2.8-12mm Eyeball with Varifocal Lens

SEE820

Features

- Varifocal 2.8-12mm Lens
- Quad Technology
- 2 High Power IRs - Up to 35m Range
- True Day/Night IR Cut Off Filter
- UTC and Co-axitron Control
- Weatherproof IP66 Rated Metal Body
- Extra Deep Base Option
- HD 1080P
- Switchable Video Output
- Gloss Black or Pure White Colour Options

Specification

FUNCTION	SPECIFICATION
Lens	2.8-12mm Varifocal
Resolution	1080P HD
Lux	0 with LEDs on
DayNight	True Day/Night Filter
IR LEDs	2
IR Range	Up to 35m
Input Voltage	12V DC / 400mA
IP Rating	IP66
Backlight	Backlight Compensation
Finish	Gloss Black or Pure White
Dimensions	120 Dia. x 90mm

SEE820

The SEE820 is a multi-format HD eyeball camera with Multi-Technology outputs, a varifocal lens and high powered IRs. It has TVI, AHD and CVI mode selection plus a separate output for CVBS* (analogue) use.

Special Features

The SEE820 is a multi-format HD camera with TVI, AHD, CVI and CVBS mode selection on a yellow BNC lead and in addition, a separate analogue output (CVBS) on a separate white BNC lead.

* Additional CVBS output available if using HD, but only one CVBS if not.

In HD-TVI mode, the cameras have the Coaxitron Control facility for changing the OSD menu specifications via the DVR or remote network connection, or via the camera.

This camera has the NiteDevil menu feature for reducing shutter speed for improving light capture at night.

**If you have fitted cameras with IRs and have experienced condensation issues or IR flare, then this camera with the flat dual front glass should reduce these problems.

Mounting the Camera

The camera is primarily for outdoor mounting on a wall, building or under a lintel, but could also be used inside in an appropriate building. A deep base can be used for cable management. Either attach the deep base or secure the thinner bracket base to the wall, building etc. with suitable screws and connect the respective cable connections.

Other Products To Consider

External HD NiteDevil Camera with 2.8-12mm Motorised Lens - White
SEE850W

External HD NiteDevil Camera with 2.8-12mm Motorised Lens - Black
SEE850B

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Powering the Camera

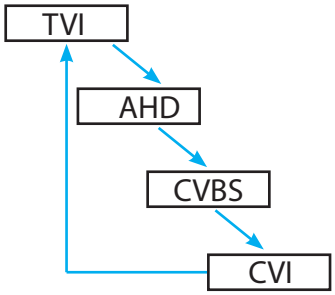
The SEE820 draws 12V DC 400mA when IRs are on and power consumption is rated at 4.8 watts. It should be noted that extra headroom is required when the camera is first powered up so we can recommend connecting it to a 12v DC regulated 600mA power supply minimum. The camera is provided with a fly lead with a mini power 2.1mm DC socket. The camera is polarity sensitive so connections must be made correctly.

Connecting the Camera to Control Equipment

The dome camera comes with a fly lead for power, TVI/AHD/CVI/CVBS selected BNC video output, plus a second analogue (CVBS) video output on separate BNC lead. Connect the HD camera to control equipment via female BNC-BNC lead. When using a co-ax type cable such as RG59 or similar, the outer braid of the co-ax provides the "0V GROUND" connection and the inner core provides the "Video" connection. The separate analogue (CVBS) output is primarily available for setup purposes but can be used for viewing via an analogue monitor. Note that you cannot use both analogue outputs together but can view one analogue and one HD.

These cameras can be viewed in TVI, AHD, CVI and CVBS.

Switch Cycle



First power the camera up when it is connected to a monitor or DVR and monitor and see if the required format displays a colour picture. If not, or if it's in black and white, press the joystick button in and *not* down for 3 seconds. Repeat until picture displays in colour. (**Note that the picture may be in black and white in low light levels, or the cellophane lens cover has not been removed).*

Alternatively, you can change the camera format in the menu:

Example - Change the camera format to TVI:

<System> <Output> <MAIN OUTPUT ANALOGUE OUT0

<System> <Output> <ANALOGUE OUT0 TVI ↵

When you are in the correct format, press the joystick button in momentarily if you wish to access the menu.

