

## Operating Instructions (Basic)

CCU for 1-4MOS Cameras

Model No. GP-CS44X10-0

4K4MOS Camera Head (VIS+IR)

Model No. GP-H443RX1-0F

Model No. GP-H443RX1-0F1

4K3MOS Camera Head

Model No. GP-H343CX1-0F

2K3MOS Camera Head

Model No. GP-H323CX1-0F

4K2MOS Camera Head (VIS+IR)

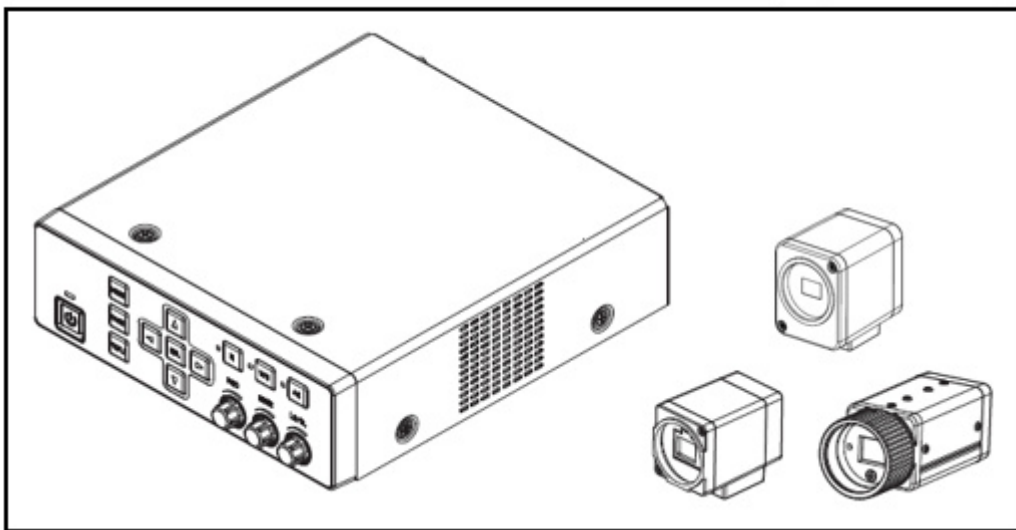
Model No. GP-H243RX1-0F

Model No. GP-H243RX1-0F1

4K1MOS Camera Head

Model No. GP-H143CX0-0F

For professional use only



Before attempting to connect or operate this product, please read these instructions carefully.

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Tokyo, Japan

<https://www.i-pro.com/>

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## Disposal of Old Equipment and Batteries

### Only for European Union and countries with recycling systems



This symbol on the products, packaging, and/or accompanying documents mean that used electrical and electronic products must not be mixed with general household waste. For proper treatment, recovery and recycling of old products, please take them to applicable collection points in accordance with your national legislation.

By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment.

For more information about collection and recycling, please contact your local authority. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For U.S.A.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**FCC CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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Supplier's Declaration of conformity

Trade name : i-PRO

Model No. : GP-CS44X10-0

GP-H443RX1-0F

GP-H443RX1-0F1

GP-H343CX1-0F

GP-H323CX1-0F

GP-H243RX1-0F

GP-H243RX1-0F1

GP-H143CX0-0F



Responsible Party : i-PRO Americas Inc.

8550 Fallbrook Drive, Suite 200 Houston, Texas 77064

Support Contact : 1-800-513-5417

For U.S.A.

The model number and serial number of this product may be found on the surface of the unit.

You should note the model number and serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

For U.S.A.

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions : (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For CANADA

CAN ICES-3(A)/NMB-3(A)

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**WARNING:**

- Operation of this product in a residential environment could cause radio interference.

**Caution:**


- The socket-outlet shall be easily accessible to shut down the main power of power supplying equipment to this product.
- Only connect 12 V DC Class 2 power supply (UL 1310/CSA 223), limited power source (IEC/EN/UL/CSA 60950-1, IEC/EN/UL/CSA 62368-1 Annex Q) or IEC/EN/UL/CSA 62368-1 PS2.
- Before attempting to connect or operate this product, please read these instructions carefully.


**Notice:**


- This product is a professional equipment.
- This product is not suitable for use in locations where children are likely to be present.
- This product is designed to be used indoors.
- For information about screws and other parts required for installation, refer to the corresponding section of this document.
- Refer to the indication label on the top, side or bottom of this unit for the equipment classification, power source, and other information.


Graphical symbols for use on equipment

 : Direct current

 : Polarity of d.c. power connector

 : Stand-by

 : Equipotentiality

 : Caution

## Precautions

In order to prevent harm to people and damage to property, it explains what must be observed without fail.

■ **Refer installation work to the dealer.**

Installation work requires technique and experiences. Failure to observe this may cause fire, electric shock, injury, or damage to the product.

Be sure to consult the dealer.

■ **Wire properly.**

Short circuit or wrong wiring may cause fire or electric shock.

■ **Periodic inspections shall be conducted.**

Rust on the metal parts or screws may cause injury or accidents.

Consult the dealer for the inspections.

■ **Turn the power off when cleaning this product.**

Failure to observe this may cause an electric shock.

■ **Stop the operation immediately when something is wrong with this product.**

When smoke goes up from the product, the smell of smoke comes from the product, or deterioration of the exterior of this product is noticed, continued use will result in fire, injury, or damage to the product.

Turn off the power of this product immediately, and then contact your dealer.

