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■ 4 In 1 HD Analog IR Mini PTZ Camera

USER MANUAL

Package Contents:

Item	Qty.
MZ-10A-2(IR)	1
Wall Bracket	1
12V2A DC power supply	1
Wall Screws	4
PM8*25 socket head screws	1
Allan Key	1

Table of Contents:

1. General Instructions:

1.1 Safety Instructions:

◆ Make sure to read the user manual before using the camera.

◆ Always follow national and local safety codes during the installation.

◆ Only qualified and experienced person can carry the installation and maintenance for this camera.

◆ Use reliable tools.

◆ Make sure that the environmental conditions meets the installation requirements for this product.

◆ Please check the space and toughness of the installation surface before installation. It should be able to bear 4 times the weight of the camera and its accessories.

1.2 Warnings:

◆ Do not install this speed dome in hazardous places where combustible or explosive materials are stored or used.

◆ Do not install on platform that suffers from constant vibrations.

◆ Make sure no object or fluid substances get inside the unit.

◆ This speed dome runs on DC12V, do not connect it to different voltage.

◆ Do not turn power on before installation is complete.

◆ Do not disassemble any part of the camera.

◆ Use soft towel to clean the down the lenses when necessary, do not use caustic detergent.

◆ To protect the image sensor, avoid facing the camera directly into strong light.

◆ To prevent damage, do not drop the unit or expose to strong shocks or vibrations.

◆ Make sure no object is blocking the unit's full range of motion.

2 Features:

2.1 Product Picture

2.2 Product Features

Features:

◆ Preset speed of 200°/Sec (max)

◆ Preset accuracy up to 0.1°

◆ Endless Pan Rotation 360°&continuously tilt with Auto flip 180°

◆ Preset position, tour, pattern and auto scan

◆ Full function OSD Menu

◆ IP66 protection

◆ X10 Optical zoom

◆ 2MP 4in1

◆ 60m Intelligent IR LED Array

◆ True Day/Night with ICR filter

◆ Noise reduction (3D-DNR)

◆ D-WDR/WB/AGC/BLC

◆ CoC Support

2.3 Specifications:

Camera Specification

Model		Ultra-Z
		MZ-10A-2 (IR)
CCD		1/3" CMOS
Resolution	AHD	2MP(AHD / TVI / CVI- 1920x1080)
	Analog	700TVL
Optical Zoom		x10 (4.7-47mm)
Digital Zoom		Yes
Minimum Focus Distance		1.5M
Horizontal Angle of View		H: 57.6 (Wide) to 5.8 (Tele)
		V: 53.2 (Wide) to 4.8 (Tele)
Sync System		Internal
Min. Illumination		0.01lux (0 Lux with IR On)
Day & Night		Auto/Day/Night (ICR)
S/N Ratio		>50dB
Focus		Auto/Manual
Auto Gain		Auto/Manual
Wide-D		No
White Balance		ATW/Manual/Outdoor/Indoor
BLC		On/Off
Shutter Speed		1/25~1/10000
Sense Up		No
Noise Reduction		3D-DNR
Stabilizer		No
Flip		On/Off
Picture Freeze		No
Iris		Auto
Flikerness		No

Pan/Tilt Specification

Pan tilt Range	360 (Endless)/ 180 (Auto Flip)
Pan tilt Speed	Max Preset Speed: 200/Sec
	Manual: 0.08~180/Sec (Proprtional to Zoom)
Preset	220
Pattern	up to 4
Auto Scan	No
Group	Up to 8
Schedule	No
Privacy zone masking	No
Park Function	Yes

Communication Specification

Data Type	CoC* (Control over Coax) RS-485
Protocols	CoC / Pelco-D/P
Baud Rates	2400, 4800, 9600
Camera ID	1 - 255
Alarm I/O	No
On Screen Display	OSD menu, Camera position, Dome ID,
	Preset / Pattern tour status

Mechanical

IR Distance	60m Intelligent IR LED
Fan / Heater	No
Sunshield	No
Humidity range	<90%
Power Supply	12VDC/2A
Operation temperature	-20~+60°C
Dimensions	22.5*24.5*23cm
Ingress Protection	IP66
Weight	3.0KG