Manual Zoom and Focus

This camera has manual zoom and focus. After installing the camera and selecting the appropriate video format, adjust the Zoom control by removing the black zoom control cover and then adjusting the zoom control screw at the bottom of the camera lens. When the area contains the appropriate view, albeit it may be out of focus, adjust the Focus screw for best results. In the camera menu you can enter the 'Focus Adjust' option and select the area for

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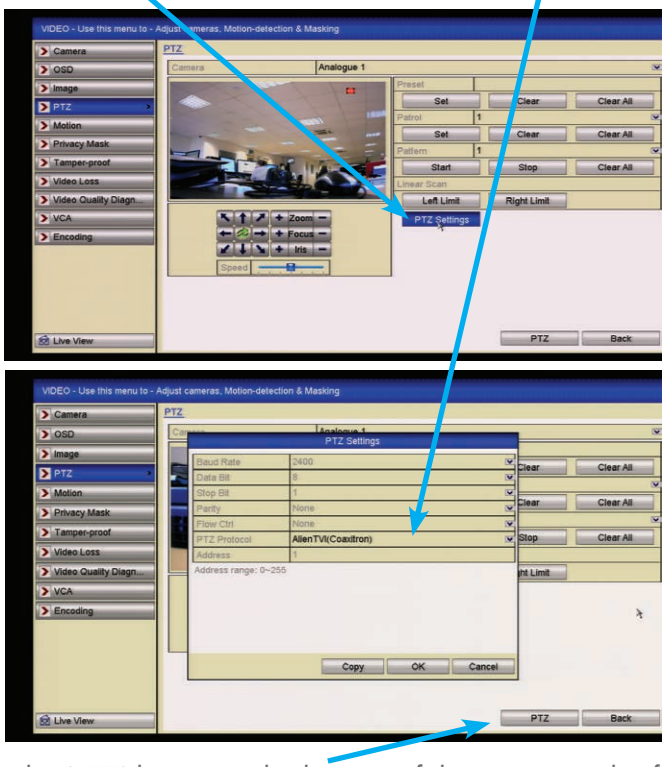
best focus results by creating a box (Wide, Middle or Narrow) to select the required area for focusing.

Menu Access via TVI DVR using Coaxitron

Access to the camera menu is via the menu buttons on the camera or via the 'Up the Co-ax' connection. Access by the menu buttons is described below. To use the 'Up to Co-ax' connection, it can be accessed using the PTZ menu in the MEGA TVI or MAX TVI DVRs using the AlienTVI(Coaxitron) protocol. This protocol is generally set in the PTZ Settings menu as default but if not, select using the following:

Enter the DVR 'Menu', click on 'Video', 'PTZ' and *select the channel* number of the TVI camera connected to the DVR.

Then click on 'PTZ Settings' and select 'AlienTVI(Coaxitron) and click 'OK'.



Now click on the 'PTZ' button at the bottom of the screen and a full screen picture will be displayed with the PTZ control menu. Click on the 'IRIS+' button to display the menu.

Use the directional arrows to move up and down or left and right to select options.

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OSD Menu

The SEE820 has an onscreen display menu. This can be accessed using the joystick on the camera.

Press the centre button straight down (see arrow) to enter the menu and use Left, Right, Up and Down to move through and amend menu settings.

Alternatively use the TVI DVR PTZ menu as detailed in 'Menu Access via DVR' above.

The following menu display is shown:

IRIS	ELC ALC	Electronic Light Control - Overall brightness of picture Auto Light Compensation - Measures peak light levels
FOCUS ADJ	OFF ON↵	Focus Area Wide/Narrow/Middle Disp Tone (Display Tone 0 Low, 1 Medium, 2 High) Disp H_Pos 0 ~ 60 Horizontal Position (Def 2) Disp V_Pos 0 ~ 34 Vertical Position (Def 12) Disp H_Size 0 ~ 60 Horizontal Size (Def 2) Disp V_Size 0 ~ 34 Vertical Size (Def 14) Return
EXPOSURE↵	BRIGHTNESS SHUTTER SENS-UP AGC RETURN	0 ~ 20 (Def 10) Auto-Normal/Deblur (Def Auto) Manual - 1/25,1/50,1/100,1/200,1/400, 1/800,1/1600, 1/3200, 1/6400, 1/12800, 1/25600 Flicker Off/x2/x4/x8/x16/x32 0 ~ 10 (Def 10)

