

## CAM065

These Traditional cameras have Digital WDR functionality allowing improved picture quality in mixed lighting conditions. They are complimented with an OSD menu, allowing access via camera or RS485, privacy masking, digital zoom and adjustable NiteDevil settings. The cameras are fitted with a Sony Super HAD CCD II and are Hi-Res 700TVL



Lens supplied separately  
2 fitted lens options available

**CAM065 12v DC only without lens**

**CAM065L 12v DC with 2.8 ~ 12mm Direct Drive Lens**

**CAM065P 12v DC with 6.0 ~ 60mm Direct Drive Lens**

The cameras provide a resolution of **700TVL** and comes with many of the NiteDevil features including an OSD menu, the Digital Slow Shutter feature allowing minimum illumination down to **0.001 Lux** and **wide dynamic** option.

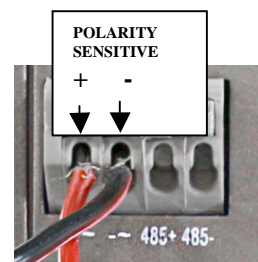
### Features

- ✓ 1/3" Sony Super HAD CCD II 700 TVL
- ✓ Wide Dynamic Range setting
- ✓ Various Lens Options
- ✓ Built-in OSD menu
- ✓ Privacy Masking
- ✓ Electronic Shutter
- ✓ Digital Zoom up to 256x
- ✓ Low Light 0.001 Lux
- ✓ Maximum 2.6 watts consumption
- ✓ Digital Slow Shutter up to 256x
- ✓ Built-in 3DNR function
- ✓ RS485 menu control
- ✓ Motion Detection Alarm Function
- ✓ Contrast & Sharpness adjustments

### Powering the Camera

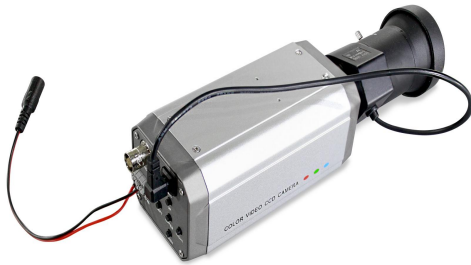
#### CAM065

The CAM065 requires a 12v DC regulated power supply providing a minimum of 300mA. When connecting to any 12v DC power supply, always use a regulated supply. The camera has a terminal connection. **This camera is polarity sensitive so ensure that the positive and negative connections are correct.** If incorrectly connected damage to the camera may result. It is recommended that the power supply used, allows additional headroom per camera to ensure long life, taking into account the extra load created by adding an auto-iris lens (typically 10mA). The power supply you choose must be a well regulated one giving a smooth regulated 12V DC output and it is recommended that it should be rated at no less than 450mA.



**WARNING** - This power supply **must not** be a security type used in intruder alarms as the over voltage may damage the camera and void the warranty. The earthing arrangement of an intruder type alarm PSU may give rise to problematic "earth-loops" and poor voltage regulation can give poor/noisy image quality. We offer no technical support or warranty with the camera if you use a 13.8V intruder alarm PSU as it is contrary to the installation & usage instructions of the camera. The terminal strip will facilitate easier and faster power connection without the hassle of soldering. The terminal connection can be seen in the picture above. The 12V+ and -0v connections from the power supply must be connected correctly. If you have a 2.1mm jack plug connected to your power supply you will need to cut this off and use the bare wires to connect to the terminal strip. Note that the 12V positive is the wire that was connected to the centre pin of the jack plug and the 0V wire was connected to the outer case.

## Fitting the Camera Lens

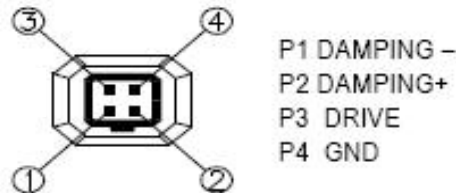


Fit the Auto Iris Direct Drive Lens connector to connection shown.