*CoC must be supported on the controlling unit as well
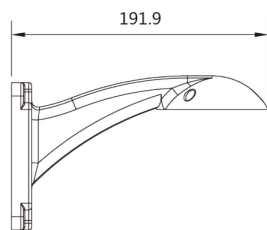
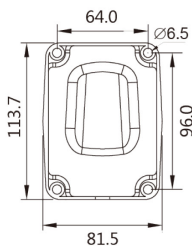*CoC not supported for CVBS video signals

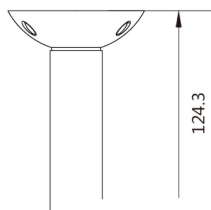## 2.4 Product Dimension:

Speed Dome Dimension
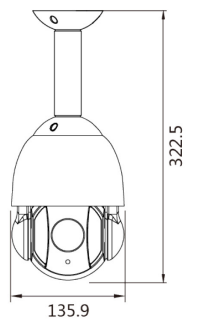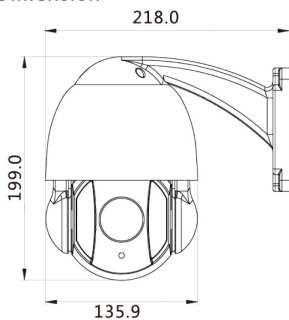
Unit:mm

Bracket Dimension
Wall Mount Bracket

Unit:mm

Ceiling Mount Bracket
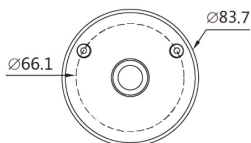
Note: Ceiling Mount Bracket isn't included in the package.

3 Installation Site Preparations:

3.1 Tool List:

(1) Screws*   (2) Monkey wrench

(3) Philips screwdriver   (4) Straight Screwdriver

(5) Wire stripper   (6) Socket head wrench

(7) Electric drill   (8) Hammer

(9) BNC connector   (10) BNC Clamp

*Included in the kit

3.2 Installation Preparation:

(1) Check the space and toughness of the site and make sure that the

environmental conditions meet the installation requirements for this product.

(2) The installation surface should be able to bear 4 times the weight of the

PTZ and its accessories.

3.3 DIP Switch Setting:

(1) Default Settings: Pelco-D, baud rate: 2400, address: 1.

(2) Baud Rate Setup
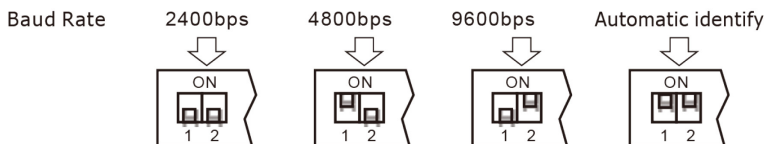
(3) Hardware Address Setup*: Please refer to Appendix I.
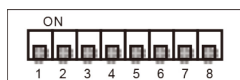
3.4 Output Mode Setting:

(1) Default Settings: AHD , PAL system

This output can be changed via the controller (Even if the user cannot gain a video output from the unit due to output incompatibility)

(2) Set your controller/DVR PTZ Settings to the Camera's Default Communication Settings: **Protocol: CoC / PELCO-D, address: 1 (Unless user changed it by the DIP switch configuration), baud rate: 2400.**

(3) In order to change the output type follow the instructions below:

Set #85preset, Call N	Call the preset number of the desired video type signal:	N=1	AHD
		N=2	TVI
		N=3	CVI
		N=4	CVBS

4. Setup of the OSD Menu:

4.1 Display Boot-UP Info.

Before installation please check the protocol, baud rate, address and RS485 data cable. **Default Settings: Protocol: PELCO-D, address: 1, baud rate: 2400.**

4.2 Enter the OSD Menu:

While the camera is in standby condition, call preset 95 ("Call" + 95 + "Enter") in order to display the main menu. Use the Up/Down direction to select item or start the configuration. Use the Right key to confirm and left key for exit the current setting.

The Main menu as follows:

```
Main Menu
System Information
System Setting
IR LED Setting
Reset
EXIT


IN:Iris+    OUT:Iris-
```

4.3 SYSTEM Information:

<Main Menu>

4.3.1 < System Information**>**

```
PROTOCOL              Pelco-D
BAUD RATE              AUTO
HARD ADDR             1
SOFT ADDR             1
VERSION               19030704
EXIT
```

The user can check the dome system information as required. The system information includes: Version, dome address, baud rate.