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BACKLIGHT	OFF HLC ↵ BLC ↵ WDR ↵	Level 1 ~ 20 / Colour - BLK/Customise/WHT/YEL/CYN/ GRN/MAG/RED/BLU H-Pos - V-Pos - H-Size - V-Size - Return Weight - Low/Middle/High - Return
DAY & NIGHT	EXTERNAL↵ AUTO↵ COLOUR B&W↵	IR LED Off/On Anti-Sat 1 ~ 20 Default 10(Not used when IRs off) External S/W Low/High D->N Level 1 ~ 20 Default 13 N->D Level 1 ~ 20 Default 7 Delay - Low/Middle/High - Return IR LED Off/On Anti-Sat 1~20 Default 10(Not used when IRs off) AGC Threshold 1~20 AGC Margin 1 ~ 20 Delay - Low/Middle/High - Return IR LED Off/On Anti-Sat 1 ~20 Default 10 (Not used when IRs off)
COLOUR↵	AWB Colour Gain 1~20 Return	Auto AUTOext PRESET (Push) MANUAL↵ C-Temp 5000k/8000k/3000k R-Gain 1 ~ 20 B-Gain 1 ~ 20 Return
DIGITAL NOISE REDUCTION	DNR	Off/Low/Middle/High
IMAGE	SHARPNESS GAMMA MIRROR FLIP ACE DEFOG	CVBS/CVI/TVI/AHD 1~10 TVI default 4 0.55/0.65/0.75/0.45 Off/On Off/On Off/Low/Middle/High (Adaptive Colour & Contrast Enhancement) Off/On↵ Mode - Auto/Manual Level - Low/Middle/High

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IMAGE (Continued)	PRIVACY RETURN	Off/On↵ Zone Num (0 ~15)/ Zone Disp Off/On H-Pos/V-Pos/ H-Size/V-Size/ Y-Level (1 ~ 20) CB Level (1~20)/ Return
MOTION	OFF/ON↵	Det Window↵ Window Zone 0 ~3 Window Use On/Off Det H-Pos <nn> <nn> value = position or size Det V-Pos <nn> <nn> value = position or size Det H-Size <nn> <nn> value = position or size Det V-Size <nn> <nn> value = position or size Return Det Tone 0~4 MDR etc Fill On/Off Sensitivity 0~10 Motion OSD On/Off Text Alarm On/Off Signal Out On/Off Return
SYSTEM	OUTPUT↵	Main Output Analog Out 0/1↵ Analog Out 0 TVI / Analog Out1 CVBS Y Gain 0 ~ 32 Def 16 / Y Gain not used CB Gain 0 ~ 32 Def 12/CB Gain not used CR Gain 0 ~32 Def 12/CR Gain not used Position 0 ~ 256 Def 128 / Position not used Burst Freq ~ 256 Def 128 / Burst Freq not used Burst Gain 0 ~ 128 Def 69/ Burst Gain not used UCC Select0 8 Byte (***Do not change this)*** 720 Ex Off/On UCC Select1 not used Exit

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SYSTEM (Continued)	FRAME RATE FREQUENCY COM.↵	1080p 25p 50Hz/60Hz COM Cam ID 0 ~ 255 Default 0 Baudrate 2400/4800/9600/57600/115200 Set Done On (Push) Return FULL/COMP/USER↵ Offset 0 ~32 (Default 16) Return
	IMAGE RANGE FULL/COMP/ USERFULL/ COMP/USER ↵	IMAGE RANGE Offset 0 ~32 (Default 16) Return
	COLOUR SPACE	HD-CbCr/YUV/SD-CbCr
	AUDIO MIC	Not Used
	COLOUR BAR	Off/On
	LANGUAGE	ENG/CHN/CHN(S)/JPN/KOR
	CAM TITLE	Off/Right Up↵/ Left Down ↵ (Use up or down to select character and left or right to select position)
	RESET ON (push)	Hold down Iris+ Button for 3 seconds
EXIT	Press IRIS+ to exit	

Menu Description

The following menu description gives more in depth information about the menu options. In some instances, recommendations are made to hopefully enhance the results. However, every installation will be different and there will be occasions where an alternative solution may be more suitable.

IRIS	ELC	Electronic Light Control - Measures Overall Brightness
	ALC	Auto Light Compensation - Measures Peak Light Levels

ELC - Electronic Light Control - measures overall brightness of the picture and applies to manual iris lens

ALC - Auto Light Compensation - measures peak light levels and applies to auto iris lens

*Recommend setting Lens to ALC mode.