### **Auto Iris Direct Drive Connections**

Auto Iris type lenses require the 4-pin connector to be attached to the camera. It is important that this connector is wired correctly. If you bought the lens from SystemQ and it's a direct drive lens, this will be pre-wired and you can simply plug the lens into the camera.

Auto Iris Direct Drive Connections



### **C or CS Mount Lenses**

Most lenses are available in 2 different mounting options - C mount and CS mount. CS mount lenses are now the most popular size as they are shorter and more compact than C mount lenses. Most cameras are now manufactured to accept CS mount lenses. Before fitting the lens you need to verify that you are using a CS mount lens with the camera. You can confirm this with your lens supplier or the literature that came with your lens, check the instructions or packaging to see if your lens is a C or a CS mount version. If your lens is a C mount type you can still fit it to the camera by following the instructions under the heading **Using a C Mount lens**.

### **Using a CS Mount lens**

If you are using a standard CS mount lens you can screw the lens straight into the camera without the need of a C-CS adapter ring.

**Adjusting the inner focus ring** - Once you have fitted the lens, if you have a picture on the monitor but cannot correctly focus the lens by the fine focal adjust on the lens itself, you may need to alter the inner adjusting ring that is screwed into the end of the camera. To do this you will need a small Phillips screwdriver. This ring enables the lens to either "sit" a little closer or a little further away from the camera to get a sharp focused image when using lenses from different manufacturers. To adjust the inner focus ring you will need to slacken the ring by loosening the screws. This is a trial and error process by moving the ring in or out say ½ turn then locking it again and trying to refocus the lens. It is possible (with common sense!) to work out whether the lens needs to be nearer or further away from the camera by watching for improvements in focus at each attempt.

**NOTE** – If it appears that the lens will never be in focus then it is possible that you are trying to fit a **C-mount** lens on the camera, not a **CS-mount** lens. If this is the case you will have to add a spacer ring to the lens.

### **Using a C Mount Lens**

If you are using a C mount lens you will need to add a C-CS mount adapter ring. This ring effectively moves the C mount lens an extra 5mm away from the camera body to achieve the correct focusing of the lens. Once you have fitted the adapter ring you can carefully screw the lens to the camera. If the picture is out of focus, try focusing it in using the focus adjust on the lens itself. If you can nearly get the focus right but not quite (because the lens runs out of adjustment) then you probably need to adjust the inner focus ring. See **Adjusting the inner focus ring** above. It is important that you never force a lens when it becomes tight on the camera or you may damage one or the other device. A **C-mount** lens fitted on a **CS-mount** camera may protrude too far into the camera and cause irreparable damage.

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**Traditional Wide Dynamic Camera with RS485**

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**Setting Up an Auto Iris Direct Drive Lens for different Light Levels**

The brightness setting in the menu determines when the IRIS of the lens opens and closes. It is important to set this correctly as if the brightness level is set too low, you may get satisfactory pictures during the day but at night not enough light can enter the camera giving poor quality pictures. The trick to setting up the brightness level is to set it up in the brightest possible conditions, i.e. midday on a sunlight day and keep the IRIS open to its maximum without a too bright picture. This means at night in low light, the IRIS will be open as much as possible and give the best results.

To do this, follow these steps:

With the camera in the brightest light conditions that it will be expected to work,

1- Enter the AWB menu and enter Brightness menu, increase to 100% and then reduce level until the picture is okay. This will ensure that the iris is set to its widest setting. Note that this setting assumes this is a bright day so judgement will have to be exercised to guess the best option on a dull day.

2- Then exit the menu. Once you have done the above the lens will restrict the light sufficiently in bright sunlight but open up to its maximum in low light giving the best night time performance.

Further details on the menu setup and operation are covered below.

