

The CAM195L Traditional NiteDevil

The NiteDevil Camera is a traditional style camera for fitting in a standard housing. It produces high quality images and works in extremely low light conditions. The NiteDevil was originally developed for bars and nightclubs but is also a good choice for external dimly lit areas such as car parks and compounds. This camera has many features including a Sony CCD providing a resolution of 540 TVL, very low light sensitivity down to 0.002Lux, electronic iris, an OSD facility providing options for motion detection, Digital Noise Reduction, privacy masking and camera setup options. No need for additional lighting with this camera. It is truly amazing.



The CAM195L comes complete with a CCT342 fitted lens 2.8mm ~ 12mm Vari-focal Auto Iris D/D

Features

1/3" SONY SUPER HAD 540 TVL CCD -
Low power consumption -
Mirror function -
Privacy Masking -
DC Drive Lens (CCT342 2.8~12mm)
Use with CS-Mount or C-Mount lens -

Low illumination down to 0.002 Lux -
12vDC 260mA or 24vAC at 170mA -
Day/Night mode -
Digital Noise Reduction -
Electronic Iris -
Motion Detect facility.

Powering the Camera

The dome requires a 24v AC or 12v DC regulated power supply.

12v DC power

When connecting to 12v DC power always use a regulated supply. There is no polarity setting. Use a 12v DC 500mA power supply unit minimum.

24v AC power

When connecting to 24v AC power supply there is no need to check AC's power polarity. Use a 24v AC 300mA power supply unit minimum.

Precautions

Do not install the camera in extreme temperature conditions. Only use the camera where temperatures are between - 10 degrees centigrade and +50 degrees centigrade.

Never install the camera in damp or humid conditions. This can affect image quality.

This camera requires stable lighting conditions to operate effectively.

Do not touch the front lens of the camera. Fingerprints can stain the lens glass.

The camera must not be placed directly facing the sun or strong light. This may damage the camera CCD.

Never expose the camera to rain or liquids. These will corrode the camera electronics.

Do not subject the camera to vibration as it may cause camera malfunctions.

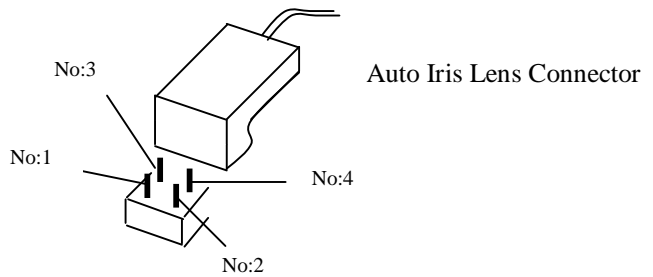
Camera Lens

This camera is supplied with a lens. It is designed to work with an Auto Iris Direct Drive Lens, CS-Mount Lens or C-Mount Lens. Note that this camera will not work with a Video Drive Lens.

The camera is supplied with an Auto Iris Lens connection plug, a miniature L-Wrench and a C-Mount adaptor. A Lens protection cap is also supplied. The L-Wrench is a small Allen Key used for adjusting the Back Focal Length.

If you are fitting a different Direct Drive Lens these are usually fitted with a connection plug that is fitted into the connection socket on the side of the camera. If the Direct Drive Lens does not have a fitted connector, use the spare connector provided. Remove approximately 8mm of the cable outer cover and then bare the four wires for 2mm. Remove the cover of the auto iris lens connection plug and solder the lens cable connections to the pins in the plug.

Pin No:	LENS	
	Direct Drive	Cable Colour
No: 1	Damping -	Yellow
No: 2	Damping +	White
No: 3	Drive +	Red
No: 4	Drive -	Green



Fitting a different Camera Lens

Fitting a CS-Mount lens or Direct Drive lens just requires the lens to be fitted direct to the camera body. If fitting a C-Mount lens then you will need to fit the C-Mount adaptor. When fitting the Direct Drive Lens ensure that the Auto Iris Lens connector is fitted to the socket on the rear of the camera.

Using a lens, which is too heavy for the camera, may cause a malfunction. Ensure weight of lens is less than 450g. Select AV mode if possible when adjusting the ALC (automatic light control) as PK mode may cause hunting. To adjust the lens focus, use the supplied allen key (L-Wrench) and loosen the Back Focus Clamp Screw situated at the top of the lens base. Adjust focus and retighten clamp screw.

