SPEED DOME SYSTEM

INSTALLATION & PROGRAMMING MANUAL

CCTV System Corp

This manual describes the installation, operation and programming procedures for the speed dome camera series PowerDome-II speed dome system. Built-in color or day/night camera, indoor (in-ceiling or pendant mount) and outdoor (pendant) housing are available for selection. Acrylic or polycarbonate vandal proof housings are optional.

INSTALLATION AND SERVICE NOTICE

The installation of this product should be made by qualified service personnel and should conform to all local codes.

If you require information during installation of this product or if service seems necessary, contact the local suppliers or authorized Technical Support Centers. You must obtain a Return Authorization Number and shipping instructions before returning any product for service.

Our obligation is limited only to the repair or replacement of any of our under-warranty products, providing said products are used within the specified ratings and applications, and said products are applied in accordance with good engineering practices, and providing said products are proved by our examination to be defective.

This warranty does not extend to any products which have been subject to acts of accident, misuse, abuse, neglect, improper application or installation, improper operation or maintenance, connection to an improper voltage supply or to materials which have been altered or repaired outside of an authorized factory repair center.

Information furnished in this manual is believed to be accurate and reliable. However, Speed dome camera assumes no responsibility for its use, or for any infringements of other rights of third parties, which may result from its use. No license is granted by implications or otherwise under any patent or patent rights of Speed dome camera.

The manufacturer declines all responsibility for any damage caused by an improper use of the appliances mentioned in this manual; further more, the manufacturer reserves the right to modify its contents without any prior notice. The documentation contained in this manual has been collected with great care; the manufacture, however, cannot take any liability for its use. The same thing can be said for any person or company involved in the creation and production of this manual.

WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE PCB OF THIS PRODUCT TO RAIN OR MOISTURE.

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DESCRIPTION

The ULTRA-VIEW integrated speed dome camera system is the integration of digital camera, lens, mult-protocol receiver, variable high-speed pan/tilt and dome enclosure. A complete speed dome is composed of a dome housing, a clear acrylic or polycarbonate bubble and a dome drive with built-in camera and lens. The system is noted for its high acceleration rate and smooth, steady motion with flexible presets/pattern/scan functions and on-screen menu display programming and system setup.

The dome drive features an integrated optics package camera and a mechanical/electrical quick mounting and disconnect system, making installation quick and easy.

The speed dome system is available as either an in-ceiling or pendant mount (indoor or outdoor) models. The in-ceiling system may be installed in either suspended or hard ceilings. The pendant model mounts directly to any recommended brackets, flush to a ceiling, or to NPT female threaded pipe.

All outdoor pendant models are environmentally sealed to a rating of NEMA 4X and IP66 and included a sun shield, heater and fan.

The dome is capable of 360° continuous rotation and 90° tilt motion with optional 180° auto-flip action.

7 contact alarm inputs and 2 auxiliary outputs are available in dome for on-site direct joint-action-control of alarm systems with closed circuit surveillance system at camera site.

A built-in multi-protocol receiver enables the dome to receive control command from any controller system compatible to PELCO RS-485 P/D protocol and Coaxitron.

FEATURE SUMMARY

- **Integration of the following components:**
  - **Digital camera & lens: high Res. 18x color or color/B&W, 22x color, 23x color/B&W**
  - **Multi-protocol receiver: RS-485 P/D or Coaxitron**
  - **Variable high-speed pan/tilt: 0.05°--250°/S pan and 0.05°--200°/S tilt**
  - **Dome housing: optional indoor in-ceiling/pendant and outdoor pendant**
  - **Dome cover: 5.9-inch sealed fixed acrylic bubble, clear or smoked color. Vandal proof optional**
- **On-Screen-Display programming**
- **360°Continuous Pan Rotation**
- **64 programmable presets**
- **3 programmable Patterns**
- **3 scan modes: auto scan, random scan and frame scan**
- **3 selectable white balance: auto on/off, Red-Blue and Magenta-green**
- **8 programmable zones with definable title**
- **Selectable privacy video blank on/off for each zones**
- **Adjustable or auto shutter speed to optimize light sensitivity:1/2—1/30000**
- **Adjustable or auto sharpness**
- **Zoom adjusted programming**
- **Proportional pan speed**
- **Auto-focus, manual override**
- **Auto-iris, manual override**
- **Automatic 180°flip**
- **Backlight compensation on/off selectable**
- **7 Alarm inputs; 2 Auxiliary Outputs**
- **Fiber optic transmission interface**
- **Surge protection**

