Installation and Operation Manual
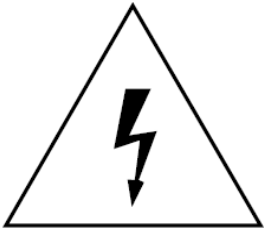
for

High Speed Dome Camera

VER: 1.0

Standard Type

Advance Type
With Alarm / Sun Shield

Please read the operation manual carefully

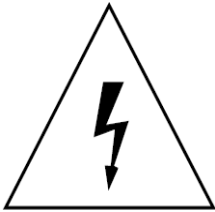before installing and using this unit

CAUTION

RISK OF ELECTRIC
SHOCK DO NOT OPEN

CAUTION：To reduce the risk of electrical shock, do not open covers.

No user serviceable parts inside.

Refer servicing to qualified service personal.

This lightning flash with arrowhead symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING：To prevent the risk of fire or electric shock hazard do not expose this camera to rain or moisture.

▐▌ Important Safeguard

1. Read Instructions

    Read all of the safety and operating instructions before using the product.

2. Retain Instructions

    Save these instructions for future reference.

3. Attachments / Accessories

    Do not use attachments or accessories unless recommended by the appliance manufacturer as they may cause hazards, damage product and void warranty.

4. Water and Moisture

    Do not use this product near water or moisture.

5. Installation

    Do not place or mount this product in or on an unstable or improperly supported location. Improperly installed product may fall, causing serious injury to a child or adult, and damage to the product. Use only with a mounting device recommended by the manufacturer, or sold with the product. To insure proper mounting, follow the manufacturer's instructions and use only mounting accessories recommended by manufacturer.

6. Power source

    This product should be operated only from the type of power source indicated on the marking label.

▐▌ Precautions

Operating

- Before using, make sure power supply and others are properly connected.
- While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and then contact your local dealer.

Handling

- Do not disassemble or tamper with parts inside the camera.
- Do not drop or subject the camera to shock and vibration as this can damage camera.
- Care must be taken when you clean the clear dome cover. Especially, scratch and dust will ruin your quality of camera.

Installation and Storage

- Do not install the camera in areas of extreme temperature, which exceed the allowable range.
- Avoid installing in humid or dusty places.
- Avoid installing in places where radiation is present.
- Avoid installing in places where there are strong magnetic fields and electric signals.
- Avoid installing in places where the camera would be subject to strong vibrations.
- Never expose the camera to rain and water.

█▌ Features ▐█

█▌ Camera Specifications
- CCD Sensor: 1 / 4 " Interline Transfer CCD
- Camera Support: CZ36SCM(COP)
  Zoom Magnification: x 36 Optical Zoom, x 32 Digital Zoom (Max. x 1152 Zoom)
- Camera Support: FCB-EX995(SONY)
  Zoom Magnification: x 28 Optical Zoom, x 12 Digital Zoom (Max. x 336 Zoom)
- Camera Support: FCB-EX1020(SONY)
  Zoom Magnification: x 36 Optical Zoom, x 12 Digital Zoom (Max. x 432 Zoom)
- Camera Support: SCM-2230(SAMSUNG)
  Zoom Magnification: x 23 Optical Zoom, x 16 Digital Zoom (Max. x 368 Zoom)
- Day & Night Function
- Various Focus Mode: Auto-Focus / Manual Focus / Semi-Auto Focus.
- Independent and Simultaneous Camera Characteristic Setup in Preset operation

█▌ Powerful Pan/Tilt Functions
- Max. 300º /sec high speed Pan/Tilt Motion
- Using Vector Drive Technology, Pan/Tilt motions are accomplished in a shortest path. As a result, time to target view is reduced dramatically and the video on the monitor is very natural to watch.
- For jog operation using a controller, since ultra slow speed 0.05 º/sec can be reached, it is very easy to locate camera to desired target view. Additionally it is easy to move camera to a desired position with zoom-proportional pan/tilt movement.

█▌ Preset, Pattern, Swing, Group, Pan scan, Tilt scan, Privacy Mask and More...
- Max. 255 Presets are assignable and characteristics of each preset can be set up independently.
- Max. 8 set of Swing action can be stored. This enables to move camera repetitively between two preset positions with designated speed.
- Max. 4 of Patterns can be recorded and played back. This enables to move camera to follow any trajectory operated by joystick as closely as possible.
- Max. 8 set of Group action can be stored. This enables to move camera repetitively with combination of Preset. A Group is composed of Max. 16 entities of Preset.
- Max. 1 set of Pan scan can be stored. This is to keep the ball machine according to the elevation angle of executive level 360 continuous rotation and speed can be adjusted.
- Max. 1 set of Tilt scan can be stored. This is to make the ball machine according to set the horizontal angle of the implementation of vertical 90 continuous rotation and speed can be adjusted.
- Privacy Masks are assignable, not to intrude on other's privacy. (8 Privacy Zones)

▌▌ PTZ (Pan/Tilt/Zoom) Control

● With RS-485 communication, Max. 255 of cameras can be controlled at the same time.

● Pelco-D or Pelco-P protocol can be selected as a control protocol in the current version of firmware.

▌▌ 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, temperature, Pan/Tilt Angle, Alarm Input and Preset can be displayed on screen.

▌▌ I/O Functions (**for Advance Type**)

● To reject external electric noise and shock perfectly, alarm sensor Input is decoupled with photo coupler.

● Using the dry contact for alarm input and output.

● 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, not entering into OSD menu. For more information, refer to "Reserved Preset" in this manual.
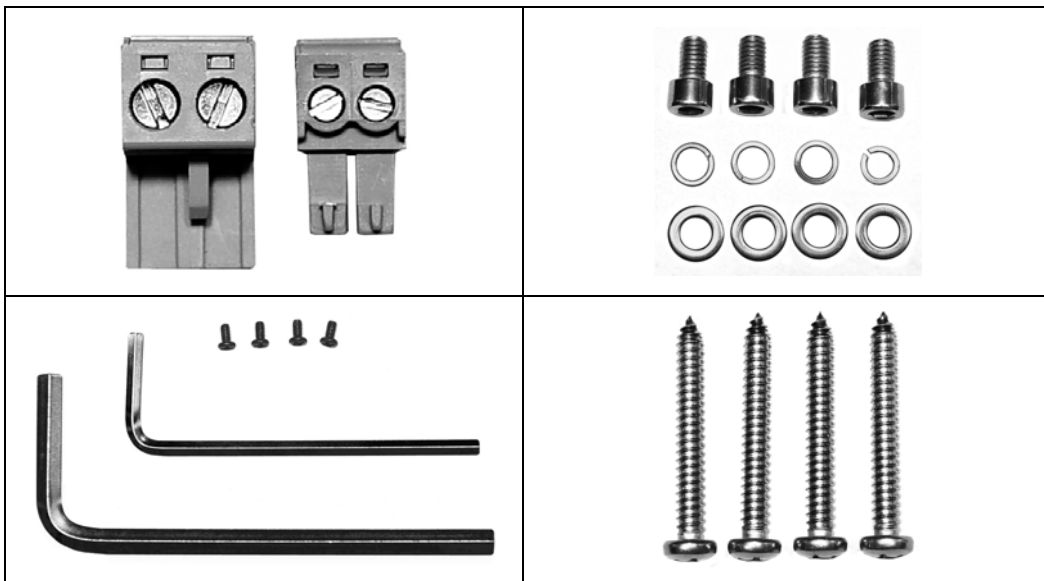
▐▌ Product & Accessories