Fitting into camera housing

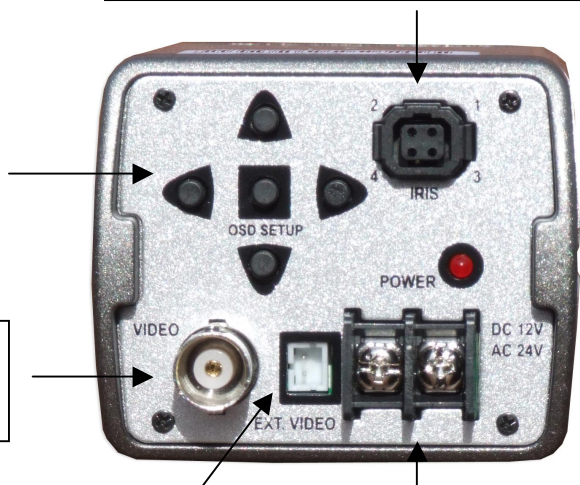
This camera has two fixing screw holes on the top of the camera case. A standard size camera screw connector found on the bottom of the camera can be used for fitting camera tripods etc. Ensure that the clamp screw is not over-tightened as this can damage the camera case.

Connecting the camera to control equipment.

Fit the Auto Iris Direct Drive Lens connector to connection shown.

The (on screen display) OSD menu is selected using the five menu selection buttons on the rear of the camera. Press the centre OSD setup button to enter menu.

The camera BNC video connection is to be found on the rear of the camera. Connect to your DVR or direct to your monitor using a BNC-BNC lead.



Use the extension video lead supplied for testing video setup.

Connect a 12vDC 500mA regulated power supply or a 24vAC 300mA power supply. Connections are not polarity sensitive.


THE SETUP MENU

First press the SET button. The SETUP menu will now be displayed on the monitor.

Please select any function by using the UP and DOWN buttons.

Press the LEFT or RIGHT buttons to change a mode. When the LEFT or RIGHT buttons are pressed available values and modes are displayed in order. Keep pressing the button until the mode you require is selected.

Finally select EXIT in the menu and then press the SET button to close the operation.

If  is displayed at the mode you wish to select, it means that there is a submenu available. If --- appears at the mode item it means that there are no other modes available.

LIST OF MENU FUNCTIONS

LENS (selection)	MANUAL	DC	
SHUTTER	ESC	MANUAL	FLK
WHITE BALANCE	ATW	AWC	MANUAL
BACKLIGHT	OFF HIGH	LOW	MIDDLE
AGC	OFF HIGH	LOW	MIDDLE
DNR	OFF HIGH	LOW	MIDDLE
SENS-UP	OFF	AUTO	
SPECIAL	CAMERA ID		COLOUR
	SYNC		MOTION DETECT
	PRIVACY		MIRROR
	SHARPNESS		RESET
	RETURN		
EXIT			







Traditional Style NiteDevil Camera with Lens

SETUP	
LENS	DC/ MANUAL
SHUTTER	FLK / ESC / MANUAL
WHITE BAL.	MANUAL / AWC / ATW
BACKLIGHT	OFF / LOW / MIDDLE / HIGH
AGC	OFF / LOW / MIDDLE / HIGH
DNR (Dig. Noise Reduct)	OFF / LOW / MIDDLE / HIGH
SENS-UP (Low luminance compensation)	OFF / AUTO
SPECIAL	
EXIT	

= Press Set button


SETUP FUNCTIONS

- LENS** DC < Auto DC Iris > (Press Set button for brightness control 1 ~ 70)
MANUAL **Special Note: Will not operate a Video Drive Lens**
- SHUTTER** FLK / ESC / MANUAL
< FLK - select when flickering occurs - imbalance between illumination and frequency >
< ESC - auto control of shutter speed - according to screen brightness >
< MANUAL – control shutter speed manually between 1/50 ~ 1/120,000 >
When in manual mode SENS UP does not work.
- WHITE BALANCE** MANUAL / ATW / AWC
< The screen colour can be adjusted by using this option. Select either ATW, AWC or MANUAL. >
ATW < Auto Tracking White Balance – set for use outdoors, sodium lamp, inside tunnels, fluorescent light etc. >
AWC < Auto White Balance Control – use a piece of white paper to make optimum setting according to current lighting source. If this changes this setting will have to be re-adjusted. Press Set button for red and blue setting 1 ~ 256 >
MANUAL < Manual mode provides fine adjustment. Select ATW or AWC first. If white balance unstable use AWC. Press Set button for red and blue setting 1 ~ 256 >
- BACKLIGHT COMP.** LOW / MIDDLE / HIGH / OFF
< When there is strong backlight behind the object, clear images of the background and object can still be obtained by using the BACKLIGHT function. The level of backlight compensation can be adjusted between LOW, MIDDLE or HIGH. >
LOW / MIDDLE / HIGH / OFF
< As the level of gain increases the screen gets brighter and the noise level increases. >
OFF < Backlight does not function >
LOW < Set for gain 0dB ~ 18dB >
MIDDLE < Set for gain 0dB ~ 30dB >
HIGH < Set for gain 0dB ~ 42dB >