CAMERA SPECIFICATION

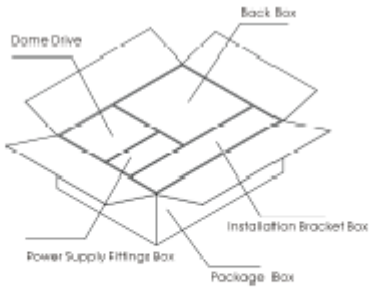
(The SPEED DOME CAMERA22 and SPEED DOME CAMERA23BW are Hitachi Camera Modules. The SPEED DOME CAMERA18L and SPEED DOME CAMERA18 are Sony Camera Modules.)

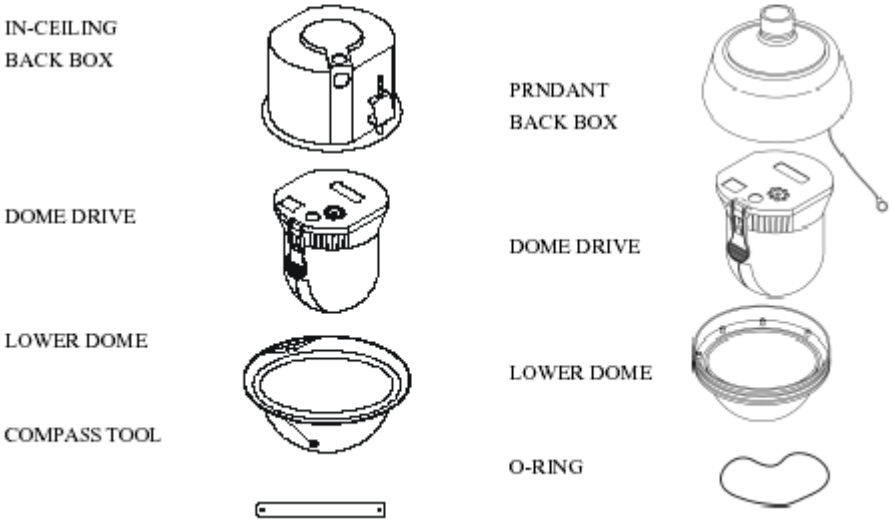
Dome Drive Model	SPEED DOME CAMERA22	SPEED DOME CAMERA23BW	SPEED DOME CAMERA18	SPEED DOME CAMERA18L
CCD	1/4	1/4	1/4	1/4
Pixel	752(H)x494(V)NTSC	752(H494(V)NTSC	752(H494(V)NTSC	752(H494(V)NTSC
Horizontal Res.	480TVL	Color 480TVL/ B& 570TVL	480TVL	Color 480TVL/ B& 570TVL
Lens	F1.6 f=4-88mm	F1.6 f=3.6-82.8mm	F1.6 f=4.1-73.8mm	F1.6 f=4.1-73.8mm
Optical Zoom	X22	X23	X18	X18
Digital Zoom	X4	X1	X4	X4
Sensitivity	0.1 Lux	Color 0.1 Lux/ B&W 0.01 Lux	0.1 Lux	Color 0.1 Lux/ B&W 0.01 Lux
S/N Ratio	50 dB	50 dB	50 dB	50 dB
Shutter Speed	1/1.5-1/30000s	1/3-1/40000s	1/1.5-1/30000s	1/3-1/40000s
White Balance	Manual/Auto	Manual/Auto	Manual/Auto	Manual/Auto
Gain Ctrl	Manual/Auto	Manual/Auto	Manual/Auto	Manual/Auto
BLC	On/Off	On/Off	On/Off	On/Off
Color or Color/B&W	Color	Color/B&W	Color	Color/B&W
Video Output	1.0 ± 0.2Vp-p	1.0 ± 0.2Vp-p	1.0 ± 0.2Vp-p	1.0 ± 0.2Vp-p

CHAPTER-I INSTALLATION

INSTALLATION

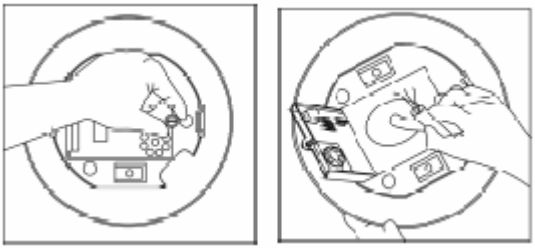
The integrated speed dome system includes the three parts: housing, dome drive and lower dome cover. Please inspect the package box to make sure all parts are present.