■ **Do not engage in work related to the installation and wiring during the power is on.**

Failure to observe this may cause fire or electric shock.

■ **Do not use this product in an inflammable atmosphere.**

Failure to observe this may cause an explosion resulting in injury.

■ **Avoid installing this product in the locations where corrosive gas is produced.**

Failure to observe this may cause injury or accidents.

■ **Do not strike or give a strong shock to this product.**

Failure to observe this may cause fire or injury.

■ **Do not insert any foreign objects.**

Do not allow any foreign object or liquid such as water, a metallic part, etc. to enter since it may cause fire or electric shock.

If it happens, disconnect the power plug from the electric outlet immediately and contact your dealer.

■ **Do not disassemble nor alter this product.**

Failure to observe this may cause fire or electric shock.

Ask your dealer for inspection and repair.

■ **Avoid placing receptacles that contain liquids such as water near this product.**

If liquid spills onto this product, it may cause fire or an electric shock.

If it happens, disconnect the power plug from the electric outlet immediately and contact your dealer.

■ **Do not rub the edges of metal parts with your hand.**

Failure to observe this may cause injury.

■ **Do not pull the cables.**

Failure to observe this may cause injury.

■ **Do not damage the cables.**

Putting a heavy thing or pinching may damage the cables and cause injury.

# Introduction

## Preface

This unit is a 4K/2K camera control unit (hereinafter called CCU) and separate 4K,2K camera head (hereinafter called camera head) that uses digital signal processing and is compact and lightweight while providing high image quality and multiple functions.

GP-CS44X10-0 ... CCU for 1-4MOS Cameras

GP-H143CX0-0F ... 4K1MOS Camera Head

GP-H243RX1-0F,GP-H243RX1-0F1 ... 4K2MOS(VIS+IR) Camera Head

GP-H343CX1-0F ... 4K3MOS Camera Head

GP-H323CX1-0F ... 2K3MOS Camera Head

GP-H443RX1-0F,GP-H443RX1-0F1 ... 4K4MOS(VIS+IR) Camera Head

1. 1/3-inch 4K or 2K sensor is used, allowing high-definition and high-sensitivity video capture.
2. Equipped with an HDMI and SDI output, realizing lossless signal transmission.
3. Simultaneous visible/IR imaging with 4K output is possible. (When using 4K2MOS Camera Head / 4K4MOS Camera Head)
4. The CCU can connect from a 4K1MOS Camera Head to a 4K4MOS Camera Head without changing any settings.

## Limitation of liability

THIS PUBLICATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THE THIRD PARTY'S RIGHT.

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## Protection of personal information

Information that can identify an individual captured with a system using this device is considered "personal information".

Handle video information properly in accordance with the law.

## Disclaimer

IN NO EVENT SHALL i-PRO Co., Ltd. BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

- (1) ANY LOSS OR DAMAGE, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
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- (3) ALL MALFUNCTIONS OR TROUBLES FROM UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER, REGARDLESS OF THE CAUSE OF THE MALFUNCTION OR TROUBLE;
- (4) INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
- (5) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
- (6) ANY CLAIM OR ACTION FOR DAMAGES BROUGHT BY ANY PERSON OR ORGANIZATION AS A PHOTOGRAPHED SUBJECT DUE TO VIOLATION OF PRIVACY CONCERNING CAMERA'S PICTURE OR SAVED DATA, FOR SOME REASON, BECOMING PUBLIC OR BEING USED FOR ANY PURPOSE;
- (7) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE (INCLUDING INITIALIZATION OF THE PRODUCT).

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- Microsoft and Windows are registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Other company names and product names described in this manual are trademarks or registered trademarks of each company.

## Copyright

Distributing, copying, disassembling, reverse compiling and reverse engineering of the software provided with this product are all expressly prohibited. In addition, exporting any software provided with this product violating export laws is prohibited.

## Precautions for installation and use

- The installation should comply with local electrical code.
- Avoid installing or using this system in the following locations:
  - Locations where it may get wet from rain or water splash
  - Locations where a chemical agent is used such as a swimming pool
  - Locations subject to humidity, dust, steam and oil smoke
  - Locations where a radiation, an X-ray, a strong radio wave or a strong magnetic field is generated
  - Locations where corrosive gas is produced
  - Locations where the temperature is not within 0 °C to 40 °C {32 °F to 104 °F}
  - Locations subject to vibrations (This product is not designed for on-vehicle use.)
  - Locations where the temperature may rapidly change such as the peripheral areas of the air outlets of air conditioners or doors facing outside
- To keep on using with stable performance  
Parts of this product may deteriorate and it may shorten the lifetime of this product when using in locations subject to high temperatures.

Use this product at temperatures between 0 °C to 40 °C {32 °F to 104 °F}. Failure to observe this may adversely affect the components inside or cause this product to malfunction. Use of this product at temperatures of 30 °C {86 °F} or lower is recommended without direct heat from heaters in consideration of heat release at the product location.

- 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.

- Radio interference

Images may be distorted near a transmitting antenna for TV or radio broadcasting signals or electric or magnetic fields (for example, caused by a motor and a transformer).

- Keep the CCU at least 10 cm away from the surrounding wall.

If the CCU is installed contacting the wall, heat release is blocked and it may result in malfunction.

- Cooling fan alarm

When the cooling fan alarm message is displayed, immediately turn off the power and contact your dealer.

