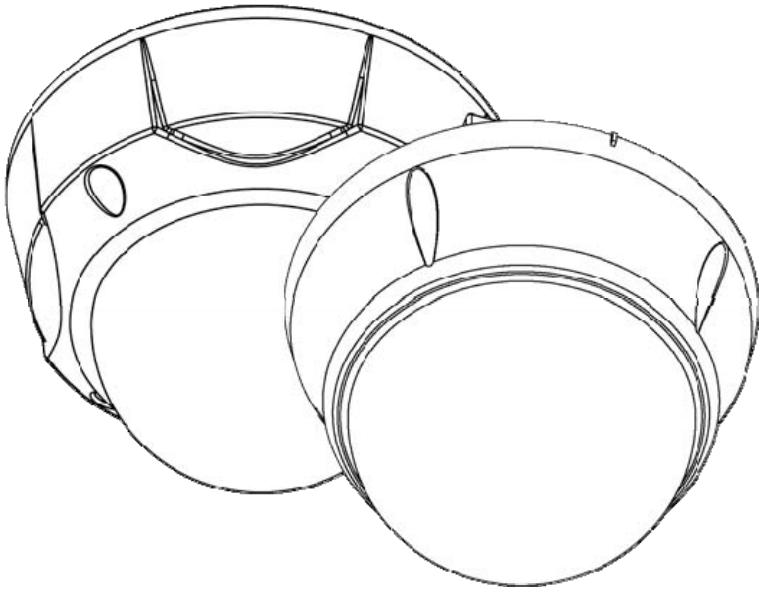
PT110N/PT110N-XT

Vandal Resistant 10x PTZ Dome



CBC GROUP

User Manual

CBC (AMERICA) Corp.

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www.computarganz.com

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Features

❑ Camera Specifications

- CCD Sensor : 1/4" Interline Transfer CCD
- Zoom Magnification : × 10 Optical Zoom, × 10 Digital Zoom (Max × 100 Zoom)
- Day & Night Function
- Variable Focus Mode: Auto-Focus / Manual Focus / Semi-Auto Focus.
- Independent & Simultaneous Camera Characteristic Setup in Preset operation

❑ Advanced Pan/Tilt Functions

- Max. 360°/sec high speed Pan/Tilt Motion
- Using Vector Drive Technology, Pan/Tilt motions are accomplished with the shortest path. As a result, time to target view is reduced dramatically and the video stream transfers are natural to watch.
- For jog operation using a controller, an ultra slow speed of 0.05°/sec can be reached, making it very easy to relocate camera to the desired target view. Additionally, it is easy to move the camera to a desired position with zoom-proportional pan/tilt movement.

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❑ Preset, Pattern, Swing, Group, Privacy Mask and More…

- Max. 127 Presets are assignable and characteristics of each preset can be set up independently, such as White Balance, Auto Exposure, Label and so on.
- Max. 8 set of Swing actions can be stored. This enables camera to move automatically between two preset positions at a designated speed.
- Max. 4 Patterns can be recorded and played back. This enables camera to automatically follow any trajectory preset by joystick as closely as possible.
- Max. 8 set of Group action can be stored. This enables camera to move automatically with a combination of Preset or Pattern or Swing. A Group is composed of max. 20 entities of Preset/ Pattern/Swings.
- Privacy Masks are assignable, so as not to intrude on other's privacy. (4 Privacy Zones)

PTZ (Pan/Tilt/Zoom) Control

- With RS-485 communication, max. of 255 cameras can be controlled at the same time.
- Pelco-D or Pelco-P protocol can be selected as a control protocol in the current firmware version.

❑ **OSD (On Screen Display) Menu**

- OSD menu is provided to display the status of camera and to configure the functions interactively.
- The information such as Camera ID, Pan/Tilt Angle, Alarm Input and Preset can be displayed on screen.

❑ **Alarm I/O Functions**

- 4 alarm sensor Inputs are available.
- To completely eliminate external electric noise and shock, alarm sensor Input is decoupled from photo coupler.
- If an external sensor is activated, camera can be set to move to the corresponding Preset position.

❑ **Reserved Presets for Special Purpose**

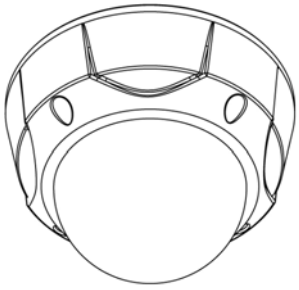
- Most camera characteristics can be set up easily and directly with reserved preset, without entering the OSD menu. For more information, refer to "Reserved Preset" in this manual.

❑ **IP66 (weather resistant)** *(***PT110N-XT model only***).*

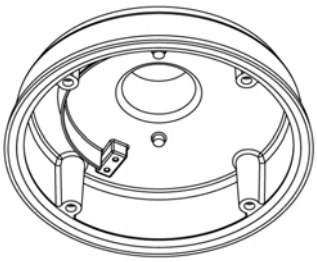
- This product has been certified to the IP66 standard for waterproof and spray proof environments. Also for the same reason it can be protected from dust and rainstorms.

Product & Accessories

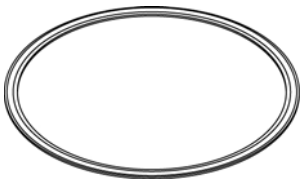
❑ Product & Accessories- **PT110N-XT model (outdoor)**.



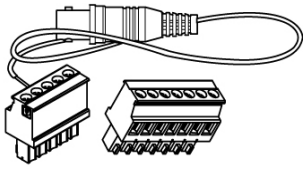
● Main Body



● Mount Adapter

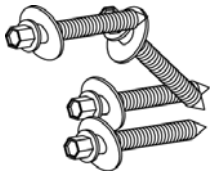


● Gasket(Rubber)

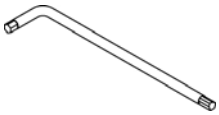


● Terminal Block

Video cable

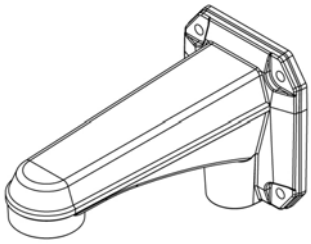


● Screws

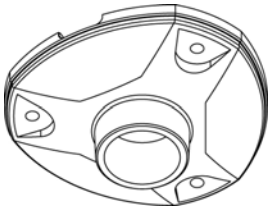


● Six angles wrench

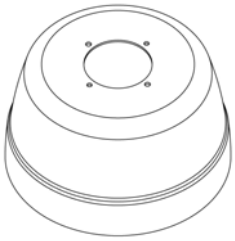
❑ Options



● Wall Mount Bracket

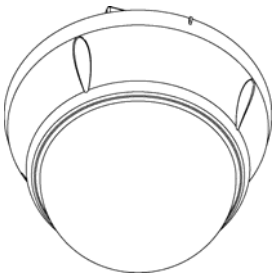


● Ceiling Mount Bracket

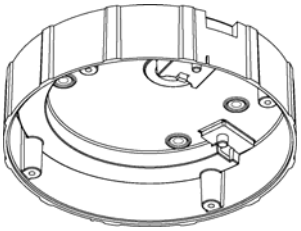


● Sun shield

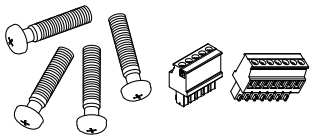
❑ Product & Accessories- **PT110N model (indoor)**.



