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LIGHT CRUISER

PROFESSIONAL MINI PTZ

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User Manual

LC-10 / LC-10IR

Table of Content:

Chapter 1:Product Summary:

1.1 Technical Parameters:

Model number	4" High Speed Mini Dome Camera
Optical focus	10X
Image sensor	1/3"CCD
Signal mode	PAL/NTSC
Resolution	650TVL
Optical focus	Manual/Auto, high performance DSP to utilize high continuous focusing function.
Presets	256
Pattern scan	4groups,each can record 100 actions
Cruise scan	Up to 30 presets cruise with independent dwell duration.
Other scan	Supports Horizontal scan, Deuce area scan and random scan
Rotation range	Horizontal 360°unlimited rotation, Vertical 180°, auto flip
Rotation speed	Horizontal & Vertical Min 0.01° Max 300°/s.
Protocol	PELCO-D and PELCO-P
OSD	Full screen menu
Temperature control system	Optional
Power supply	DC12V
Ball cover dimension	4 inch optical glass cover (Non-IR model only)
Material	Aluminum shell
IP Rating	IP66 (Non-IR Model Only)
Work environment	-20℃~+50℃(select temperature control accessories), <95%RH

1.2 Package Contents:

1. Speed Dome Camera – 1 Pcs
2. Wall Bracket – 1 Pcs
3. Ceiling Bracket – 1 Pcs
4. Power Supply – 1 Pcs
5. User Manual – 1 Pcs
6. Installation Accessories – Lot.

1.3Main Functions Description:

1. Set address coding, baud rate, control protocol:

Each command transmitted to the camera has its own address coding, baud rate and control protocol. APTZ camera will respond only if its own address coding, baud rate and control protocol matches the ones of the command. In order to set the camera address coding, baud rate and control protocol settings please refer to the DIP settings.

2. Auto speed matching to focal length technical:

Based on user-friendly design, the camera's intelligent response mechanism will be generate different tracking speeds according to the proximity of the focal length of the camera. The camera will automatically adjust the horizontal and vertical tracking speed, so that manual operation is simpler and track targets become easier.

4. Auto Flip:

When the lens is pulled all the way down (vertically) by the operator, the lens will auto-rotate 180° and continue the move turning up immediately after the 90°, this allows a direct watch to the back of the scene in order to achieve the full 180° continuous vertical surveillance.

5. Set and call preset position:

Preset function stores a given state of the ball. The PTZ memory will store the horizontal angle; tilt angle and camera lens focal length. "Calling" these parameters will quickly send the PTZ ball to the saved location. The operator can quickly and easily store and call preset points by using a PTZ keyboard, infrared controller or other equipment such as DVR which supports PTZ feature. The PTZ supports up to 256 preset points.

6. Lens Control:

(1) Zoom control

Users can control the PTZ lens in order to adjust the zoom level of the camera and get wide/narrow view according to the scene.

(2) Focus Control

System default is auto-focus. The object in center of the screen will be the subject of focus. In exceptional circumstances the user can manually adjust the focus in order to maintain a clear picture.

When in momentarily manual focus state (achieved by Focus +/- controls on the control unit), any shift of the camera by user or preset call will reinstate the auto-focus.

In the following situations the camera lens may not autofocus on the desired objective:

a. Target is not in the screen center;

b. The target has different parts that are both near and far.

c. The target is light objects such as neon lighting, spotlights and other luminous items;

d. Target is behind interfering layer (Such as droplets or glass).

e. Large monotone area targets, such as walls.

f. Large area targets, such as walls;

g. Target is located in extremely dark/foggy environment.

7. Aperture Control:

Users can control the lens in order to manually adjust the aperture size to get the required picture brightness.

8. Backlight Compensation:

When the backlight compensation function is on, the camera will disregard bright areas in the scene and will open the shutter further more to light up dark areas in the scene.

9. White Balance:

The camera will reproduce color shadings according to the changes in ambient light in order to achieve true color shades in any conditions.

10. Night Mode (color / Black & White conversion):

Cameras with night mode, automatic color / monochrome conversion mode, in accordance with changes in ambient light automatic conversion CCD illumination. Such as: adequate lighting during the day due to the use of general illumination to ensure colorful images. In the night illumination can be automatically changed to black and white images show a clear interest.

11. Cruise:

Cruise can be built from several preset points. The presets for this speed dome can be configured in consecutive order only (you may skip a non-relevant preset, but you cannot change the order of the called presets).Dwell durations can be configured according to the needs. The cruise can be activated using the OSD or the RS-485 controller.