Standard Type

Advance Type
With Alarm / Sun Shield

● **Accessories:**

1.   Standard and Advance Type

2.   Advance Type only
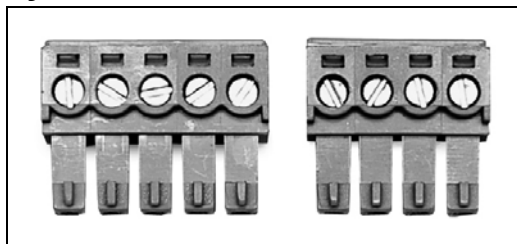
▌▌DIP Switch Setup

Before you install the camera, you should set the DIP switches to configure the camera ID, communication baud rate.

PIN	1	2	3	4	5	6	7	8	9	10
FUNC.	A0	A1	A2	A3	A4	A5	A6	A7	Baud Rate	
ON	1	2	4	8	16	32	64	128	Refer to	
OFF	0	0	0	0	0	0	0	0	the Manual	

►Camera ID Setup

● ID number of camera is set using binary number. The example is shown bellow.

PIN	1	2	3	4	5	6	7	8
ID Value	1	2	4	8	16	32	64	128
OSD menu setup	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
ex) ID=5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
ex) ID=10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF

● The range of ID is 1~255. 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.
● When DIP SW set all off the speed dome can change the ID address and baud rate via OSD menu.

►Communication Baud Rate Setup
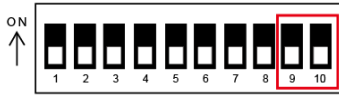
● Select the appropriate Baud Rate with DIP switch combination.

Switch State		Baud Rate
P9	P10	
OFF	OFF	default 2400 bps
OFF	ON	2400 bps
ON	OFF	4800 bps
ON	ON	9600 bps

● If you want to control using DVR or P/T controller, their protocol must be identical to camera. Otherwise, you can not 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 baud rate is 2400 bps. You can change it in OSD menu.

● **Speed dome will detect the Pelco-D or Pelco-P automatically in the Present conditions.**

▌▌Cabling

Cabling Terminal Block
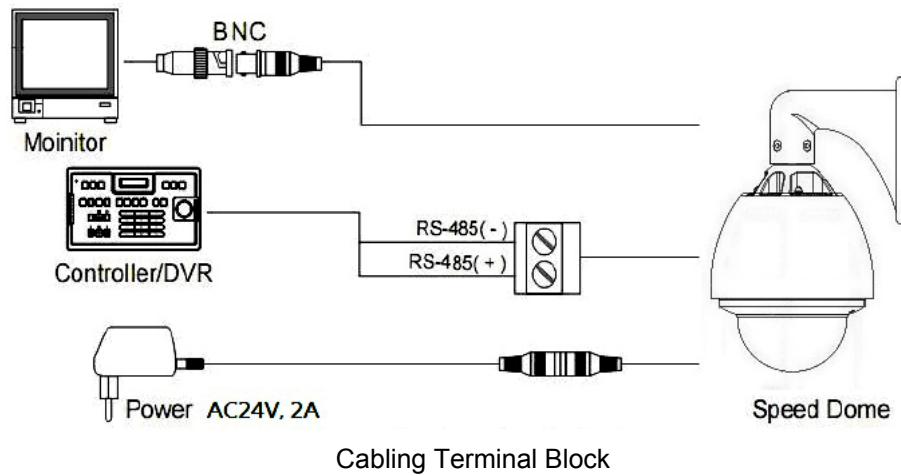
►Power Connection

● Please, check the voltage and current capacity of rated power carefully.

Rated power is indicated in the back of main unit.

Rated Power	Input Voltage Range	Current Consumption
AC 24V	AC 24V~26 V	2A

►RS-485 Communication

● For PTZ control, connect this line to keyboard and DVR.

To control multiple cameras at the same time,

RS-485 communication lines of them is connected in parallel as shown below.

● Speed Dome OSD Menu, support the distal 120R resistance of the opening and closing.
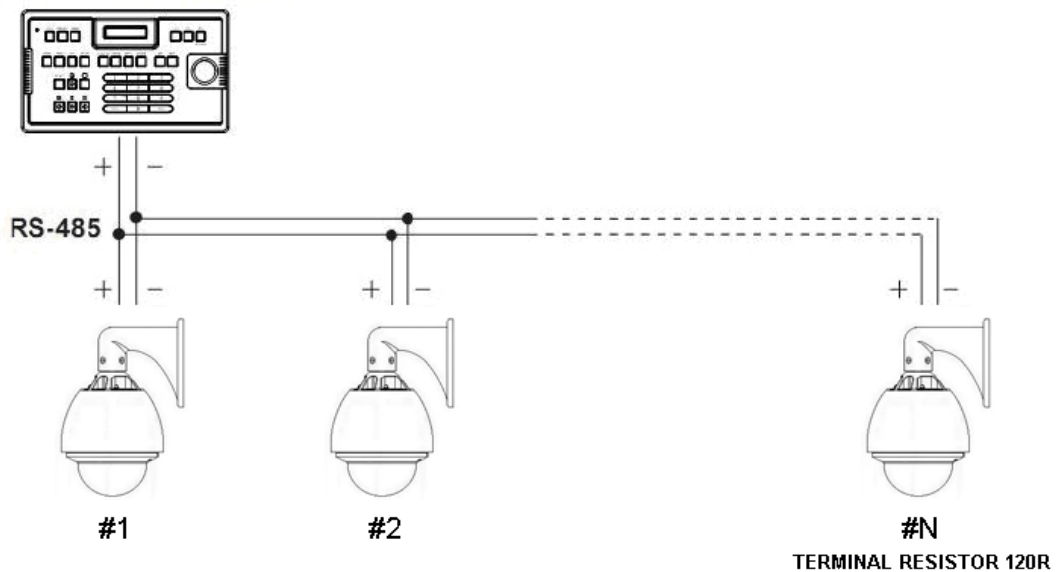
►Video Connection

● Connect with BNC coaxial cable.