● Main Body

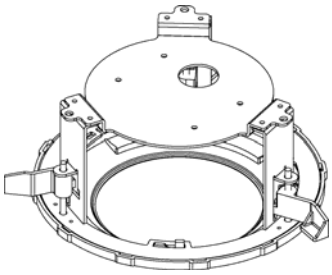


● Surface Mount Bracket

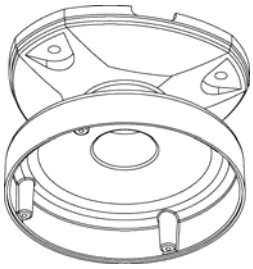


● Screws & Terminal Block

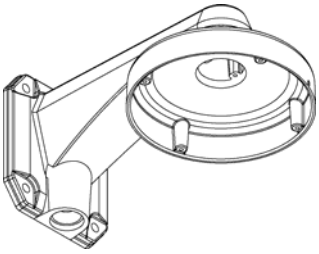
❑ Options



● In-Ceiling Mount Bracket

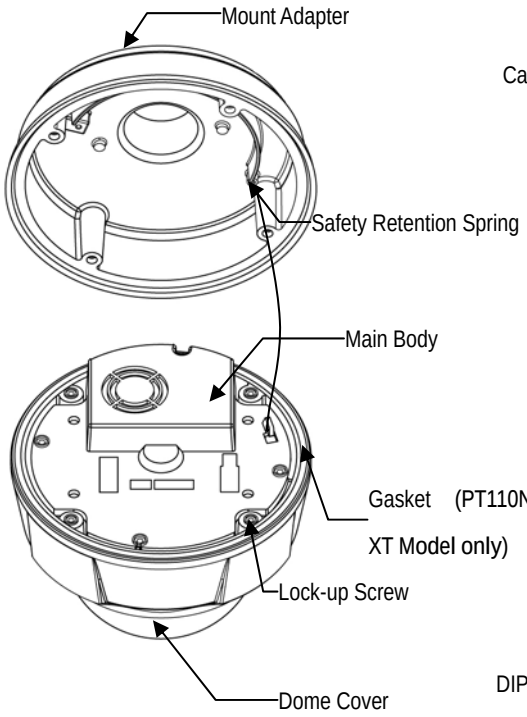


● Ceiling Mount Bracket

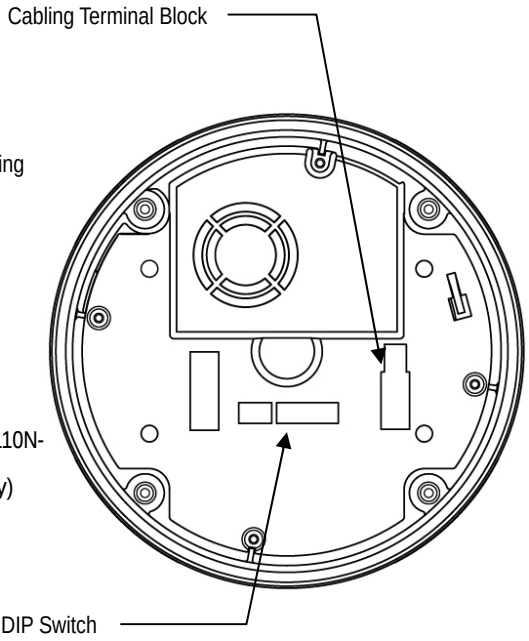


● Wall Mount Bracket

Parts Name & Functions



Main Unit / Surface Mount Bracket

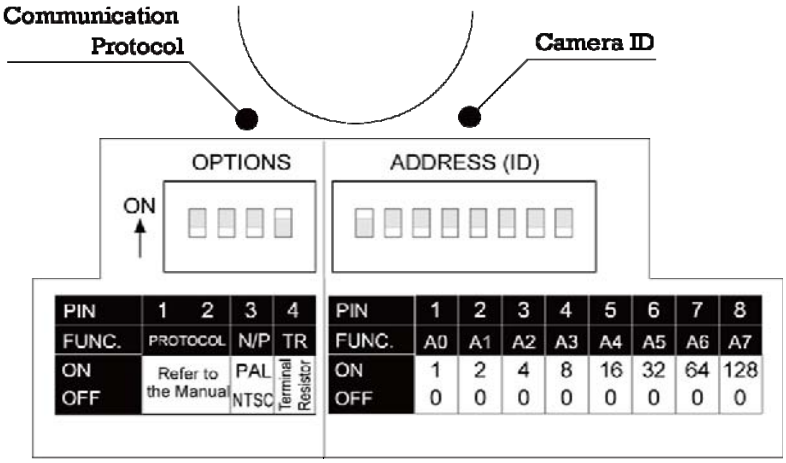


Back of Main Unit

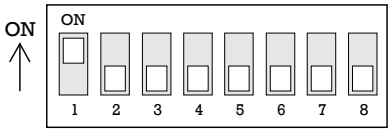
● Dome Cover	**Do not** remove protective vinyl from dome cover before finishing all installation processes to protect dome cover from scratches or dust.
● Surface Mount Bracket	The surface mount bracket is used for installing either a ceiling mount or wall mount bracket. Separate the cover first and then attach it directly to ceiling. Camera must be assembled at the last stage.
● Gasket **(PT110N-XT model only)**	Protect it from dust and rainstorm. Move projecting part of the gasket which should be placed on the low to main body position
● Lockup Screw	Fixes main unit to surface mount bracket.
● Cabling Terminal Block	During installation, Power, Video, Communication, Alarm Input cables are connected on to this cabling terminal block. Pull out from Surface Mount Bracket and connect to Main Body hook.
● DIP Switch	Adjusts camera ID and protocols.
● Fall-proof spring	After installing fall-proof spring on Bracket , hang on the safety ring to protect the camera from falling

DIP Switch Setup

Before you install the camera, you should set the DIP switches to configure the camera ID and communication protocol.



❑ Camera ID Setup



- The ID number of camera is set using a binary number. Examples shown below.
- The range of ID is 1~255. **Do not use 0 as camera ID**. Factory default of Camera ID is 1.
- If you want to control a certain camera, you must match the camera ID with Cam ID setting of DVR or Controller.

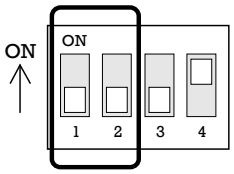
Pin	1	2	3	4	5	6	7	8
ID	1	2	4	8	16	32	64	128
1	**on**	off	off	off	off	off	off	off
2	off	**on**	off	off	off	off	off	off
3	**on**	**on**	off	off	off	off	off	off
4	off	off	**on**	off	off	off	off	off
5	**on**	off	**on**	off	off	off	off	off
6	off	**on**	**on**	off	off	off	off	off
7	**on**	**on**	**on**	off	off	off	off	off
8	off	off	off	**on**	off	off	off	off
9	**on**	off	off	**on**	off	off	off	off
10	off	**on**	off	**on**	off	off	off	off

Pin	1	2	3	4	5	6	7	8
ID	1	2	4	8	16	32	64	128
11	**on**	**on**	off	**on**	off	off	off	off
12	off	off	**on**	**on**	off	off	off	off
13	**on**	off	**on**	**on**	off	off	off	off
14	off	**on**	**on**	**on**	off	off	off	off
15	**on**	**on**	**on**	**on**	off	off	off	Off
16	off	off	off	off	**on**	off	off	off
17	**on**	off	off	off	**on**	off	off	off
18	off	**on**	off	off	**on**	off	off	off
19	**on**	**on**	off	Off	**on**	off	off	off
20	off	off	**on**	off	**on**	off	off	off

Pin	1	2	3	4	5	6	7	8
ID	1	2	4	8	16	32	64	128
21	on	off	on	off	on	off	off	off
22	off	on	on	off	on	off	off	off
23	on	on	on	off	on	off	off	off
24	off	off	off	on	on	off	off	off
25	on	off	off	on	on	off	off	off
26	off	on	off	on	on	off	off	off
27	on	on	off	on	on	off	off	off
28	off	off	on	on	on	off	off	off
29	on	off	on	on	on	off	off	off
30	off	on	on	on	on	off	off	off

Pin	1	2	3	4	5	6	7	8
ID	1	2	4	8	16	32	64	128
31	on	on	on	on	on	off	off	off
32	off	off	off	off	off	on	off	off
33	on	off	off	off	off	on	off	off
34	off	on	off	off	off	on	off	off
35	on	on	off	off	off	on	off	Off
36	off	off	on	off	Off	on	off	off
37	on	off	on	off	Off	on	off	off
38	off	on	on	off	Off	on	off	off
39	on	on	on	off	Off	on	off	off
40	off	off	off	on	Off	on	off	off

❑ Communication Protocol Setup

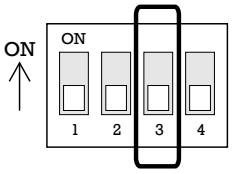


- Select the appropriate Protocol with DIP switch combination.

Switch State		Protocol
P0 (Pin 1)	P1 (Pin 2)	
OFF	OFF	PELCO-D, 2400 bps
ON	OFF	PELCO-D, 9600 bps
OFF	ON	PELCO-P, 4800 bps
ON	ON	PELCO-P, 9600 bps

- If you want to control using DVR or P/T controller, their protocol must be identical to camera. Otherwise, you **cannot** control the camera.
- If you changed camera protocol by changing DIP S/W, the change will be effective after you reboot the camera.
- Factory default of protocol is "Pelco-D, 2400 bps".

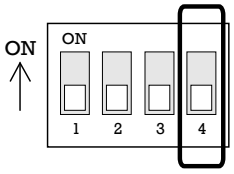
❑ Reserved for Supplier



- Pin 3 is only for supplier, DO NOT CHANGE THESE ITS ORIGINAL STATE. If you change one of these, proper operation can not be achieved.

  ⊙ Pin 3 PAL / NTSC system selection of Camera. DO NOT CHANGE THIS PIN.

❑ Terminal Resistor Setup



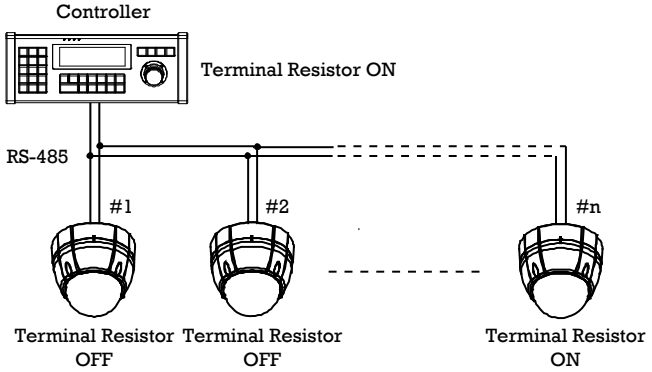
Terminal resistor is used if your system meets one of following two conditional cases.

- **Case1: Control cable between camera and controller is relatively long (1:1 connection)**

  If communication cable is very long, the electrical signal will bind in the terminal point. This reflected signal causes signal distortion, resulting in a degradation of camera function. In this case, the terminal resistor of both sides (i.e. camera and controller) must be set to the 'ON' state.

- **Case2: Multiple cameras are controlled at the same time**

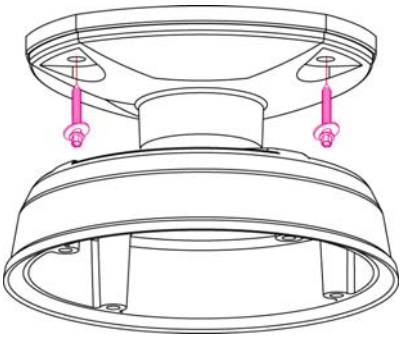
  Due to similar reasons stated in case 1, the terminal resisters of the controller and the last camera must be set to 'ON' state. The camera with the longest cable length is determined to be the 'last' camera. Do not turn on the terminal resistor of all cameras.



