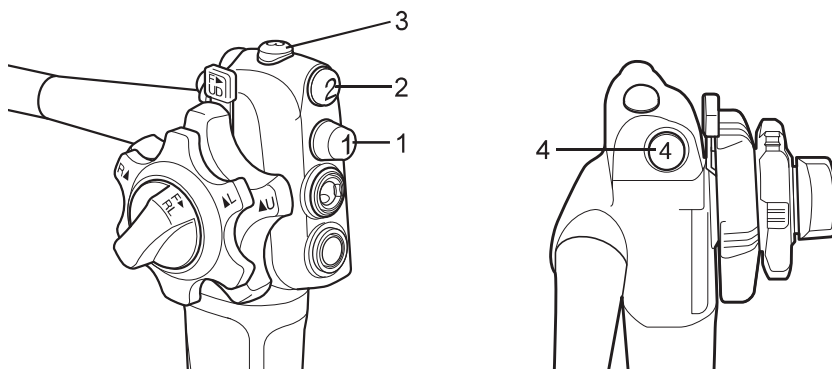**• Assignments of 700 System (5-Switch) Scope**

Function	1	2	3	4	5	FR+OM (RC)
F/T (Freeze / Trigger)	Yes	Yes	Yes	Yes	Yes	-
F+T (Freeze + Trigger)	Yes	Yes	Yes	Yes	Yes	-
FRZ (Freeze)	Yes	Yes	Yes	Yes	Yes	-
Trigger [Note 1]	Yes	Yes	Yes	Yes	Yes	Yes
Record [Note 1]	Yes	Yes	Yes	Yes	Yes	Yes
Iris Mode	Yes	Yes	Yes	Yes	Yes	-
Shutter Speed	Yes	Yes	Yes	Yes	Yes	-
Obs. Mode Preset	Yes	Yes	Yes	Yes	Yes	-
Structure Emphasis	Yes	Yes	Yes	Yes	Yes	-
FICE	Yes	Yes	Yes	Yes	Yes	-
Color Emphasis	Yes	Yes	Yes	Yes	Yes	-
Display	Yes	Yes	Yes	Yes	Yes	-
Electronic Zoom	Yes	Yes	Yes	Yes	Yes	-
Optical Zoom: Zoom In [Note 1]	Yes	Yes	Yes	Yes	Yes	-
Optical Zoom: Zoom Out [Note 1]	Yes	Yes	Yes	Yes	Yes	-
Timer	Yes	Yes	Yes	Yes	Yes	-
Lap Time	Yes	Yes	Yes	Yes	Yes	-
Not Assigned	Yes	Yes	Yes	Yes	Yes	-

Yes: Available to assign

[Note 1] The "Trigger" / "Record" and "Optical Zoom" functions can be assigned at the same time.

[Note] If "Freeze / Trigger", "Freeze + Trigger" or "Freeze" and "Trigger" / "Record" are not assigned, images cannot be captured.

• **Assignments of 700 System (4-Switch) Scope**

Function	1	2	3	4
F/T (Freeze / Trigger)	Yes	Yes	Yes	Yes
F+T (Freeze + Trigger)	Yes	Yes	Yes	Yes
FRZ (Freeze)	Yes	Yes	Yes	Yes
Trigger	Yes	Yes	Yes	Yes
Record	Yes	Yes	Yes	Yes
Iris Mode	Yes	Yes	Yes	Yes
Shutter Speed	Yes	Yes	Yes	Yes
Obs. Mode Preset	Yes	Yes	Yes	Yes
Structure Emphasis	Yes	Yes	Yes	Yes
FICE	Yes	Yes	Yes	Yes
Color Emphasis	Yes	Yes	Yes	Yes
Display	Yes	Yes	Yes	Yes
Electronic Zoom	Yes	Yes	Yes	Yes
Timer	Yes	Yes	Yes	Yes
Lap Time	Yes	Yes	Yes	Yes
Not Assigned	Yes	Yes	Yes	Yes

Yes: Available to assign

[Note]   If "Freeze / Trigger", "Freeze + Trigger" or "Freeze" and "Trigger" / "Record" are not assigned, images cannot be captured.