- Procure a tripod separately.

The tripod to mount the camera head is not supplied. Prepare it according to the area where the camera is to be installed.

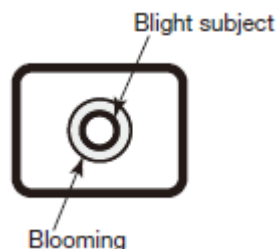
- Do not touch the lens surface with your bare hands.

A dirty lens surface causes deterioration of picture quality.

- 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. In addition, the same provisions apply after unit is repaired.

- Do not aim this product at strong light sources.

A light source such as a spot light may cause a blooming (light bleeding).



- Do not apply or use organic solvents such as benzene and thinner. The case may become discolored. Follow the precautionary statement when using chemical foil.
- Cleaning the lens

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

- i-PRO Co., Ltd. assumes no responsibility for injuries or property damage resulting from failures arising out of improper installation or operation inconsistent with this documentation.

- About USB memory

USB memory that require a special driver or have password authentication or encryption functions cannot be used.

Use the USB memory compatible with USB2.0.

In order to maintain high-speed reading/writing, perform “ScanDisk” or “CheckDisk” with the PC with the Microsoft Windows OS.

FAT32 is supported. Use a USB memory whose volume is 32 GB or less.

The USB memory cannot be formatted with CCU.

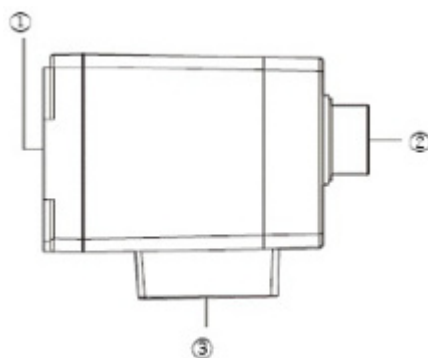
- Be sure to remove this product if it is not in use.

Please use the product in compliance with the necessary laws, regulations, and standards depending on your intended use.
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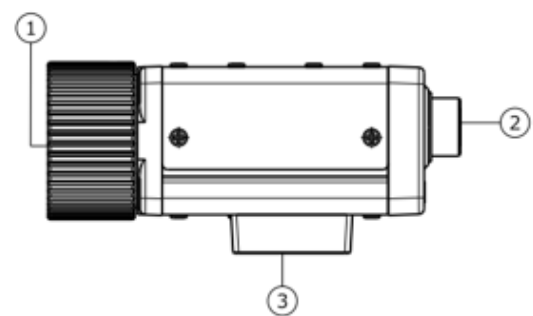
## Parts and functions

### Camera head

<2MOS/3MOS/4MOS Camera Head>



<1MOS Camera Head>



**Important**

- Be sure to turn off the power (Stand-by) of the CCU before connecting or disconnecting the camera cable.
- Avoid bending excessively or breaking the camera cable.
- Use the specific-camera head only.

① **Lens mount section**

C-mount lens is mounted on this section.

② **Camera cable connector**

One of the following optional camera cable is connected to this connector.

GP-UC532G\*\*A

※ GP-UC532G\*\* (cables that do not end in A) cannot be used.

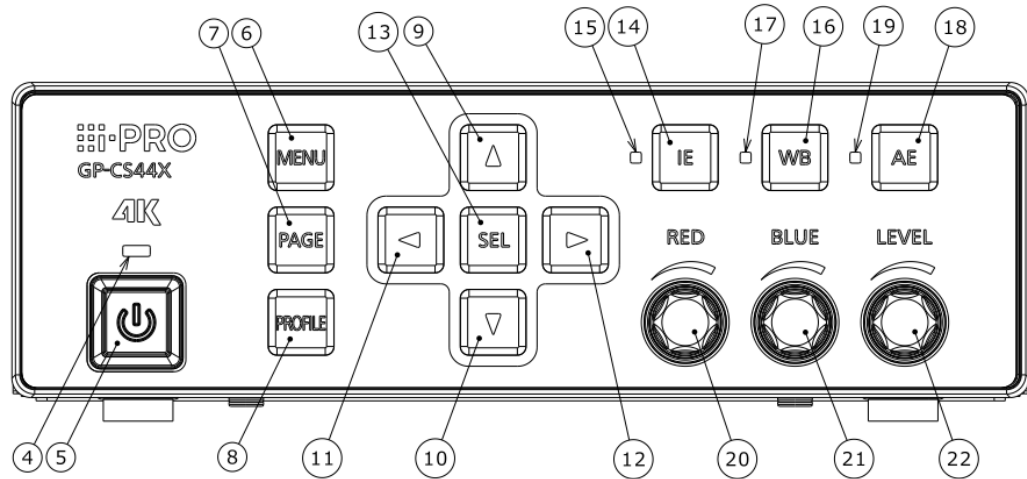
③ **Tripod mount base**

The tripod socket hole is used when the camera head is secured to the tripod.

Tripod socket hole : 1/4-20 UNC

## Camera control unit (CCU)

<Front>



The front panel is covered with a protective sheet.

Since the performance is not affected, please use the product with the protective sheet removed if necessary.

④ **Power status lamp (Green)**

On : While the power is turned on.

Off : While the power is turned off (stand-by).

⑤ **Power On/Off(Stand-by) switch [ ⏻ ]**

This switch toggles the power of the CCU and camera head on and off (stand-by).