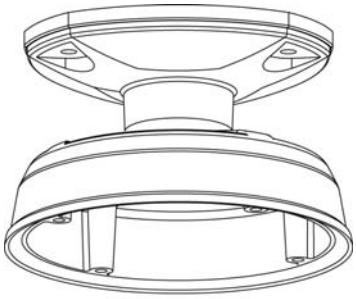
Installation using Ceiling Mount Bracket

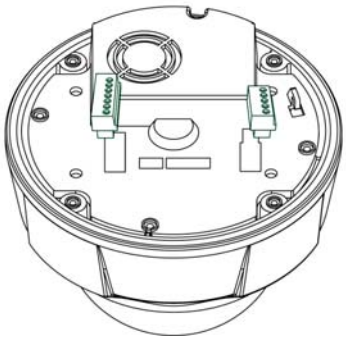
① After putting the Gasket on the ceiling

Fasten ceiling mount bracket to ceiling with 3 screws.

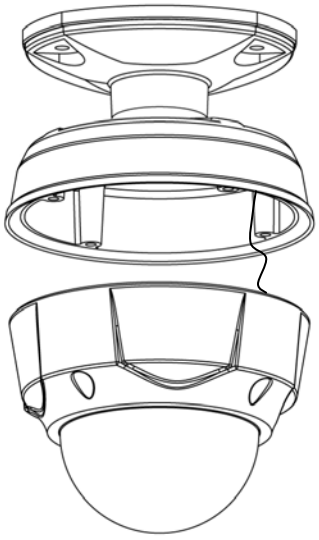


② Wire cables to terminals and connect the terminals to main unit. **Do not use surface mount bracket!**

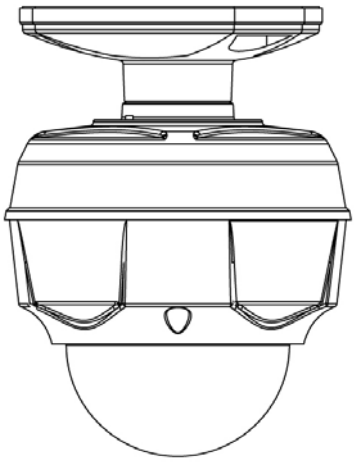




① Hang the camera on the safety ring and assemble it using the fall-proof spring.

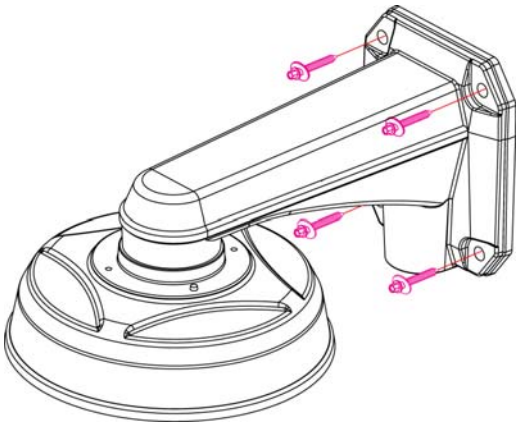


② Remove protective vinyl from dome cover.

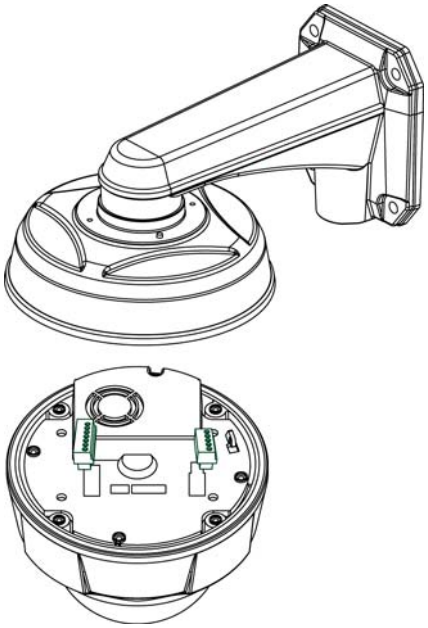


Installation using Wall Mount Bracket

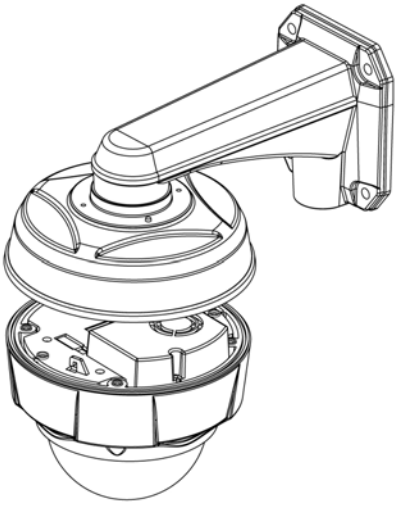
① After putting the Gasket on the wall Fasten wall mount bracket to ceiling with 4 screws.



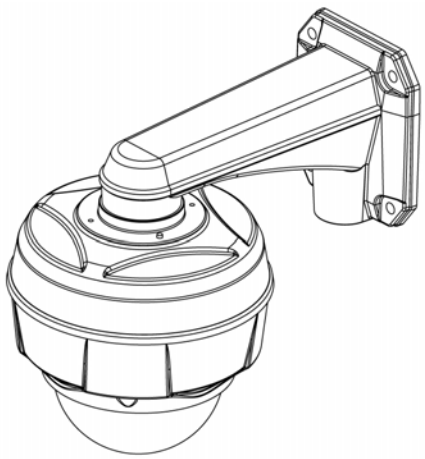
② Wire cables to terminals and connect the terminals to main unit. **Do not use surface mount bracket!**



③ Fasten main unit to wall mount bracket with 4 screws.

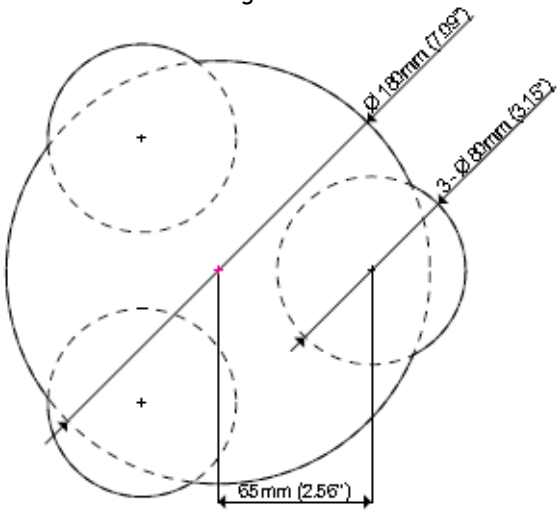


④ Remove protective vinyl from dome cover.

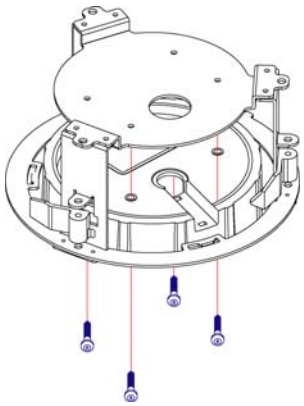


Installation using Flush Mount Bracket

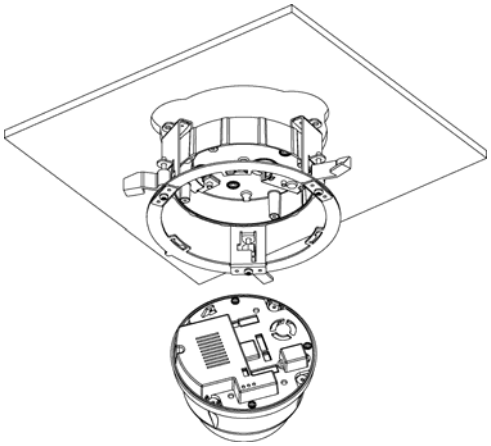
① Cut 3 holes in ceiling



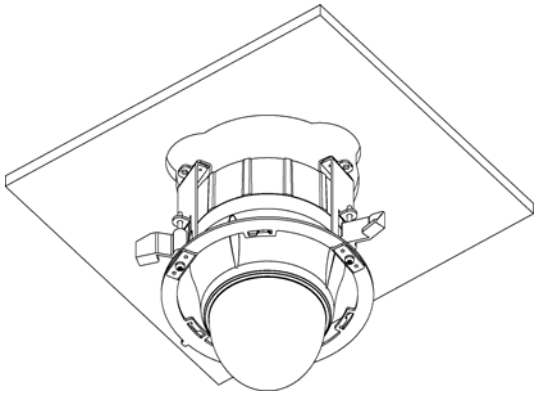
② Align main body bracket with flush mount bracket. Fasten with screws.



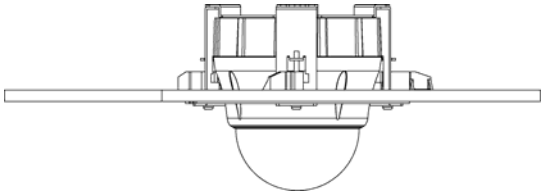
③ Connect fall-proof spring to main body hook. Assemble and fasten with screws.