►Alarm input
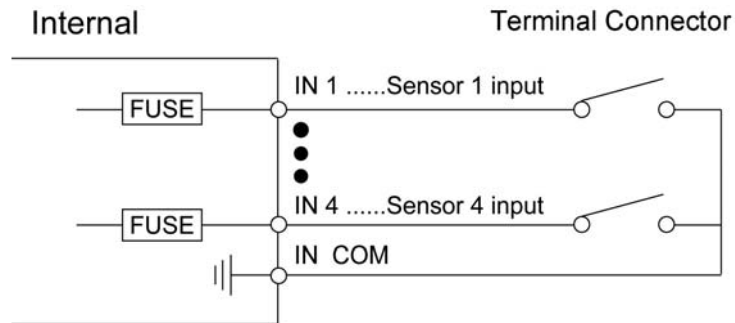
Signal	Description
IN COM	Common point for alarm
IN1-,IN2-,IN3-, IN4-,	Alarm input signal

Speed dome can detect the status of alarm input (NO or NC) automatically.

Normal Open and Normal Close define as below:

⊚Normal Open	No contact between alarm input and common point
⊚Normal Close	Keeping contact between alarm input and common point

►Alarm output
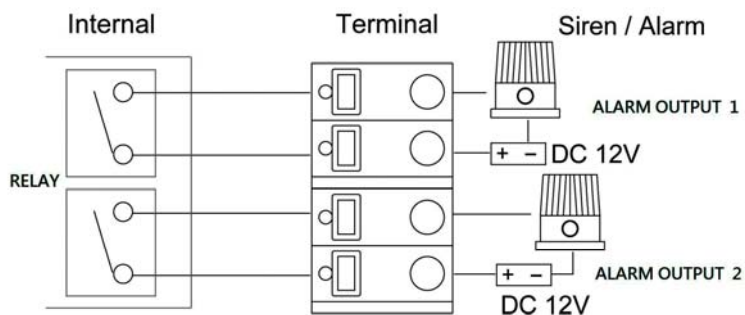
Signal	Description
Alarm output 1	Alarm output port 1
Alarm output 2	Alarm output port 2

Speed dome can detect the status of alarm input automatically, when any alarm was triggered then alarm output must be action.

▌▌ 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 how to operate preset and pattern function with controller or DVR in advance to operate camera function fully when using controller or DVR.

● Refer to the following table when using standard Pelco® D protocol controller.

<Go Preset>	Press [Call] input [Preset number]and press [Enter]
<Set Preset>	Press [Preset] input [Preset number] and press [Enter]
<Run Pattern>	Press [Call] input [Pattern number] and press [Enter]
<Set Pattern>	Please refer to the pattern setup, turn to "Pattern Setup"

● 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 Pan, Tilt and Alarm Input function can be configured for each application.
- ● Enter Menu   Press <Call> + Preset Number [95] +<Enter>

▌▌ Reserved Preset

- ● Description   Some Preset numbers are reserved to special functions.

- ● Function   <Call> [95]<Enter>   : Enters into OSD menu

                          <Call> [99]<Enter>   : Run Pan Scan

                          <Call> [100]<Enter>   : Run Tilt Scan

                          <Call> [131~134]<Enter>   : Runs Pattern Function 1~4

                          <Call> [141~148]<Enter>   : Runs Swing Function 1~8

                          <Call> [151~158]<Enter>   : Runs Group Function 1~8

                          <Call> [200]<Enter>   : Run the minimum angle of Horizontal scanning.

                          <Call> [160]<Enter>   : Sets Alarm ON

                          <Call> [161]<Enter>   : Sets Alarm OFF

                          <Call> [170]<Enter>   : Sets Camera BLC Mode to OFF

                          <Call> [171]<Enter>   : Sets Camera BLC Mode to ON

                          <Call> [174]<Enter>   : Sets Camera Focus Mode to AUTO

                          <Call> [175]<Enter>   : Sets Camera Focus Mode to Manual

                          <Call> [176]<Enter>   : Sets Camera Focus Mode to SEMI-AUTO

                          <Call> [177]<Enter>   : Sets Day & Night Mode to AUTO

                          <Call> [178]<Enter>   : Sets Day & Night Mode to NIGHT

                          <Call> [179]<Enter>   : Sets Day & Night Mode to DAY

                          <Call> [190]<Enter>   : Sets OSD Display Mode to AUTO

                                              (Except Privacy Mask)

                          <Call>[191]<Enter>   : Sets OSD Display Mode to OFF (Except Privacy Mask)

                          <Call>[192]<Enter>   : Sets OSD Display Mode to ON (Except Privacy Mask)

                          <Call>[193]<Enter>   : Sets all Privacy Mask Display to OFF

   <Call>[194]<Enter>   : Sets all Privacy Mask Display to ON

▋▋ Preset

- Function   Max. 255 positions can be stored as Preset position. The Preset number can be assigned from 1 to 255, but 95 is reserved for starting OSD menu.

- Set Preset   <Preset>[1~255] <Enter> (Except [95])

- Run Preset   <Call>[1~255] <Enter> (Except [95])

- Delete Preset   To delete Preset, use OSD menu.

  <DOME CAMERA SETUP>→<PRESET SETUP>→<CLR PRESET>

▋▋ Swing

- Function   By using Swing function, you can make camera to 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.
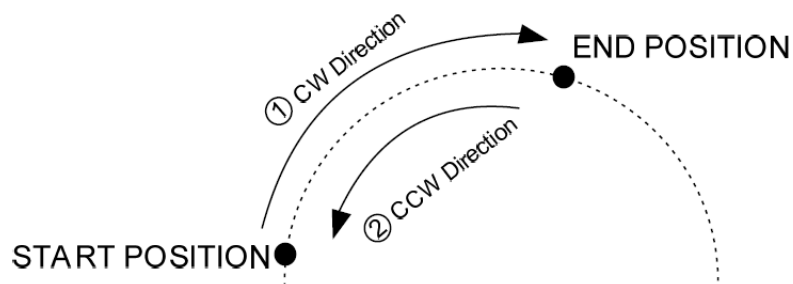
  Speed can be set up from 1° /sec to 180° /sec.
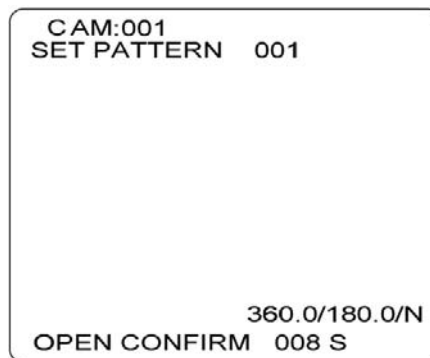
  Start and stop point of the residence time can be set function from 1s to 255s.