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FOCUS ADJ	OFF ON↵	Focus Area Wide/Narrow/Middle (Def Wide) Disp Tone (Display Tone 0 Low, 1 Medium, 2 High) Disp H_Pos 0~60 Horizontal Position (Def 2) Disp V_Pos 0~34 Vertical Position (Def 12) Disp H_Size 0~60 Horizontal Size (Def 2) Disp V_Size 0~34 Vertical Size (Def 14) Return

This camera has manual zoom and focus. After installing the camera and selecting the appropriate video format, adjust the Zoom control by removing the black zoom control cover and then adjusting the zoom control screw at the bottom of the camera lens. When the area contains the appropriate view albeit may be out of focus, adjust the focus screw for best results.

Focus Area Middle/Wide/Narrow

Select to create a focus box.

In the camera menu you can enter the Focus Adjust option and select the area for best focus results by creating a box (Wide, Middle or Narrow) to select the required area for focusing. Yellow is for accurate focus setting and green for out of focus. The less green displayed, the better the focus setup is. Note that this is a setup aid only and focusing is a manual process. Ensure option is switched off after set up.

Disp Tone 0/1/2

Alter brightness of focus aid

Dis H_Pos

Set horizontal position of Focus Box

Dis V_Pos

Set vertical position of Focus Box

Dis H_Size

Set horizontal size of Focus Box

Dis V_Size

Set vertical size of Focus Box

RETURN

Return to the Main Menu

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EXPOSURE↵	BRIGHTNESS SHUTTER SENS-UP AGC RETURN	1 ~20 Auto-Normal/Deblur Manual - 1/25,1/50,1/100,1/200,1/400, 1/800, 1/1600, 1/3200, 1/6400, 1/12800, 1/25600 Flicker Off/x2/x4/x8/x16/x32 1~20

BRIGHTNESS 1 ~ 20 (Default = 10)

Use this setting to increase brightness by opening camera iris. Useful for improving night time viewing by using in conjunction with the Sens-Up option. However be aware to consider possible effects when there is strong sunlight that if setting brightness to high it may cause the picture to white out.
**Recommendation is to set brightness to 15*

SHUTTER Auto/Manual

1/25,1/50,1/100,1/200,1/400, 1/800,

1/1600,1/3200,1/6400,1/12800,1/25600,

Flicker

Shutter speed changes allow you to freeze moving objects without ghosting but reduce the amount of available light the faster the shutter operates. At night the slower the shutter speed the more light is available. The Flicker option sets the shutter speed at 1/250 that synchronises with fluorescent tubes so that the pulsing effect is minimised.
**Recommendation is to leave this in Auto.*

SENSUP Off/x2/x4/x8/x16/x32

The SensUp option allows the shutter speed to be reduced allowing additional light to be captured. Increasing brightness helps night time viewing (see BRIGHTNESS setting above). If set too high and Sensup is slowing shutter speed down to a lower speed than any movement speed, ghosting can occur. **Recommend that Sensup is switched on to x2 for areas with some light at night to x16 when pitch black.*

AGC 1 ~ 20 (Default = 10)

For better performance in low light conditions the AGC (Automatic Gain Control) can be increased. This has the effect of making the picture brighter but it may also add more noise as it amplifies all aspects of the video signal.
**Recommend AGC is decreased below 10 if Sensup is increased over x2.*

RETURN

Return to main menu.

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BACKLIGHT	OFF HLC↵ BLC↵ WDR↵	Level 1 ~ 20 / Colour - BLK/Customise/WHT/YEL/CYN/ GRN/MAG/RED/BLU H-Pos - V-Pos - H-Size - V-Size - Return Weight-Low/Middle/High - Return

Backlight Compensation, when set, can balance light levels during day and night so that light hitting objects viewed is evenly spread across the picture. There are 3 options: HLC, BLC and WDR that can be selected.

HLC↵

(High Level Backlight Compensation)

Level 1 ~ 20/Mode - All Day/Night Only

HLC is high level backlight compensation that will darken a bright area e.g car headlights. This can be set for all day or night only. The lower the level the more compensation is applied. Note that using the night option may be best as daytime pictures generally give a more even spread of light apart from sunlight issues. **Recommend only to use on Night Only if bright lights are causing complete video loss.*

BLC↵

(Backlight Compensation)

H-Pos - V-Pos - H-Size - V-Size

BLC is the standard setting for low level light differences. Select an area where BLC is required. Using the H-Pos (Horizontal Position) and V-Pos (Vertical Position) followed by H-Size (Horizontal Size) and V-Size (Vertical Size) create a box where light balancing is required.