AGC LOW  / MIDDLE  / HIGH  / OFF
< As the level of gain increases the screen gets brighter and the noise level increases. >
OFF < Gain is fixed at 6dB >
LOW  < Set gain 6dB ~ 18dB >
MIDDLE  < Set gain 6dB ~ 30dB >
HIGH  < Set gain 6dB ~ 42dB >







DNR LOW / MIDDLE / HIGH / OFF
(Note: the higher DNR setting will reduce noise but increase ghosting)
OFF < There is no reduction in noise level. >
LOW < Small reduction in noise level with almost no ghosting. >
MIDDLE < There is sufficient noise level reduction without causing too much ghosting. >
HIGH < Noise levels greatly reduced however ghosting more prevalent >

SPECIAL NOTE: If AGC is turned OFF, DNR will not function




SENS-UP AUTO  (low luminance compensation – Press Set button to amplify level
Min x2 ~ Max x128)
OFF
< SENS-UP maintains a bright, clear screen image by automatically detecting changes in low light level conditions. Pressing Set button in AUTO mode will provide adjustment of storage magnification from x2 ~ x128. As the magnification increases, the screen gets brighter but moving objects get more afterimage effect. If storage magnification is increased while SENS-UP is operating, it may result in noise, and spots across monitor may appear. This is normal. >

**SPECIAL NOTE:
When SHUTTER is in manual mode SENS-UP does not operate**

SPECIAL  See SPECIAL menu details below
< The SPECIAL menu includes the following options:
CAMERA ID
COLOUR
SYNC
MOTION DET
PRIVACY
MIRROR
SHARPNESS
RESET
RETURN >

SPECIAL	
CAMERA ID	OFF / ON 
COLOUR	AUTO / COLOUR / B/W
SYNC	INT / LL
MOTION DET	OFF / ON 
PRIVACY	OFF / ON 
MIRROR	OFF / H-REV / V-REV
SHARPNESS	OFF / ON 
RESET 	
RETURN 	

SPECIAL FUNCTIONS

CAMERA ID OFF / ON  (Select ID for ID characters)
 A B C D E F G H I J K L M
 N O P Q R S T U V W X Y Z
 a b c d e f g h i j k l m
 n o p q r s t u v w x y z
 - . 0 1 2 3 4 5 6 7 8 9
  CLR POS END

< Up to 15 characters can be selected for the ID. Move the cursor to the required character and choose using UP/DOWN/LEFT/RIGHT buttons. Select character by pressing the Set button. The cursor will now move to the next space. Repeat with next character and so on. When name chosen move cursor to POS and press Set button. The name now appears in top left hand corner of display. Move using the 4 directional keys and press Set again. Now select END and press Set again to complete ID. >






< If you press the Set button after moving cursor to CLR, all the letters will be erased. To change a character move cursor to the arrow at bottom left of screen

and press SET. Now position cursor above character you wish to change and select, then move cursor to replacement character and press Set again. Go to Return to save the settings.>

SPECIAL NOTE: If Camera ID is switched to OFF, ID will not be displayed even though it has been input.

COLOUR AUTO - This sets camera to DAY/NIGHT mode. Colour for daytime and Black & white for night time.
 ON - The colour mode is selected permanently.
 < If AGC is OFF you cannot select COLOUR mode. If Infra-red light is used you may have a problem with focusing >

SYNC INT - Internal synchronisation
 LL - External line lock synchronisation. Adjust phase from 0 to 359.
 <If LL set, the video is synchronised between cameras with a synchronous generator>. Sync mode is fixed to INT in 12vDC input power.

