USER MANUAL

MECHANICAL IR FILTER OLPF

DAY/NIGHT

DIGITAL COLOR CCD CAMERA

1/3” HI. RESOLUTION

24VAC + 12VDC

1. General description

This 1/3” Day/Night color CCD camera, with high resolution (470/410 k) picture elements, is equipped with a mechanical IR filter and advanced Digital Signal processor to provide an unprecedented optimal image with vivid and stable true color picture up to 500TVL (color mode) in Day time and 520TVL (b&w mode) without focus shift when under IR light at night time.

2. Features

a. Day/Nigth mode: The built in mechanical IR filter design allows the camera to work at true color mode under day light condition and Mono mode under no visible light condition with IR projector.

b. Resolution: perform 500 TV line at day time (color) and 520 TV line at b&w

c. Low light sensitivity: By employing high sensitivity image sensor and low noise circuit design the camera is capable of a 0.5 lux (color mode) and 0.1 lux(b&w mode) low light sensitivity produces and a 48 dB signal-to-noise ratio.

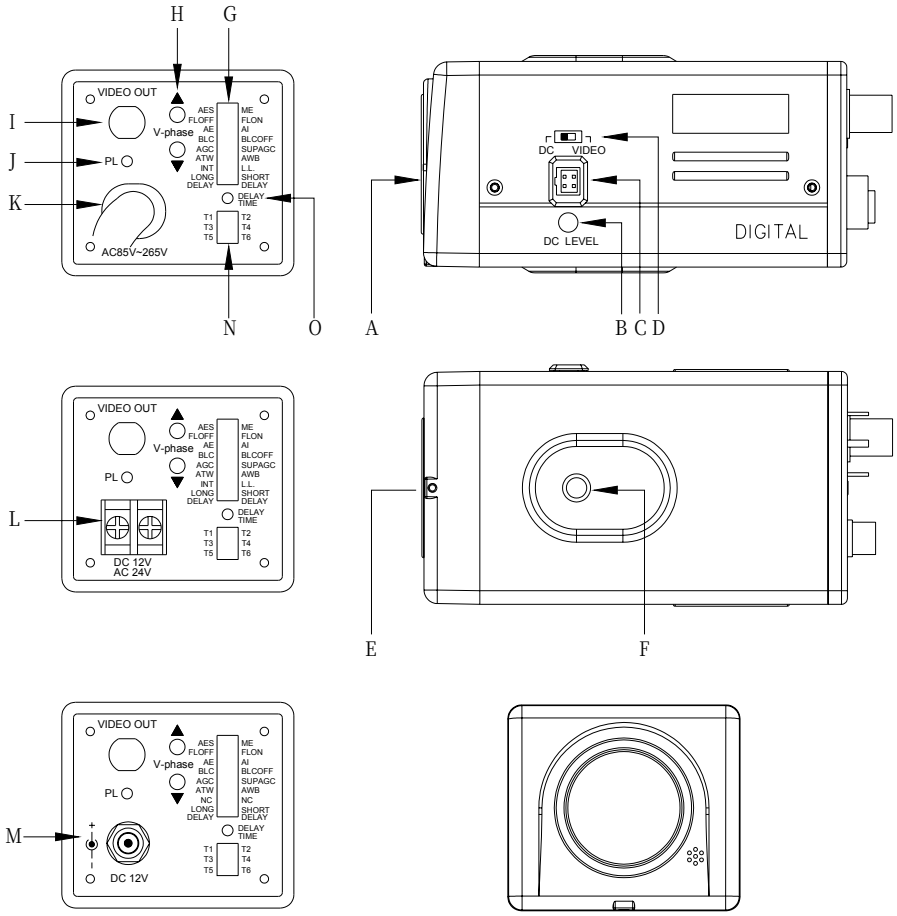
d. White Balance: The wide range Auto Wide Balance (AWB) and Auto Tracing white balance (ATW) allowing the camera to adjust color tone automatically according to the color temperature of the light source illuminating the subject.

e. Back Light Compensation: Smart digital control Auto BLC, enable the camera to be used against any unusual back light conditions.

f. Auto Exposure System: Advanced Auto Exposure System for both CCD iris and auto iris lenses controlling the amount of light to ensure the optimal picture quality.

g. User selectable Internal or external Line-lock sync. mode.

