INDUSTRIAL SECURITY CAMERA

Product instruction Manual

Class A equipment (business broadcasting and communication equipment)
—

This device is a business (class A) electromagnetic wave suitability device, and sellers or users are advised to pay attention to this point.
It is intended for use outside the home.

Through QR code,
you can find PDF file

Product User Manual
iCUBE-PS,PD Series

WARRANTY

If the product is not normally installed due to a defect under normal use conditions,

The manufacturer will repair it free of charge through the place of purchase.

The warranty period is 1 years, and the following situations are excluded from the warranty.

• Abnormalities caused by product changes over time or natural wear and tear during use

• Damage to fastening parts due to negligence when assembling the product

※ The appearance and specifications of the product may be changed without prior notice
  to improve performance.

Outline

Index

PC System Recommended Specifications

* CPU: Intel Core 2 Duo 2.4 GHz or higher (when using 1920x1080 30fps)
        Intel Core i7 2.8 GHz or higher (when using 1920x1080 60fps)
* Resolution: 1280x1024 or higher (32-bit color)
* Memory: 2GB or more
* Supported OS: Windows XP, VISTA, 7, 8, 10 / Mac OS 10.7 or later
* Supported web browsers: Microsoft Internet Explorer (Ver. 8~11),
                    Microsoft Edge (Ver. 94 ~118) Latest 118
                    Mozilla Firefox (Ver. 9~19) Latest 85
                    Google Chrome (Ver. 15~15) Latest 88
                    Apple Safari (Ver. 6.0.2) Latest 14
  - Windows 8 is supported only in desktop mode.
  - Beta version or developer version other than the version released on the
    official site Not supported.
  - For IPv6 access, Windows 7 or later is recommended.
  - Safari Browser is supported only on Mac OS X.
* Video memory: 256MB or more
  - The video memory card driver is not installed correctly, or the latest version
    is not available. If not, the video may not play normally.
  - When using two or more monitors, playback performance may
    decrease depending on system specifications.
    may fall.

Component information

Before starting the installation, carefully check the following components enclosed in the product box to ensure that no parts are missing during installation.

Basic Components

Picture	Qty	Explanation	Picture	Qty	Explanation
	1	Product instruction Manual		1	L-Wrench set (M5,M3)
	1	AC 24V Adapter		1	Hex Bolt Set (M8*40)
	1	Output Cable		1	Copper tube Terminal (M6)
	1	Spare Bolt (M3*4, M4*2)			

Optional components (Purchased separately)

Picture	Qty	Explanation	Picture	Qty	Explanation
	1	Pedestal Mount Bracket		1	ICUBE-WB-01 Wall Mount Bracket
	-	Mount Bracket Accessories			

Component notes

* The sun shield is shipped attached to the iCUBE Series product.
* The power supply is AC-24V for the iCUBE Series.
* Multi-cable may not be provided depending on some specifications.
* Cable glands may not be provided on some models or may be replaced with sealing fittings.
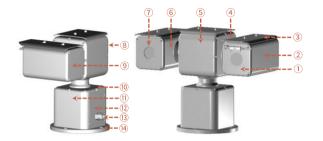* When purchasing a pedestal mount or wall mount bracket, 4 or 6 set anchors are provided as standard.

Product Classification and Part Names

Please be aware of the part names for each product as they are important for providing quick and accurate service for problems in each part.

iCUBE Series

ICUBE-PS

ICUBE-PD

Series	Model	Details
iCUBE Series	ICUBE-PS-100	36X CAMERA + Wiper + IRLED + AC24V
	ICUBE-PD-100	36X CAMERA + Wiper + IRLED + GE Glass + AC24V

No	Details	No	Details
1	Camera Housing Cover R	11	Pan Body
2	Camera Housing Body R	12	Pan Service Cover
3	Sun Shield	13	Cable Entry, M20
4	Tilt Flange	14	Pan Base Bottom
5	Tilt Body	15	
6	Camera Housing Body L	16	
7	Camera Housing Cover L	17	
8	Tilt Cover	18	
9	Camera Housing Rear Cover	19	
10	Pan Flange	20	

Checklist before product installation

Check product operation information and appearance status

[Box]

[ICUBE-PS]

NETWORK INFO.
IP	10.20.30.40
ID	admin
PW	1234

INDUSTRIAL SECURITY CAMERA

[ICUBE-PD]

* On the product label on the product packaging box and on the
tag on the sunshield portion of the product
After checking the information necessary for initial operation
such as IP address, ID, password, etc.   Keep it so you don't lose it.