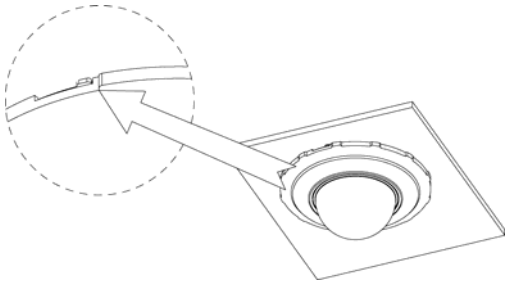
④ Put main body and bracket assembly into main hole.



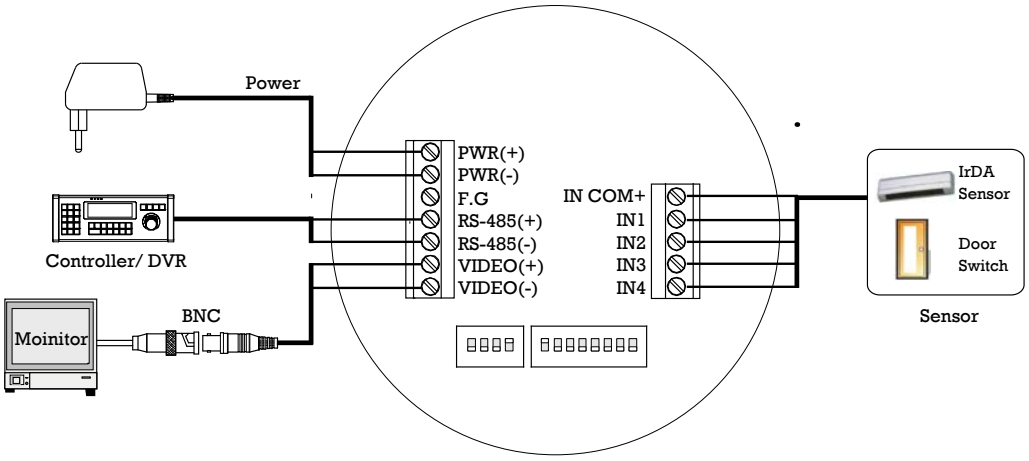
⑤ Secure flush mount bracket to the ceiling with screws through the 3 holes on the bracket.



⑥ Cover assembly with bracket cover and turn it clockwise.



Cabling



Cabling Terminal Block

❑ Power Connection

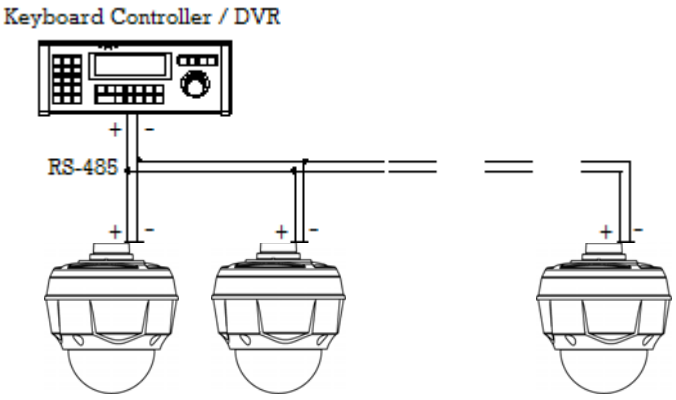
- Please check the voltage and current capacity of rated power carefully. Rated power is indicated on the back of main unit.

Rated Power	Input Voltage Range	Current Consumption
AC 24V (PT110N)	AC 17V ~ 29V	0.4 A
AC 24V (PT110N-XT)	AC 17V ~ 29V	1.5 A

- DC power loss increases over distance. DC power wiring to cameras should be kept as short as possible.

❑ RS-485 Communication

- For PTZ control, connect the RS-485 line to keyboard and DVR. To control multiple cameras on the same line with simultaneous operation (see page 13 for resistor settings): the RS-485 communication lines to cameras are connected in parallel as shown below.

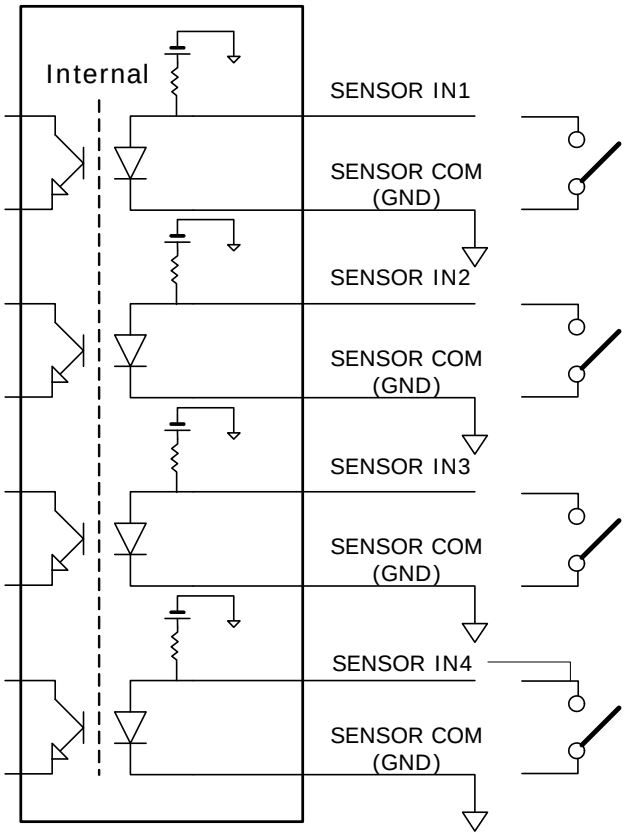


❑ Video Connection

- Connect with BNC coaxial cable.

❑ Alarm Input Connection

- Sensor Input



Before connecting sensors, check the sensor driver voltage and output signal type. Since sensor output signal types are divided into Open Collector and Voltage Output types in general, the cabling must be installed properly depending on the signal type.

Signal	Description
IN COM+	Connect (+) cable of electric power source for Sensors to this port as shown in the circuit above.
IN1–, IN2–, IN3–, IN4–	Connect output of sensors for each port as shown in the circuit above.

If you want to use Alarm Input, the type of sensor must be selected in OSD menu. The sensor types are Normal Open and Normal Close. If the sensor type is not selected properly, alarm activation will occur opposite of what is desired.

⊙ Normal Open	Output Voltage is high state when sensor is activated
⊙ Normal Close	Output Voltage is high state when sensor is not activated

Check Points before Operation

- Before power is applied, please check the cables carefully.
- The camera ID of the controller must be identical to that of the target camera. The camera ID can be checked by reading DIP switch of the camera.
- If your controller supports multi-protocols, the protocol must be changed to match to that of the camera.
- If you changed camera protocol by changing DIP switch, the change will be effective after you reboot the camera.
- Since the operation method can be different for each controller available, refer to the manual for your controller if camera can not be controlled properly. The operation of this manual is based on the standard Pelco® Controller.

Preset and Pattern Function Pre-Check

- Check controller or DVR preset and pattern functions in advance when using controller or DVR.
- Refer to the following table when using standard Pelco® protocol controller.

< Go Preset >	Input [Preset Number] and press [Preset] button.
< Set Preset >	Input [Preset Number] and press [Preset] button for more than 2 seconds.
< Run Pattern >	Input [Pattern Number] and press [Pattern] button.
< Set Pattern >	Input [Pattern Number] and press [Pattern] button for more than 2 seconds.

- If controller or DVR has no pattern button or function, use shortcut keys with preset numbers. For more information, refer to "Reserved Preset" in this manual.

Starting OSD Menu

- Function: Using the OSD menu, Preset, Pattern, Swing, Group and Alarm Input function can be configured for each application
- Enter Menu: <Go Preset> [95]

Reserved Preset

- Description: Some Preset numbers are reserved to special functions.
- Function:

Go Preset [95]	: Enters into OSD menu
Go Preset [131~134]	: Runs Pattern Function 1 ~ 4
Go Preset [141~148]	: Runs Swing Function 1 ~ 8
Go Preset [151~158]	: Runs Group Function 1 ~ 8
Go Preset [170]	: Sets Camera BLC Mode to OFF
Go Preset [171]	: Sets Camera BLC Mode to ON
Go Preset [174]	: Sets Camera Focus Mode to AUTO
Go Preset [175]	: Sets Camera Focus Mode to Manual
Go Preset [176]	: Sets Camera Focus Mode to SEMI-AUTO
Go Preset [177]	: Sets Day & Night Mode to AUTO
Go Preset [178]	: Sets Day & Night Mode to NIGHT
Go Preset [179]	: Sets Day & Night Mode to DAY
Go Preset [190]	: Sets OSD Display Mode to AUTO (Except Privacy Mask)
Go Preset [191]	: Sets OSD Display Mode to OFF (Except Privacy Mask)
Go Preset [192]	: Setting OSD Display Mode to ON (Except Privacy Mask)
Go Preset [193]	: Sets all Privacy Mask Display to OFF
Go Preset [194]	: Sets all Privacy Mask Display to ON

Preset

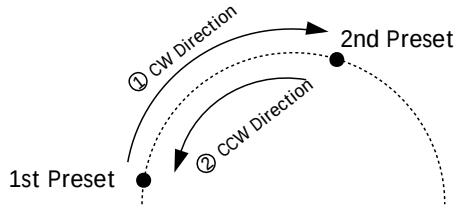
- Function — Max. 127 positions can be stored as Preset position. The Preset number can be assigned from 1 to 128, but 95 is reserved for starting OSD menu.