- Set Preset   To set Swing, use OSD menu.

  <DOME CAMERA SETUP>→<SWING SETUP>

- Run Swing   Ex: Run the first swing <Call>[141]<Enter>

  Ex: Run the second swing <Call>[142]<Enter>

- Delete Swing   To delete Swing, use OSD menu.

  <DOME CAMERA SETUP>→<SWING SETUP>→<CLEAR SWING>

▌▌ Pattern

● Function   Pattern Function is that a camera memorizes the path (mostly curve path) by joystick
of controller for assigned time and revives the path exactly as it memorized.
4 Patterns are available and Maximum 150~180s or 500 communication commands
can be stored in a pattern.

● Setup Pattern   <DOME CAMERA SETUP>→<PATTERN SETUP>→<EDIT PATTERN>

□ Pattern editing screen is displayed as bellow.

```
CAM:001
SET PATTERN    001




                      360.0/180.0/N
OPEN CONFIRM   008 S
```

□ Movement by Joystick and preset movement can be memorized in a pattern.
□ The recording time will be shown on the right-down corner
  (Max. 150~180S or 500 sec.)
□ Pattern during the recording process can be embedded in the preset, swing
  between group scanning, comprising mixing a pattern.
□ To save the recording, press OPEN key to save.

● Run Pattern   Ex) Run Pattern 1: <Call>[131]<Enter>

Ex) Run Pattern 2: <Call>[132]<Enter>

● Delete Pattern   Use OSD menu to delete Pattern

<DOME CAMERA SETUP>→<PATTERN SETUP>→<CLR PATTERN>

▋▋ Group

● Function   The group function allows running sequence of Presets Max. 8 group can be stored.

Each group can have Max. 16 preset can be set up in Group setup.

Dwell time between actions can be set up also.
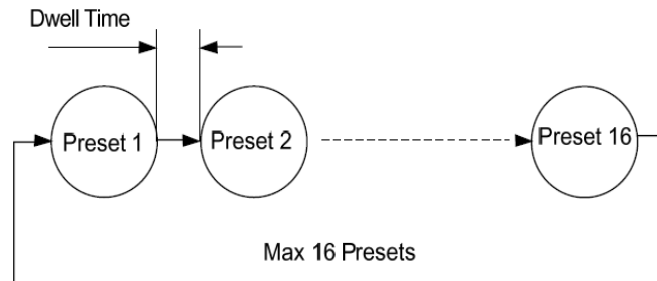
● Set Group   Use OSD menu to create a Group

● Run Group   Ex) Run Group 1: <Call>[151]<Enter>

Ex) Run Group 2: <Call>[152]<Enter>

● Delete Group   Use OSD menu to delete

<DOME CAMERA SETUP>→<GROUP SETUP>→<CLR GROUP>

▌▌ Other Functions

● Power Up Action

This function enables to resume the last action executed before power down. Most of actions such as Preset, Pattern, Swing and Group are available for this function but jog actions are not available to resume.

● Auto Flip

When the inclination to get to the top of the inclined orbit (90°), the ball through the horizontal rotation of the camera 180º, can continue to observe the other side inclined orbit (90 º) monitoring image.

● Parking Action

This function enables to locate the camera to specific position automatically if operator doesn't operate the controller for a while. The Park Time can be defined as an interval from 3 to 240 seconds.

● Home Place

This function enables to adjust the camera in the best condition as the Home Place.

● Privacy Zone Mask

To protect privacy, Max. 8 Privacy Masks can be created on the arbitrary position to hide objects such as windows, shops or private house. With Spherical Coordinates system, powerful Privacy Zone Mask function is possible.

● Global/Local Image Setup

WB (White Balance) and AE (Auto Exposure) and Brightness (1 to 100) can be set up independently for each.

● SemiAuto Focus

This mode exchanges focus mode automatically between Manual Focus mode and Auto Focus mode by operation. Manual Focus mode activates in preset operation and Auto Focus mode activates during jog operation With Manual mode at presets, Focus data is memories in each preset in advance and camera calls focus data in correspondence with presets as soon as camera arrives at a preset. It should shorten time to get focuses Focus mode changes to Auto Focus mode automatically when jog operation starts.

▌▌ OSD Display of Main Screen
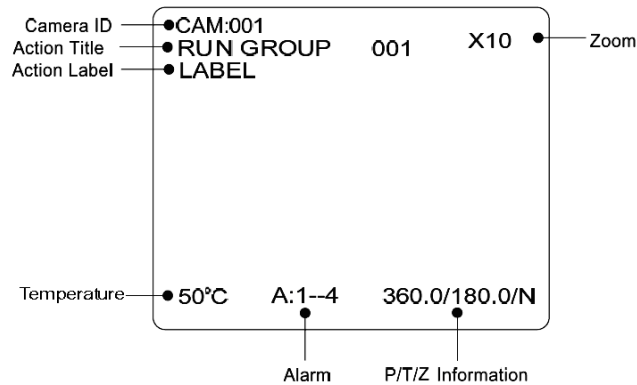
- P/T/Z Information   Current Pan/Tilt angle in degree and a compass direction.

- Camera ID   Current Camera ID (Address).

- Action Title   Following are possible Action-Titles and their meaning.

    "SET PRESET xxx"   When Preset xxx is stored

    "GOTO PRESET xxx"   When camera reach to Preset xxx

    "RUN PATTERN x"   When Pattern x is in action

    "RUN SWG x / GROUP xxx"   When Swing is in action

    "xxxxxx ERROR xxx"   When undefined function is called to run

- Action Label   The Label stored for specific Preset and Pattern and Group.

- Alarm Input   **<For Advance Type >**

    This information shows current state of Alarm Input. If an Input point is ON

    state it will show a number corresponding to each point If an Input point is OFF

    state, ' - ' will be displayed

    Ex) Point 2 & 3 of inputs are ON, OSD will show as below

- Temperature   Show current speed dome internal temperature.

█ █ General Rules of Key Operation for Menu

- The menu items surrounded with ( ) always has its sub menu.
- For all menu level, to go into sub menu, press OPEN key or use joystick in the right.
- To go to up-one-level menu, press CLOSE key or use joystick in the left.
- To move from items to item in the menu, use joystick in the Up/Down.
- To change a value of an item, use Up/Down of the joystick in the controller.
- Press OPEN key or use joystick in the right to save values and Press CLOSE key or use joystick in the left to cancel Values.