4.3.2 SYSTEM SETTING

SYSTEM SETTING
CAMERA
MOVEMENT CONTROL
PRESET
TOUR TRARK
PATTERN
EXIT

4.3.2.1 CAMERA

CAMERA	
SCREEN TIPS	ON/OFF
AUTO ICR	ON/OFF
AUTO FOCUS	ON/OFF
FOCUS SPEED	FAST/SLOW
ZOOM SPEED	FAST/SLOW
EXIT	

4.3.2.2 MOVEMENT CONTROL

MOVEMENT CONTROL	
AUTO FLIP:	ON/OFF
PROPORTION	ON/OFF
PARK ACT TIME	ON/0-255
PARK ACT	ON/PRESET1-8/ TOUR1-4/PATTERN 1-4
	SCAN360 AB SCAN
POWER ACT	ON/PRESET1-8/ TOUR1-4/PATTERN 1-4
	SCAN360 AB SCAN CONTROL SPEED

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AUTO FLIP: When the camera tilts downward and goes just beyond the vertical position, the camera will rotate 180 degrees. The user can press IRIS OPEN to enter and choose to turn on/off this function.

4.3.2.3 PRESET

PRESET	
NUMBER:	1（1-220）
EDIT	
REMOVE	
EXIT	

The dome supports 255 presets. Please check the following steps to set up a preset.

1) PRESET NO.: Move the cursor here and press IRIS OPEN to enter the setup of Preset Number. Move the joystick to select a preset number (1-64 and 100-220) and press IRIS OPEN to confirm.

2) EDIT: Move the cursor here and press IRIS OPEN to enter. Move the dome to a defined position as preset point and press IRIS OPEN to save the preset position.

3) REMOVE: Move the cursor here and press IRIS OPEN to delete the current preset.

4.3.2.4 TOUR

TOUR				No. PRE	SPD	TIME
NUMBER		1(1-4)		01 001	060	005
EDIT				02 002	060	005
RUN				03 003	060	005
REMOVE				04 004	060	005
EXIT				05 005	060	005
				06 006	060	005

The dome camera will run repeatedly as the given sequence of presets at

certain dwell time by one command. Max. 4 tours available (16preset/tour).

1)TOUR NO: Set current tour number from 001~004.

2)DWELL TIME: Set the default dwell time from 000~220 seconds for each

preset. User can still set independent dwell time for each preset when editing

the tour.

3)EDIT: Edit presets and corresponding dwell time in a tour.

4.3.2.5 PATTERN

PATTERN	
NUMBER	1(1-4)
EDIT	
RUN	
REMOVE	
EXIT	

The dome supports 4 pattern tours and each pattern cover at most 10

Minutes of 500 commands. Please check the following steps to set up a

pattern.

1) PATTERN NO.: Move the cursor here and press IRIS OPEN to enter the setup of Pattern Number. Move the joystick to select a pattern number (14) and press IRIS OPEN to confirm.

2) RUN: Move the cursor here and press IRIS OPEN to start the current pattern tour.

3) EDIT: Move the cursor here and press IRIS OPEN to enter. Move the dome up/down/left/right, make the zoom in/out and press IRIS OPEN to save the pattern tour.

4) REMOVE: Move the cursor here and press IRIS OPEN to delete the current pattern tour.

4.3.3 IR LED SETTING

IR LED SETTING	
CONTROL MODE	AUTO/ON/OFF
LED ON VALUE	220 (0-250)
LED OFF VALUE	170 (0-250)
CURRENT LEVEL	24
EXIT	

The user can open and close the IR LED manually and set up the IR LED work mode under this OSD mean. (Under control mode ON, the user can adjust the IR LED power):

1) control mode:

AUTO	IR LED will be opened or closed automatically according to the light conditions.
ON	IR LED forcedly open

OFF	IR LED forcedly close
CAMERA	IR LED status (Open/Close) will be synchronized with Camera day and night switching

4.5 Advanced Camera Menu:

For advanced Menu, Call preset #69.

PLEASE NOTE: Scrolling and changing values in the advanced menu is done with different controls:

1) The controller joystick has effect.