12. Pattern scanning:

Pattern scan will record any movement of the camera's ball in order to make a consecutive scan with special characteristics.

13. Continuous scan:

Continuous horizontal scan with adjustable height and speed. It can be triggered in power-up or RS-485 controller.

14. Random Scan:

Random horizontal scan with adjustable height and speed; unlike the continuous scan, the random scan will shift the camera left and right and dwell in random points. It can be triggered in power-up, by OSD or RS-485 controller.

15. Area scan

Continuous horizontal scan with adjustable height, speed and left/right borders which the camera is confined to. It can be triggered in power-up, by alarm or RS-485 controller.

Chapter 2 Equipment installation:

2.1DIP switch setting:

The four channel DIP switch is the baud rate and the control protocol switch. The eight channels DIP switch is

the address setting switch.

DIP switch to “ON” means to “1”,DIP switch to "OFF" means "0".

The baud rate and control protocol as the following table:

NO.	1	2	3	4	
Baud rate (BPS）	OFF	OFF			PELCO-P
	ON	OFF			PELCO-D
	OFF	ON			PELCO-D/P
	ON	ON			PELCO-D/P
Control Protocol			OFF	OFF	9600
			ON	ON	9600
			OFF	ON	4800
			ON	OFF	2400

8-bit DIP switch is used to set the camera's address coding. Address set binary mode can be set to a total of 256 different dome camera address coding, see coding table address.

Camera address	Camera address coding form							
	1	2	3	4	5	6	7	8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
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
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
…	…	…	…	…	…	…	…	…
246	OFF	ON	ON	OFF	ON	ON	ON	ON
247	ON	ON	ON	OFF	ON	ON	ON	ON