⑥ **Menu button [MENU]**

Press and hold for 1 second or more to display the SETUP menu (ADVANCED MENU).

When the SETUP menu is displayed and the cursor is on a submenu screen, pressing this button will move up a menu hierarchy. Pressing this button for 1 second or more will hide the SETUP menu.

If you press this button when the SETUP menu is not displayed, the screen freeze function will be activated.

•For information about SETUP menu (QUICK MENU, ADVANCED MENU, MAINTENANCE MENU), refer to the "Operating Instructions (OSD)".

⑦ **Page button [PROFILE/PAGE]**

When the SETUP menu is displayed, press this to move to the next page.

When pressed except when the SETUP menu is displayed, switches the settings between "VIDEO OUTPUT HDMI/SDI 1" and "VIDEO OUTPUT HDMI/SDI 2".

When pressed while the QUICK MENU is displayed, it changes pages.

⑧ **Profile button [PROFILE]**

Select a profile from 1 to 6.

Set each profile in advance in the SETUP menu.

⑨ **Up button [▲]**

While the SETUP menu is displayed, the following two operations are possible.

- Move the cursor to switch setting items.
- When on a submenu screen of an item that can be adjusted vertically (such as the [COLOR MATRIX] USER AREA screen), vertical adjustment is performed.

When pressed except when the SETUP menu is displayed, it switches between "FLIP+ MIRROR".

⑩ **Down button [▼]**

Please refer to ⑨ above.

⑪ **Left button [◀]**

While the SETUP menu is displayed, the following three operations are possible.

- Change the setting value of the item where the cursor is located (in the case of LEVEL adjustment, adjust in the  $\pm$  direction)
- When on a submenu screen of an item that can be adjusted left and right (such as the [COLOR MATRIX] USER AREA screen), adjust left and right.
- When the SETUP menu is displayed and the cursor is on the bottom line ([EXP(RGB,IR) PIC(RGB,IR,MIX) CONTR(RGB,IR) F1 F2 SYS]), it will move to each setting screen.

When pressed except when the SETUP menu is displayed, the "DIGITAL ZOOM" magnification is changed.

⑫ **Right Button [▶]**

Please refer to ⑪ above.

⑬ **Select button [SEL]**

While the SETUP menu is displayed, the following four operations are possible.

- If the cursor is on an item that is a submenu item, it will transition to the submenu.
- If the cursor is on an action command such as "CANCEL", "SET (NEW SETTING)", "RET", "END", or "RESET", the corresponding action will be performed.
- If you are on the submenu screen for the "USER PROFILE ID" or "USER PROFILE LABEL" item, select the string indicated by the cursor as the ID/LABEL.
- When the cursor is on "AUTO(SET)" in the "WHITE SHADING" item, automatic adjustment of white shading will start.

When you press this button other than when the SETUP menu is displayed, the "SETTING INFORMATION" screen will be displayed. Press again to return to the camera image.

"SETTING INFORMATION" displays the settings for "IE FUNCTION SELECT", "FOOTSW CONTROL CH1/CH2", "SAVE/LOAD MODE (USB)", and "VIDEO FORMAT (HDMI1/HDMI2/SDI1/SDI2)".

⑭ **IE (IMAGE ENHANCEMENT) button [IE]**

Switches the IE ON/OFF setting.

⑮ **IE status lump (Green)**

Displays the ON/OFF setting status of IE.

- On: IE function ON
- Off: IE function OFF

⑯ **AWC (Automatic White balance Control) button [WB]**

When "WHITE BAL MODE" in the SETUP menu is set to "AWC", pressing this button briefly while the camera image is displayed will start AWC.

- If the camera head is not connected, the [WB] button will not work.

⑰ **AWC status lump (Orange)**

Displays the AWC status.

- Off: AWC stopped
- Blinking: AWC is running
- Blinking → Off: AWC successful
- On: AWC error

⑱ **AE (Automatic Exposure) button [AE]**

Switches between Auto/Manual AE settings.

⑲ **AE status lamp (Green)**

Displays the Auto/Manual setting status of AE.

On: Auto Exposure

Off: Manual Exposure

⑳ **Red Volume [RED]**

Adjusts the offset for the RED gain of the white balance.

When the adjustment screen is displayed, you can press the [PAGE] button to switch the DETAIL BAND settings.

When the SETUP menu is displayed, turn it to change the selected item.

㉑ **Blue Volume [BLUE]**

Adjust the offset for the white balance BLUE gain.

When the adjustment screen is displayed, you can press the [PAGE] button to switch the DETAIL LEVEL setting.