IN-CEILING MOUNT

Cut a 6-inch circle out of the ceiling. Attach the conduit fitting, lock nut, and safety chain bracket. Install a safety chain/cable (not supplied) that will support up to 16 pounds (7.3kg). Turn the thumb screw and open the hinged door to the housing. Pull wiring into the housing through the conduit fitting. Compress the spring clips on the back box and push it through the hole, until the clips spring back. Tighten the screws until you hear a click noise. Install the ceiling with the housing. Attach a T-rail clip on each side of the ceiling tile. Fasten the L-bracket to the clip with the supplied screw and washers.

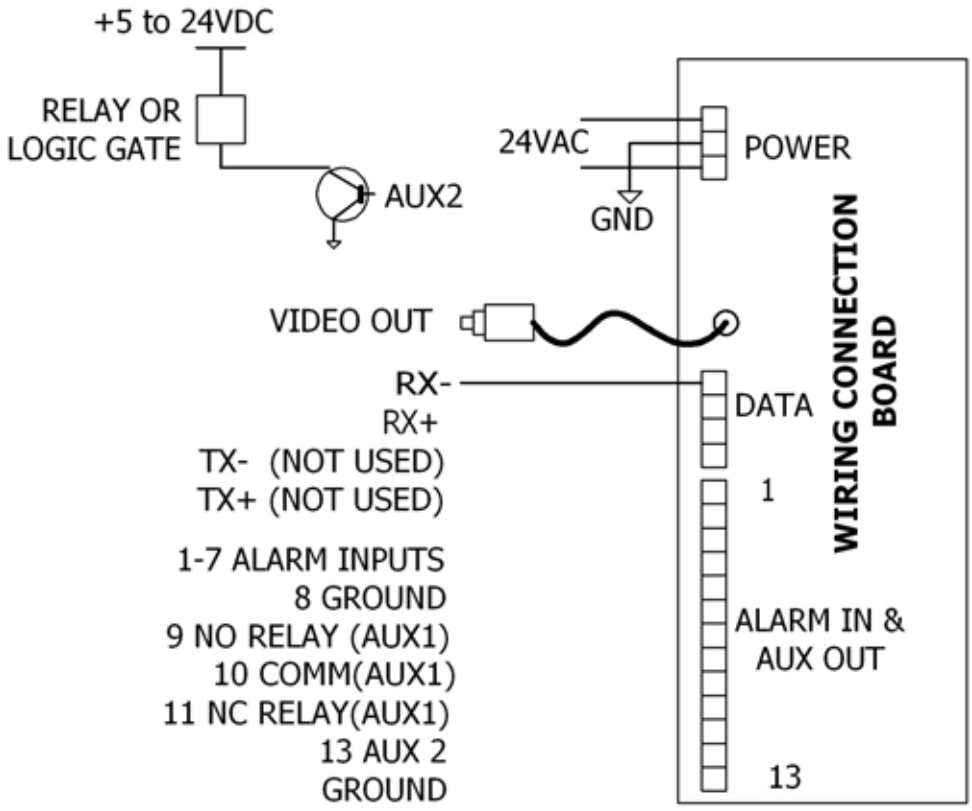


PENDANT MOUNT

Put wiring through the appropriate bracket first, mount the bracket and pull the wiring out, then leave 15-20cm cable length for future wiring connection.Turn the thumbscrew and open the hinged door located inside the housing. Pull wiring from the mount into the housing. Screw the housing into the mount bracket. If outdoors, apply thread compound to the threads on the housing.