248	OFF	OFF	OFF	ON	ON	ON	ON	ON

2.2 Dome camera structure diagram:

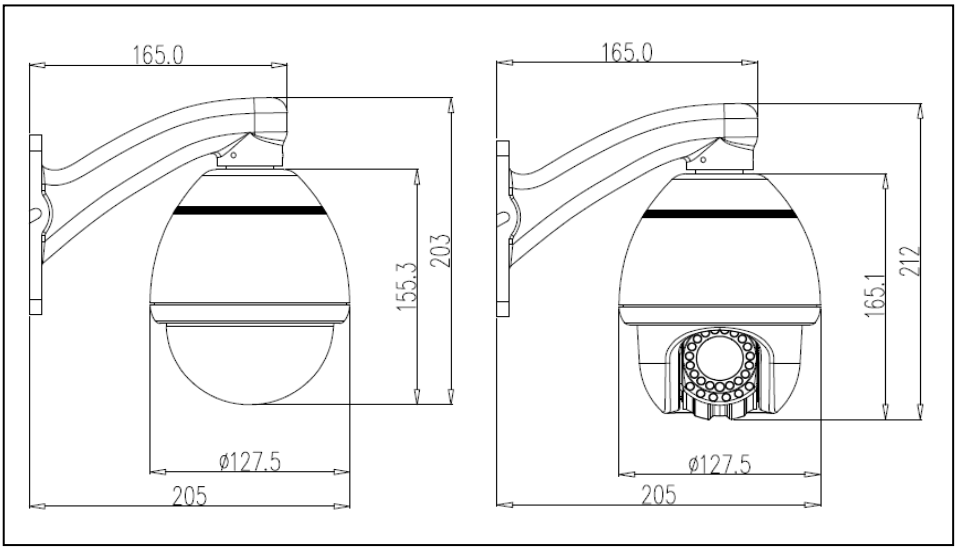

Figure 1 Figure 2

2.3 Bracket installation diagram

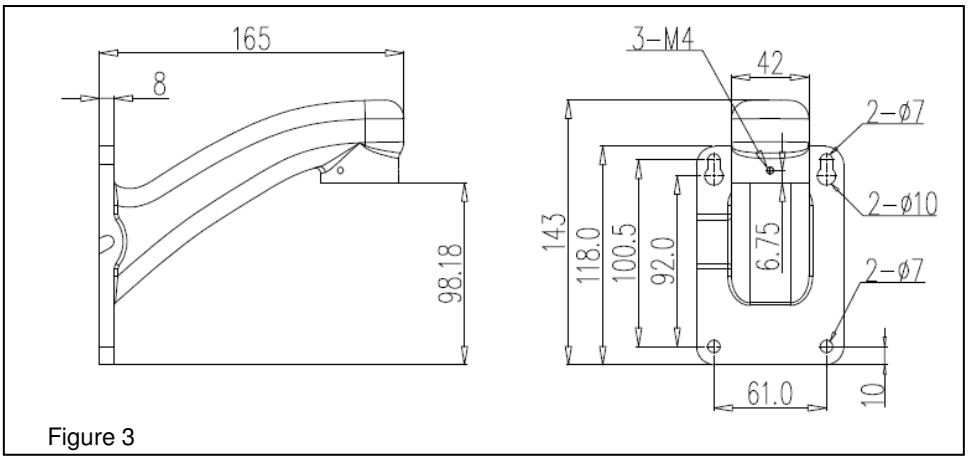

Figure 3

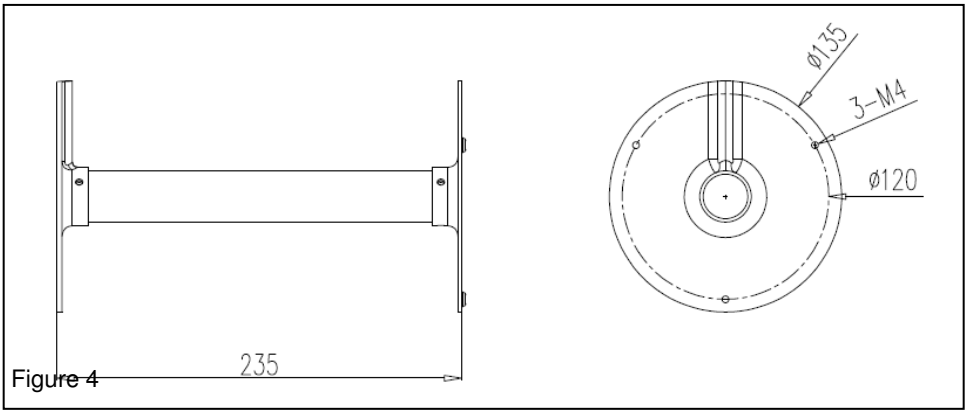

Figure 4

Chapter 3 System OSD menu settings:

3.1Power-On Self-Test:

When power is connected to the dome camera, the camera will move in horizontal and vertical directions to confirm that motors and belts are in order. The screen will show system-related information.

PTOL： PELCO-D
COMM： 2400，N，8，1
ADDR： 1

Display: PELCO-D protocol、Baud Rate 2400、Address code 1

3.2Preset point setting and calling:

3.2.1 Set Preset points:

(1) Make sure the correct camera is selected in your controller.

(2) Adjust pan, tilt and zoom to the desired location.

(3) Press the required preset number + PRESET* to preserve the scene preset parameters.

3.2.2 Call preset points:

(1) Make sure the correct camera is selected in your controller.

(2) Press the required preset number (inputs the designated preset) + PREVIEW* button, the camera will immediately move to the desired preset position. The lens zoom, focus and Iris will also automatically change to the preset parameters

If the preset input is a special function preset (see "Preset Point table" below), the dome camera will perform special features functions (such as: Preset 82: the camera will perform auto-cruise feature).

*Subject to changes according to your controlling device. Please check your PTZ controller user manual to confirm

3.3 Preset point function table:

Dial the 95thPresets	Enter Main menu.
Dial the 82nd Presets	Auto Scan.
Dial the 83th Presets	Clear all presets
Dial the 84th Presets	Pattern Scan 1
Dial the 85th Presets	Pattern Scan 2
Dial the 86thPresets	Pattern Scan 3
Dial the 87th Presets	Pattern Scan 4
Dial the 96th Presets	360-degree gap scan
Dial the 97th Presets	Frame Scan
Dial the 98th Presets	Presets Cruise
Dial the 99th Presets	360 degree continuing Scan

*Subject to changes according to your controlling device. Please check your PTZ controller user manual to confirm

3.4OSD Main Menu

Once the dome camera is power on and finished self-testing, call preset 95in order to access the ODS main menu as shown in Table 3.1.

MAINMENU	Menu function descriptions
SYSTEM INFORMATION	Displays camera basic information. See More Details in section 3.5.
ADDR SETTING	Used to set the camera address. See More Details in section 3.6.
MOTION	“PTZ” setup menu. See More Details in section 3.7.
PATTERNS	Pattern scan setting. See More Details in section 3.8.
CAMERA	Lens setting. See More Details in section 3.9.
CRUISE SETTING	Preset point cruise setting. See More Details in section 3.10.
IR SETTING*	Infrared light setting. See More Details in section 3.11.
DISPLAY SETUP	Screen display setting. See More Details in section 3.12.
RESTORE FACTORY DEFAULT	Restore the settings to factory default.
REBOOT SYSTEM	System restart, the dome camera will reset.
EXIT	Exit the OSD menu setting.