  Camera characteristics (i.e. White Balance, Auto Exposure) can be set up independently for each preset. Label should be blank and "Camera Adjust" should be set to "GLOBAL" as default. All characteristics can be set up in OSD menu.

- Set Preset — <Set Preset> [1~128]
- Run Preset — <Go Preset> [1~128]
- Delete Preset — To delete Preset, use OSD menu.

Swing

- Function — By using Swing function, the camera can move between 2 Preset positions repeatedly. When swing function runs, camera moves from the preset assigned as the 1st point to the preset assigned as the 2nd point in CW (Clockwise) direction. Then camera moves from the preset assigned as the 2nd point to the preset assigned as the 1st point in CCW (Counterclockwise) direction.



  If the preset assigned as the 1st point is the same as the preset assigned as the 2nd point, the camera will turn 360° in a CW (Clockwise) direction, then 360° in a CCW (Counterclockwise) direction.

  Speed can be set up from 1°/sec to 180°/sec.

- Set Swing — To set Swing, use OSD menu.
- Run Swing — Method 1) <Run Pattern> [Swing NO.+10] ex) Run Swing 3 : <Run Pattern> [13]

  Method 2) <Go Preset> [Swing NO.+140] ex) Run Swing 3 : <Go Preset> [143]

- Delete Swing — To delete Swing, use OSD menu.

Pattern

● Function

Pattern Function allows the camera to memorize a path (often a curved path) created by controller joystick for an assigned time. The camera will then retrace the path exactly as memorized.

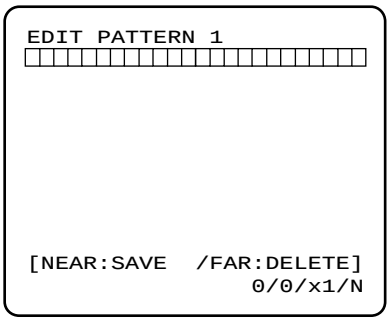
4 Patterns are available and Maximum 1200 communication commands can be stored in a pattern.

● Set Pattern

Patterns can be created by one of following two methods.

Method 1) <Set Pattern> [Pattern NO.]

○ Pattern editing screen is displayed as bellow.



○ Movement by Joystick and preset movement can be memorized in a pattern.

○ The remaining memory size is displayed in progress bar.

○ To save the recording, press **NEAR** key and to cancel, press **FAR** key.

Method 2) OSD Using OSD Menu: See the section "How to use OSD Menu".

● Run Pattern

Method 1) <Run Pattern> [Pattern NO.] ex) Run Pattern 2 : <Run Pattern> [2]

Method 2) <Go Preset> [Pattern NO.+130] ex) Run Pattern 2: <Go Preset> [132]

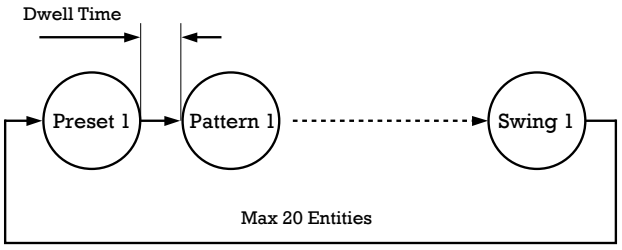
● Delete Pattern

Use OSD menu to delete a Pattern.

Group

- Function

The group function allows a running sequence of Presets, Pattern and/or Swings. Max 8 groups can be stored. Each group can have max 20 action entities which can be preset, pattern or swing. Preset speed can be set up and the repeat number of Pattern & Swing can be set up in Group setup. Dwell time between actions can also be set up.



- Set Group

Use OSD Menu to create a Group.

- Run Group

Method 1) <Run Pattern> [Group NO.+20] ex) Run Group 7 : <Run Pattern> [27]

Method 2) <Go Preset> [Group NO.++150] ex) Run Group 7 : <Go Preset> [157]

- Delete Group

Use OSD Menu to delete.

Other Functions

- Power Up Action — This function enables the camera to resume the last action executed before power down. Most actions such as Preset, Pattern, Swing and Group are available for this function, but Jog actions cannot be resumed.

- Auto Flip — If the tilt angle arrives at the top of tilt orbit (90°), zoom module camera will keep moving in the opposite tilt direction (180°) to keep tracing targets. As soon as the camera (lens) passes through the top of tilt direction (90°), images will be reversed automatically and the F symbol appears on screen. If this function is set to OFF, tilt movement range is 0 ~ 95°.

- Parking Action — This function sets the camera to a specific position automatically if operator doesn't operate the controller for a while. The Park Time can be defined as an interval from 1 minute to 4 hours.

- Alarm Input — 4 Alarm Inputs are used. If an external sensor is activated, camera can be set to move to corresponding preset position. Note: the latest alarm input is in effect if multiple sensors are activated.

- Privacy Zone Mask — To protect privacy, MAX. 4 Privacy Masks can be created in arbitrary locations to hide objects such as windows, shops or private houses. With the Spherical Coordinates system, a powerful Privacy Zone Mask function is available.

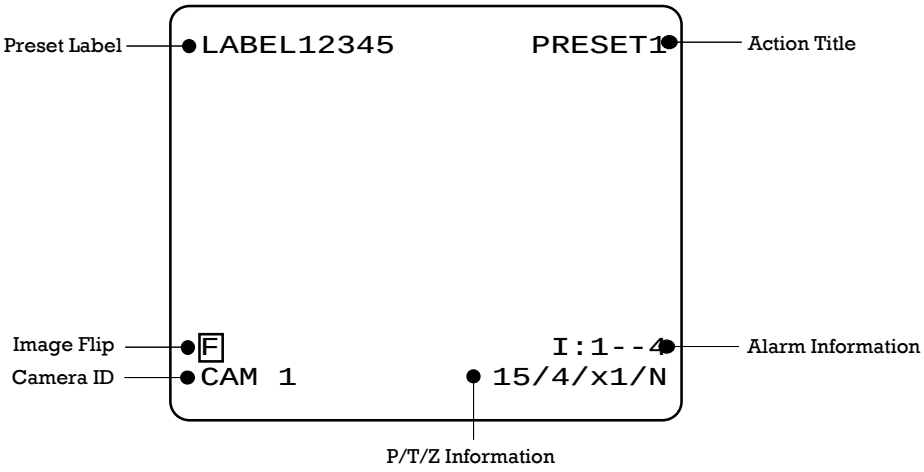
- GLOBAL/LOCAL Image Setup — WB (White Balance) and AE (Auto Exposure) can be set up independently for each preset. There are 2 modes, "Global" mode & "Local" mode. The Global mode means that WB or AE can be set up simultaneously for all presets in the "ZOOM CAMERA SETUP" menu. The Local mode means that WB or AE can be set up independently or separately for each preset in each preset setup menu. Each Local WB/AE value will activate correspondingly as the camera arrives at each preset location.

  During jog operation, Global WB/AE values should be applied. All Local WB/AE values will not change although Global WB/AE value changes.

- Semi-Auto Focus — Automatically selects focus mode from Manual Focus or Auto Focus depending on type of operation. Manual Focus mode activates in preset operation and Auto Focus mode activates during jog operation. In Manual mode, Focus data for each preset is memorized in advance, and the camera calls focus data for corresponding presets as soon as it arrives at a preset. This method shortens focus times.

  Focus mode changes to Auto Focus mode automatically when jog operation starts.

OSD Display of Main Screen



- P/T/Z Information — Current Pan/Tilt angle in degree, zoom magnification and a compass direction.
- Camera ID — Current Camera ID (Address).
- Action Title — Followings are possible Action Titles and their meaning.

"SET PRESET ×××"	When Preset ××× is stored
"PRESET ×××"	When camera reach to Preset ×××
"PATTERN ×"	When Pattern × is in action
"SWG×/PRESET ×××"	When Swing × is in action
"UNDEFINED"	When undefined function is called to run

- Preset Label — The Label stored for specific Preset.
- Alarm Input — This information shows current state of Alarm Input. If an Input point is **ON** it will show a number corresponding to each point. If an Input point is **OFF**, **'-'** will be displayed.

  Example - if points 2 & 3 of inputs are **ON,** the OSD will show as below:

  I:-23-

- Image Flip — Indicates that images are currently reversed by Auto Flip Function.

General Rules of Key Operation for Menu

- The menu items surrounded with ( ) always have a sub menu.
- At all menu levels, to go into sub menu, press **NEAR** key.
- To go to up one menu level, press **FAR** key.
- To move from items to item in the menu, use joystick in the **Up/Down** or **Left/Right**.
- To change a value of an item, use **Up/Down** of the joystick in the controller.
- Press **NEAR** key to save values and Press **FAR** key to cancel values.

Main Menu

```
SPEED DOME CAMERA
------------------------
→<SYSTEM INFORMATION>
 <DISPLAY SETUP>
 <DOME CAMERA SETUP>

 <SYSTEM INITIALIZE>



 EXIT
```

- System Information — Displays system information and configuration.
- Display Setup — Enable/Disable of OSD display on Main Screen.
- Dome Camera Setup — Configure various functions of this camera.
- System Initialize — Initializes system configuration and sets all data to factory default configuration.

Display Setup

```
DISPLAY SETUP
------------------------
→CAMERA ID          ON
 PTZ INFORMATION    AUTO
 ACTION TITLE       AUTO
 PRESET LABEL       AUTO
 ALARM INPUT        AUTO
 <SET NORTH DIRECTION>
 <PRIVACY ZONE>

 BACK
 EXIT
```

This menu defines Enable/Disable of OSD display on Main Screen. If an item is set to be AUTO, the item is displayed only when the value of it is changed.

