

BOTOL / Video

道路专用摄像机操作说明书

根据使用、安装和环境条件，请务必进行适当的设定和调整。如果你在安装和（或）设定时需要帮助，请和销售商联系。

此说明书适用于以下型号摄像机：

BTL-5660 540线彩色0.01Lux,黑白0.002LuxF1.2,AGC ON,50IRE,红外照度0Lux,彩转黑摄像机

注:以上型号彩转黑摄像机可以通过摄像机后板上的指拨开关设置成彩转黑或彩色摄像机

注意

在进行本机的接线或操作之前,请仔细阅读下面的标签!



本产品的制造号码标示于机身上。
请在下面的空白处填上本机的制造号码，并将此说明书妥加保存，以便万一丢失时查核。

型号_____

制造号码_____

在三角形中的闪烁的箭头,用以提醒用户在本产品附近出现较大的非绝缘“危险电压”足以对人体产生触电。

在三角形中的注意号,用以提醒用户参考有关该机的重要操作与维修文字说明。

警告: 不可让本品淋雨或受潮,以免机器损坏!

前言

BTL-5660道路专用高清摄像机由于采用了具有752个水平像素的1/3英寸行间传递CCD图像传感器及数字信号处理大规模集成电路,达到了高质量高清晰度及低照度的境界,同时该款摄像机具有8段可手动调整的电子快门和强光抑制功能,被广泛应用于道路交通监控系统。

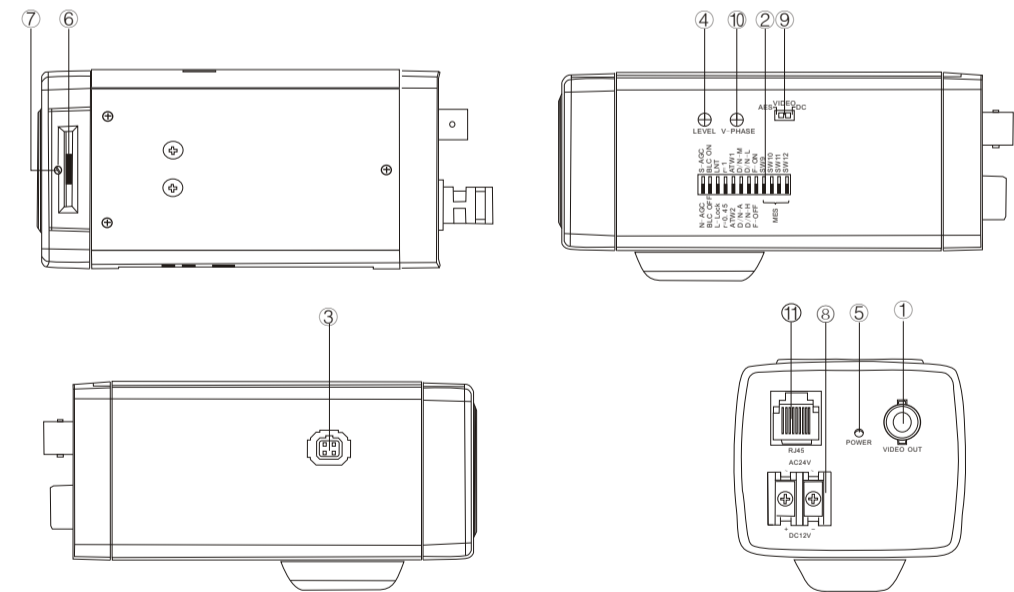
特点

- 机内具有如下功能:
 - 自动亮度控制 (ALC) /电子亮度控制 (ELC)
 - SUPER HAD CCD功能
 - 2种白平衡模式
- 信噪比大于53dB
- F1.2镜头时彩色照度达0.01Lux
- 540水平解析度
- 手动调整摄像机电子快门
- 利用电子亮度控制 (AES) 功能,可用固定光圈镜头拍摄室内景物
- 强光抑制功能
- 电源同步功能