3. Name of parts and functions



a. C（CS）mount adapter

If a CS mount lens is to be used, remove the C mount ring.

b. DC lever Adjuster（VR）

For DC drive auto iris lens driving level adjustment; in order to obtain correct exposure light.

c. Auto iris lens connector（MINI JACK） See section III-1 auto-iris connector.

d. Video/DC auto-iris lens selector

DC—For DC Drive lens

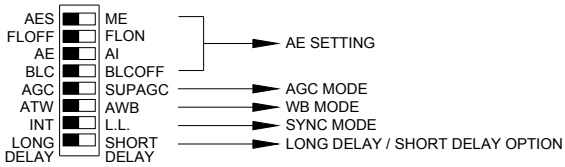
Video—For Video drive lens

e. Flange focal lock screw

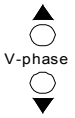
f. Camera mounting screw hole

Standard photographic pan-head screw size（1/4”-20）

g. Dip Switchs



h. Phase Adj.



Line-lock Phase Adj.（Line-lock model）

i. Video output terminal（BNC）

This connector is used to provide video signal output.

j. Power LED

k. AC85V~265V Power Cord

l. DC 12V or AC24V & DC 12V terminal block

m. DC 12V power input terminal

n. Delay time selectable table

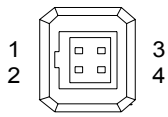
o. LONG delay and SHORT delay time LED

3.1. Auto Iris Lens Connector

● Use the accompanying auto iris lens connector plug.

For auto iris lens with built-in EE amp.（VIDEO Type）

Set the Iris selector switch to “Video” position.



Connector cable leads definition:

1.Red----power 2.NC

3.White----video 4.Black----shielded

For auto iris lens without EE amp.（DC Type）

The connector drawing shows external view from camera.

Set the lens iris selector switch to “DC” position.

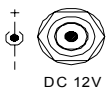
Connector cable lead definition:

1.Damping coil（－） 2.Dampling coil（＋）

3.Driving coil（＋） 4.Driving coil（－）

Connect the leads as shown above; please refer to the instructions of the lens for more detail.

3.2. Power Terminal



3.2.1 DC 12V model

Connect the power supply to the power-input terminal as shown above.

1. Power range for the camera is 12VDC±10%.

2. Connector’s center pole is positive 12V DC and the outside shell is common ground.

3.2.2 AC 24V/DC 12V model

This terminal block accepts both polarity protected AC 24V and DC 12V.

3.2.3 AC 85V~265V model

For AC 85V to 265V models, the camera is equipped with a universal switching power supply. It can accept power source input from 85VAC to 265VAC

4. DIP switch function

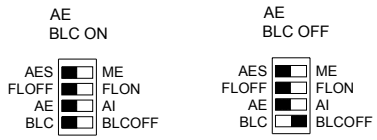
4.1 AE (Auto Exposure) setting

In different situation, there are two kind of shutter mode, Auto/AES mode and Manual/ME mode.

4.1.1 AES mode

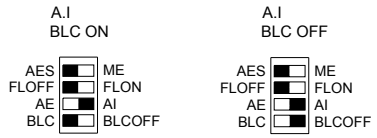
4.1.1.1 If a fixed or manual iris lens is used, please select the AE mode to control the exposure time with electronic shutter. The range of shutter speed is from 1/60(1/50) sec to 1/100,000 sec

In bright light behind the subject condition, the subject is usually slightly darker than the overall screen, please set to BLC ”on” to perform exposure compensation operation by applying the appropriate luminance intensity to the dark areas.
In normal light condition, please set the DIP SW to BLC “off”.



4.1.1.2 If an auto iris lens is used, please set to AI mode, in this mode, the shutter speed is fixed to 1/60 sec. for NTSC and 1/50 sec. for PAL system.

In bright light behind the subject condition, the subject is slightly darker than the overall screen, please set to BLC ”on” to perform exposure compensation operation by applying the appropriate luminance intensity to the dark areas.
In normal light condition, please set the DIP SW to BLC “off”.



4.1.1.3 Flickerless function: under this mode, the shutter speed is fixed to 1/100 sec for NTSC system and 1/120 sec for PAL system to reduce the flicker of fluorescent lights. This feature is designed for Japanese market which uses both 50 and 60 Hz power system.

Note: When using manual iris lens in Flickerless mode, please select table “a” and “b”. If auto iris lens is used in flickerless mode, please select table “c” and “d”.