WDR↵

(Wide Dynamic Range)

Weight - Low/Middle/High

WDR is used for surveillance applications where there is a large difference in foreground and background light levels. This is typical in homes and office buildings that have large areas of glass with direct sunlight outside. Without the option switched on, views by cameras looking through windows may not give good reproduction outside. Also where there are areas of shadow and bright sunlight, the WDR option helps to balance light levels. **Recommend using WDR where balancing light levels in warehouses or large buildings is difficult.*

Return

Return to Main Menu.

Features

- Varifocal 2.8-12mm Lens
- Quad Technology
- 2 High Power IRs - Up to 35m Range
- True Day/Night IR Cut Off Filter
- UTC and Co-axitron Control
- Weatherproof IP66 Rated Metal Body
- Extra Deep Base Option
- HD 1080P
- Switchable Video Output
- Gloss Black or Pure White Colour Options

Specification

FUNCTION	SPECIFICATION
Lens	2.8-12mm Varifocal
Resolution	1080P HD
Lux	0 with LEDs on
DayNight	True Day/Night Filter
IR LEDs	2
IR Range	Up to 35m
Input Voltage	12V DC / 400mA
IP Rating	IP66
Backlight	Backlight Compensation
Finish	Gloss Black or Pure White
Dimensions	120 Dia. x 90mm

Other Products To Consider

External HD NiteDevil Camera with 2.8-12mm Motorised Lens - White
SEE850W

External HD NiteDevil Camera with 2.8-12mm Motorised Lens - Black
SEE850B

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2.8-12mm Eyeball with Varifocal Lens

DAY & NIGHT	EXTERNAL↵	IR LED Off/On Anti-Sat 1 ~ 20 (Not used when IRs off) External S/W Low/High D->N Level 1 ~ 20 Default 13 N->D Level 1 ~ 20 Default 7 Delay - Low/Middle/High - Return
	AUTO↵	IR LED Off/On Anti-Sat. 1~20 (Not used when IRs off) AGC Threshold 1 ~ 20 AGC Margin 1 ~ 20 Delay - Low/Middle/High - Return
	COLOUR	
	B&W ↵	IR LED Off/On Anti-Sat 1 ~ 20 (Not used when IRs off) Return

Day & Night menu controls light settings and predominantly provides options for using the cameras Infra-Red facilities. There are four sub-options namely External, Auto, Colour and Black & White.

EXTERNAL↵

This option does not use the internal CDS sensor to measure the available light. With cameras using their own IR light source, this option can give the best results. Note that this option has a manual adjustment for setting IR switch on according to lux level from day to night and from night to day, plus an option for applying a delay factor. This stops switching until a pre-determined lux level remains constant. There is also the option to switch off the IRs. **Recommend to try this option if Auto does not give required results.*

AUTO↵

The standard Auto function uses the internal CDS to measure available light. This uses AGC (Automatic Gain Control) and Anti Saturation to measure picture quality before switching which is used in conjunction with a pre-determined time interval when lux levels remain constant. There is also the option to switch off the camera IRs.

COLOUR

This option will remain in colour mode day and night. There are no sub menu settings. This will only be applicable when light levels at night allow the camera to continue working at 4 lux or higher.

B&W↵

When this option is selected the camera will remain in black and white mode, day and night. The only sub menus available are Anti Saturation and the option to switch off the camera IRs.

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2.8-12mm Eyeball with Varifocal Lens

Return

Return to the Main Menu.

COLOUR↵	AWB Auto Colour Gain 1 ~ 20 (Default 13) Return	AUTOext / Preset (Push) Colour Gain 1 ~ 20 Default 13 Return MANUAL↵ C-Temp 5000k/8000k/3000k R-Gain 1 ~20 (Default 10) B-Gain 1 ~20 (Default 10) Return

This feature automatically adjusts the colour settings in the camera to match the type of light available, so that white and other colours appear as natural as possible.

AUTO

This option automatically sets white balance.

AUTOext

This option is generally used to set white balance when the camera is used externally.

PRESET(Push) Press IRIS+ or joystick centre button down

This option allows you to set white balance using current light levels. Settings will only change when you press IRIS+ or joystick centre down.