*Note:<IR SETTING> is valid only for infrared dome camera model

3.5 SYSTEM INFORMATION:

SYSTEM INFORMATION	Menu function descriptions
COM 2400,N,8,1	Serial information, display the dome camera serial port baud rate, parity, data bits, stop bits of information.
ADDRESS 1	Display the current dome camera address
PROTOCOL PELCO-D	Display the current dome camera communication protocol.
PRESETS 256	Display the current dome camera preset number.
SOFTWARE VERSIONV#.#	Display the current software version.
BACK	Return to main menu.
EXIT	Exit the menu setting.
Note: The system information menu items cannot be modified.	

3.6 ADDRESS SETTINGS:

ADDR SETTING	Menu function descriptions
ADDR TYPE HARD	Divides HARD and SOFT; select the SOFT can directly determine the dome camera address.
ADDR SOFT 1	Within1~254.
ADDR HARD 1	(Configured by DIP Switch)
BACK	Returns to main menu.
RESET	To restore the default settings.
EXIT	Exit the menu setting.
Note: Soft and hard address settings must be identical. Not complying may cause the camera to go out of control. In such case, restoring to factory default settings will be required.	

3.7 MOTION (PTZ) Settings:

This menu is used to set PTZ parameters such as movement and orientation angles as shown in the following table:

MOTION	Menu function descriptions
SET FRAME SCAN	Set the scan left and right limits. See More Details in section 3.7.1.
POWER UP NONE	Power on setting menu. See More Details in section 3.7.4.
PARK TIME 15S	Waiting time before performing idle action.
PARK ACTION NONE	Which action to perform when the dome camera is idle. See More Details in section 7.4.5.
FRAME SCAN SPEED 16	Set the area scan speed of the dome camera. Within1 (Slowest)~32 (Fastest).
RANDOM SCAN SPEED 16	Set the intermittent scan speed of the dome camera. Within 1 (Slowest)~32 (Fastest).
BACK	Return to the main menu.
EXIT	Exit the menu setting.

3.7.1 SET FRAME SCAN:

Setting the Left and Right limits of the Frame scan

FRAME SCAN	Menu function descriptions
SET SCAN POSITION	The left and right Limits in Two stages
CLEAR FRAME SCAN	Clear area scanning setting. (Clear left and right limit position).
BACK	Return to the previous menu.
EXIT	Exit the menu setting.

3.7.4POWER UP Settings:

This will define which action the dome camera will perform when it is powered on. (unless any other action was received). Parameters in the following table:

POWER UP	Menu function descriptions
NONE	Don't perform any action.
AUTO SCAN	Perform continuous scanning action.
RANDOM SCAN	Perform random scanning action.
FRAME SCAN	Perform frame scan action*
PRESET 1	Send the camera to Preset No.1
PRESET 8	Send the camera to Preset No.8
PATTERN 1	Perform the pattern 1
PATTERN 2	Perform the pattern 2
PATTERN 3	Perform the pattern 3
PATTERN 4	Perform the pattern 4
CRUISE	Perform cruise action*

***Applicable only if these functions are properly set-up.**

3.7.5 PARK ACTION Settings:

Park action parameters shown in the following table:

PARK ACTION	Menu function descriptions
NONE	Don't perform any action.
AUTO SCAN	Perform continuous scanning action.
RANDOM SCAN	Perform random scanning action.
FRAME SCAN	Perform frame scan action*
FRESET 1	Send the camera to Preset No.1
PRESET 8	Send the camera to Preset No.8
PATTERN 1	Perform the pattern 1
PATTERN 2	Perform the pattern 2
PATTERN 3	Perform the pattern 3
PATTERN 4	Perform the pattern 4
REAPEAT LAST	Automatic recovery to last running action (If applicable)
CRUISE	Perform cruise action*

***Applicable only if these functions are properly set-up.**

3.8PATTERNS Menu:

PATTERNS	Menu function descriptions
PATTERNNUMBER 1	Select pattern number, within 1~4.
PROGRAM PATTERN	To select pattern scan line; Operations shown in section 3.8.1.
CLEAR CURRENT PATTERN	Clear current pattern scan line.
CLEAR ALL PATTERN	Clear all the pattern lines.
BACK	Return to the previous menu.
EXIT	Exit the menu setting.