- Camera ID [ON/OFF]
- PTZ Information [ON/OFF/AUTO]
- Action Title [ON/OFF/AUTO]
- Preset Label [ON/OFF/AUTO]
- Alarm Input [ON/OFF/AUTO]

❑ Compass Direction Setup

```
SET NORTH DIRECTION
------------------------




MOVE TO TARGET POSITION
[NEAR:SAVE  /FAR:CANCEL
```

Set North to assign compass direction as criteria. Move camera and press **NEAR** button to save.

Privacy Zone Mask Setup

```
PRIVACY ZONE
------------------------
→MASK NO        1
                UNDEFINED
 DISPLAY        OFF
 CLEAR MASK     CANCEL
 <EDIT MASK>



 BACK
 EXIT
```

Select area in image to mask.

- Mask No [1~4]

  Select Mask number. If the selected mask has already data, camera moves as it was set. Otherwise, "UNDEFINED" will be displayed under "Mask NO".

- Display [ON/OFF]

  Sets if camera makes mask shows or not on images.

- Clear Mask [CANCEL/OK]

  Deletes data in the selected mask NO.

❑ Privacy Zone Area Setup

```
EDIT MASK 1
------------------------









MOVE TO TARGET POSITION
[NEAR:SELECT/FAR:CANCEL]
```

Move camera to area to mask. Then the menu to adjust mask size will be displayed.

❑ Privacy Zone Size Adjustment

```
EDIT MASK 1
------------------------

[◂▸:ADJUST MASK WIDTH]
[▴▾:ADJUST MASK HEIGHT]

[NEAR:SAVE  /FAR:CANCEL]
```

Adjust mask size. Use joystick or arrow buttons to adjust mask size.

- ◂ ▸ (Left/Right)
- ▴ ▾ (Up/Down)

- ◂ ▸ (Left/Right)
- ▴ ▾ (Up/Down)

Camera Setup

```
ZOOM CAMERA SETUP
------------------------
→FOCUS MODE     SEMIAUTO
 DIGITAL ZOOM   ON
 LINE LOCK      OFF
 IMAGE FLIP     OFF
 <WHITE BALANCE SETUP>
 <AUTO EXPOSURE SETUP>


 BACK
 EXIT
```

Setup the general functions of zoom camera module.

● Focus Mode [AUTO/MANUAL/SEMIAUTO]

Sets camera focus mode.

○ SEMIAUTO Mode

Automatically selects focus mode from Manual Focus or Auto Focus depending on type of operation. Manual Focus mode activates in preset operation and Auto Focus mode activates during jog operation. In Manual mode, Focus data for each preset is memorized in advance, and the camera calls focus data for corresponding presets as soon as it arrives at a preset.

● Digital Zoom [ON/OFF]

Sets digital zoom function to ON/OFF. When set to OFF, optical zoom function runs but zoom function stops at the end of optical zoom magnification.

● Line Lock [ON/OFF]

If Line lock sync is ON, video signal is synchronized with AC power. Video can be fluctuated after setting is changed.

●Image Flip [ON/OFF]

Turn watching direction to the other side of moving when camera gets vertical sight.

❑ White Balance set up

```
WB SETUP - GLOBAL
------------------------
→WB MODE          AUTO
 ●RED  ADJUST     ---
 ●BLUE ADJUST     ---




 BACK
 EXIT
```

- ● WB Mode [AUTO/MANUAL]

  In Manual mode, Red and Blue level can be set up manually

- ● Red Adjust [10~60]
- ● Blue Adjust [10~60]

❑ Auto Exposure Setup

```
AE SETUP - GLOBAL
------------------------
→BACKLIGHT        OFF
 DAY/NIGHT        AUTO1
 BRIGHTNESS       25
 IRIS             AUTO
 SHUTTER          ESC
 AGC              NORMAL
 SSNR             MIDDLE
 SENS-UP          <AUTO>
 BACK
 EXIT
```

● Backlight [ON/OFF]

Sets Backlight Compensation

● Day/Night [AUTO1/AUTO2/DAY/NIGHT]

AUTO1 exchanges Day/Night mode faster than AUTO2.

● Brightness [0~100]

Adjusts brightness of images. Iris, Shutter Speed and Gain are adjusted automatically in correspondence with this value.

● IRIS [AUTO/MANUAL(0~100)]

If Iris is set to Auto, Iris should have highest priority in adjusting AE and Shutter Speed should be fixed.

If Iris is set to Manual, Iris should be fixed and Iris has lower priority in adjusting AE, in comparison with others.

● Shutter Speed [ESC/A.Flicker/Manual(×128~1/120000 sec)]

If Iris is set to Manual and Shutter Speed is set to ESC, Shutter Speed should have highest priority. If Shutter Speed is set to A.Flicker, to remove Flicker, Shutter Speed should be set to 1/100 sec. for NTSC and 1/120 for PAL.

● AGC [OFF/NORMAL/HIGH]

Enhances image brightness automatically in case that luminance level of image signal is too low.

● SSNR [OFF/LOW/MIDDLE/HIGH]

Enhances images by filtering noise when gain level of images is too high.

● SENS-UP [AUTO(2~128)/OFF]

Activates Slow Shutter function when luminance of image (signal) is too dark.

It is possible to set up the maximum number of frames stacked on one another by Slow Shutter function.

Motion Setup

```
MOTION SETUP
------------------------
→MOTION LOCK      OFF
 PWR UP ACTION    ON
 AUTO FLIP        ON
 JOG MAX SPEED    120/SEC
 JOG DIRECTION    INVERSE
 FRZ IN PRESET    OFF
 <PARKING ACTION SETUP>
 <ALARM INPUT SETUP>
 BACK
 EXIT
```

Setup the general functions of Pan/Tilt motions.

- Motion Lock [ON/OFF]

  If Motion Lock is set to ON, it is impossible to set up and delete Preset, Swing, Pattern and Group. It is only possible to run these functions. To set up and delete these functions, enter into OSD menu.

- Power Up Action [ON/OFF]

  Refer to “Other Functions" section.

- Auto Flip [ON/OFF]

  Refer to “Other Functions" section.

- Jog Max Speed [1°/sec ~360°/sec]

  Sets maximum jog speed. Jog speed is inversely proportional to zoom magnification. As zoom magnification goes up, pan/tilt speed goes down.

- Jog Direction [INVERSE/NORMAL]

  If you set this to ‘Inverse’, the view on the screen will move in the same direction as jog tilt. If ‘Normal’ is selected, the view on the screen will move in the opposite direction.

- Freeze in Preset [ON/OFF]

  At start point of preset movement, camera will freeze the image of start point. Camera keeps displaying the image of start point during preset movement and does not display the images received during preset movement. As soon as camera stops at preset end point, camera will display live images received at the preset end point.

  Availability of this function will vary by model.

❑ Parking Action Setup

```
PARKING ACTION SETUP
------------------------
→PARK ENABLE    OFF
 WAIT TIME      00:10:00
 PARK ACTION    HOME




 BACK
 EXIT
```

If Park Enable is set to ON, camera runs assigned function automatically if there is no PTZ command during assigned "Wait Time".

● Park Enable [ON/OFF]

● Wait Time [1~10/15/30 seconds & 1/2/3/4 minutes]

The time is displayed with "hh:mm:ss" format and can be changed in 1 min units.

● Park Action [HOME/PRESET/PATTERN/SWING/GROUP]

○ HOME

Camera moves to home position if there is no PTZ command during assigned "Wait Time".

❑ Alarm Input Setup

```
ALARM INPUT SETUP
------------------------
→ALARM1 TYPE    N.OPEN
 ALARM2 TYPE    N.OPEN
 ALARM3 TYPE    N.OPEN
 ALARM4 TYPE    N.OPEN
 ALARM1 ACT     NOT USED
 ALARM2 ACT     NOT USED
 ALARM3 ACT     NOT USED
 ALARM4 ACT     NOT USED
 BACK
 EXIT
```

Matches the Alarm sensor input to one of Preset positions. If an external sensor is activated, camera will move to corresponding preset position when this item is predefined.

● Alarm × Type [Normal OPEN/Normal CLOSE]

Sets sensor input type.

● Alarm × Action [NOT USED/PRESET 1~128]

Assign counteraction Preset position to each Alarm input.

Preset Setup

```
PRESET SETUP
------------------------
→PRESET NO.     1

 CLR PRESET     CANCEL
 <EDIT SCENE>
 <EDIT LABEL>   LABEL123
 CAM ADJUST     GLOBAL


 BACK
 EXIT
```

- Preset Number [1~128]

  If a selected preset is already defined, camera moves to pre-defined position and preset characteristics such as Label and Relay Outputs show on monitor. If a selected preset is not defined, "UNDEFINED" shows on monitor.

- Clear Preset [CANCEL/OK]

  Delete current Preset data

- Edit Preset Scene Redefine current Preset scene position (i.e. PTZ).

❑ Edit Preset Scene

```
EDIT SCENE - PRESET 1
------------------------









MOVE TO TARGET POSITION
[NEAR:SAVE  /FAR:CANCEL]
```

① Using Joystick, move camera to desired position.

② By pressing **NEAR** key, save current PTZ data.

③ Press **FAR** key to cancel.