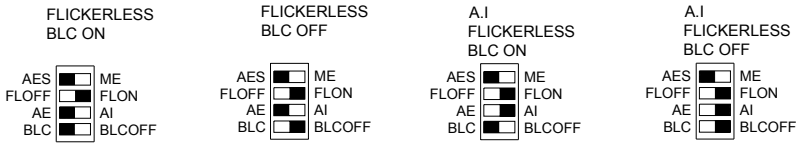
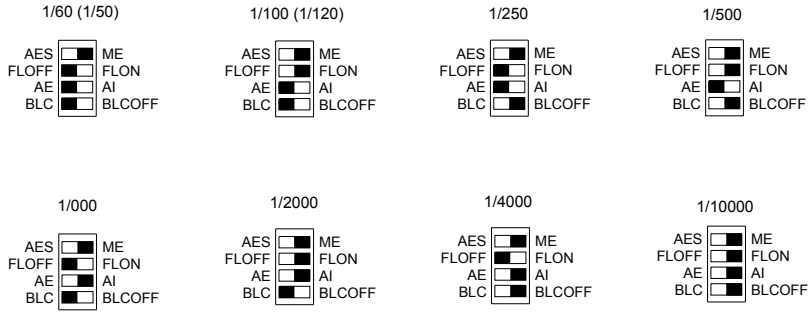


Table “a” “b” “c” “d”

4.1.2 ME (Manual Exposure) setting

Follow the DIP switch to manually set the shutter speed from 1/60(1/50) sec. to 1/100,000 sec.



4.2 AGC mode

Set the DIP switch to super AGC/SUPAGC, the gain is up to 34 dB. In normal AGC mode the gain is at 28dB

4.3 ATW mode/AWB mode

4.3.1 ATW mode --Set the DIP SW to ATW position, the color temperature is monitored continuously and the white balance is set automatically by internal microcontroller, the operating color temperature range is from 2500°k to 18000°k.

4.3.2 AWB mode-- Conventional auto white balance, set the DIP SW to AWB position. In this case, operation is performed at a faster operating speed than ATW mode.

4.4 Line-lock mode

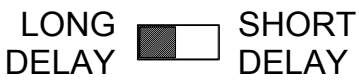
Set the vertical phase of the camera video signal to match the phase of AC power source to avoid color rolling.

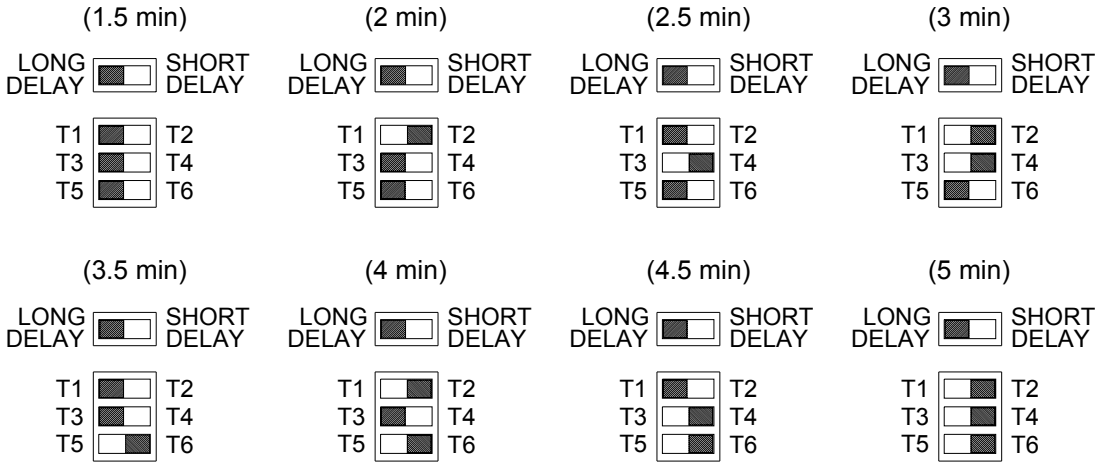
When using dual power source model, set the DIP SW to L.L, the camera will automatically detect and adjust to Line Lock mode with AC power source, and INT for DC power source.

4.5 Delay time selectable function

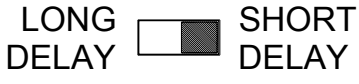
To prevent false triggering for switching between different IR filter in certain light condition, a delay time is introduced before the actual IR filter switching action. Set the DIP sw to LONG DELAY or SHORT DELAY to apply proper delay time according to the light condition.