Check the packing box
- When delivering the product, check that the packaging is intact and has not
been dropped or torn.
- In the case of returning a broken product, we recommend that you reuse
the packaging box provided for transportation. Recommended.
- The box label attached to the product box contains the information shown in
the picture above.
- Before discarding the box, back up the information entered on the label to
prevent product operation problems. wish.

Safe Disposal of Packaging Materials
- Among packaging materials, PE foam, excluding paper, is subject to
separate discharge. Therefore, please separate and dispose according to
the separate collection method or regulations.

Check the specifications of the L wrench

No	L wrench specification
1	M5 (Equipped with sun shield)
2	M3 (Everything but sun shield)
3	
4	
5	
6	
7	
8	
9	
10	

Select product installation location

When selecting a location to install the product, be sure to install it in a place that does not have any inconsistencies as in the case below.

Things to consider when installing the product

When selecting the initial location to install the product, please consider the following.
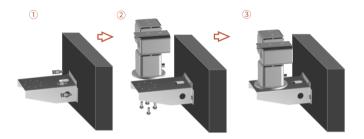
① Check whether the size of the 'pedestal mount bracket' provided by the manufacturer is appropriate for the size of the top of the pole.
② Check whether the size of the mounting parts such as the 'wall mount bracket' and H beam provided by the manufacturer are suitable for installation.
③ Make sure that the environment in which the product is installed is not an area where lightning frequently occurs, and if possible, install it in a place that is not affected by lightning.
④ If the environment where the product is installed is subject to external factors such as high temperature, high humidity, and low temperature due to direct sunlight, it is recommended to install the product to avoid these influences.
⑤ The environment in which the product is installed must be installed in a place where there is a sufficient turning radius for the product to move in PTZ motion.
⑥ If there is severe vibration in the environment where the product is installed, it may affect the video, so it is recommended to attach and install a device that can attenuate vibration, such as a separate damper.
⑦ If the environment in which the product is installed is poor and cannot support the high weight of the product (approximately 15 kg), it may pose a safety problem, so it is recommended to install it in another safe location.

Product installation and precautions

The manufacturer is not responsible for any problems caused by installing a bracket other than the genuine bracket provided by the manufacturer.

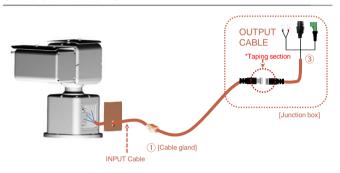## Pole installation using pedestal mount bracket

- Use the provided hex bolt set to fasten the bolts to the bolt holes between the pedestal mount and the product. At this time, check that there are no foreign substances in the threads or fastening holes of the product.
- Before tightening the bolt, apply locking compound (Loctite 263, medium-strength thread locking agent) to the bolt fastening hole. Apply liberally.
- The thread compound must harden for one hour, during which time the installation must be completed.
- Use the adapter external hole to secure the assembled device to the pole. Use screws that can withstand at least four times the weight of the device.
- When tightening the bolt, tighten the torque to 35Nm.

Wall installation using wall mount bracket

- The wall mount bracket can be fixed to a vertical wall. Secure the bracket to the wall with the supplied set anchors that can withstand at least 4 times the weight of the device.
- Then, secure the device to the bracket using the provided hex bolt set. At this time, check that there are no foreign substances in the threads or fastening holes of the product.
- Apply locking compound (Loctite 263) generously on the four bolts and then lock the bolts.
- The thread compound must harden for one hour, during which time the installation must be completed.
- When tightening the bolt, tighten the torque to 35Nm.