WIRE CIRCUIT BOARD

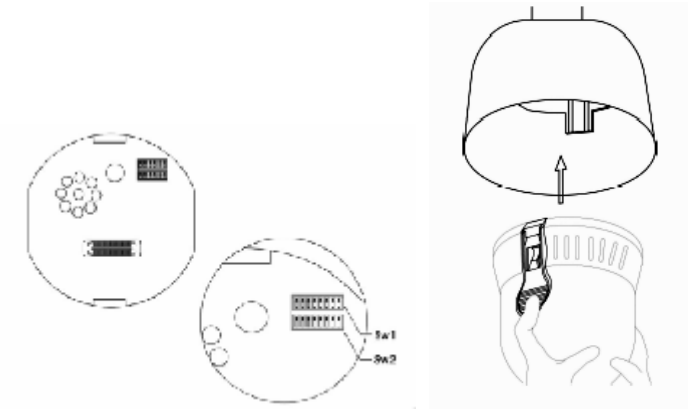
Attach the wiring to the interconnect circuit board inside the housing. Close the door to the back box. Turn on the power to the housing. The red LED will light. See the wiring guide diagram below:



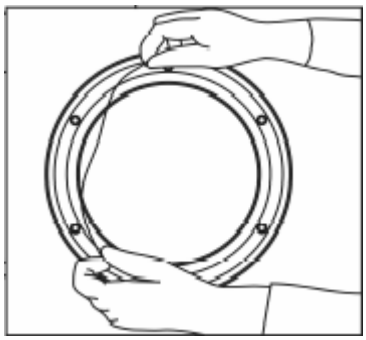
INSTALL DOME DRIVE

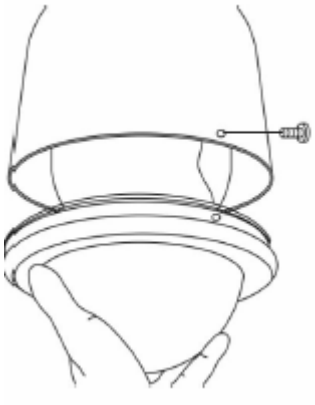
Set the DIP switch for SW1 and SW2 on the bottom of the dome drive for the appropriate receiver address and protocol. For daisy chain operation, terminate the last unit in the chain.

Line up the green and red tabs with the green and red labels. Push in on the tabs. Insert the side with the green tab, then the side with red tab. Continue pushing on the ends of the tabs until both sides click into place.



INSTALL LOWER DOME
(Refer to the guide pictures.)