注意事项

- 不要擅自拆卸摄像机
不要卸下螺钉或防护盖,以免触电或损坏相机,机内无用户自行维修零件,有关维修须有资格维修人员进行。
- 小心使用摄像机
不要乱用摄像机,应避免受撞或震动,摄像机若使用不当将损坏。
- 不要让摄像机淋雨或在受潮的地方使用
如果淋雨或受潮,应切断电源,并由有资格的维修人员进行维修,湿气会损坏摄像机并引起触电。
- 清洗摄像机体时请不要带有研磨性的清洁剂
摄像机有污垢时,请用软布擦拭,如果污垢严重,请用中性清洁剂轻轻擦拭。
- CCD靶面的清洗
不要使用强烈或带有研磨性的清洁剂清洗CCD靶面。应使用专用镜头纸或海绵沾酒精轻轻擦拭。
- 不要让摄像机对着太阳或者强光
无论摄像机在使用或没有使用时,都不要将摄像机瞄准太阳或者强光,否则会造成图像模糊产生光晕,严重时还会损坏CDD。

控制功能



- VIDEO OUT
视频输出信号,1.0Vpp,PAL制复合视频信号
- 拨码开关设置(另外介绍)
- 镜头连接器 (4管脚插座)
自动光圈镜头提供电源和控制信号。
- 直流驱动镜头电压调整旋钮
当使用直流驱动自动光圈时,用于调整视频输出信号的幅度。
- PWR电源
电源指示
- 后焦调节环
具有C和CS安装两种方式,只需旋转调节环就可方便地选择C和CS安装。
- 锁定螺丝
锁定后焦调节环的螺丝。
- 电源输入
AC24V/DC12V双电源输入接口
- 镜头驱动信号选择开关
用于选择视频驱动(VIDEO)或直流驱动(DC)镜头或固定/光手动圈镜头(AES)
- 同步相位调整V-PHASE
使用AC24V电源时,本机LINELOCK(电源锁定电路)自动开启,当摄像机出现色漂、明暗变化不定、抖动或同时连接两台摄像机到一台监视器出现图像自动翻转等问题时,调整V-phase按钮可锁定摄像机与电源的震荡频率,从而解决以上问题。
- RJ45接口(客户定制)

拨码开关介绍

- 自动增益功能(normal AGC/super AGC)
Normal:普通模式, GAIN=22dB
Super:高灵敏度模式, GAIN=30dB
- 背光补偿功能 (ON/OFF)
OFF:背光补偿功能关闭
ON:背光补偿功能开启
- 同步系统 (Line-lock/Internal)
LL:摄像机设置为线性同步模式,可以调整V-PHASE旋钮设置同步范围
INT:摄像机设置为内同步模式
- Gamma(0.45/1)
在CCTV监控中设置为0.45,用于影像处理时设置为1

- 自动白平衡功能 (ATW1/ATW2)
ATW1:TTL自动跟踪白平衡模式,色温选择范围2500K~6000K
ATW2:TTL自动跟踪白平衡模式,色温选择范围2500K~9500K
- 日夜切换模式(D/N-A,D/N-M)
选择日夜切换模式为自动模式或者手动模式
AUTO:摄像机根据工作环境的光线情况,自动选择彩色模式和黑白模式
MANUAL:摄像机固定在彩色模式或者黑白模式工作(如:设置为单彩模式:摄像机在彩色状态下,开关拨到D/N-M)
- 日夜切换点 (High/Low)
当摄像机工作环境光线强度高于日夜切换点照度时,自动从黑白模式转到彩色
LOW:摄像机自动从黑白模式到彩色模式的切点为4.5lux
HIGH:摄像机自动从黑白模式到彩色模式的切点为7.5lux
- 黑白清晰度 (Filter on/Filter off)
Filter on:在黑白模式下,摄像机的黑白清晰度为480线
Filter off:在黑白模式下,摄像机的黑白清晰度为600线
- DIP 9-12手动电子快门设置
设置DIP快门开关的组合,选择不同的电子快门速度

Shutter speed	1/50	1/120	1/250	1/500	1/k	1/2k	1/4k	1/10k	Auto
Pin 9	0	0	0	0	0	0	0	0	1
Pin10	0	0	0	0	1	1	1	1	1
Pin11	0	0	1	1	0	0	1	1	1
Pin12	0	1	0	1	0	1	0	1	1

安装方法

接线方式

- 视频电缆
在摄像机输出电缆最远端接上75Ω电阻。
 - 采用75Ω同轴电缆
 - 把最后一台监视器终端开关打到75位置,而把其它监视器终端开关打到HI-Z位置。
- 接线注意事项
 - 不要把同轴电缆扭变成半径小于电缆直径10倍的曲线
 - 不要卡钉电缆,否则会引起信号衰减。
 - 不要挤压或夹紧电缆,否则会使电缆的阻抗改变而降低图像质量。