█ █ Main Menu

```
SPEED DOME CAMERA

 <SYSTEM INFORMATION>
 <DISPLAY SETUP>
 <DOME CAMERA SETUP >
 <ALARM SETUP>
 <SYSTEM INITIALIZE>

 EXIT

   UP AND DOWN TO SELECT
   OPEN ENTER ,CLOSE EXIT
```

- System Information   Displays system information of configuration and RS485 terminal

                                    120 ohm resistor switch setting.

- Display Setup   Enable/Disable of OSD display on Main Screen

- Dome Camera Setup   Configure various functions of this camera.

- Alarm Setup   Configure alarm action.

- System Initialize   Initializes system configuration and sets all data to factory default

                                    configuration

▌▌ System Information

```
    <SYSTEM INFORMATION>
----------------------------------
FIRMWARE VER :      V1.5
COLOR SYSTEM :      PAL
SN CODE        :    12081122
PROTOCOL       :    PELCO-D
ADDRESS        :    001
BAUD RATE      :    2400
120R RES       :    OFF
B A C K
E X I T
UP AND DOWN TO SEELT
OPERA PTZ ,OPEN CONFIRM
```

This menu Displays system information of configuration and

RS485 terminal 120 ohm resistor switch setting.

● Firmware Ver :   V1.5

● Color System :   PAL/NTSC

● SN   Code   :   12081122

● Protocol   :   PELCO-D/ PELCO-P

● Address   :   001~255

● Baud Rate   :   2400/4800/9600

● 120R Res   :   ON/OFF

▌▌ Display Setup

```
    <DISPLAY  SETUP>
CAMERA   ID        ON
PTZ INFO           AUTO
ACTION TITLE       AUTO
ALARM  INPUT       AUTO
TEMPERATURE        AUTO
<SET NORTH DIRECTION>
<PRIVACY ZONE>

BACK
EXIT
    UP AND DOWN TO SELECT
    OPEN ENTER ,CLOSE 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]

● Alarm Input   [ON/OFF/AUTO]

● Temperature   [ON/OFF/AUTO]

```
    <DISPLAY  SETUP>
CAMERA   ID        ON
PTZ INFO           AUTO
ACTION TITLE       AUTO
ALARM  INPUT       AUTO
TEMPERATURE        AUTO
<SET NORTH DIRECTION>
<PRIVACY ZONE>
BACK
EXIT
         180.0/0.0/S
OPERATE PTZ,OPEN CONFIRM
```

■ **Compass Direction Setup**

Set North to assign compass direction as criteria.

Move camera and press OPEN button to save.

▌▌ Privacy Zone Mask Setup

<DISPLAY SETUP>→<PRIVACY ZONE>

```
<PRIVACY  ZONE>

MASK  NO.
   STATE        UNDEFINED
DISPLAY        OFF
CLEAR MASK  CANCEL
<EDIT MASK>

BACK
EXIT
   UP AND DOWN TO SELECT
   OPEN ENTER ,CLOSE EXIT
```

Select area in image to mask.

● Mask No   [1~8]

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.

```
                    180.5/50.0/NW
OPEN PTZ ,OPEN CONFIRM
```

■ Privacy Zone Area Setup

<DISPLAY SETUP>→<PRIVACY ZONE>→<EDIT MASK>

● Move camera to area to mask. Then the menu to adjust

mask size will be displayed.

● By Pressing "OPEN" to enter, then press "OPEN" again,

the menu to adjust mask size will be displayed.

```
UP DOWN LEFT RIGHT MOVE
TILT WIDE FAR NEAR SET

OPEN CONFIRM
```

■ Privacy Zone Size Adjustment

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

size.

● ◄ ► (TILT/WIDE)   Adjusts mask width.

● ▲ ▼ (FAR/NEAR)   Adjusts mask height.

►Camera Setup

```
    <CAMERA SETUP>
FOCUS MODE        SEMIAUTO
ZOOM SPEED        003
FOCUS SPEED       005
DIGITAL ZOOM      OFF
DAY/NIGHT         AUTO
BACK LIGHT        OFF
WIDE DYNAMIC      OFF
<WHITE BALANCE  SETUP>
<AUTO EXPOSURE SETUP>
B A C K
UP AND DOWN TO SEELT
OPERA PTZ ,OPEN CONFIRM
```

Note: the above camera menu supports only SONY FCB-EX995 and FCB-EX1020.

Samsung SCM-2230 camera menu:

```
         MAIN SETUP

   CAM TITLE       OFF
   WHITE BAL       ATW ↵
   BACKLIGHT       OFF
   MOTION DET      OFF
   FOCUS ↵
   EXPOSURE ↵
   SPECIAL ↵
   RESET
   EXIT
```

Note: SCM-2230 camera set using the embedded module itself menu settings.

COP CZ36SCM camera menu:

```
         <MENU>
FOCUS          ↵
EXPOSURE       ↵
WHITE BAL      ↵
IMAGE          ↵
INTELLIGENCE   ↵
SPECIAL FUNC   ↵
DISPLAY        ↵


[EXIT]    [SAVE]    [DFLT]
```

Note: CZ36SCM camera set using the embedded module itself menu settings.

<DOME CAMERA SETUP>→<CAMERA SETUP>

Setup the general functions of zoom camera module

● Focus Mode [AUTO/MANUAL/SEMIAUTO]

Sets camera focus mode.

■ **SEMIAUTO Mode**

This mode exchanges focus mode automatically between Manual Focus mode and Auto Focus mode Manual Focus mode activates in preset operation and Auto Focus mode activates when jog operation Starts. With Manual mode at presets, Focus data is memorized in each preset in advance and camera calls focus data in correspondence with presets as soon as camera arrives at a preset

● Zoom Speed [1~7]

Sets camera zoom speed.

● Focus Speed [1~7]

Sets camera focus speed.

● Digital Zoom [ON/OFF]

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

● Day/Night [AUTO/DAY/NIGHT]

Sets camera day or night mode.

● Back Light [ON/OFF]

Sets camera back light on or off.

● Wide Dynamic[ON/OFF]

Sets camera wide dynamic on or off.