CHAPTER-II PROGRAMMING

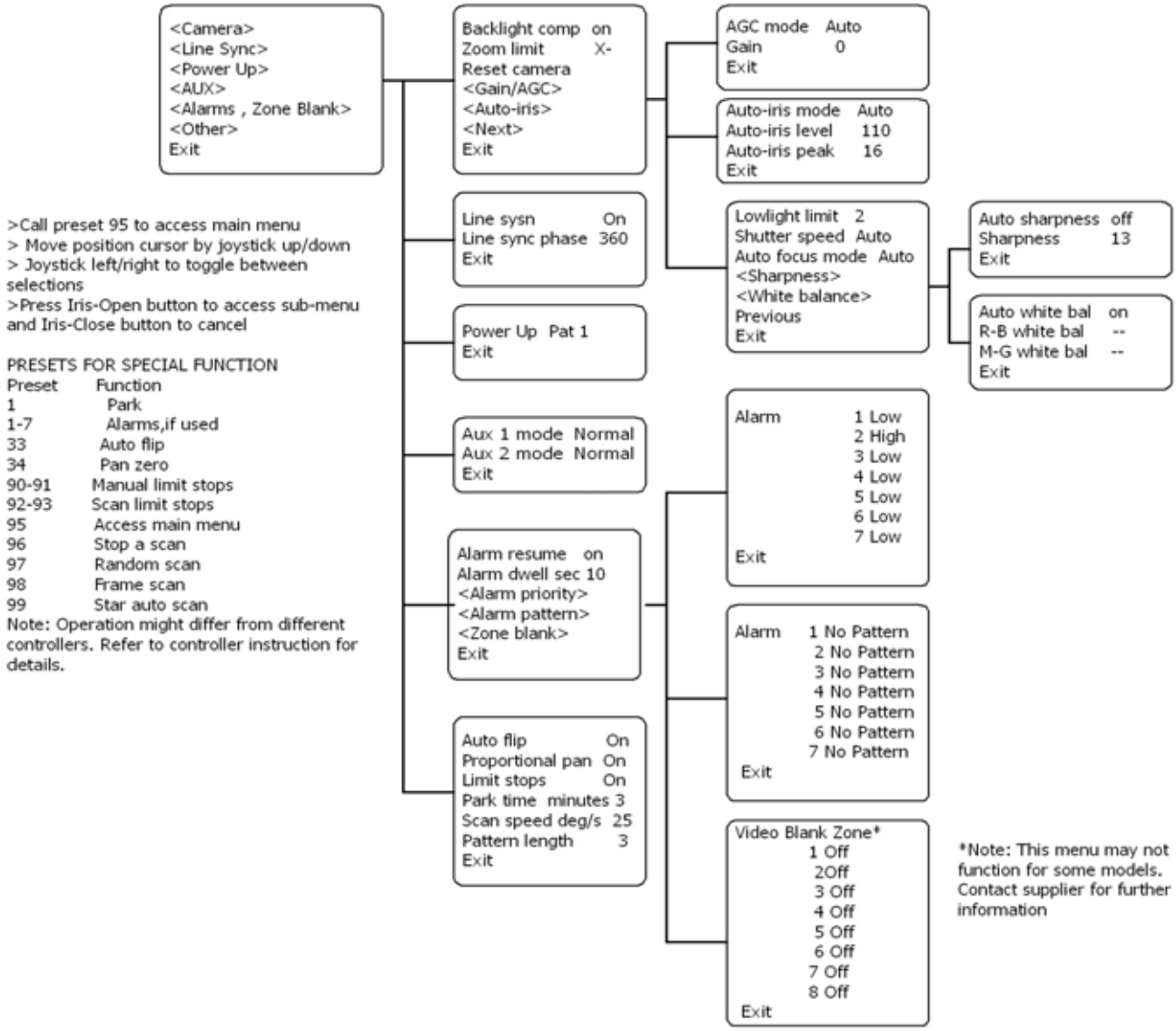
POWER-UP DISPLAY

Power up the speed dome, such system information as the selected protocol, revision code will display on the monitor. And the speed dome starts pan/tilt/zoom system initialization for about 20 seconds.

ON-SCREEN MENU DISPLAY

Refer to the menu-tree layout and description for details.

Menu Tree Layout



Menu Descriptions

This part describes the programming & operation methods of main functions.

ALARMS

The PowerDome-II has seven alarm inputs with high or low priority. The high priority setting is significant when more than one alarm is activated.

Alarm dwell time could be set through 1-200 seconds in one-second increments. This is the minimum time the ULTRA-VIEW will stay at an alarm even if the alarm is present for less than this amount of time.

System will call preset 1-7 automatically when alarm1-7 is activated. The alarm inputs could also be set to call

system patterns including Full Pat, Half Pat 1 and Half Pat 2. Default setting "No Pattern" means that the alarms will call the corresponding presets accordingly.

Alarm resume lets the dome resume its previous activity (scan, pattern, or previous position) after all alarm are cleared. Toggle to on to enable this function and off to disable.

AUX outputs could be set as normal for controller operated, latching (pressing the AUX key turns on the AUX and the next press of the AUX key turns it off) or alarm (any alarm input activates the AUX).

AUTO FLIP

There are two auto flip modes on/off. When the camera tilts downward and goes just beyond the vertical positon, the dome rotate 180 degrees. When the dome rotates, the camera starts moving upward as long as you continue to hold the joystick in the down position. This is very useful for following a person who passes directly beneath the camera.

AUTO FOCUS & AUTO IRIS MODE

The dome could be set as auto focus and auto iris ON/OFF.

Auto-iris level could be adjusted if the video level in the auto iris mode is too bright or too dark.

Increasing the Auto-iris peak value will cause the auto iris circuit to react more to highlights or peaks in the picture. Deceasing this value will cause it to use the average video level to adjust the iris.

BACKLIGHT COMPENSATION

There are two modes for backlight compensation:

On—The dome uses the center 10 percent of the picture to adjust the iris. If there is a bright light source outside of this area, it will wash out to white. The camera will adjust the iris so that the object in the sensitive area is properly exposed.