Swing Setup

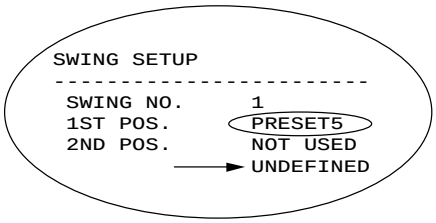
```
SWING SETUP
------------------------
→SWING NO.      1
 1ST POS.       NOT USED
 2ND POS.       NOT USED

 SWING SPEED    30/SEC
 CLEAR SWING    CANCEL


 BACK
 EXIT
```

- Swing Number [1~8]

  Select Swing number to edit. If a selected Swing is not defined, "NOT USED" is displayed in 1st Position and 2nd Position

- 1st Position [PRESET 1~128]

  2nd Position Set up the 2 position for Swing function. If a selected preset is not defined, "UNDEFINED" will be displayed as shown below.



When swing function runs, the camera will move from the preset assigned as the 1st point to the preset assigned as the 2nd point in a CW (Clockwise) direction. Then the camera will move from the preset assigned as the 2nd point to the preset assigned as the 1st point in a CCW (Counterclockwise) direction. If the preset assigned as the 1st point is same as the preset assigned as the 2nd point, the camera will turn 360° in CW direction and then turn 360° in CCW direction.

- Swing Speed [1°/sec ~180°/sec]

  Sets Swing speed from 1°/sec to 180°/sec.

- Clear Swing [CANCEL/OK]

  Deletes current Swing data.

Pattern Setup

```
PATTERN SETUP
------------------------
→PATTERN NO.    1
                UNDEFINED
 CLR PATTERN    CANCEL
 <EDIT PATTERN>



 BACK
 EXIT
```

- Pattern Number [1~4]

  Selects Pattern number to edit.

  If a selected pattern number is not defined, "UNDEFINED" will be displayed under selected pattern number.

- Clear Pattern [CANCEL/OK]

  Deletes data in current pattern

- Edit Pattern Starts editing pattern.

❑ Edit Pattern

```
EDIT PATTERN 1
------------------------




MOVE TO START POSITION
[NEAR:START /FAR:CANCEL]
```

① Using Joystick, move to start position with appropriate zoom. To start pattern recording, press **NEAR** key. To exit this menu, press **FAR** key.

```
EDIT PATTERN 1
[                        ]




[NEAR:SAVE  /FAR:DELETE]
                0/0/x1/N
```

② Move camera with controller joystick or run preset function to memorize a path (often a curved path) in a selected pattern. The total memory size and remaining memory size are displayed in the form of a bar. Maximum 1200 communication commands can be stored in a pattern.

③ To save data and exit, press **NEA**R key. To cancel recording and delete record data, press **FAR** key.

Group Setup

```
GROUP SETUP
------------------------
→GROUP NO.      1
                UNDEFINED
 CLEAR GROUP    CANCEL
 <EDIT GROUP>



 BACK
 EXIT
```

- Group Number [1~8]

  Selects Group number to edit.

  If a selected Group number is not defined, "UNDEFINED" will be displayed under selected Group number.

- Clear Group [CANCEL/OK]

  Deletes data in current Group

- Edit Group Starts editing Group.

❑ 그룹 편집

```
EDIT GROUP 1
------------------------
→NO ACTION ### DWELL OPT
------------------------
  1 NONE
  2 NONE
  3 NONE
  4 NONE
  5 NONE
------------------------
 SAVE
 CANCEL       [NEAR:EDIT]
```

① "Press **Near** key in "NO" list to start Group setup.

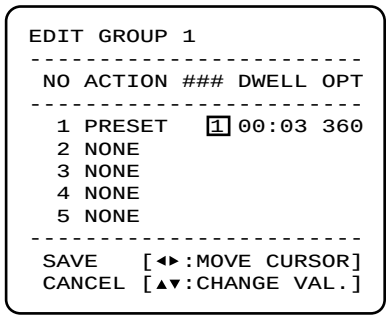
```
EDIT GROUP 1
------------------------
 NO ACTION ### DWELL OPT
------------------------
→ 1 NONE
  2 NONE
  3 NONE
  4 NONE
  5 NONE
------------------------
 SAVE     [NEAR:EDIT ACT]
 CANCEL   [FAR :EDIT END]
```

② Note that MAX. 20 Functions are allowed in a Group. Move cursor up/down and press **Near** key to set up.

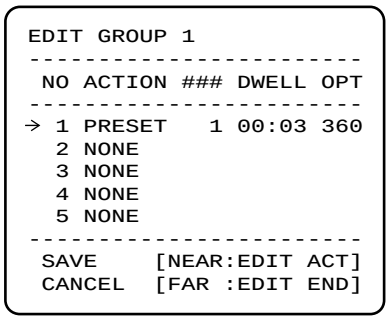
③ Set up Action, Dwell time and Option. Note that selected item is displayed in reverse. Move cursor **Left**/**Right** to select items and move cursor **Up**/**Down** to change each value.

- Action ### [NONE/PRESET/SWING/PATTERN]
- DWELL [0 second ~ 4 minutes]

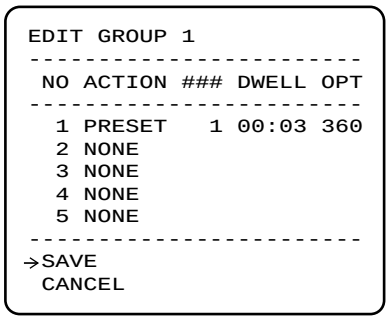
  Sets Dwell Time between functions
- OPT Option. Displays the preset speed when preset is set in Action. Displays the number of repeats when Pattern or Swing is selected in Action



④ Set up items such as Action, ###, Dwell and OPT.



⑤ After finishing setup of an Action, press **Near** key to one-upper-level menu (Step ②). Move cursor **Up**/**Down** to select Action number and repeat Step ② ~ Step ④ to edit selected Group.



⑥ After finishing setup of all Actions, press **FAR** key to exit. Then cursor should be moved to "SAVE". Press **Near** key to save data.

System Initialize

```
SYSTEM INITIALIZE
------------------------
→CLEAR ALL DATA      NO
 ●CLR DISPLAY SET    NO
 ●CLR CAMERA SET     NO
 ●CLR MOTION SET     NO
 ●CLR EDIT DATA      NO
 REBOOT CAMERA       NO
 REBOOT SYSTEM       NO

 BACK
 EXIT
```

- ● Clear All Data — Deletes all configuration data, such as display, camera, and motion setup.
- ● Clear Display Set — Initializes Display Configuration
- ● Clear Camera Set — Initializes Camera Configuration
- ● Clear Motion Set — Initializes Motion Configuration
- ● Clear Edit Data — Deletes Preset Data, Swing Data, Pattern Data and Group Data
- ● Reboot Camera — Reboots Zoom Camera module
- ● Reboot System — Reboots Speed Dome Camera

❑ ❑ Initial Configuration Table

● Display Configuration	
Camera ID	ON
PTZ Information	AUTO
Action Title	AUTO
Preset Label	AUTO
Alarm Input	AUTO
North Direction	Pan 0°
Privacy Zone	Undefined

● Motion Configuration	
Motion Lock	OFF
Power Up Action	ON
Auto Flip	ON
Jog Max Speed	120°/sec
Jog Direction	INVERSE
Freeze In Preset	OFF
Park Action	OFF
Alarm Action	OFF

● Camera Configuration	
Focus Mode	SemiAuto
Digital Zoom	ON
Line Lock	OFF
White Balance	AUTO
Backlight	OFF
Day&Night	AUTO2
Brightness	25
Iris	AUTO
Shutter	ESC
AGC	HIGH
SSNR	MIDDLE
SENS-UP	AUTO

● User Edit Data	
Preset 1~128	Undefined
Swing 1~8	Undefined
Pattern 1~4	Undefined
Group 1~8	Undefined

Specifications

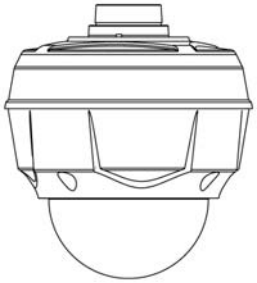
Model		×10	
Video Signal System		NTSC	PAL
Camera	CCD	1/4" Interline Transfer CCD	
	Max. Pixels	811(H)×508(V) 410K	795(H)×596(V) 470K
	Effective Pixels	768(H)×494(V) 380K	752(H)×582(V) 440K
	Horizontal Res.	500 TVL (Color), 570 TVL (B/W)	
	S/N Ratio	50 dB (AGC Off)	
	Zoom	×10 Optical Zoom, ×10 Digital Zoom	
	Focal length	F1.8, f=3.8~38mm	
	Min. illumination	0.7 Lux (Color) / 0. 02 Lux (B/W), 50 IRE	
	Day & Night	Auto / Day / Night(ICR)	
	Focus	Auto / Manual / SemiAuto	
	Iris	Auto / Manual	
	Shutter Speed	x128 ~ 1/120000 sec	
	AGC	Normal / High / Off	
	White Balance	Auto / Manual(Red, Blue Gain Adjustable)	
	BLC	Low / Middle / High / Off	
	Flickerless	Selectable	
	SSNR	Low / Middle / High / Off	
Pan/Tilt	Range	Pan : 360°(Endless)	
		Tilt : 180° (Auto-Flip), 95° (Normal)	
	Pan/Tilt Speed	Preset : 360°/sec	
		Manual : 0.05 ~ 360°/sec (proportional to zoom)	
		Swing : 1~ 180°/sec	
	Preset	127 Preset (Label, Camera Image Setting)	
	Pattern	4 Pattern, 1200 commands(about 5 minute)/Pattern	
	Swing	8 Swing	
	Group	8 Group (20 action entities per Group)	
	Other Functions	Auto Flip, Auto Parking, Power Up Action etc.	
General	Communication	RS-485	
	Protocol	Pelco-D, Pelco-P selectable	
	Privacy Zone	4 Zone	
	Alarm Input	4 Input	
	OSD	Menu / PTZ information etc	
	Rated Power**	DC Type : DC 12V / 0.8A , *DC 12V / 2.5A	
		AC Type : AC 24V / 0.4A , *AC 24V / 1.5A	
	Dimension	Dome : ∅115	
		Ceiling	∅178× 233(H) mm
		Housing	∅154.5 × 158.5(H) mm , *∅178 × 244(H)×289(H) mm
	Weight	Main Unit	Approx. about 1.3 Kg, *1.9 Kg
		Ceiling	Approx. *2.2Kg
		Wall	Approx. *2.5Kg
	Operating Temp.	0°C ~ 40°C , (*-30 ~ 50°C / -22~ 122°F)	
	IEC-529 Standard	*IP66	