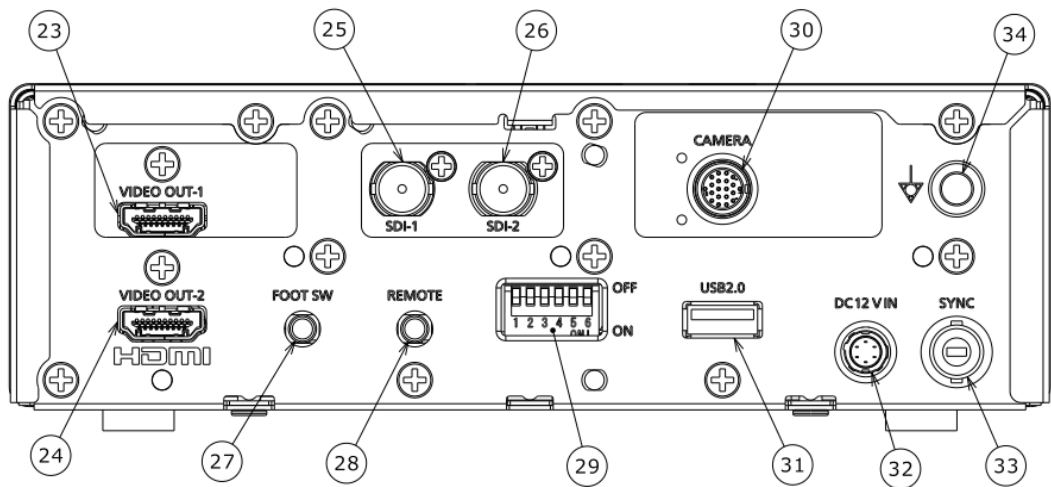
㉒ **Level Volume [LEVEL]**

Adjusts the brightness level up or down.

While the adjustment screen is displayed, you can press the [PAGE] button to increase or decrease the IE FUNCTION LEVEL(RGB).

When the SETUP menu is displayed, turn it to move the cursor or change the settings of the selected items.

<Rear>



②③ **HDMI output connector [HDMI OUT 1]**

Used when connecting to an HDMI compatible monitor.

②④ **HDMI output connector [HDMI OUT 2]**

Used when connecting to an HDMI compatible monitor.

- We recommend using a Panasonic HDMI cable (sold separately).
- When using VIDEO OUT with 2160p output YPbPr (422) 10BIT, use an HDMI cable that supports 18Gbps (sold separately).
- Please use a monitor that has the HDMI logo.

②⑤ **SDI output connector [SDI-1]**

Outputs 12G-SDI, 3G-SDI signals.

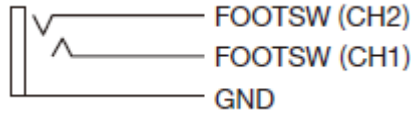
②⑥ **SDI output connector [SDI-2]**

Outputs 12G-SDI, 3G-SDI signals.

- For information on the video screen compatibility of each output, refer to the "Operating Instructions (OSD)".

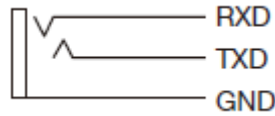
⑳ **Foot switch terminal [FOOT-SW]**

Terminal for connecting a foot switch. (φ 3.5 stereo mini jack)



㉑ **Remote terminal [REMOTE]**

This port is used to perform external control. (ø3.5 mini jack, 3-pole, serial)



㉒ **Function switch**

This switch sets the function of each video output.

Switch 1 selects the frame frequency: 59.94 Hz/50 Hz.

Switches 2, 3, and 4 are fixed ON.

Switch 5 selects the output format 3840x2160/1920x1080 for HDMI OUT 1 and SDI OUT 1.

Switch 6 selects the output format 3840x2160/1920x1080 for HDMI OUT 2 and SDI OUT 2.

DIPSW				Frame Rate	HDMI OUT 1	HDMI OUT 2	SDI OUT 1	SDI OUT 2
1	2, 3, 4	5	6					
ON	ON	ON	ON	59.94Hz	3840x2160 59.94p	3840x2160 59.94p	3840x2160 59.94p	3840x2160 59.94p
		ON	OFF		3840x2160 59.94p	1920x1080 59.94p	3840x2160 59.94p	1920x1080 59.94p
		OFF	OFF		1920x1080 59.94p	1920x1080 59.94p	1920x1080 59.94p	1920x1080 59.94p
OFF		ON	ON	50Hz	3840x2160 50p	3840x2160 50p	3840x2160 50p	3840x2160 50p
		ON	OFF		3840x2160 50p	1920x1080 50p	3840x2160 50p	1920x1080 50p
		OFF	OFF		1920x1080 50p	1920x1080 50p	1920x1080 50p	1920x1080 50p

③⑩ **Camera cable connector [CAMERA]**

One of the following optional camera cable is connected to this connector.

GP-UC532G\*\*A

※ GP-UC532G\*\* (cables that do not end in A) cannot be used.

•Power output : DC5V @0.5A 5.5V max.

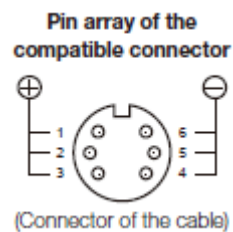
③⑪ **USB connector [USB2.0]**

Insert a USB memory and save/load the profile.

③⑫ **12 V DC power terminal [DC 12V IN]**

Connector for the external DC power more than 12 V DC (3 A or more).

Compatible connector : HR10A-7P-6S(73) manufactured by HIROSE ELECTRIC CO., LTD.



③⑬ **Sync terminal [SYNC]**

Inputs or outputs an external sync signal.

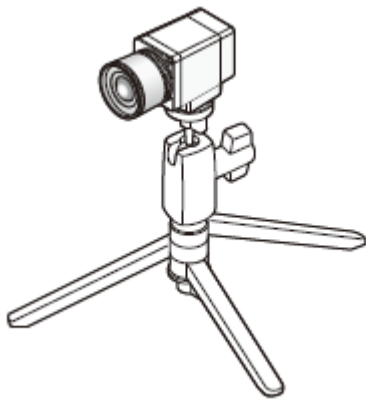
③⑭ **Equipotential terminal [ ⚡ ]**

A terminal for connecting an external equipotential conductor.