- MOTION DET OFF / ON 
AREA SEL 1 / 2 / 3 / 4
AREA STATE ON / OFF
TOP DOWN 1 ~ 73
LEFT RIGHT 1 ~ 96
SENSITIVITY 1 ~ 99
< Movement in 4 areas on the screen can be selected and when movement is detected the words "MOTION DETECTED" are displayed on the screen.>
Press the Set Button. Select AREA SEL and select area required. Select ON for area required. Set the size of the area to be observed using the UP, DOWN, LEFT and RIGHT selectors. To adjust level of observation use the SENSITIVITY setting. Go to Return to save the settings.
NOTE: MOTION DETECTION IS A MONITOR SCREEN DISPLAY MESSAGE ONLY - THERE IS NO MOTION DETECT OUTPUT SIGNAL. >
- PRIVACY OFF / ON 
AREA SEL 1 / 2 / 3 / 4
AREA STATE ON / OFF
AREA TONE 1 ~ 100
TOP DOWN 1 ~ 73
LEFT RIGHT 1 ~ 96
PAL
< Select areas on the screen that you do not want displayed. Press AREA SEL . Select ON for area required. Set the size of the area to be observed using the UP, DOWN, LEFT and RIGHT selectors. The AREA TONE sets the colour tone of the blanked out area. As area size is different in PAL or NTSC mode ensure PAL is selected. Go to Return to save the settings. >
- MIRROR OFF / ON
< If set to ON inverts the horizontal image. OFF cancels the inversion. >
- SHARPNESS OFF / ON 
< The outline of the video image becomes cleaner as the Sharpness level is increased. If the level goes up excessively it may affect the video image by generating noise. Press Set button to display setting for sharpness 0 ~ 31. Go to Return to save the settings.
- RESET  < Resets manufacturers settings. Note that the SENS-UP setting is switched OFF, AGC set to Middle and DNR set to low. >
- RETURN  < Saves the SPECIAL menu and returns to the SETUP menu. >

CAM195L Camera Specifications

Image Sensor	1/3" SONY Colour Interline CCD	Effective Pixels	PAL 752 (H) x 582 (V)
Electronic Shutter	1/50 – 1/120,000 sec	Sync. System	Internal / Line Lock adjustable
BLC	Automatic selected by menu	S/N Ratio	52dB (AGC off)
Image Output	1V _{pk-pk} 75Ω	Gamma Correction	0.45
Resolution	540 TVLines	White Balance	ATW/AWC/Manual
Min Illumination	.002 lux at F1.6 (SENS-UP x128)	DNR	Noise reduction menu settings
Input Voltage	12v DC or 24vAC	Privacy Mask	On / Off (4 zones)
Power Consumption	260 mA DC12V / 170 mA AC24V	Scanning System	PAL 625 Lines
Colour	On / Auto	Humidity	30 ~ 90% RH
Lens	CCT342 Auto Iris D/D 2.8 ~ 12mm	Weight	565g
AGC	6dB ~ 42dB (Max/Mid/Low/Off)	Dimension	W61mm x H51mm x L116mm
Lens Mount	C / CS Mount (screw lock)	Operating Temp.	-10°C ~ +50°C
OSD	On Screen Display	Housing	Aluminium

Special Features

Digital Noise Reduction
Motion Detection via On Screen Menu
Privacy Masking via On Screen Menu
Mirror Option via On Screen Menu

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Troubleshooting

- No screen display connection
 - * check power
 - * check video line
 - * check brightness of Auto Iris Lens
- Unclear video image
 - * check lens is clean
 - * ensure display screen is not exposed directly to sunlight.
 - * adjust the back focus setting
- Screen is dark
 - * adjust monitor contrast
 - * adjust brightness level of the Auto Iris Lens – Refer LENS settings
- Operational problems
Camera surface hot
black stripes displayed
 - * check power supply
- Motion Detect not working
 - * check Motion Detection Mode switched to ON
 - * check MD sensitivity not too low
 - * check MD AREA correctly set
- Colours incorrect
 - * check the White Balance settings – refer to instructions
- Flickering screen
 - * ensure camera not in direct sunlight or near fluorescent light
 - * if auto iris lens fitted check lens connector cable
- L/L mode not selectable
 - * camera must be connected to AC power source
- No colour
 - * check AGC is not set to OFF mode
- SENS-UP not working
 - * check AGC is not set to OFF mode
 - * check SHUTTER menu not set to MANUAL mode