Product installation and precautions

Product defects due to connection errors between the power terminal and RS-485 terminal connector are considered customer negligence and will be repaired at a cost.
The ICUBE-PS and PD Series have a built-in hub, so they can operate normally when only one NETWORK cable is connected.

Cable connection SETP 1

OUTPUT CABLE
*Taping section
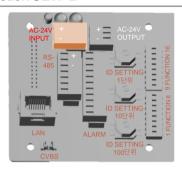③
[Junction box]
① [Cable gland]
INPUT Cable

- Open the repair cover at the bottom of the product as shown in the picture on the left and insert the cable gland into the INPUT cable.
- Be careful not to damage the cable core coating when inserting it.
- Connect the cable to each terminal on the front board.
- Insert the other side of the INPUT cable into the junction box as shown in the picture, and then connect the provided OUTPUT cable.
- At this time, tape the connection area between the INPUT cable and the OUTPUT cable with insulating tape.

Tip

[INPUT Cable]   [OUTPUT Cable]
AC-24V
NETWORK   20Ø
RS-485   15.7mm

Cable connection SETP 2

AC-24V INPUT   AC-24V OUTPUT
RS-485
ID SETTING 1단위
ID SETTING 10단위
ID SETTING 100단위
LAN   ALARM
CVBS
1 FUNCTION 8   9 FUNCTION 16

- For cable connection method, refer to 'Cable Connection STEP 1' on the left.
- Referring to the structure of the front board above, connect the LAN and AC-24V connectors of the cable and then turn on the power supply. Then, check whether the device is operating abnormally through a warm-up operation and proceed with the installation.
- RS-485 communication port can be used by connecting to the field when necessary.

Tip

- The AC-24V OUTPUT function is an option to re-supply AC-24V to surrounding devices after installation of the product.

Product installation and precautions

Incorrect operation of options may cause malfunction or malfunction of the product.
OPTION S/W functions may change depending on the product.

Front Panel Option setting table in A Type Panbase

FUNCTION S/W 1								
PROTOCOL		BAUDRATE			TER MINA TION	RS MODE	MODE	FUNCTION MENU
1	2	3	4	5	6	7	8	
0	0							AUTO
0	1							PELCO D
1	0							PLECO P
1	1							NC
		0	0	0				2400
		0	0	1				4800
		0	1	0				9600
		0	1	1				19200
		1	0	0				57600
		1	0	1				115200
		1	1	0				NC
		1	1	1				NC
					0			OFF
					1			ON
						0		RS 485
						1		RS 422
							0	TOP
							1	BOTTOM

Option operation by PRESET number

Operation function by preset number	BUILT-IN CAMERA No	EXTERIOR CAMERA No
IR-LED ON/OFF (Set Preset -> GO Preset Select)	#15	#15
Wiper ON/OFF (Set Preset -> GO Preset Select)	#16	#16
Run Home Position	#241	#241
Reboot	#242	#242
Factory Reset	#243	#243
Tour 1	#211	#211(*1)
Tour 2	#212	#212(*1)
Tour 3	#213	-
Tour 4	#214	
Tour 5	#215	
Tour 6	#216	
Tour 7	#217	
Tour 8	#218	

- The Group function uses presets #221 to #228 and does not work when an external camera is installed.
- The swing function uses presets #231 to #238 and applies to both internal and external cameras. However, the swing function from #231 to #234 supports forward operation, and the swing function from #235 to #238 supports reverse operation.
- The tour function in (*1) only applies when an external camera is installed, and #211 uses presets sequentially from #1 to #14 #212 operates Preset in the order #14 -> #1.

Product installation and precautions

The manufacturer is not responsible for damage to the product due to lightning, surge, etc. due to failure to ground the product.