```
<WHITE BALANCE SETUP>

WB MODE          AUTO
  RED  ADJUST    ----
  BLUE  ADJUST   ----

BACK
EXIT

  UP AND DOWN TO SELECT
  OPEN ENTER ,CLOSE EXIT
```

■ **White Balance Setup**

<DOME CAMERA SETUP>→<CAMERA SETUP>

→<WHITE BALANCE SETUP>

● WB Mode   [AUTO/MANUAL/ATW/OUTDOOR/INDOOR]

In Manual mode, Red and Blue level can be set

up manually

● Red Adjust   [1～255]

● Blue Adjust [1～255]

```
  <AUTO EXPOSURE SETUP>
EXPOSURE  MODE    AUTO
SHUTTER  SPEED    1/50
IRIS              F2.8
GAIN              0 B
BRIGHT            050
EXP COMP          OFF
SET EXP COMP      0 B

BACK
EXIT
UP AND DOWN TO SEELT
OPERA PTZ ,OPEN CONFIRM
```

■ **Auto Exposure Setup**

<Dome Camera Setup>→<Camera Setup>

→<Auto Exposure Setup>

● Exposure Mode [AUTO/MANUAL/SHUTTER/IRIS/BRIGHT]

Sets camera priority exposure mode.

● Shutter Speed   [1/1~1/4000]

When the exposure patterns for Shutter

priority at, Sets camera shutter speed .

● Iris   [F1.4~F22]

When the exposure patterns for Iris priority at,

Sets camera iris value.

● Gain   [-3B~28B]

When the exposure patterns for Gain priority

at, Sets camera Gain value.

● Bright   [OFF/LOW/MIDDLE/HIGH]

When the exposure patterns for Bright priority

at, Sets camera Bright value.

● EXP COMP   [ON/OFF]

● SET EXP COMP [0B]

▌▌ Motion Setup

```
        <MOTION SETUP>
MOTION LOCK          OFF
PWR UP ACTION        NOTHING
AUTO  FLIP           OFF
 H.REVERSE           OFF
JOG DIRECTION        NORMAL
PAN MAX SPEED        300
TILT MAX SPEED       60
FRZ IN PRESET        OFF
<PARKING ACTION SETUP>
BACK
EXIT
    UP AND DOWN TO SELECT
    OPEN ENTER, CLOSE EXIT
```

<DOME CAMERA SETUP>→<MOTION SETUP>

- Motion Lock [ON/OFF]

   Group. It is possible only to run those functions.

   To set up and delete those functions, enter into

   OSD menu.

- Power Up Action   [NORTH/GROUP/PATTERN/SWING
   /PRESET/PAN SCAN/TILT SCAN]

   Refer to "Other Functions" section.

- Auto Flip   [ON/OFF]

   Refer to "Other Functions" section.

- H.REVERSE [ON/OFF]

   Flip horizontal

- Jog Direction [INVERSE/NORMAL]

   If you set this to 'Inverse', the view in the

   screen is moving same direction with jog

   tilting. If 'Normal' is selected, the view in

   the screen is moving reversely.

- Pan Max. Speed   [1º /sec~300º /sec]

   Set the Maximum operating speed of the ball

   machine Pan. Jog speed is inversely

   proportional to zoom magnification.

- Tilt Max. Speed   [1º /sec~300º /sec]

   Set the Maximum operating speed of the ball

   machine Tilt. Jog speed is inversely

   proportional to zoom magnification.

- Freeze in Preset   [ON/OFF]

   At start point of preset movement, camera

   starts freezing the image of start point. Camera

   keeps displaying the image of start point

   during preset movement and does not display

   the images which camera gets during preset

   movement. As soon as camera stops at preset

   end point, camera starts displaying live images

   which it gets at preset end point.

   This function availability should be different by

   models.

```
<PARKING ACTION SETUP>


WAIT TIME        005
PARK ACTION      NOTHING
BACK
EXIT



  UP AND DOWN TO SELECT
  OPEN ENTER ,CLOSE EXIT
```

■ Parking Action Setup

<DOME CAMERA SETUP>→<MOTION SETUP>

→<PARKING ACTION SETUP>

● Wait Time   [003~240S]

The time is displayed with "XXX S" format
and you can change this joystick or
keyboard..

● Park Action   [NOTHING/PATTERN/SWING/GROUP
/PRESET/PAN SCAN/TILT SCAN]

Ex) If you set park action is HOME, the camera will move to
home position when there is no PTZ command during
assigned "Wait Time".

▌▌ Preset Setup

```
<PRESET SETUP>

PRESET NO.       001
  STATE          DEFINED
CLR PRESET       CANCEL
CLR ALL PRESET   CANCEL
<EDIT SCENE>
<EDIT LABEL>
BACK
EXIT
   UP AND DOWN TO SELECT
   OPEN ENTER ,CLOSE EXIT
```

<DOME CAMERA SETUP>→<PRESET SETUP>

● Preset Number   [1~255] (Except [95])

If a selected preset is already defined,
camera moves to pre- defined position. If a
selected preset is not defined.
"UNDEFINED" shows on monitor.

● Clear Preset [CANCEL / OK]

Delete current Preset data (include edit
label)

● Clear all Preset   [CANCEL / OK]

Delete all current Preset data (include edit
label)

● Edit Scene

Redefine current Preset scene position
Using Joystick move camera to desired
position, By pressing OPEN to save current
PTZ data.

● Edit Label

Edits Label to show on monitor when preset
runs Max. 18 alphabets are allowed. Enter
edit label, "?" cursor will be displayed on the
screen, using up/down of joystick to select
character, and using left/right to move
cursor. After inputting, press "OPEN" key to
save and exit the setting.

▌▌ Swing Setup

```
     <SWING SETUP>
SWING NO.           001
     STATE    UNDEFINED
START POSITION
    HALT  TIME       003
END POSITION
    HALT  TIME       003
SWING SPEED         20
CLEAR SWING
RUN SWING
BACK
EXIT
  UP AND DOWN TO SELECT
  OPEN ENTER, CLOSE EXIT
```

<Dome Camera Setup>→<Swing Setup>

● Swing Number [1~8]

    Selects Swing number to edit.

● Start Position   Set up the 2 position for Swing function if a

  End Position   selected preset is not defined,

    "UNDEFINED" will be displayed.

    When swing function runs, camera moves

    form the preset assigned as the start point

    to the preset assigned as the end point in

    CW (Clockwise) direction. The camera

    moves from preset assigned as the start

    point to preset assigned as the end point

    CCW (Counterclockwise) direction.

    Then camera moves from the preset

    assigned as the endpoint to the preset

    assigned as the start point in CCW

    (Counterclockwise) direction.

● HALT TIME   [003~255]

    Sets SWING start position and stop position

    time, adjustment range 003~255S.

● Swing Speed   [001~180]

    Sets Swing speed from 001 to 180.

● Clear Swing   [CANCEL/OK]

    Deletes current Swing data

● Run Swing   Run current Swing

▌▌ Pattern Setup