Off- Backlight compensation is not activated.

GAIN/AGC

Gain- The amount of amplification the camera places on its video information in order to obtain a full 1-volt peak-to-peak video signal out. This is to adjust the signal level of the video output. Increasing the gain in low light conditions will increase the level of noise in the picture.

AGC- Automatically adjusts the gain, auto or off.

LIMIT STOPS

There are two types of limit stops:

Manual limit stops – A manual pan operation stops when a limit stop is reached.

Scan limit stops – The dome reverses direction during random, frame, or auto scanning when a limit stop in reached. This function is deactivated when it is set to OFF.

Set preset 90 for left side and 91 for right side.

LINE SYNCHRONIZATION

If cameras are out of phase with each other, they may produce what appears to be vertical roll when switching between cameras.

There are two settings for line synchronization:

On-Adjust the synchronization of the power line voltage so that it is in phase with other cameras.

Off- The dome synchronizes to an internal clock.

If the line sync is changed to off, the camera may reset itself as it adjusts to the new synchronization. If the camera resets, it will only affect the line synchronization. It will not change any other camera parameters, such as auto focus or auto iris.

Change the value of line sync phase, the line sync setting will change to on and the camera may reset or the picture on your monitor may wiggle. For example, 900 is 90 degrees, 2700 is 270 degrees and so on.

LOWLIGHT LIMIT

This setting determines the maximum length of time the shutter will remain open automatically in low light

conditions. There are six choices: 2=1/2 second, 4=1/4 second, and 60=1/60 second.

PARK TIME MINUTES

Change the value from 0 to 720 (in minutes), the dome will park at preset 1 after the programmed number of minutes of control inactivity.

PATTERN LENGTH

Pattern consists of any standard pan and tilt or lens command. Presets, flip, and turbo are not allowed in a pattern. Zone scan can be enabled while running a pattern. And pattern length could be changed as following:

One full pattern – 1.5, 3, or 6 minutes longOrTwo half patterns – 0.75, 1.5, or 3 minutes long

POWER-UP MODE

This feature lets the dome resume a desired condition following power-up. The menu includes the following choices.

Default – On power-up, the dome goes through a configuration cycle and stops at zero reference, showing "Configuration Done", address, and mode settings on the screen.

Park --- The dome moves to preset 1 when the power-up sequence finishes. The only text on the screen is the preset label (if any is programmed).

Scan Auto, Scan Frame or Scan Rand- The dome initiates scan mode/scan frame/random scan when the power-up sequence finishes. No text.

Full Pat, Half Pat 1, Half Pat 2 -- The dome initiates pattern mode when the power-up sequence finishes. No text.

PROPORTIONAL PAN

On- Enables the proportional pan mode. The amount of zoom controls the pan and tilt. At telephoto zoom settings, the pan and tilt speeds will be slower for a given amount of joystick deflection than at wide zoom settings. This keeps the image from moving too fast on the monitor when there is a large amount of zoom.

Off- Disables the function. The pan speed will not depend on the amount of zoom.

SCAN SPEED

Change the value from 1 to 40, the scan speed is changing accordingly from 1 to 40 degree per second.

SHARPNESS

This is for adjusting the sharpness of the picture automatically or manually.

SHUTTER SPEED

The camera controls the shutter speed automatically. Increasing the shutter speed lowers the light sensitivity, but rapidly moving objects will be less blurred as the speed is increased. The value will change from auto,1/2,1/4,…1/30000.

WHITE BALANCE

Auto white balance – Auto or off.

R-B and M-G white balance – Change the value from 0 through 255. If auto white balance is on, it changes to off when you select a new value.

ZONES & ZONE BLANK

The dome is capable of eight zones, each with a 20-character label. Depending on the controller, you can define the zone size and define any zone as blanked for video when the camera pans into the zone area.

Zones can be programmed to overlap each other, although this is not recommended. If you program two zones to overlap, the title of the zone with the highest priority (zone 8 is the highest, zone 1 is the lowest) will be displayed in the overlap area. The same applies to zone blanking. On to enable the video blanking and off the disable.

ZOOM LIMIT

Cameras could be set as 18x optical zoom plus up to 4 digital zoom, or 22x or 23x optical zoom with up to 1x or 4x digital zoom