Fastening of sunshield

- Secure the sun shield provided as an accessory to the housing using the wrench bolt (M6 SET) fastened to the top of the housing at the time of shipment using an L wrench (M5).
- Apply locking compound (Loctite 263) generously to the bolt fastening hole before tightening the bolt.
- The thread compound must harden for one hour, during which time the installation must be completed.
- When tightening the bolt, tighten the torque to 15Nm.

Ground installation
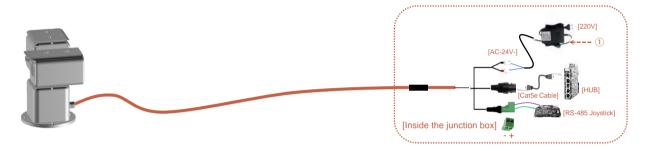
- Product grounding must be done using an external cable (12 AWG) with a cross-section of 3 mm^2.
- For the copper tube terminal to be used for power connection, such as grounding, use the copper tube terminal provided with the product and the M4*8 (round head cross) screw to fix it in the grounding hole with a Phillips screwdriver.
- A separate compressor is required to compress copper tube terminals. At this time, the press is not provided separately.

Installation completed and inspected

Manufacturers strongly recommend that all devices undergo final testing prior to installation at their final installation location.

Finalization of product installation

- Once the cable installation and explosion-proof flexible installation is complete, close the M3*6 bolts on the fan service cover using a Phillips screwdriver as shown in the picture.
- Before closing the fan service cover, make sure there is no foreign matter on the lid.
- Organize the cables in the junction box so that they are not caught between the service cover and the product.

Junction box internal wiring

[220V]
[AC-24V-]
①
[Cat5e Cable]
[HUB]
[RS-485 Joystick]
[Inside the junction box]
- +
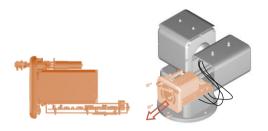
- After all installation is complete, install the AC 24V adapter included with the product inside the enclosure and install necessary devices such as network and other RS-485 controllers.
- Turn on the AC-24V adapter.
- Carefully check all connections to the product before turning on the power.
- When power is applied, the system enters a warm-up state and automatically controls PAN/TILT and camera
  Check everything relevant.
- At this time, if there are no problems during inspection, it is connected to the NETWORK and can be used normally. status.
- In this case, if an abnormality is discovered in the initial state, immediately turn off the power and contact the manufacturer.
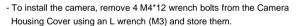
Maintenance after product installation

When replacing or maintaining the camera, move to a safe area without humidity and static electricity.
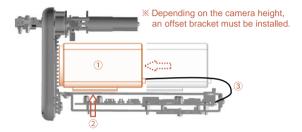
Open Camera Housing Cover

- To install the camera, remove 4 M4*12 wrench bolts from the Camera Housing Cover using an L wrench (M3) and store them.
- Slowly pull the camera housing cover by hand, being careful not to damage the gasket.
- When the Camera Housing Cover is separated from the body to a certain extent, remove the cable connected to the control board and completely separate the camera assembly from the product.

Replacement of external BOX camera

※ Depending on the camera height, an offset bracket must be installed.

- As shown in ①, check whether the center of the camera matches the Camera Housing Cover and, if the height is low, use the Offset Bracket to adjust the height and mount it on the IP bracket. If not, place the camera directly on the camera base bracket.
- As shown in ②, fasten the M6 bolt by aligning it with the mounting hole of the camera using a cross-head screwdriver.
- Connect the three harness cables to the motherboard as shown in ③. (Separation can be done in the reverse order of fastening.)
- Assemble to the Camera Housing Body in the reverse order of disassembly, paying attention to the cables and their direction.
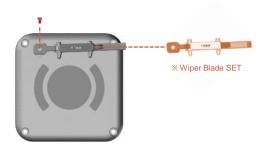
Tip

If the manufacturer is equipped with a separate BOX camera, the BOX camera part excluding the housing body and its moving body is excluded from service.

Maintenance after product installation

The manufacturer only guarantees the use of genuine parts guaranteed by the manufacturer for parts used during device maintenance.