**Connecting Video**

The video out from the camera is provided from the BNC connector located at the rear of the camera. The camera's video signal is carried by a suitable cable (usually RG59 or similar) to the monitor or other video input, ie, of a switcher, quad, DVR etc. Remember that the Video out from the camera is like any other electrical circuit and requires two wires to complete the circuit. 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. A typical connection is shown as follows:



It is recommended that when you are first setting up the cameras that you use a short BNC-BNC cable to link the camera directly to the monitor and to set it up at the same time. This allows you to both understand the camera and get the very best out of this great product as you will be able to adjust the camera whilst looking at the monitor screen. Obviously whilst you are setting up the camera, it does need to be powered!

This camera has an RS485 terminal connection on the rear of the camera to allow the camera menu to be updated using an RS485 keyboard or using the PTZ option in a DVR. Alternatively you can change the menu settings using the menu control buttons on the rear of the camera.

**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.

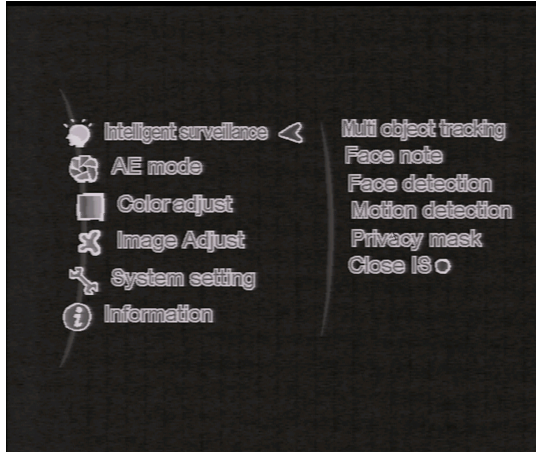
Never expose the camera to rain or liquids. These will corrode the camera electronics.

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

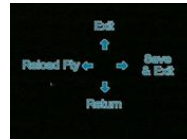
Only use this camera in a housing if used externally.

**Traditional Wide Dynamic Camera with RS485**

To display the OSD menu press the ENTER button.



**ENTER BUTTON:** Displays menu on the screen. Press button down to Exit menu, Save & Exit, Reload Pty(Reset\*) or Return.



**UP/ DOWN BUTTON:** Used to change the value of a selected item and move up and down menu.

**LEFT / RIGHT BUTTONS:** Move cursor right to allow the editing of a value of a selected item, or left, to then move up or down the menu.

**\*Reload Pty (Reset)**  
**SPECIAL NOTE**  
 If the menu is reset the camera will revert to black & white. Go to System Setting, Lens and change manual to either DC-Indoor or DC-Outdoor.

MENU STRUCTURE		
<b>Intelligent Surveillance</b>	Multi Object Tracking	DZoom 0 ~ 5
	Face Note	0 ~ 11
	Face Detection	Frame On/Off, Sensitivity 0 ~ 11, Warning trigger Off/Low/High, Warning seconds 0 ~ 65535
	Motion Detection	Off/On, Set Range, Sensitivity -2~2, Warning trigger Off/Low/High, Warning seconds 0 ~ 65535
	Privacy Mask	Opacity 0~3, Mask select 1~8, Set mask area(right click), Switch On/Off, Mask Color 0 ~ 65535
	Close IS	Close menu
<b>AE Mode</b>	Standard AE	Not Applicable
	SWDR	Auto-Switch Auto/Manual, Level 0~8, Strong light sharpen 0~50, DWDR 0~12, Saturation enhance 0~64, SLWDR entry 0~32
	BLC	Level: Auto/Low/Middle/High
	HLC	Set range:Right click, Level:Low/Middle/High, Mask Greyscale 1~6
	Face AE	Frame: On/Off, Sensitivity 0~11
	Demist	Demist: Auto/Low/Middle/High, 3D-NR Off/On
<b>Color Adjust</b>	AWB	AWB, ATW, F/A, U30, CWF, D50, D65, D75
	Brightness	0 ~ 99
	Color-Red	0 ~ 99
	Color-Green	0 ~ 99
	Color-Blue	0 ~ 99
	Contrast	0 ~ 99
	Saturation	0 ~ 99
	CR Suppress	Off/On
<b>Image Adjust</b>	Day & Night	Auto-general, Ext, Color, BW, Auto-progressive
	Digital SlowShutter	1/50,1/100,1/250,1/500,1/2000,1/5000,1/10000,1/100000,2x,3x,4x,5x,6x,7x,8x,16x,32x,64x,128x,256
	3D-NR	0~3
	2D-NR-1	0~32
	2D-NR-2	0~32
	Sharpen	0~32
	FC Suppress	0~15
	Blemish Compensation	0~3
<b>System Setting</b>	Lens	Manual/DC-Indoor/DC-Outdoor
	D-Zoom	D-Zoom:1~256, Tilt:-100~+100, Pan:-100~+100
	RS485 Setting	Camera ID: 0~255, Baud rate: 1200/2400/4800/9600/19200/38400/57600/115200/230400/460800
	Language	English, French, Spanish, Russian, Chinese
	Monitor	LCD/CRT
	Other	Show ID/Icon: Show ID/Icon/Show Icon/Show ID/Off AC Freq: 50Hz/60Hz
<b>Information</b>	Version Information	

**Using the Menu**

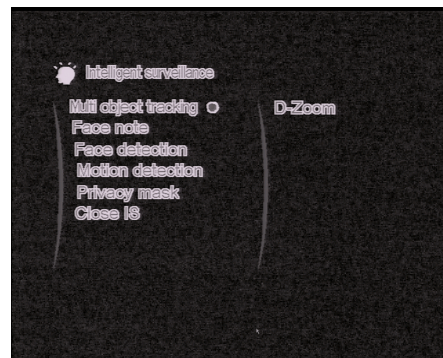
The menu can be accessed by pressing the Enter button down on the back of the camera or by accessing the camera using the RS485 connection. This option will be discussed later in this manual.

When you enter the main menu you will see six sub menus listed on the left side of the screen and an arrow pointing to the first menu. On the right are displayed options for that menu selected. Now press the Right button to display these options on the left hand side of the screen. Using the Down or Up buttons select the option required and click the right button to select it. Press the right button to edit the option. Change the settings using the Up or Down keys and press the Left button twice to return to the menu selected. Use the same method to access each menu. Before leaving menu press Enter button and click on Save & Exit.

**The Menu System**

**Intelligent Surveillance**

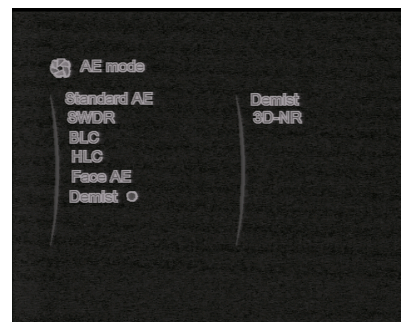
This facility allows you to track multiple screen movements and will zoom in on the area where movement is detected. You can set the zoom level, whether you want a frame displayed around movement area and display a coloured warning box that can be displayed for a timed interval.



Multi Object Tracking	DZoom	0 ~ 5			
Face Note	Sensitivity	0 ~ 11			
Face Detection	Frame	On/Off	Sensitivity	0 ~ 11	Warning Trigger Off/Low/High
	Warning Seconds	0 ~ 65535			
Privacy Mask	Opacity	0 ~ 3	Mask select	1 ~ 8	Switch On/Off Mask Color 0 ~
65535					
Close IS	Close Intelligent Surveillance				

**A E Mode**

Standard AE is a fixed option. SWDR is the wide dynamic feature. This uses two elements in the CCD to recognise the darkest and lightest parts of the picture and merge the results. This provides a balanced picture and is especially useful in situations where there are large areas of shadow. BLC is backlight compensation and this too allows you to balance the light levels on picture. HLC is high level backlight compensation and this reduces strong light e.g car headlights and Face AE allows improved face recognition. It is recommended to leave the Demist option set to Auto. 3D-NR corrects night time motion blur using sophisticated DNR algorithms, providing clear low light images.



Standard AE	No menu adjustments				
SWDR	Level:	Auto/Manual	Level 0 ~ 8	Strong Light Sharpen 0 ~ 50	DWDR 0 ~ 12
			Saturation Enhance 0 ~ 64	SLWDR (Slow WDR entry) 0 ~ 32	
BLC	Level:	Auto/Low/Middle/High			
HLC	Set Range: (Right Click)	Level:	Low/Middle/High	Mask Greyscale	1 ~ 6
FACE AE	Frame:	On/Off	Sensitivity 0 ~ 11		

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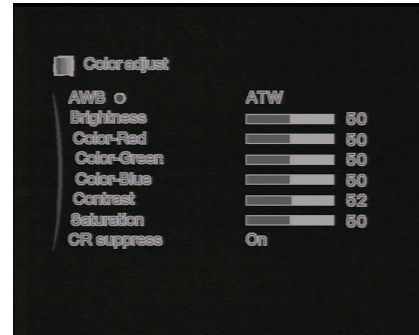
**Traditional Wide Dynamic Camera with RS485**


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Demist                      Demist: Auto/Low/Middle/High    3D-NR On/Off

**Color Adjust**

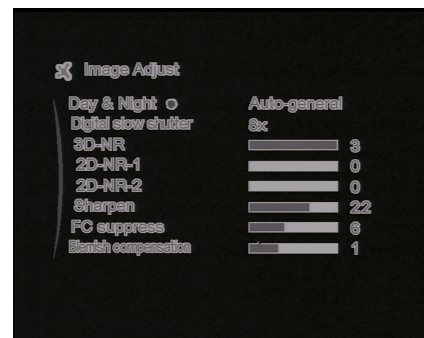
Auto White Balance is used to cater for different light temperature and the general setting for indoor is AWB and outdoor ATW (Auto Tracking White Balance) where light temperature can alter considerably. There are other settings that cater for different levels of light equalisation such as U30, CWF, D50 etc. In addition you can change the Red, Green and Blue hue by altering the separate parameters in this menu. Additional contrast and saturation can be set for the overall colour range.



AWB	AWB / ATW / F/A / U30 / CWF / D50 / D65 / D75
Brightness	0 ~ 99
Color-Red	0 ~ 99
Color-Green	0 ~ 99
Color-Blue	0 ~ 99
Contrast	0 ~ 99
Saturation	0 ~ 99
CR Suppress	Off/On

**Image Adjust**

This menu is for improving the picture quality and includes the Day & night settings with options switching from colour to black & white at night and vice versa, Digital Slow Shutter (DSS) that is the NiteDevil feature for holding the shutter open slightly longer to increase light availability at night, Digital noise reduction i.e 2D and the advanced 3D to remove affects from DSS, Sharpen to improve picture sharpness and FC (False Colour) Suppression / Blemish Compensation to help improve colour quality.



Day & Night	Auto-general / Ext / Color / BW / Auto-progressive
Digital Slow Shutter	1/50, 1/100, 1/250, 1/500, 1/2000, 1/5000, 1/10000, 1/100000, 2x, 3x, 4x, 5x, 6x, 7x, 8x, 16x, 32x, 64x, 128x, 256x
3D-NR	0 ~ 3
2D-NR-1	0 ~ 32
2D-NR-2	0 ~ 32
Sharpen	0 ~ 32
FC Suppress	0 ~ 15
Blemish Compensation	0 ~ 3

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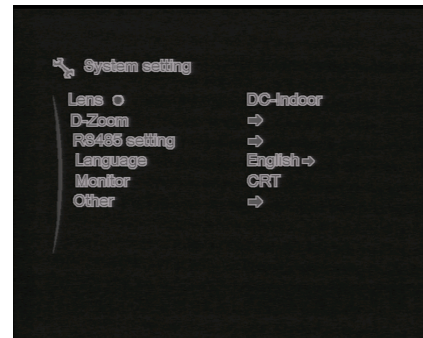
**Traditional Wide Dynamic Camera with RS485**


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**System Setting**

This option defaults to Manual on camera menu reset, so if you have a Direct Drive Lens fitted, you will need to change the setting to either DC-Indoor or DC-Outdoor. You also have settings for the Digital Zoom, RS485\* used for changing the menu by your Alien DVR or PTZ keypad, Language, monitor type and displaying or suppressing camera icons.