7.15   Switching the Iris Mode

Press the [IRIS] button to select the ALC (automatic light control) mode to control the screen brightness.

The EP-6000 has three iris modes: AVE to control the brightness on the entire screen, PEAK to control the brightness in the highlight areas, and AUTO to set average or peak iris automatically for optimal iris. When the power is turned on, the system is set at the AUTO iris mode.

Each time the [IRIS] button is pressed, the iris mode switches to AVE, PEAK or AUTO.
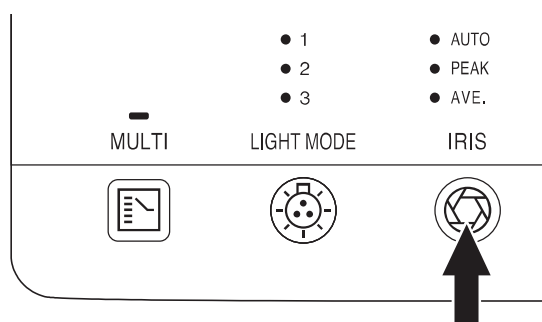
In the screen, the iris mode is displayed as follows.

AUTO : Lv+1 AUTO ◎ The setting is displayed in white.

PEAK : Lv+1 PEAK ◎ The setting is displayed in green.
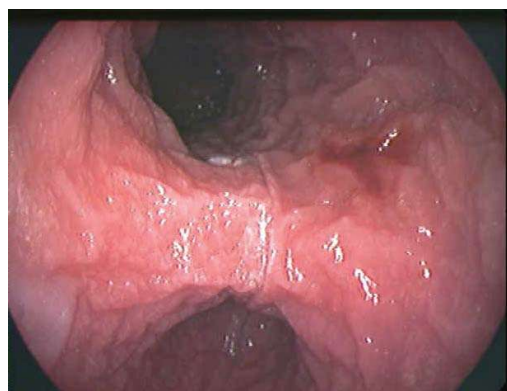
AVE : Lv+1 AVE ◎ The setting is displayed in green.

Note   While the light is turned on, the brightness level is displayed next to AUTO/PEAK/AVE.

➡ "7.8 Adjusting the Brightness"

The AVE is suitable for a screen that does not have that much difference in brightness.

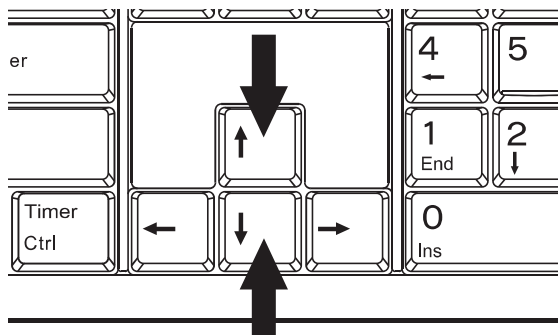The PEAK is suitable for a screen that has some high brightness parts.

<Detail setting>

Press and hold the Iris Mode button for about two seconds to display the setup screen.

➡ "5.3.7 Setting the Iris Mode"

7.16 Adjusting the Electronic Zoom

Display the observation screen and press the [↑] / [↓] keys on the keyboard.

The electronic zoom is switched.

The zoom ratio can be set between x1.00 and x2.00 (0.05 steps).

| Note | • The zoom ratio of some 530 series scopes is x1.00 to x1.95. |

• When an optical zoom scope is connected, pressing the zoom switch, while the optical zoom ratio is at maximum, switches to the electronic zoom automatically.