Wiper replacement

※ Wiper Blade SET

- For models equipped with wipers, the blades may wear out and video quality may deteriorate.
  At this time, you can replace the wiper blade by loosening the bolt that secures the wiper blade and pulling it by hand as shown in the picture.
- If the wiper blade is pushed too far left or right when replacing, the wiper motor may malfunction.

Tip

- The cable must not show any signs of damage or wear that could lead to a dangerous situation. In this case, special maintenance is essential.
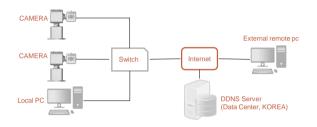
Cleaning of GE Glass Protection Grid

- Through routine cleaning, the product must be managed periodically to prevent more than 5 mm of dust from accumulating on the surface.
  (for static electricity prevention purpose)
- Tempered glass should be cleaned with mild soap and water diluted with water.
- Care must be taken when cleaning germanium glass to avoid scratching or damaging the carbon-coated surface.
- If the coating of germanium glass is damaged, the ultraviolet light projection of the surface may decrease.
- When cleaning germanium glass, unscrew the bolts of the germanium glass protector grid, clean with mild soapy water diluted with water, and then reassemble.

Tip

- The device must be disposed of appropriately in accordance with electronic waste guidelines and environmental regulations.

Network Connection and Setup

You can set the network environment of the camera according to the user's network connection configuration.

Installing the camera directly in a LAN environment

- Run the Internet browser of the local PC.
- Enter the IP address of the camera you want to access in the browser's address bar.
- From a remote PC on the external Internet in a LAN environment to a camera installed in a LAN environment When connecting, if port forwarding is not done or if a firewall is installed, the connection is not possible. may not be
  In this case, contact your network administrator.
- When the product is shipped, the IP address is a fixed IP as in 'Checking product operation information and appearance status' It is set.

Tip

- If you lose the box or tag displaying the IP address, ID, and PW, you can contact us through the manufacturer's website.
  You can download the IP Search program.

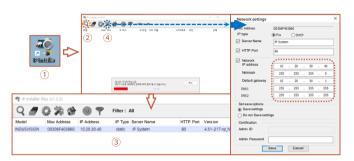## Installing the camera directly in a LAN environment

- Direct connection between user computer and network camera.
- Use the IP Search program to find the IP address of the camera from the user's computer to the Internet.
  Change it to an IP address that can be accessed through a browser.
- Connect to the web viewer using an internet browser.
- Move to the [Setup] page.
- Go to [Network] - [DDNS] setting page and set DDNS.
- [Basic] - Go to the [IP & Port] setting page and set the IP type to [DHCP].
- Disconnect the camera from the user's computer and connect it directly to the modem.
- Reboot the camera.

Network Connection and Setup

The IP address range of the user's computer and the IP address range of the camera must match for normal web viewer access.

Using the IP Search program

- Click the icon such as ① on the IP Search program downloaded to the user's computer Run.
- When the IP Search program is executed, click ② icon to start IP search.
  If the IP address is normally searched as shown in ③, double-click the searched IP address to open the web viewer.
  can connect. (default IP address: 10.20.30.40 / ID: root / PW: root)
- If you need to change the IP address, click the corresponding icon as ④ in the IP Search program. Click to change IP address.

Tip

- HTTP Port: HTTP used when accessing the camera using an Internet browser Port, the initial value is 80.
- RTSP Port: This is the port that controls real-time streaming, and the initial value is 554..

PC network settings depending on whether an IP sharer is used

- As in ①, connect to the internal network settings of the user's router.
  (The menu name or access method may differ depending on the router manufacturer.)
- IP Address: Set according to the private IP range provided by the IP sharer.
  Ex) 192.168.1.2~254, 192.168.0.2~254, 192.168.XXX.2~254
- Subnet Mask: If the <Subnet Mask> of the IP router is the <Subnet Mask> of the camera It's possible.
- Gateway: The IP router's <Local IP Address> becomes the camera's <Gateway> value.
- ② Check if the IP settings of the same band are set in the network settings of the user's computer. Check.