MANUAL↵

Use this option to manually balance light levels. Note that the manual option is used for a static light environment and generally suitable for cameras installed indoors using constant artificial light.

C-Temp 5000K/8000K/3000K

R-Gain 1 ~ 20 (Default 10) Sets Red Gain

B-Gain 1 ~ 20 (Default 10) Sets Blue Gain

Return

RETURN

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DIGITAL NOISE REDUCTION	DNR	Off/Low/Middle/High

DNR Off/Low/Middle/High

Digital Noise Reduction is generally applied when the Sens-Up feature is used to improve night time views in low light conditions. Using the Sens-Up option slows the shutter speed but this increases noise and causes grainy picture effects. DNR helps to minimise this effect. The options low, medium and high, apply different levels of noise reduction and therefore have to be tested to gain the best result as light levels will be different at every site and location. **Recommend to leave off even when Sense-Up is on. If grainy picture is created then test starting on low and leave camera on the best setting.*

IMAGE	SHARPNESS↵	CVBS/CVI/TVI/AHD 1 ~ 10 TVI Default 4
	GAMMA	0.55/0.65/0.75/0.45
	MIRROR	Off/On
	FLIP	Off/On
	ACE	Off/Low/Middle/High (Adaptive Colour & Contrast Enhancement)
	DEFOG	Off/On↵ Mode - Auto/ Manual Level - Low/Middle/High
	PRIVACY	Off/On↵ Zone Num (0 ~15) / Zone Disp Off/ On H-Pos/V-Pos/H-Size/V-Size/ Y-Level (1~20)/CR Level (1~20) CB Level (1~20)/Return
	RETURN↵	

IMAGE↵

The Image menu covers a variety of options including sharpness, mirror, defog, shading and privacy masking facilities.

Sharpness 1 ~ 10

Depending on the camera format selected, the format/s will be in dark type for adjustment.

The sharpness control is done by digital correction and the best way to set this option is to set level to maximum of 10, then flick back to 1, to see the difference. Then adjust to display sharpest picture without displaying heavy black lines around subjects.

Gamma 0.55/0.65/0.75/0.45 (Default 0.55)

Gamma correction controls and adjusts the overall brightness of an image. **Recommend trying each option and select the best quality picture.*

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2.8-12mm Eyeball with Varifocal Lens

Mirror Off/On

This option changes a left handed view to a right handed view if switched on.

Flip Off/On

This option turns a view upside down. This option is generally used with the Mirror function.

ACE Off/On/Middle/High

Adaptive Colour & Contrast Enhancement (ACE) is an automated option for adjusting colour and contrast as light levels change throughout the day. Low, middle or high options are available. **Recommend setting option to Low.*

DEFOG↵ Off/On↵

Mode - Auto - Level - Low/Middle/High

Manual - Level - Low/Middle/High

The defog option can be used to improve the captured image in poor weather conditions such as smog, fog or smoke. Three levels of optimisation can be applied, low, middle or high. This option is useful to stabilise rapid fluctuating light levels. **Recommend setting this option to On.*

PRIVACY Off/On↵

Zone Num (0~15)

This function allows the creation of up to 16 coloured areas to be created to provide privacy masking.

Done Disp Off/On

The Zone Display allows you to switch on and off the zone number.

H-Pos/V-Pos/H-Size/V-Size

Each area can be positioned using the H-Pos (Horizontal Position), V-Pos (Vertical Position) and sized using the H-Size (Horizontal Size) and V-Size (Vertical Size) options. The Zone Display allows you to switch on and off the zone number.

Y-Level (1~20)

CR Level (1~20)

CB Level (1~20)

The Y-Level is the colour hue for privacy masking and the CR Level (Chrominance Red) and CB Level (Chrominance Blue) are used to create the required colour.