## How to install

The following shows how to mount the camera on the tripod (locally procured).

< Sample of camera mounting on tripod >



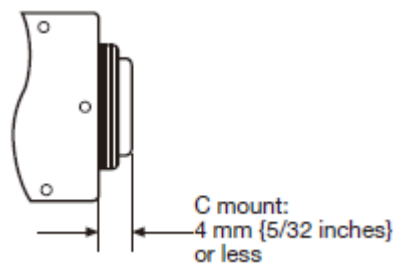
Important:

- The tripod and CCU shall be horizontally placed.
- The CCU shall be horizontally placed. Do not place the unit in an upright or tilted position.

## How to mount lens

Important:

- A lens whose projection length of the lens mount section is 4 mm {5/32 inches} or less shall be used.

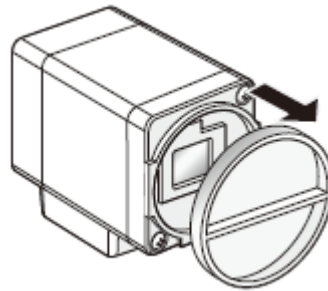


- The recommended lens aperture ranges from F4.0 to F16. Selection of less than F4.0 of the lens aperture may result in image blurring.

- When a zoom lens is used, focus adjustment method varies with the lens. For further information, refer to the operating instructions for the lens.
- When the lens is removed, be sure to put the cap on the lens mount section of the camera head.

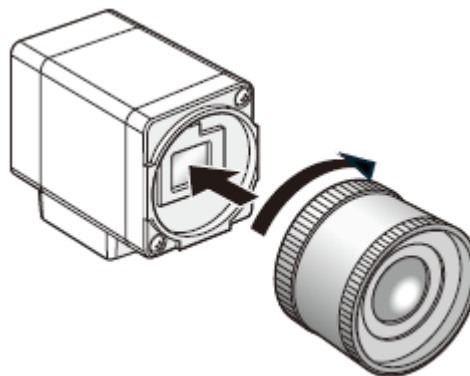
**STEP1**

Remove the cap from the lens mount section of the camera head.



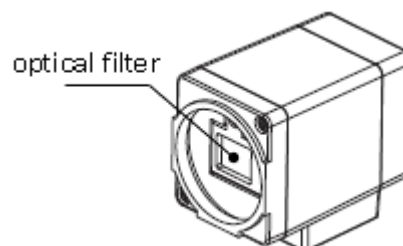
**STEP2**

Turn a C-mount lens clockwise to engage the lens with the lens mount section.

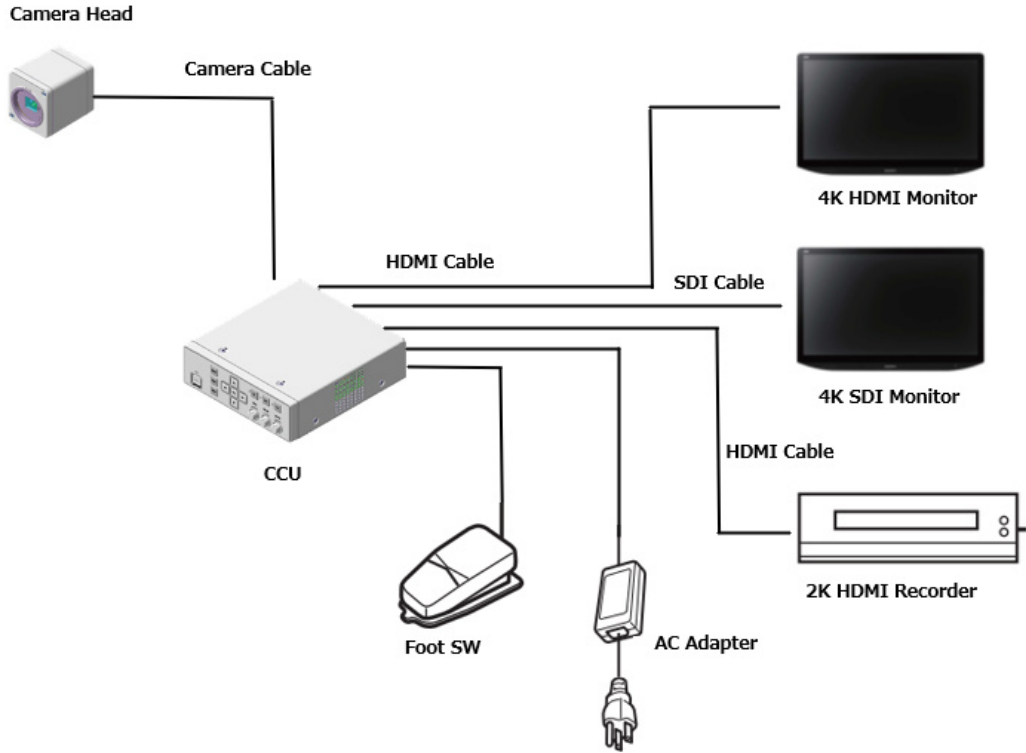


**Important:**

- Check to see whether the surface of the optical filter is clean before mounting a lens. If the surface is dirty, use a blower brush for general camera to remove dust.