Tip

- If there are more than 2 cameras, camera 1 (192.168.0.3), camera 2 (192.168.0.4), etc. Set different IP addresses and use the same subnet mask and gateway.

Network Connection and Setup

Web viewer access can be checked in normal operation through Google Chrome and Microsoft Edge browsers.

Web viewer access

- Run a web browser such as Chrome or Edge on the user's computer.
- Enter the IP address set on the camera into the web browser address bar.
- If you connect to the camera normally as in ① and press the 'LIVE' button on the top left of the screen, the same as ②
  The ID/PW input window is executed, and input the initial ID/PW 'root'.
  (For security, be sure to change the initial ID/PW after setting.)
- As shown in ③, you can check the OSD window for PTZ control along with the output of the live screen. there is.

Tip

When operating the web viewer in Internet Explorer 11, 'Active X' must be downloaded and executed.

Change IP Settings in Web Viewer
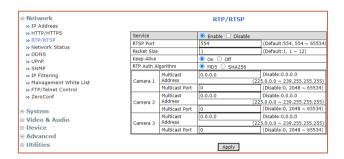
- There is a SETUP menu that displays the 'ADMIN' icon in ① on the live screen. Now.
- You cannot go back to the static IP and DHCP status for the camera IP address by clicking the 'IP Address' menu.
  it's okay. Static IP allows you to change your IP address.
- When all changes are complete, click the 'Apply' button to save the settings.
- After 30 seconds, you can connect to the changed IP address in your web browser.

Tip

If the IP address you want to change is an IP address that is being used by another device in the same band You may not be able to access the web viewer due to an IP conflict.

Network Connection and Setup

When setting RTSP, you must first check if the '554 PORT' of the router is open.

RTSP settings

	RTP/RTSP		
⊟ **Network**			
» IP Address			
» HTTP/HTTPS	Service	⊙ Enable ○ Disable	
» RTP/RTSP	RTSP Port	554	(Default:554, 554 ~ 65534)
» Network Status	Packet Size	1	(Default:1, 1 ~ 12)
» DDNS	Keep-Alive	⊙ On ○ Off	
» UPnP	RTP Auth Algorithm	⊙ MD5 ○ SHA256	
» SNMP	Camera 1 Multicast Address	0.0.0.0	Disable:0.0.0.0
» IP Filtering			(225.0.0.0 ~ 239.255.255.255)
» Management White List	Multicast Port	0	(Disable:0, 2048 ~ 65534)
» FTP/Telnet Control	Camera 2 Multicast Address	0.0.0.0	Disable:0.0.0.0
» ZeroConf			(225.0.0.0 ~ 239.255.255.255)
	Multicast Port	0	(Disable:0, 2048 ~ 65534)
⊟ **System**	Camera 3 Multicast Address	0.0.0.0	Disable:0.0.0.0
⊟ **Video & Audio**			(225.0.0.0 ~ 239.255.255.255)
⊟ **Device**	Multicast Port	0	(Disable:0, 2048 ~ 65534)
⊟ **Advanced**			
⊟ **Utilities**		Apply	

- **Service**: Set whether to use RTP/RTSP.
- **RTSP Port**: Sets the RTSP Port. The default value is 554.
- **Packet Size**: This is the menu to set the Packet Size to be transmitted via RTP/RTSP.
  If the value is low, compatibility with many S/Ws is maintained. It divides and transmits small amount of packets.
  The higher the value, the fewer packets are divided and transmitted.
  However, if the program does not support a high value, no video is displayed.
- **Keep-Alive**: Sends the current camera status through continuous UDP communication. Some S/W and equipment are not supported.
- **RTP Auth Algorithm**: Determines the RTP encryption authentication method.
- **MD5** is highly compatible with many S/W. If set to **SHA256**, stronger encryption is applied, but It cannot be played on S/W or devices that do not support SHA256, such as VLC.