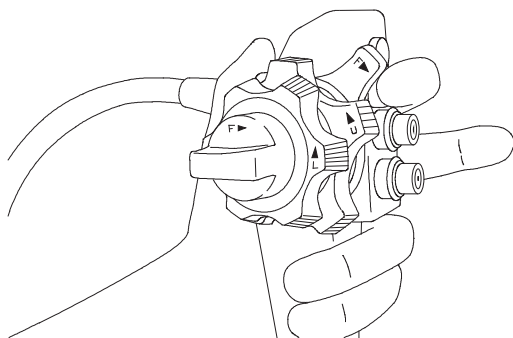➡ "4.2.9 Setup for Switching the Shutter Speed During Optical Zoom"
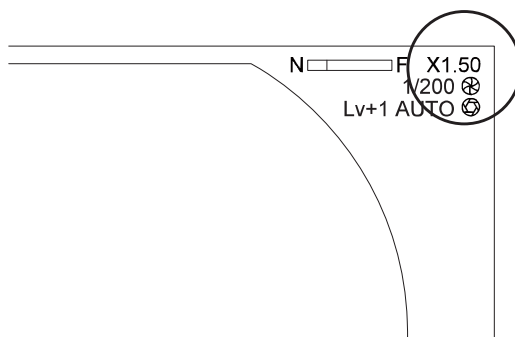
8.2.3　Capturing the Image

Captures the image onto the printer unit.

<Capture the image by using the scope switch of the Endoscope>

(1)　Focus the object to be recorded on the screen, and freeze the image by pressing the scope switch to which "Freeze" is assigned.

Note　The observation screen is frozen while the scope switch to which the Freeze function is assigned is pressed. While the screen is frozen, the video image is displayed in the sub-screen. When Mask Type: Type 1 is selected in SXGA mode, each pressing of the [Tab] key changes the display position of the sub-screen in order of the upper left → upper right → lower right → lower left.

➡ "3.9 Data Display on the Observation Screen"

(2)　While the image is static, pressing the scope switch to which "Trigger" is assigned captures the image.
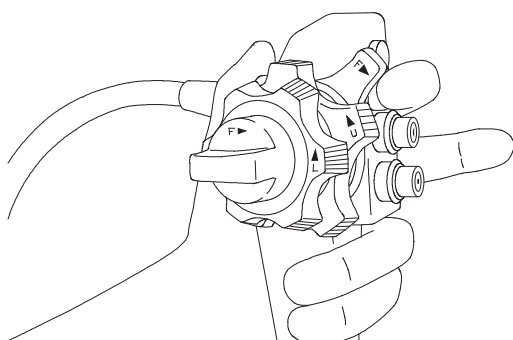
➡ "4.2.7 Endoscope Tab"

8.6   Recording Video Images on the Video Recorder (by Operating the Scope Switch)

8.6.1   Assignment of Video Recording Switches

Video images are recorded by using the scope switch on the endoscope to which the "Trigger" function is assigned.

| Note | The "Trigger" function needs to be assigned to a scope switch. The setting is performed by service personnel.

➡ "4.2.7 Endoscope Tab"

8.6.2   Starting Video Recording

Press the scope switch to which "Trigger" is assigned to start video recording. Press the scope switch again to pause video recording.
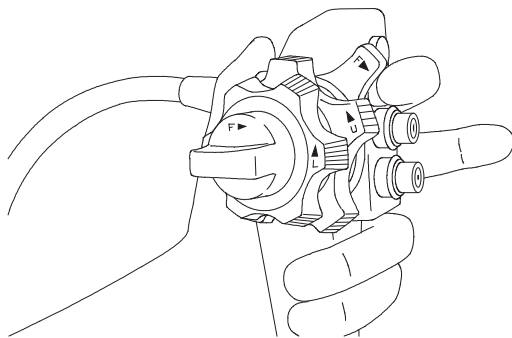
➡ "4.2.7 Endoscope Tab"

Chapter 11 Main Specification

11.1 Specification

◆ Classification of Medical Electrical Equipment

1. Type of protection against electric shock: Class I equipment (Power supply: Protective earth plug)
2. Degree of protection against electric shock: Type BF applied part
3. Degree of explosion protection: Use is prohibited in an oxygen-rich environment or in a flammable gas atmosphere.
4. Degree of protection against ingress of water: IPX0
5. Mode of operation: Continuous operation