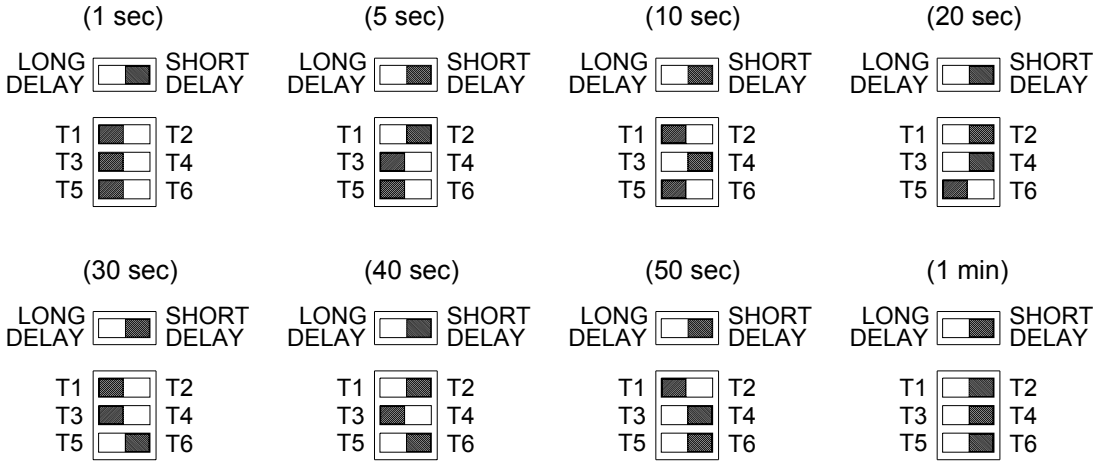
4.5.1 LONG DELAY time from 1.5 minutes to 5 minutes.





4.5.2 SHORT DELAY time from 1 second to 60 seconds





5. Infra-Red Illuminator

Under low light condition, ordinary color camera cannot achieve a clear picture when working with IR projector. This camera is specially designed with the capability to accept most IR projector to have a crystal clear mono picture when in a completely dark area.

The range of Infrared wavelength accepted is from 700nm to 1100nm.

The focus may slightly vary with IR wavelength due to the lens diffraction to long-wave, while installing the camera with IR projector, please check the focus under IR projector and normal light condition, and find and best focusing position.

It is recommended to close lens aperture one or two steps to increase the depth of field in order to compensate the lens diffraction.

6. Specifications

Power requirements	DC12V＋AC24V	
Synchronization	Line-Lock	
Image device	1/3” SONY Super HAD CCD	1/3” SONY Ex-view HAD CCD
Picture elements	PAL: 752(H) x 582(V), NTSC: 768(H) x 494(V)	PAL: 795(H) x 596(V), NTSC: 811(H) x 508(V)
Scanning system	PAL: 625 lines, NTSC: 525 lines, 2:1 interlace	
Horizontal resolution	500 TV Lines (color mode) 520 TV Lines (b&w mode)	
Min. illumination	0.5 lux @F1.2(color mode, 30IRE, SAGC) 0.1lux @F1.2(b&w mode, 30IRE, SAGC)	0.1 lux @F1.2(color mode, 30IRE, SAGC) 0.05lux @F1.2(b&w mode, 30IRE, SAGC)
IR wavelength	700~1100nm	

OLPF switching	Auto switching
OLPF change delay time	User define from real time(1 sec.)~5 mins
Aperture correction	Horizontal & Vertical 2H enhancer
Signal to noise ratio	Better than 48 dB
Flicker less	ON/OFF switchable
Gain control	Max. 36 dB, AGC off
Auto iris shutter	Auto iris mode: PAL:1/50 sec, NTSC: 1/60 sec.
Auto electronic shutter	AES: 1/50(60) ~1/100,000 sec.
Auto exposure	ON/OFF switchable
White balance	AWB / ATW 2500°k ~ 9500°k
Gamma correction	0.45
BL compensation	Auto detect, Histogram & 225 areas windows weighted
Phase adjustment	V phase adjustment(±90°), AC model
Video output	1Vp-p, 75Ω composite, BNC connector
Lens mount	Accept C/CS mount
Auto iris lens	Accept DC/Video servo iris lens
Operating temperature	-10°C ~50°C (14°F ~ 122°F)
Weight	0.55kg
Dimensions	60 x 53 x 110mm (W x H x D)

Warning：To prevent fire or electric shock hazard, do not expose the appliance to rain or moisture.