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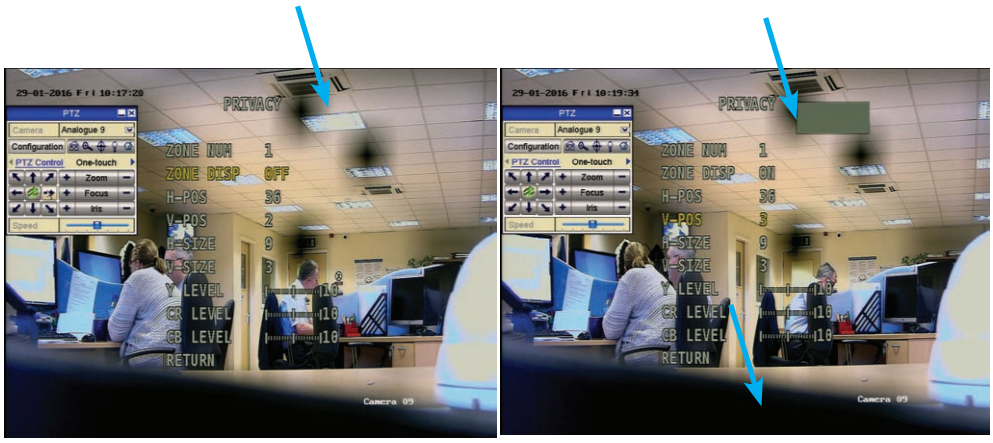
2.8-12mm Eyeball with Varifocal Lens

The pictures below show an area that has been masked, before and after.



RETURN

Return to the Main Menu.

MOTION	Off/On↵	Det Window↵ Window Zone 0 ~ 3 Window Use On/Off Det H-Pos<nn> <nn> value = position or size Det V-Pos<nn> <nn> value = position or size Det H-Size<nn> <nn> value = position or size Det V-Size<nn> <nn> value = position or size Return Det Tone 0~4 MDRect Fill On/Off Sensitivity 0 ~ 10 Motion OSD On/Off Text Alarm On/Off Signal Out Off/On Return

MOTION Off/On↵

The motion option when switched on allows you to create up to four areas in the picture and as motion is detected in these areas, the areas will be displayed with red moving boxes.

DET WINDOW↵

Enter to select window number

Window Zone	0~3	
Window Use	On/Off	
Det H-Pos	<nn>	Set horizontal position
Det V-Pos	<nn>	Set vertical position
Det H-Size	<nn>	Set horizontal size
Det V-Size	<nn>	Set vertical size

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2.8-12mm Eyeball with Varifocal Lens

	Each area can be positioned using the H-Pos (horizontal position), V-Pos (vertical position) and sized using the H-Size (horizontal size) and V-Size (vertical size) options.
	RETURN
DET TONE 0~4	Sets the background tone to enable the motion detect area to be more or less prominent.
MIDRECT FILL On/Off	Allows the switching on or off of the selected zone.
SENSITIVITY 0 ~ 10	Sets the sensitivity of the motion detection.
MOTION OSD On/Off	Switch Motion on Screen Display on or off
TEXT ALARM On/Off	Switch Motion Text Alarm on or off.
RETURN	

SYSTEM	OUTPUT↵	Main Output Analog Out 0↵ / Out 1↵ Analog Out 0 TVI/AHD/CVI/Analog Out1 CVBS Y Gain 0 ~ 32 Def 16/ Y gain not used CB Gain 0 ~ 32 Def 12 / CB gain not used CR Gain 0 ~ 32 Def 12/ CR Gain not used Position 0 ~ 256 Def 128 / Position not used Burst Freq 0 ~ 256 Def 128 / Burst Freq not used Burst Gain 0 ~ 128 Def 69 / Burst Gain not used UCC Select 0 8 Byte ***(Do not change this)*** 720 EX Off/On UCC Select1 not used Exit
	FRAME RATE	1080 25P
	FREQUENCY	50Hz/60Hz
	COM.↵	COM

Features

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2.8-12mm Eyeball with Varifocal Lens

		Cam ID 0 ~ 255 Default 0 Baudrate 2400/4800/9600/57600/ 115200/ Set Done On (Push) Return FULL/COMP/USER↵ Offset 0 ~32 (Default 16) Return
	IMAGE RANGE FULL/COMP/ USER↵	IMAGE RANGE Offset 0 ~ 32 (Default 16) Return
	COLOUR SPACE	HD-CbCr/YUV/SD-CbCr
	AUDIO MIC	(Not Used)
	COLOUR BAR	Off/On
	LANGUAGE	ENG/CHN/CHN(S)/JPN/KOR
	CAM TITLE	Off/Right Up↵/Left Down↵ (Use up or down to select character and left or right to select position)
	RESET ON (Push)	Hold down Iris+ button for 3 seconds
	Return	

The SYSTEM menu provides a number of general facilities. These include selecting the correct camera format, setting a camera identification number and baud rate for RS485 connection, resolution mode, frame rate and colour standard, language, test colour bar, camera title and camera reset option.