Unicast Primary Stream (1번 Channel) : rtsp://camera IP/cam0_0
Unicast Secondary Stream (2번 Channel) : rtsp://camera IP/cam0_1
Unicast Tertiary Stream (3번 Channel) : rtsp://camera IP/cam0_2
Multicast Primary Stream (1번 Channel) : rtsp://camera IP/mcam0_0
Multicast Secondary Stream (2번 Channel) : rtsp://camera IP/mcam0_1
Multicast Tertiary Stream (3번 Channel) : rtsp://camera IP/mcam0_2

Firmware update method

- Press the 'ADMIN' icon at the top of the web viewer to enter the SETUP menu.
- Press the 'UPDATE' menu as in ① and click the 'Fimware Update -> Start' button at the top of the menu. Click.
- When a pop-up window like ② appears, click the 'Select File' button to specify the file to be upgraded. do.
- Click the 'NEXT' button at the bottom of the pop-up window in ② to proceed with the upgrade.

Tip

- If the firmware update is not completed normally, the product cannot be used.
- Please note that this problem must be returned to the manufacturer and repaired.

Installation inspection check sheet

1. When receiving the product, before on-site installation, please check the pre-checklist in the following order and only install on-site if there are no problems.

2. Please note that in some cases, service measures may be provided at a cost for problems that occur during on-site delivery without prior checklist inspection.
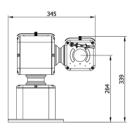
| No	Checking list	Check
1	Please remove the IP address tag attached to the sunshield area of the product after installing and securing the device.	☐
2	Do not throw away at least one product box and PE foam for shipping defective products to the manufacturer.	☐
3	If you turn the tilt part (up/down) more than 180 degrees from the front with excessive force, it may cause a malfunction.	☐
4	Connect carefully according to the input specifications of a separate power supply or adapter supplied by the manufacturer. (AC24V)	☐
5	Pay attention to the polarity (+, -) of the data line (RS-485) and connect it to the connection terminal correctly.	☐
6	When turning on the main power, please check the warm-up (initial operation check) operation as follows. - Check PAN (left/right) control operation and TILT (up/down) control operation.	☐
7	If applicable, connect the video cable (BNC terminal) correctly to the recorder or monitor to check for normal video output.	☐
8	Correctly connect the CAT.5 cable (RJ-45 Jack) to the connection terminal and operate under optimal network environment conditions. Check that video and control operate normally.	☐
9	Check/set whether the PTZ control protocol and control communication speed (Baud Rate) match the NVR or communication device in use.	☐
10	If applicable, check IR-LED and Wiper (left/right) operation.	☐
11	Make a final check to see if there are any problems with the pan/tilt/zoom/video/control status.	☐
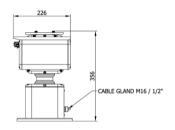
Technical drawing – ICUBE Series
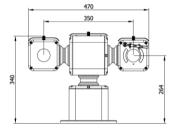
Please refer to the technical drawings and review the site situation before and after product installation.
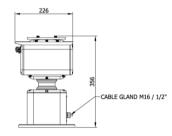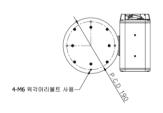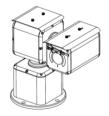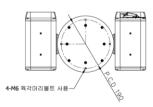
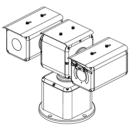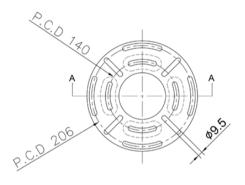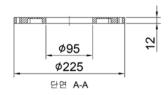## ICUBE-PS Series

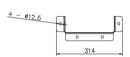## ICUBE-PD Series

Technical drawing – Mount bracket

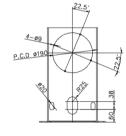**Please refer to the technical drawings and review the site situation before and after product installation.**
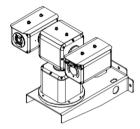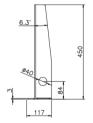
Pedestal Mount Bracket

Wall mount bracket

INDUSTRIAL SECURITY CAMERA