2) Scrolling up and down is done by pressing IRIS+/IRIS-

3) Changing Values of the selected feature is done by pressing ZOOM+/ZOOM-

4) IMPORTANT!!! Changing any values the advanced menu might result in the camera malfunctioning

OSD-DISP	ON
D&N	AUTO/B&W/Color/EXT
MIRROR	OFF/Flip/UD/LR
BRIGHTNESS	00-31
WDR	ON/OFF/AUTO
SHARPNESS	1-50
OUTPUT	AHD
FORMAT	1080/25
SAT	00-31
CONTRAST	00-31
ZOOM	00-50
BLC	OFF/ON
FOCUS	MF/AF
Z-SAVE	OFF/ON
F-SAVE	OFF/ON
F-RANGE	1.3M/1.8M/3.8M/10M
RESET	
SAVE-EXIT	

- **<OSD-DISP >:** Do Not Change
- **<D&N>:** Do Not Change
- **<MIRROR>:** Turning Mirror effect ON/OFF
- <**BRIGHTNESS**>: Changing the brightness value.
- **<WDR>:** Turning Digital WDR effect ON/OFF
- <**SHARPNESS**>: Changing the sharpness value.
- **<OUTPUT>:** Manually set the output between AHD / TVI / CVBS
- <**SAT**>: Changing the saturation value.

- <CONTRAST>: Changing the contrast value.
- <ZOOM>: Do Not Change.
- <BLC>: switching OFF/ON.
- <FOCUS>: Do Not Change
- <Z-RANGE >: Do Not Change
- <F-RANGE >: Do Not Change
- <RESET >: Reset All settings to factory Default

APPENDIX I: DIP SWITCH SETTING:

DIP Switch consists of 8 numbers from 1-8, use 8421 binary code, max 255 address. When the switch is in the "ON" position, the number from 1-8 corresponding to 1, 2, 4, 8, 32, 64, 128. For example, if you set 1, 3, 5, 7 switch to the "ON" position, the corresponding address will be 1+4+16+64=85, please refer to the blow details.

Sheet 1（**1=ON,　0=OFF**）

Add	SW-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
1	1	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0	0
3	1	1	0	0	0	0	0	0
4	0	0	1	0	0	0	0	0
5	1	0	1	0	0	0	0	0
6	0	1	1	0	0	0	0	0
7	1	1	1	0	0	0	0	0
8	0	0	0	1	0	0	0	0
9	1	0	0	1	0	0	0	0
10	0	1	0	1	0	0	0	0

11	1	1	0	1	0	0	0	0
12	0	0	1	1	0	0	0	0
13	1	0	1	1	0	0	0	0
14	0	1	1	1	0	0	0	0
15	1	1	1	1	0	0	0	0
16	0	0	0	0	1	0	0	0
17	1	0	0	0	1	0	0	0
18	0	1	0	0	1	0	0	0
19	1	1	0	0	1	0	0	0
20	0	0	1	0	1	0	0	0
21	1	0	1	0	1	0	0	0
22	0	1	1	0	1	0	0	0
23	1	1	1	0	1	0	0	0
24	0	0	0	1	1	0	0	0
25	1	0	0	1	1	0	0	0
26	0	1	0	1	1	0	0	0
27	1	1	0	1	1	0	0	0
28	0	0	1	1	1	0	0	0
29	1	0	1	1	1	0	0	0
30	0	1	1	1	1	0	0	0
31	1	1	1	1	1	0	0	0
32	0	0	0	0	0	1	0	0
…	…	…	…	…	…	…	…	…
254	0	1	1	1	1	1	1	1
255	1	1	1	1	1	1	1	1

APPENDIX II Shortcuts Key Chart:

AHD/TVI/CVBS Command			
Shortcut Key	**Function (Set Preset)**		
Set #84preset	Proportional P/T OFF		
Set #85preset,Call N	Call the preset number of the desired video type signal:	N=1	AHD
		N=2	TVI
		N=3	CVI
		N=4	CVBS
Set # 87preset	Set camera ID	N is address	
Set # 89preset	Delete all presets		
Set #90 preset	Set left limit Position		
Set #91preset	Set right limit Position		
Set #92 preset	Delete left/right limit		
Set #93preset	Dome restart		
Set #94 preset	Restore Factory Setting		
Set #95preset	Open main menu		
Set #96 preset	Park OFF		
Set #97 preset	60S Park time ON		
Set #98preset	120S Park time ON		