◆ Applied Part

Insertion portion of applicable endoscope

◆ Specification

Power	100 - 240 V ~ 50/60 Hz
Current consumption (rated)	2.0-1.1 A
Fuse	T3.15AH 250V×2 (Rating: 3.15A/250V)
Type of color	NTSC/PAL
Video output	DVI (Resolution: 1280×1024 pixels, 1920×1080 pixels)
Light control	Automatic light control by the control signal
Light cooling method	Forced air cooling
Air supply pump	HI/MID/LOW/OFF
Maximum air supply pressure	65kPa
Maximum water supply pressure	65kPa
Illumination source	LED
Maximum light output	750lm or less (Measured with our jig)
Optical radiation safety (LED for infrared communication)	Class 1 LED product [Note 1] (IEC 60825-1: 1993+A1: 1997+A2: 2001: 2007)
Power transmission frequency	110 to 205 kHz
Effective radiatied power	15 W or less

Serial control	UP-55MD
Image pickup method	Simultaneous [Note 2]
Iris mode	AUTO/PEAK/AVE
Image zoom [Note 3]	Electronic zoom x1.00 to x2.00 (0.05 steps)
Memory	Patient data: 45 patients Clinical procedure: 20 types Dr. Name: 20 doctors Image Setup Page: 5 patterns
Built-in clock	Date, time (back up from the secondary battery: ML2430-HJ1)
Shooting counter	Adding up display
Applicable endoscope	700 system scopes, 600 system scopes, 500 system scopes [Note 4] [Note 5]
Dimensions (W x H x D)	395 × 210 × 485 mm (including projection)
Mass	15.0 kg

[Note 1] "Chapter 3 Name and Function of Each Part" > "3.1 Front Panel" >
"20. Communication Window (LED)" falls into this class.

[Note 2] Image pickup method using the imaging sensor with color filters (red, green and blue) at the distal end of scope. White light is used as illumination light.

[Note 3] The zoom ratio of some 530 series scopes is x1.00 to x1.95.

[Note 4] Depending on the model, smoothness of video images may vary due to the difference in software version.

[Note 5] Excluding 590 series scope, EG-530UT2, EG-530UT, EG-530UR2 and EG-530UR.

◆ **Operating Environment**

Operating conditions

Temperature	+10 to +40°C
Humidity	30 to 85%RH (no dew condensation)
Pressure	70 to 106 kPa

Non-operating conditions

Temperature	-10 to +45°C
Humidity	30 to 95%RH (no dew condensation)
Pressure	70 to 106 kPa

◆ **Transport and Storage Environment**

Temperature	-20 to +60°C
Humidity	10 to 90%RH (no dew condensation)
Pressure	70 to 106 kPa

◆ Term of Validity/Period for Use (Durability)

The term of validity (durability) is 6 years from the first use of this product, providing that this product undergoes periodic servicing. "Based on our company's criteria"

◆ Input/Output Connector

(1)　Image output connector

VIDEO	1.0 Vp-p/75 Ω (NTSC/PAL)	1 channel
S VIDEO	Y: 1.0 Vp-p/75 Ω (NTSC/PAL) C: 0.3 Vp-p/75 Ω	1 channel
RGB TV (D-sub 15 p)	RGB: 0.7 Vp-p/75 Ω (NTSC/PAL) SYNC: TTL, 2.0 Vp-p/75 Ω	1 channel
DVI-D (24 p)	Digital	2 channels

(2)　Control connector

WC-LINK (37p)		1 channel
REMOTE (BNC)		2 channels
Peripherals (D-sub 9 p)	[Note] RS-232C	2 channels
Keyboard	[Note] USB1.1	1 channel
Reader	[Note] USB1.1	1 channel
Digital printer	[Note] USB2.0	1 channel
Footswitch (Din 5 p)		1 channel
Network (RJ-45)	[Note] 10/100 BASE	1 channel