```
   <PATTERN  SETUP>
PATTERN  NO.       001
   STATE           DEFINED
CLR  PATTERN       CANCEL
LABEL DISPLAY      OFF
EDIT  PATTERN      CANCEL
<EDIT  LABEL>
RUN  PATTERN
B A C K
E X I T

   UP AND DOWN TO SELECT
   OPEN ENTER ,CLOSE EXIT
```

<DOME CAMERA SETUP>→<PATTERN SETUP>

● 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

● Label Display [ON/OFF]

● Edit Pattern   [OK/CANCEL]

OK: Edit the pattern function

Cancel: Don't execute the pattern function.

▌▌ Edit Pattern

```
CAM:001
SET PATTERN   001




                   360.0/180.0/N
OPEN CONFIRM   008 S
```

● Edit Pattern

Starts editing pattern. By using Joystick, move
to start position with appropriate zoom. To start
pattern recording, press OPEN key. To exit this
menu, press CLOSE key. Move camera with
joystick of controller or run preset function to
memorize the path (mostly curve path) in a
selected pattern. Maximum 500 sec. can be
stored in a pattern

● Edit Label

Edits Label to show on monitor when preset
runs Max. 18 alphabets are allowed. Enter edit
label, "?" cursor will be displayed on the screen,
using up/down of joystick to select character,
and using left/right to move cursor, After
inputting, press "OPEN" key to save and exit
the setting.

● Run Pattern   Run current Pattern

▮▮ Group Setup

```
    <GROUP  SETUP>
GROUP  NO.        001
    STATE          DEFINED
CLR  GROUP        CANCEL
LABEL DISPLAY     OFF
<EDIT  GROUP>
<EDIT  LABEL>
RUN   GROUP
B A C K
E X I T

   UP AND DOWN TO SELECT
   OPEN ENTER ,CLOSE EXIT
```

<Dome Camera Setup>→<Group Setup>

● Croup 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.

● Edit Label

Edits Label to show on monitor when preset

runs Max. 18 alphabets are allowed. Enter

edit label, "?" cursor will be displayed on the

screen, using up/down of joystick to select

character, and using left/right to move cursor,

After inputting, press "OPEN" key to save and

exit the setting.

● Run Group   Run current Group

▮▮ Edit Group

```
      <EDIT GROUP>
ID   PRESET   SPEED   TIME
1    000      240     005S
2    000      240     005S
3    000      240     005S
4    000      240     005S
5    000      240     005S
6    000      240     005S
7    000      240     005S
8    000      240     005S
   UP AND DOWN TO SELECT
   OPEN ENTER ,CLOSE EXIT
```

<Dome Camera Setup>→<Group Setup>→<Edit Group>

1. Press OPEN key to start Tour setup.

2. Note that Max. 16 "Presets" are allowed in a Tour.

   Move cursor up/down and press OPEN key to set up.

3. Set up Action, Dwell time and Speed is optional. Time value

   from displayed in reverse. Move cursor Left/Right to select

   items and 3 sec. To 240 sec. Speed value from 001 to 300.

   Move cursor Left/Right to select items and move cursor

   Up/Down to change each value.

▌▌Pan Scan Setup

```
-----<PAN SCAN SETUP>---------
SCAN SPEED        030
TILT POSITION
RUN SCAN



B A C K
EXIT

UP AND DOWN TO SEELT
OPERA PTZ ,OPEN CONFIRM
```

<Dome Camera Setup>→<Pan Scan Setup>

● SCAN SPEED   [001~250]

Sets Pan scan speed from 001 to 250.

● TILT POSITION

Sets Pan scan Tilt position (Including the

ZOOM).

● RUN SCAN

Run current Pan.

Run PAN SCAN, ball machine according to a

preset angle of TILT and ZOOM, 360º

horizontal rotation, while running speed can

be adjusted in 1~300.

▌▌Tilt Scan Setup

```
----------<TILT SCAN SETUP>---------
SCAN SPEED        030
PAN POSITION
RUN SCAN



B A C K
EXIT

UP AND DOWN TO SEELT
OPERA PTZ ,OPEN CONFIRM
```

<Dome Camera Setup>→<Tilt Scan Setup>

● SCAN SPEED   [001~60]

Sets Tilt scan speed from 001 to 60.

● PAN POSITION

Sets Tilt Scan Pan position (Including the

ZOOM).

● RUN SCAN

Run current Tilt.

Run TILT SCAN, ball machine according to

the preset position of PAN and ZOOM, 90º

vertical running up and down, while running

speed can be adjusted in 1~60.

▌▌ Alarm Input Setup   <For Advance Type >

```
    <ALARM SETUP>
ALARM ENALE        OFF
ALARM NO.          001
  ALARM ACT        NOTHING
  OUTPUT1          OFF
  OUTPUT2          OFF
  RELEASE          010S

BACK
EXIT
  UP AND DOWN TO SEELT
OPERA PTZ ,OPEN CONFIRM
```

<DOME CAMERA SETUP>→<ALARM SETUP>

Match the Alarm sensor input to one of Preset Positions /Home/Auto Scan/Group/Pattern/Swing/Pan/Tilt. If an external sensor is activated, camera will corresponding command position when this item is predefined.

● Alarm Enable   [ON/OFF]

Establish the current passage reports to the police open of function with pass

● Alarm No.   [001~004]

Select alarm channel number

● Alarm x Action   [NOTHING/PRESET/PATTERN/SWING/ GROUP/PAN SCAN/TILT SCAN]

Assign counteraction Preset position to each Alarm input.

● OUTPUT1   [ON/OFF]

On / Off alarm output, when open, when the corresponding channel trigger the alarm, the ball will be the implementation of the corresponding linkage action, at the opening of the OUTPUT1 output.

● OUTPUT2   [ON/OFF]

On / Off alarm output, when open, when the corresponding channel trigger the alarm, the ball will be the implementation of the corresponding linkage action, at the opening of the OUTPUT2 output.

● Release Time   [001~240 S]

Alarm output time is postponed to a certain time, adjustable range is 0 sec t 240 sec.

▋▋ 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
  B A C K
  E X I T

    UP AND DOWN TO SELECT
    OPEN ENTER ,CLOSE EXIT
```