3.8.1 PROGRAM PATTERN Menu:

PROGRAM PATTERN	Menu function descriptions
USE THE JOYSTICK OR KEYBOARD TO MOVE THE CAMERA TO THE STARTING POSITION IRIS OPEN TO CONTINUE	Use the controller to move the camera to the desired pattern starting position, and press the IRIS+ key to continue.
STORAGE USED 1	Move the joystick to capture the scanning line and action, from the movement 1 began to record, up to 100 movements. Press IRIS+ key to save the settings and return to table 3-5.

3.9CAMERA (Zoom Module) Settings:

CAMERA ID 000	**Not in use**
ZOOM DISPLAY OFF	Allow you to remove the Zoom indication display
BLC OFF	Backlight Compensation Control
AGC MIDDLE	Allows you to adjust AGC levels
DAY & NIGH AUTO	Change mode (Day: force the camera to stay in Day mode, Night : force the camera to stay in Night mode, Auto: lets the camera to determine the appropriate mode
FOCUS AUTO	Change between Auto and Manual Focusing
BAUD RATE 9600	**Not in Use**
AWB AUTO	Allows you to define the white balance control of the camera.
R GAIN*	Red Gain Control
B GAIN*	Blue Gain Control
BRIGHTNESS 12	Picture Brightness level adjustment
SHARPNESS OFF	Picture Sharpness level adjustment
MIRROR OFF	Toggle Mirror Effect
HLM OFF	Enable/Disable Eclipse feature
HLM LEVEL FF	Adjust Eclipse effect level

*Available only when AWB set to MANUAL.

3.10 CRUISE Settings*

CRUISE	Menu function descriptions
DWELL TIME[SECS] 6	Cruise waiting time between preset points.
PRESET LIST 1	List of preset points. Total3 pages, each page can select up to 10 preset points.
1 ON 0 OFF 1234567890 PRESET 1111111111 [1-10]	Select preset points which need to be active in the cruise scan. The corresponding parameter is 0 (Off) and 1 (On). Press IRIS+ key to save change.
BACK	Return to the previous menu.

EXIT	Exit the menu setting.

*in case you are setting-up the cruise using Provision-ISR DVR, make sure that you mark “Simulative Cruise” as active. Otherwise, the cruise may not work.

3.11 IR Settings (Only Applicable in IR Dome Cameras)

IR SETTING	Menu function descriptions
IR MODE AUTO	ON:IR light is forced to be on constantly; OFF: Infrared light is forced to be off constantly; AUTO:IR light will switch automatically.
IR ON SENS240	Light intensity for IR light to turn on, within 81~254.
IR OFF SENS 170	Light intensity for IR light to turn off, within 81~254.
BACK	Return to the previous menu.
EXIT	Exit the menu setting.
CURRENT LEVEL	On screen display of current light conditions for reference

3.12 DISPLAYSETUP Settings

DISPLAY SETUP	Menu function descriptions
ZOOM ON/OFF	Zoom display ON/OFF.
P/T DEG ON/OFF	Horizontal/Vertical coordinates display ON/OFF.
BRIGHTDATA ON/OFF	Light source data display ON/OFF.
IR DATA ON/OFF	IR light data display ON/OFF.
BACK	Return to the previous menu.
EXIT	Exit the menu setting.

Chapter4: Simple troubleshooting and maintenance.

4.1 Simple Troubleshooting Table:

Failure	Possible Cause	Solutions
Power connected but the camera is not performing self-test, no image	Connected the wrong power cord	Check voltage in cable
	Power supply is damaged	Check power ratings. Replace power supply.
	Bad fuse	Replace Fuse
	Power cord connection is bad	Confirm firm connections and polarity.
Power connected, the camera is performing self-test, image available, but **no control**	Dome camera address, Baud rate or protocol does not match	Reset camera and confirm details with "On screen display" while the camera is self-testing. If needed make changes
	RS485Connections	Check wiring RS485 control line. Try switching +/- terminals.
Unable to complete self-test, there are images associated with motor tweet sound	Power rating is not sufficient	Replace power supply to meet the requirements of the power consumption. If the camera is far from the power supply check cables for shortages.
	Mechanical failure	Replace Camera
Image instability	Video line connection is bad	Check Coaxial cable and BNC clamps
	Power rating is not sufficient	Replace power supply to meet the requirements of the power consumption. If the camera is far from the power supply check cables for shortages.

Blurry Image	Manual focus on the state	Make sure settings are on auto focus. If so try to shift the camera in any direction to reinstate auto focus mode
Long delays in actions performing / camera going out of control.	Power rating is not sufficient	Replace power supply to meet the requirements of the power consumption. If the camera is far from the power supply check cables for shortages.
	RS-485 the signal attenuation	Check RS-485 Signal Cable.