# System configuration



## Specifications

CCU (Camera Control Unit) Model No.		GP-CS44X10-0
Camera Head to be connected		GP-H443RX1-0F, GP-H443RX1-0F1, GP-H243RX1-0F, GP-H243RX1-0F1, GP-H343CX1-0F, GP-H323CX1-0F, GP-H143CX0-0F, GP-UH532HA, GP-UH832HX, GP-UH832HX1
Video Output	HDMI	HDMI-1,2 : HDMI 2.0 ( 4K / 2K )
	SDI	SDI-1,2 : 12G-SDI / 3G-SDI ( 4K / 2K )
	VBS	-
	Y/C	-
	RGB / YPbPr	-
Video Output Format	HDMI	3840x2160p (59.94Hz/50Hz), 1920x1080p (59.94Hz/50Hz)
	SDI	12G-SDI : 3840x2160p (59.94Hz/50Hz) 3G-SDI : 1920x1080p (59.94Hz/50Hz)
	VBS	-
	Y/C	-
	RGB / YPbPr	-
Visible / IR Output	HDMI / SDI	HDMI-1/SDI-1 : Visible/IR/Mixed IR/PinP
		HDMI-2/SDI-2 : Visible/IR/Mixed IR
External I/O	Foot SW	ø3.5 mm stereo mini jack (two inputs)
	External Control	ø3.5 mm stereo mini jack (3-poles serial, RS232C signal compliant)
	Synchronization	BNC terminal
	USB	USB2.0 (for profile save/load)
	Network	-
	Equipotential Terminal	Yes
General	Power source and consumption	DC 12 V : 2.7 A (including camera head)
	Operating Temperature	0 °C to 40 °C {32 °F to 104 °F}
	Operating Humidity	30 % to 90 % (without condensation)
	Dimension	185 mm(W) x 57 mm(H) x 206 mm(D)
	Weight	Approx. 1.5 kg
	Included Items	Important Safety Instructions

<b>CCU (Camera Control Unit) Model No.</b>		<b>GP-CS44X10-0</b>
Option (Recommended products)	Power Supply	MPU60A-105-P49L10* (Sinpro Electronics Co., Ltd.)

<b>Camera Head Model No.</b>		<b>GP-H443RX1-0F</b>	<b>GP-H443RX1-0F1</b>
Camera	Prism	1/3 type 4-channels (RGB+IR) prism	1/3 type 4-channels (RGB+IR) prism
	Image Sensor	1/3 type 2K sensor (Visible) x3 1/3 type 2K sensor (IR)	1/3 type 2K sensor (Visible) x3 1/3 type 2K sensor (IR)
	Scanning Method	Progressive Scan, Rolling Shutter	Progressive Scan, Rolling Shutter
	Resolution	1,400 TV lines Typ.	1,400 TV lines Typ.
	Sensitivity	F9 (2000lx, 3200K, Head Gain Off)	F9 (2000lx, 3200K, Head Gain Off)
	Frame Rate	59.94 / 50 fps	59.94 / 50 fps
	S/N Ratio	58 dB (Gain Off, Head Gain Off)	58 dB (Gain Off, Head Gain Off)
	Lens Mount	C-mount	C-mount
	Optical path length difference b/w IR-Visible	0 ± 30 μ m	150 ± 30 μ m
General	Operating Temperature	0 °C to 40 °C {32 °F to 104 °F}	0 °C to 40 °C {32 °F to 104 °F}
	Operating Humidity	30 % to 90 % (without condensation)	30 % to 90 % (without condensation)
	Dimension	35 mm(W) x 42 mm(H) x 47 mm(D)	35 mm(W) x 42 mm(H) x 47 mm(D)
	Weight	Approx. 110 g	Approx. 110 g
	Included Items	Important Safety Instructions	Important Safety Instructions
Option	Camera Cable	GP-UC532G02A (2m) GP-UC532G03A (3m) GP-UC532G04A (4m) GP-UC532G06A (6m) GP-UC532G15A (15m)	GP-UC532G02A (2m) GP-UC532G03A (3m) GP-UC532G04A (4m) GP-UC532G06A (6m) GP-UC532G15A (15m)

Camera Head Model No.		GP-H343CX1-0F	GP-H323CX1-0F
Camera	Prism	1/3 type 3-channels (RGB) prism	1/3 type 3-channels (RGB) prism
	Image Sensor	1/3 type 2K sensor (Visible) x3	1/3 type 2K sensor (Visible) x3
	Scanning Method	Progressive Scan, Rolling Shutter	Progressive Scan, Rolling Shutter
	Resolution	1,600 TV lines Typ.	1,000 TV lines Typ.
	Sensitivity	F9 (2000lx, 3200K, Head Gain Off)	F9 (2000lx, 3200K, Head Gain Off)
	Frame Rate	59.94 / 50 fps	59.94 / 50 fps
	S/N Ratio	58 dB (Gain Off, Head Gain Off)	63 dB (Gain Off, Head Gain Off)
	Lens Mount	C-mount	C-mount
	Optical path length difference b/w IR-Visible	-	-
General	Operating Temperature	0 °C to 40 °C {32 °F to 104 °F}	0 °C to 40 °C {32 °F to 104 °F}
	Operating Humidity	30 % to 90 % (without condensation)	30 % to 90 % (without condensation)
	Dimension	27 mm(W) x 30 mm(H) x 42.5 mm(D)	27 mm(W) x 30 mm(H) x 42.5 mm(D)
	Weight	Approx. 57 g	Approx. 57 g
	Included Items	Important Safety Instructions	Important Safety Instructions
Option	Camera Cable	GP-UC532G02A (2m) GP-UC532G03A (3m) GP-UC532G04A (4m) GP-UC532G06A (6m) GP-UC532G15A (15m)	GP-UC532G02A (2m) GP-UC532G03A (3m) GP-UC532G04A (4m) GP-UC532G06A (6m) GP-UC532G15A (15m)