- Clear All Data   Deletes all configuration data such as display, camera, motion setup and so on.
- Clear Display Set Initializes Display Configuration
- Clear Camera Set Initializes Camera Configuration
- Clear Motion Set   Initializes Motion Configuration
- Clear Edit Data   Deletes Preset Date, 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 Configuration	
Camera ID	ON	Focus Mode	SemiAuto
PTZ Information	OFF	Exposure Mode	AUTO
Action Title	AUTO	Zoom Speed	003
Alarm Input	AUTO	Focus Speed	005
Temperature	AUTO	Digital Zoom	OFF
<Set North Direction>		Day & Night	AUTO
<Privacy Zone>		White Balance	AUTO
		Backlight	OFF
Motion Configuration		Wide Dynamic	OFF
Motion Lock	OFF		
Power Up Action	NOTHING	**User Edit Data**	
Auto Flip	OFF	Preset 1~255	Undefined
Pan Max. Speed	250º/sec.	Swing 1~8	Undefined
Tilt Max. Speed	220º/sec.	Pattern 1~4	Undefined
Jog Direction	NORMAL	Group 1~8	Undefined
Freeze In Preset	OFF	Pan 1	Undefined
Park Action	NOTHING	Tilt 1	Undefined

▌▌ Specifications

Type	Standard Type	Advance Type
Video Signal System	NTSC / PAL	
CCD	1/4" Interline CCD	
Effective Pixels	SCM-2230(SAMSUNG)： NTSC: 768(H)×494 (V) / PAL: 752(H)×582 (V)	
	CZ36SCM(COP)： NTSC: 1028(H)×508(V)520K / PAL: 1028(H)×596(V)610K	
	FCB-EX995(SONY)： NTSC: Approx.380.000 pixels/PAL: Approx.440.000 pixels	
	FCB-EX1020(SONY)： NTSC: Approx.380.000 pixels/PAL: Approx.440.000 pixels	
Horizontal Res.	SCM-2230(SAMSUNG)：560TV Line	
	CZ36SCM(COP)：700 TV Line	
	FCB-EX995(SONY)：550TV Line	
	FCB-EX1020(SONY)：550TV Line	
Zoom	SCM-2230(SAMSUNG)： x 23 Optical Zoom, x 16 Digital Zoom (Max. x 368 Zoom)	
	CZ36SCM(COP)： x 36 Optical Zoom, x 32 Digital Zoom (Max. x 1152 Zoom)	
	FCB-EX995(SONY)： x 28 Optical Zoom, x 12 Digital Zoom (Max. x 336 Zoom)	
	FCB-EX1020(SONY)： x 36 Optical Zoom, x 12 Digital Zoom (Max. x 432 Zoom)	
Focal length	SCM-2230(SAMSUNG)：f 3.84mm~88.4mm	
	CZ36SCM(COP)：f 3.4mm~122.4mm	
	FCB-EX995(SONY)：f 3.5mm~98.0mm	
	FCB-EX1020(SONY)：f 3.4mm~122.4mm	
S/N	Ration 50 dB (AGC Off)	
Min. Illumination	0.2 Lux /F1.67(50 IRE)Color / 0.02 Lux F1.67 (50 IRE)B/W	
Day & Night	Auto / Day(Color) / Night(ICR, B/W)	
Focus	Auto / Manual / Semi Auto	
Iris	Auto / Manual / Semi Auto	
Shutter	1/1~ 1/120000 sec	
AGC	Low / Middle / High / Off	
White Balance	Auto / Manual(Red, Blue Gain Adjustable)	
BLC	Normal / High / Off	
Pan/Tilt Speed	Pan : 360°(Endless)	
	Tilt : 1~90°(Auto-Flip)	

Preset	Go to Preset Speed : 1~300°/sec	
	Manual : 0.05~300°/sec	
	255 Preset(Label)	
Pattern	4 Pattern, 500 sec. /Pattern	
Swing	8 Swing	
Group	8 Group (16 Presets per Group)	
Pan Scan	1 Pan Scan	
Tilt Scan	1 Tilt Scan	
Direction	Inverse / Normal	
Other Functions	Auto flip, Auto Parking, Power Up Action etc.	
Communication	RS-485(9600, 4800, 2400 Selectable or change from OSD menu)	
Protocol	Pelco-D, Pelco-P, Auto identify	
Privacy Zone	8 Zone	
Alarm Input	No	4 Input
Alarm Output	No	2 Output
OSD	Menu / PTZ information etc	
Fan and Heater	Yes	
Power	AC 24V / 2A	
Dimension	Ø200 x 336(H)mm	Ø216 x 336(H)mm
Weight	about 4Kg	about 5Kg
Operating Temp.	0°C ~ 40°C	-30°C ~ 50°C

▋▋ Dimension

160 mm

380 mm

200 mm
216 mm

170 mm
200 mm

116 mm
140 mm
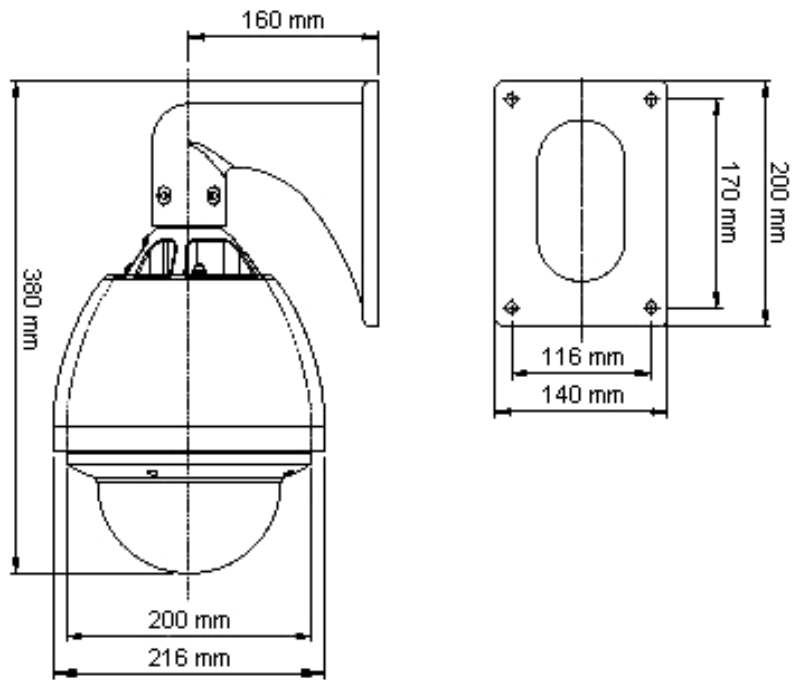
► Ceiling Bracket (CD03BH1)

► Pole Bracket (CD04BH)

► Pendant Bracket (CD03BH3)

► Outside Corner Bracket (CD05BH)

► Pendant Bracket (CD03BH6)

► Inside Corner Bracket (CD06BH)

►Angle Bracket (CD03BVR)

►Sunshield Dome Cover (CD01CH)

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