*** PT110N-XT Model Only**

** Check the voltage and current capacity of rated power carefully.

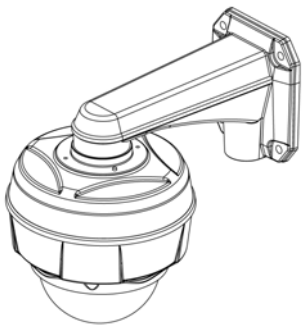
*** Specifications of this product are subject to change without notice.

■ Appearance*

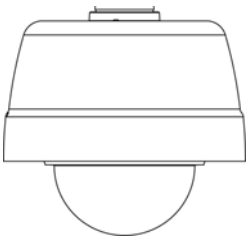


Main Unit

Ceiling



Wall

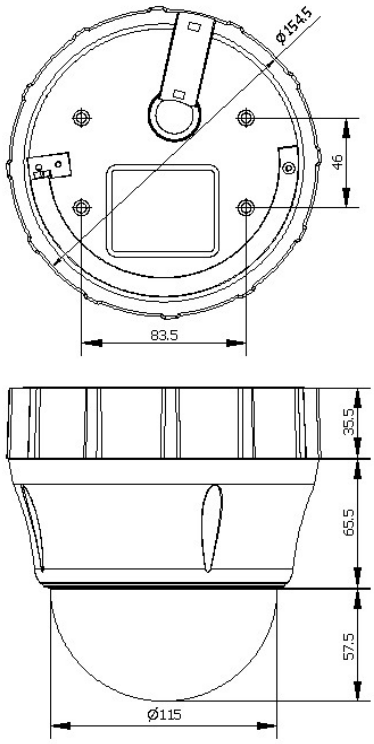


Sun shield

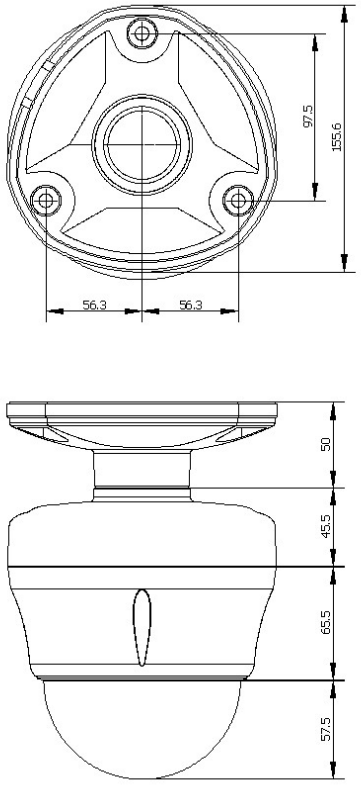
Note: PT110N-XT. PT110N appearance will vary, see page 38 for PT110N appearance specifications.

Dimensions-PT110N Indoor Model

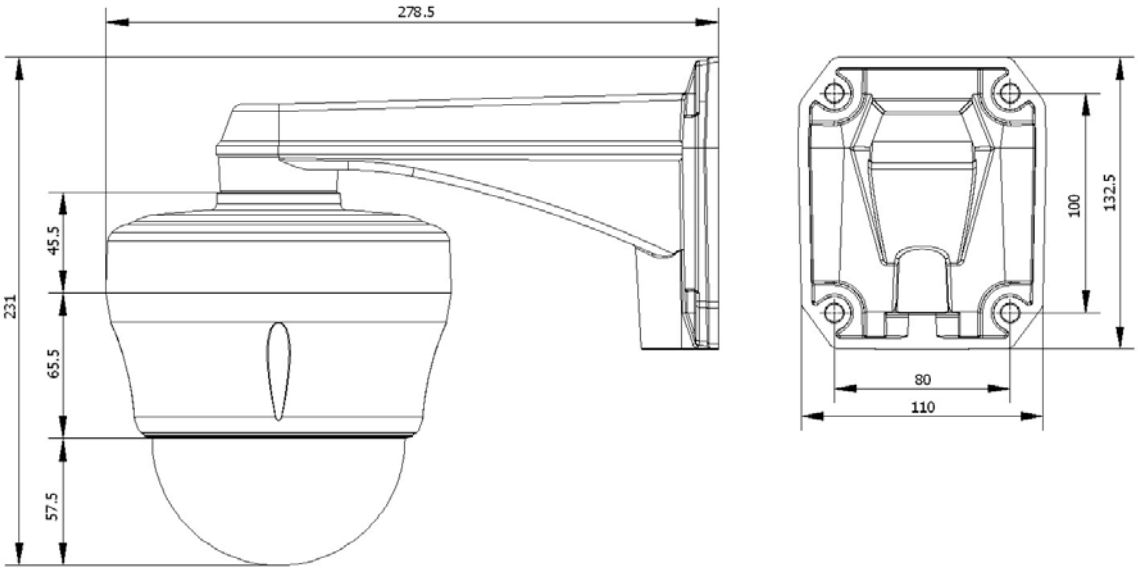
- Main Unit & Surface Mount Bracket



- Ceiling Mount Bracket



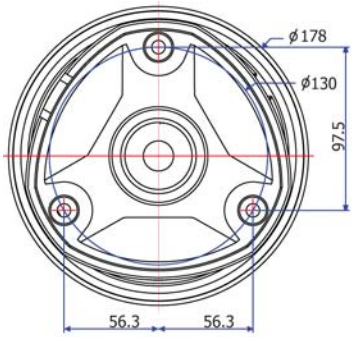
- Wall Mount Bracket



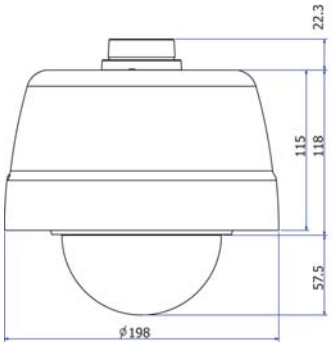
Unit: mm

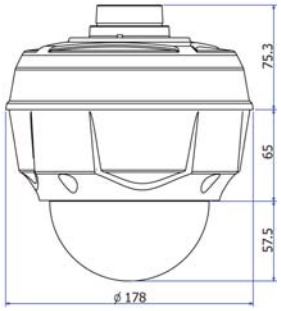
Dimensions-PT110N-XT Outdoor Model

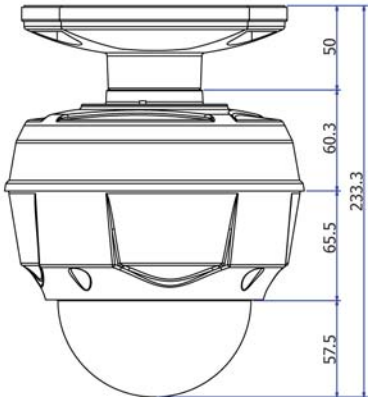
- Ceiling Mount Bracket



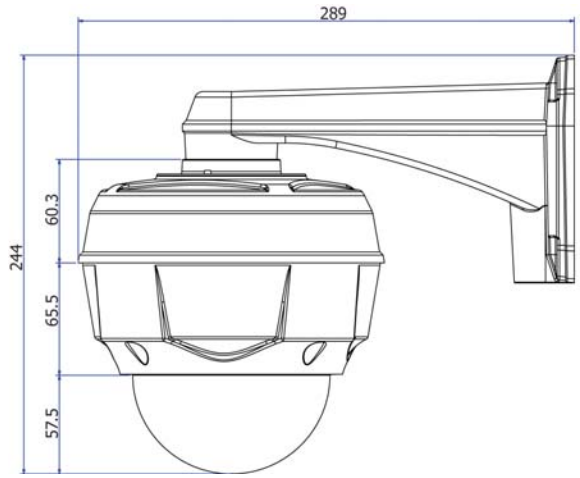
- Sun shield

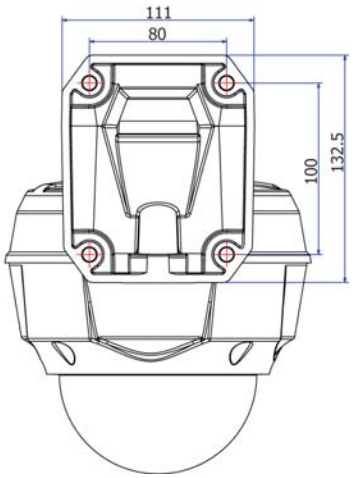






- Wall Mount Bracket





Unit: mm

NOTES: