Austral Surveillance

StarLight Camera

Star Light Colour Camera

1/3”, 470 TV Lines, 12VDC

High Resolution

High Sensitivity, Digital Signal Processor Technology

(Pictured above with optional 3.5-16mm Auto-Iris lens)

High Sensitivity, Low light, vivid colours, Dynamic images.
The MTV-63V3HP camera incorporates state of the art Star light high grade sensitivity, the MTV-63V3HP is used in a wide range of CCTV installations, particular in low light critical locations where there is a high demand for high grade images from a very low light location. Such situations are government buildings, jails, underground tunnels, Subway stations, marine, mining, foundry, hotels, banks etc. The camera can see as low as 0.003. Hence the user can see use the star lights at night without any artificial light source to create a colour image.

What is "STAR LIGHT" camera?

The "Star Light” video camera is one of the many unique lines of cameras that Mintron has developed for special-purpose applications. By incorporating frame integration technology, the Star Light camera offers an unsurpassed level of low-light performance, allowing image formation in near total darkness.

In these cameras, the CCD accumulates the incoming light for periods 2 to 128 times longer (1- 2 second shutter speed) than normal maximum exposure times for video CCD cameras (1/60 or 1/50 second). As a result, the minimum illumination needed by the camera to produce a usable image is decreased by a factor of 2 to 128 times.

Using our Star Light camera with frame integration technology, users can see colour images under starlight illumination conditions (0.0035 Lux). The scattered background light prevalent in cities (i.e. light pollution) is adequate for good colour exposures.

Star Light cameras can also extend the effective range of supplementary infrared illumination used to generate "night-time" images. Using frame integration exposures, the effective range of an infrared source can be extended 128 times - so, for example, an infrared projection lamp designed to illuminate an area 10 metres away will have its range extended to 1280 metres.

The 63V3HP is capable of 2 ~128 times (2x -128x) frame integration periods, programmable by the user through an on-screen display (OSD) menu. The frame integration exposure capability of the starlight camera can be further extended to 256x; 512x; or 1024x (or more) by special order. Note: these special extended exposure times also require that a special cooling system be installed to bring the CCD chip temperature down to -10C to decrease the dark current and prevent "pixelation."

What is star light mode?

Star light mode will allow the CCD camera to see a clear colour image under very low light situations, such as 0.003 lux illumination level.

All CCD sensors are designed to work on 1/50,1/60 ~1/2000 sec. shutter speed, limiting the minimum illumination level or so called sensitivity to 3 to 6 lux with a F1.2 lens on 5600k. Mintron proprietary DSP can drive CCD shutter speeds to as low as 1 sec ~ 10 sec. As a fundamental of physics, the longer the shutter is open, the more photon (incoming light) the CCD will capture, hence increasing the sensitivity to 100 ~ 600 times more than a standard camera. The Mintron 63VHP series camera has 4 times better sensitivity on standard mode then other cameras, plus it will multiply light to 128X on star light mode. All these features make 63VHP series cameras 512 times more sensitive then all other cameras on the market.

How can I activate the Starlight mode?

The user/installer can turn ‘On’ Starlight mode (slow shutter frame integration mode) by using the OSD (On Screen Display) buttons located on the rear of the camera. If the camera has the Star light mode turned ‘On’, when the incoming light decreases the camera will automatically increase AGC gain to bring the video level back to 100IRE (100% video level 1Vp-p). After the AGC pulls up to the maximum level and still can not maintain 100 IRE, then the frame integration feature will automatically kick in, the shutter speed will start to drop from 1/50 to 1/25, 1/12, 1/8 1/4 1/2… and all the way down to 1~2 seconds shutter speed. Due to manufacturing process, a normal CCD has an inherent problem where most of the CCD will experiencee too much dark current noise on 64X sensitivity or 1sec shutter speed. The MTV-63V3HP camera only uses high grade selected CCD’s and incorporates an adaptive noise cancellation circuit, which enables the CCD to go further up to 128X sensitivity or 2 second slow shutter speed. Hence it will add two times better sensitivity. The MTV63V3HP camera has even a more advanced feature, the priority of AGC or SLOW SHUTTER can be programmed by OSD.

What is Shutter Priority? When Shutter Priority is selected, while the lighting level decreases, the frame integration mode will kick in to first maintain a clean brilliant noise free image with perfect color rendering. After the shutter speed slows down to a maximum 128X or 2 seconds but cannot maintain 100 IRE video level, the AGC will start to kick in and continue to hold the video level on 100 IRE till the AGC pulls up to maximum (+18 dB). Whilst enabling the camera to display a noise free colour image down to 0.003 Lux, the only draw back of this mode is that, while the shutter slows down, the motion of the image will become a little slow and blurry.

Back Light Compensation

A standard camera without a super dynamic feature, has only one option for shutter speed and Iris opening settings, for example 1/50 second for a selected scene. In a situation where a very bright back ground or strong spot light is behind main object, it is unavoidable that the camera will take in all the incoming light, average it and decide the exposure setting. This is not a good solution in this application because as the shutter speed increases, the iris closes down, causing the main object to become too dark to see. To overcome this problem, an algorithm called BLC (back light compensation) is widely used in most of the cameras, using “weighted zone” theory. The image is first divided into 7 blocks or 6 zones. Each of the zones can be weighted while calculating the exposure level. For example the centre portion can be weighted for 9 times more; hence an object in the very centre of the scene will become clearer to see as its exposure was calculated mainly according to lighting level of centre zone. Hoever there is a very big draw back with this process. If the main object is moving from centre to up, down, left or right, the object will become very dark as it is now not being weighted and instead, has been discriminated.

The only way to solve the above problem is to give the camera an intelligence which will instantly change the weighted zone from the centre to any other portion of the screen where the main object is now moving to. The Mintron MTV-63V3HP camera is equipped with this excellent feature.

The DSP first divides the image into 320X240 (76,800) tiny micro zones. Each zone is constantly scanned to search for the main object and over exposure pixel. Those over exposure points are first removed from the calculation formulas. The rest of the grey level area is then used for calculation of the exposure level. The artificial intelligence further searches for the main object and applies a proper weighting level to further adjust the exposure level to perfection.

Users may be astonished to see that the DSP works so fast in that, no matter where on the screen the main object is moving to, the exposure level follows immediately and always provides clear images.

ITEM		DESCRIPTION	
Model No.		MTV-63V1N	MTV-63V3H
TV System		NTSC	PAL
Picture Element¡G		811(H) X 508(V)	795(H) X 596(V)
Scanning System		525 lines, 60 fields/sec	625 lines, 50 fields/sec
Sync system:		Internal / VD-Lock (option)	
Minimum Illumination	Legacy mode:	0.8 Lux of F1.2	
	Star Light Mode:	0.0035 Lux of F1.2	
Gain Control:	Mode:	ATW / AWC / FIX (Zero color rolling)	
	Range:	3200 ~ 10000 ºK	
Resolution		470 TVL / 580 TVL (Enhanced)	
S/N Ratio		52dB (MIN) / 60dB (TYP) (AGC OFF)	
Auto iris:		A.E.S. / Video Drive	
A.E.S.		1/60~1/100,000 sec.	1/50~1/100,000 sec.
Video Output		1.0V p-p composite video at 75 ohm	
Gamma Correction		0.45	
Gain Control		AGC On/Off (0~18dB)	
OSD Display		On Screen Display For All Control	
5 PUSH SW		FOR OSD Control Panel	
Flickerless:		Selectable by OSD Manual	
BLC:		Selectable by OSD Manual	
Digital Zoom (2X):		Selectable by OSD Manual	
Mirror Function		Selectable by OSD Manual	
Masking Area		Selectable by OSD Manual	
Operation Temperature		-20¢J TO 50¢J	
Operation Humidity		within 85¢MRH	
Power Source		DC 12V¡Ó1V / 180mA	
Dimension:		50.5mm(W) X50.5mm(H) X115mm(L)	

FOR MORE INFORMATION

42 Botany Rd
Alexandria NSW 2015
PHONE: 1300 130 508 FAX: 02 9698 5476
www.australsurveillance.com.au
sales@australsurveillance.com.au
ABN 85 388 051 001
MASTER SECURITY LICENCE No. 408916063

Member of ASIAL [www.asial.com.au]