Camera Head Model No.		GP-H243RX1-0F	GP-H243RX1-0F1
Camera	Prism	1/3 type 2-channels (Visible+IR) prism	1/3 type 2-channels (Visible+IR) prism
	Image Sensor	1/3 type 4K sensor (Visible) 1/3 type 2K sensor (IR)	1/3 type 4K sensor (Visible) 1/3 type 2K sensor (IR)
	Scanning Method	Progressive Scan, Rolling Shutter	Progressive Scan, Rolling Shutter
	Resolution	1,800 TV lines Typ.	1,800 TV lines Typ.
	Sensitivity	F8 (2000lx, 3200K, Head Gain Off)	F8 (2000lx, 3200K, Head Gain Off)
	Frame Rate	59.94 / 50 fps	59.94 / 50 fps
	S/N Ratio	58 dB (Gain Off, Head Gain Off)	58 dB (Gain Off, Head Gain Off)
	Lens Mount	C-mount	C-mount
	Optical path length difference b/w IR-Visible	0 ± 30 μ m	150 ± 30 μ m
General	Operating Temperature	0 °C to 40 °C {32 °F to 104 °F}	0 °C to 40 °C {32 °F to 104 °F}
	Operating Humidity	30 % to 90 % (without condensation)	30 % to 90 % (without condensation)
	Dimension	27 mm(W) x 30 mm(H) x 42.5 mm(D)	27 mm(W) x 30 mm(H) x 42.5 mm(D)
	Weight	Approx. 57 g	Approx. 57 g
	Included Items	Important Safety Instructions	Important Safety Instructions
Option	Camera Cable	GP-UC532G02A (2m) GP-UC532G03A (3m) GP-UC532G04A (4m) GP-UC532G06A (6m)	GP-UC532G02A (2m) GP-UC532G03A (3m) GP-UC532G04A (4m) GP-UC532G06A (6m)

Camera Head Model No.		GP-H143CX1-0F	
Camera	Prism	-	
	Image Sensor	1/3 type 4K sensor (Visible)	
	Scanning Method	Progressive Scan, Rolling Shutter	
	Resolution	1,800 TV lines Typ.	
	Sensitivity	F8 (2000lx, 3200K, Head Gain Off)	
	Frame Rate	59.94 / 50 fps	
	S/N Ratio	54 dB (Gain Off, Head Gain Off)	
	Lens Mount	C-mount	
	Optical path length difference b/w IR-Visible	-	
General	Operating Temperature	0 °C to 40 °C {32 °F to 104 °F}	
	Operating Humidity	30 % to 90 % (without condensation)	
	Dimension	28 mm(W) x 27 mm(H) x 68.2 mm(D)	
	Weight	Approx. 69 g	
	Included Items	Important Safety Instructions	
Option	Camera Cable	GP-UC532G02A (2m) GP-UC532G03A (3m) GP-UC532G04A (4m) GP-UC532G06A (6m)	

# 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
No image displayed	<ul style="list-style-type: none"> <li>•Are the cables appropriately connected to HDMI output connector and SDI output connector? Check whether the connection is appropriately established.</li> <li>•Is the video output signal format of each output connector compatible with the video format displayable on the monitor? Check whether the video output signal format is compatible with the video format.</li> <li>•Is the monitor luminance appropriately adjusted, or is the contrast appropriately adjusted? Check whether the monitor settings are appropriate.</li> <li>•Check the monitor after restoring the default settings (1:ON, 2:ON, 3:ON, 4:ON, 5:ON, 6:ON).</li> </ul>
The lamp status is not changed after the [PROFILE] button is pressed	<ul style="list-style-type: none"> <li>•Pressing once displays the state. Press the [PROFILE] button repeatedly until your target indicator lights.</li> </ul>
The lighting indicator of the [AE] button unchanged	<ul style="list-style-type: none"> <li>•Pressing once displays the state. Press the [AE] button repeatedly until your target indicator lights.</li> </ul>
The lighting indicator of the [IE] button unchanged	<ul style="list-style-type: none"> <li>•Pressing once displays the state. Press the [IE] button repeatedly until your target indicator lights.</li> </ul>
Only the color bar displayed	<ul style="list-style-type: none"> <li>•Is the camera cable appropriately connected at both the connector of the CCU and the connector of the camera head? Check whether the connection is appropriately established.</li> </ul>
Blurred whole screen	<ul style="list-style-type: none"> <li>•Is the lens aperture appropriately adjusted? Check whether the aperture is appropriately adjusted. Use lenses with recommended F number or higher.</li> </ul>
“AWC OK” not displayed	<ul style="list-style-type: none"> <li>•When the screen is too bright, narrow the lens aperture or set “AE” in the SETUP menu to “AUTO”.</li> </ul>
No sound from monitor	<ul style="list-style-type: none"> <li>•This unit is not applicable to sound output.</li> </ul>

Symptom	Cause/solution
The “FAN STOPPED” message is displayed	•The fan is stopped. Turn off the power immediately, and contact your dealer or the operator for the fan replacement.
The “Unsupported Camera Head” is displayed.	•An unsupported camera head is connected. Contact your dealer.