\*Details on using the RS485 are further described below.




Lens	Manual / DC-Indoor / DC-Outdoor
D-Zoom	D-Zoom: 1 ~ 256, Tilt: -100 ~ +100, Pan: -100 ~ +100
RS485 Setting	Camera ID: 0 ~ 255, Baud rate: 1200/2400/4800/9600/19200/38400/57600/115200/230400/460800
Language	English, French, Spanish, Russian, Chinese
Monitor	LCD/CRT
Other	Show ID/Icon: Show ID/Icon, Show Icon, Show ID, Off      AC Freq: 50Hz / 60Hz

**RS485 Menu Control**

Using the RS485 to change menu settings can be a good option. Note the zoom and focus are manually set but all the menu settings can be changed using the RS485. The Alien DVR can be used to control access by using the PTZ option. This means if you run a CAT5 single matched pair from the camera to the DVR you can update the menu, from the DVR rather than having to use ladders to access the camera. A further benefit is if the DVR is remotely networked, you can update the menu from a remote location using the Alien client software. This is especially useful when installations are a long distance away, saving you transport and of course changes can easily be made when dark.

To enable control of the RS485 connection using a PTZ keyboard or Alien DVR, you need to do the following:

- a) Connect a CAT5 match twisted pair to the 485+ and 485- connections on the back of the camera. Take the CAT5 to a PTZ keypad or Alien DVR ensuring that the + and - connections are set with the correct polarity. On the Alien DVR the T+ refers to the + and the T- refers to the - connection. The control works only on the PELCO-D setting and this must be set in the DVR PTZ menu for the correct channel. Also the baud rate must be set ( recommend 2400) in the DVR and in the System Setting, RS485 option in the camera menu. Also ensure the Camera ID set in the camera menu is the same as the ID in the PTZ menu.
 
- b) Enter a CALL 95 via the DVR or keypad to display the menu. The arrow keys move up, down, left and right in the menu. The right arrow enters and moves the cursor position to an editing position and the up and down arrow changes values. The left arrow moves out of editing mode, and the enter button allows for saving the changes.

Note that various keypads may have different keys allocated and the above is only a guide.

**Traditional Wide Dynamic Camera with RS485**
**TECHNICAL SPECIFICATIONS**

<b>FUNCTION</b>	<b>CAMERA MODEL</b>
Camera Model	<b>CAM065</b>
Imaging Sensor	1/3" SONY Super HAD CCD 11
Effective Pixels	PAL:976(H)x582(V)
Horizontal Resolution	700TVL
Minimum Illumination	0.001Lux – 0Lux(with IR LEDs on)
S/N Ratio	More than 50dB
Scanning System	2:1 Interlace
Synchronous System	Internal, negative sync
Auto Electronic Shutter	PAL: 1/50s ~ 1/100,000s
Gama	0.45
Video Output	1vp~p,75Ω
AGC	Automatic
Power/Current	12vDC / 300mA
Lens	Supplied separately
Dimensions	110(W) x 45(45(H) x 55(D)mm
Weight	300grms
Storage Temperature	-30°C ~ +60°C RH95% Max
Operating Temperature	-10°C ~ +50°C RH95% Max

*All specifications are approximate. Kovert.com reserves the right to change any product specifications or features without notice. Whilst every effort is made to ensure that these instructions are complete and accurate, kovert.com cannot be held responsible in any way for any losses, no matter how they arise, from errors or omissions in these instructions, or the performance or non-performance of the equipment that these instructions refer to.*



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