OUTPUT↵

Main Output Analog Out 0/1 (Out 0 = HD Out 1 = CVBS)

Analog Out 0 TVI↵ (Select TVI/AHD/CVI)

Y Gain 0 ~ 32 Default 16 Yellow Gain

CB Gain 0 ~ 32 Default 12 Blue Gain

CR Gain 0 ~ 32 Default 12 Red Gain

Position 0 ~ 256 Default 128 Position

Burst Freq 0 ~ 256 Default 128 Burst Frequency

Burst Gain 0 ~ 128 Default 69 Burst Gain

UCC Select 0 8 Byte (***Do not change this***)

720 EX Off/On

UCC Select1 not used

Exit

Analog Out1 CVBS/TVI↵/OFF

Analog Out1 CVBS

Return

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FRAME RATE 1080P 25P/720 25P/720 (crop) 50P (Select Camera Frame Rate) Sets the camera output mode. 1080p is default.

FREQ 50Hz/60Hz (Cycles per second)

COM.↵ Cam ID 1 (Set ID number in camera between 0 & 255)
Baud Rate 2400/4800/9600/57600/115200
Set Done (Press Iris+ button)
Return

IMAGE RANGE Full/Comp/User↵
Offset 1 ~ 32 (Default = 16)

COLOUR SPACE HD-CbCR (High Definition Chrominance Blue and Red)
YUV (Allows greyscale adjustment (Y = luminance UV = colour)
SD-CbCr (Standard Definition Chrominance Blue and Red)

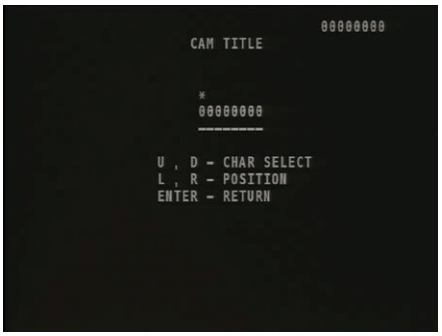
AUDIO MIC Not used

COLOUR BAR Off/On (Useful for testing camera colour quality)

LANGUAGE ENG/CHN/CHN(S)/JPN/KOR (Select language required)

CAM TITLE Off/Right Up↵ / Left Down ↵ (Enter Camera Title)

(Use up or down to select character and left or right to select position) Hold down Iris+ button for 3 seconds



RESET ON(Push)↵ Press IRIS+ or joystick centre button down

RETURN

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Sensor	SONY 2.1MP	**Video Outputs**	TVI, AHD, CVI & Analogue
Resolution 1080p	1920(H) x 1080(V) @25fps	**Independent CVBS**	CVBS 700TVL separate output*
Day/Night	Mechanical True Day/Night	**IR Power**	2 x H/Powered IR LEDs>30m
Signal System	PAL/NTSC	**Operating Temp.**	-10°C ~ +50°C
Min. Illumination	B&W .001 Lux @ (F2.0,AGC & DSS on) Colour 0.5 Lux @ (F2. 0,AGC on)	**Power/Current** **Power Supply**	12vDC 400mA IRs on >12vDC 600mA regulated
Mounting	Ceiling and Wall Mounting	**Lens 2.19MP**	2.8mm ~ 12mm Manual Varifocal
Menu	OSD direct and via coaxitron	**Backlight**	HLC, BLC, WDR, off
WDR	True Wide Dynamic Range option	**Dimensions**	85mm(H) x 120mm (Dia.)
S/N Ratio	>52dB (AGC off)	**Build**	Cast Alloy Body
Colour	SEE820W White SEE820B Black	**IP Rating**	IP66
NiteDevil	Sens-Up option included	**Extra Deepbase**	Additional for cable management
Privacy Masking	16 areas for Privacy Masking	**2D+3D NR**	Low/Middle/ High/Off
Dual Front Glass	Dual glass to reduce IR reflection	**AGC**	Automatic/ Selectable

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External HD NiteDevil Camera with 2.8-12mm Motorised Lens - Black
SEE850B

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WEE/CG0783SS

This symbol on the products and/or accompanying documents means that used electronic equipment must not be mixed with general household waste. For treatment, recovery and recycling please return this unit to your trade supplier or local designated collection point as defined by your local council.