Set #99 preset	scan and tour scan speed is automatic
Set #100 preset	scan and tour scan speed is high, 15°/sec
Set #101preset	scan and tour scan speed is middle, 10°/sec
Set #102preset	scan and tour scan speed is low, 5°/sec
Set #103 preset	Record Pattern scan 1
Set #104 preset	Record Pattern scan 2
Set #105 preset	Record Pattern scan 3
Set #106 preset	Record Pattern scan 4
Set #107 preset	Set cruise 1
Set #108 preset	Set cruise 2
Set #109 preset	Set cruise 3
Set #110 preset	Set cruise 4
Set #111 preset	Set color-to-black function
Set #112 preset	the preset-dwell: 0S
Set #113preset	the preset-dwell: 5S
Set #114preset	the preset-dwell: 10S
Shortcut Key	**Function (Call Preset)**
Call #67preset	Change system to PAL

Call #68preset	Change system to NTSC
Call #69 preset	Open Advanced Settings menu
Call #70 preset	Preset Error Correction
Call #71 preset	Proportional P/T ON
Call #72 preset	Start Cruise scan and switch the cruise scan direction
Call #73 preset	Start Pattern 1
Call #74 preset	Start Pattern 2
Call #75 preset	Start Pattern 3
Call #76 preset	Start Pattern 4
Call #77 preset	Call cruise 1 (default number 1~16 preset)
Call #78 preset	Call cruise 2 (default number 17~32 preset)
Call #79 preset	Call cruise 3 (default number 33~48 preset)
Call #80preset	Call cruise 4 (default number 49~64 preset)
Call #81 preset	Camera IR-CUT switch
Call #82 preset	Call all valid presets cruise
Call #83 preset	Call 360° scan
Call #95preset	Open main menu (Same response as "Set")
Call #95preset	Open main menu (Same response as "Set")

CVI Command			
Shortcut Key	**Function (Set Preset)**		
Set #50preset,Call N	Set output model	N=1	AHD
		N=2	TVI
		N=3	CVI
		N=4	CVBS
Set #51preset	Proportional P/T OFF		
Set # 52preset	Set camera ID	N is address	
Set # 54preset	Delete all presets		
Set #55 preset	Restore Factory Setting		
Set #56 preset	Park OFF		
Set #57 preset	60S Park time ON		
Set #58preset	120S Park time ON		
Set #59preset	scan and tour scan speed is high, 15°/sec		
Set #60preset	scan and tour scan speed is middle, 10°/sec		
Set #61preset	scan and tour scan speed is low, 5°/sec		
Set #62preset	Set color-to-black function		
Set #63preset	the preset-dwell: 0S		
Set #64preset	the preset-dwell: 5S		

Set #65preset	the preset-dwell: 10S
Shortcut key	**Function (Call preset)**
Call #50preset	Camera IR-CUT switch
Call #51preset	Call all valid presets cruise
Call #52preset	Open main menu (Same response as "Set")
Call #53 preset	Open Advanced Settings menu
Call #54 preset	Preset Error Correction
Call #55 preset	Proportional P/T ON
Call #56 preset	Start Cruise scan and switch the cruise scan direction
Call #57 preset	Start Pattern 1
Call #58 preset	Start Pattern 2
Call #59 preset	Start Pattern 3
Call #60 preset	Start Pattern 4
Call #61 preset	Call cruise 1 (default number 1~16 preset)
Call #62 preset	Call cruise 2 (default number 17~32 preset)
Call #63 preset	Call cruise 3 (default number 33~48 preset)
Call #67preset	Change system to PAL
Call #68preset	Change system to NTSC

APPENDIX III Trouble Shooting

Troubles	Reason	Solution
No action when power on	1. The power supply is not connected correctly. 2. The fuse is broken.	1. Correct the connection. 2. Check the power supply LED power indicator. 3. Replace the fuse.
Self-testing and image are normal but the dome is out of control	1. The dome DIP switch setting is incorrect. 2. RS485 cable is disconnected or reversed. 3. Control device is not properly configured.	1. Confirm DIP settings on camera power up screen. 2. Reset the DIP Switch according to the DIP switch chart. 3. Check the wiring. 4. Check the control device settings
Some function is out of control	1. RS485 communication signal is not balance. 2. Control protocol is not compatible.	1. Connect 120Ω resistor to the RS485 line. 2. Change protocol type.
Unclear image	1. Focus is in manual state. 2. Digital Zoom is on and in full ratio (If applicable) 3. Dome cover is dirty.	1. Reset the focus mode to Auto. 2. Cancel/reduce digital zoom. 3. Clean the dome cover.
No night vision	1. Camera is in Color mode. 2. backlight on the top or back of the dome camera	1. Reset the day/night function to Auto. 2. Remove the direct light source.