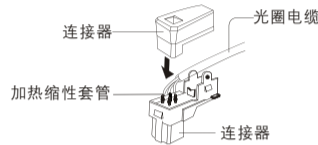
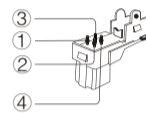
自动光圈镜头

当使用自动光圈镜头时,要安装自动镜头插头,此操作应由有资格的维修人员或系统安装人员负责进行。

- 断开镜头插头的光圈控制电缆,拆开镜头插头,然后剥开电缆外皮。
- 接线以后,按照下图组装镜头插头。

镜头插头内各接线端作用如下:

VIDEO驱动	DC驱动
1 电源, 直流+12V,50毫安	DAMP-
2 未使用	DAMP+
3 视频信号	DRIVE+
4 屏蔽, 接地	DRIVE-



注意:选择LENS DRIVE开关到VIDEO/DC的正确位置

安装镜头

- 把镜头向顺时针转动,以便将其安装在摄像机的镜头安装架上。
 - 使用自动光圈镜头时,把镜头电缆连接到摄像机上的自动光圈连接器上。
- 注意:安装镜头时,应该松开后焦调节环上螺丝,把该环向右转到底(C安装架侧),以免镜头损伤内部玻璃及CCD图像传感器。

焦点或后焦的调整方法

下列操作工作应该由有资格的维修人员或系统安装人员负责进行。

一般摄像机在安装好镜头后,通过调整镜头的焦距和聚焦旋钮,即可获取清晰图像。但是当旋动镜头聚焦旋钮后无法获取清晰图像时,会通过调整摄像机后焦,具体操作如下:

- 松开后焦调节环上的螺丝。
- 把后焦调整环旋转到适合的位置。
- 固定后焦调整环上的螺丝。
- 旋转镜头的聚焦旋钮,直到图像清洗位置。
- 如果无法获取清晰图像,请重复(-)~四步骤。

摄像机安装

当将摄像机装在天花板支架或三脚架上时,请安装附属的安装支架。支架可安在摄像机的顶部或底部。请用附属的1/4英寸的UNC-20螺丝将摄像机安装在三脚架或天花板支架上。

设定和调整

亮度控制调整

选择AES(自动电子快门控制时,)电子快门根据射入的光线亮度而连续自动改变CCD图像传感器的曝光时间(一般从1/50到1/10000秒连续调节)。此时,需用固定或手动光圈镜头。选DC或VIDEO模式时,请使用自动光圈镜头。

镜头驱动信号的选择

此项用于选择自动光圈镜头的形式,以提供驱动信号给镜头上的自动光圈驱动接口。

如果使用的是需要DC直流驱动信号的自动光圈镜头,开关拨向DC方向。

如果使用的是需要视频驱动信号的自动光圈镜头,则开关拨向VIDEO方向。

镜头驱动信号的选择

当使用直流驱动自动光圈镜头时,旋转LEVEL旋钮,调整到适当的位置,以便得到适当亮度的图像。

增益控制的设定 (AGC ON/OFF)

可以将增益(图像的分配亮度电平)设定为自动电平调整(ON)或固定电平(OFF),摄像机AGC ON自动彩转黑。

同步设定 (LL/INT)

通过此拨码开关可以设定摄像机的同步方式,当摄像机采用DC12V供电时,将摄像机设置为内同步(INT),否则,当摄像机采用AC24V供电时将摄像机设置为电源同步(LL)。

BLC 背光补偿(BLC)

当摄像机对着明暗对比比较大的目标物时,目标物的暗处会变行很暗,在这种情况下您要选择BLC在ON状态以增加图像的亮度从而获得较好的图像。一般情况下摄像机背光补偿是关闭的。

故障排除

在把摄像机拿去修理之前,请检查下列事项以确认摄像机是否能正常使用。如果仍不能正常运作,请与销售商或特约销售商联系。

- 监视器屏幕上没有图像
所有被连接的设备其电源是否接通? 电压是否正确?
所有的信号连接电缆是否连接正确?
光线是否足够?
镜头盖是否已取下?
可变光圈控制驱动方式选择是否正确?
- 图像不清晰
监视器是否正确调整?
凸缘后圈位置是否正确设定?
镜头焦点是否调整正确?
镜头表面是否干净?
如果有灰尘和手指印在镜头上,图像质量会变差。请使用软布或市上出售的镜头清洁套件清洁镜头。

维修

本摄像机为精密装置,如果使用得当则可长时间保持满意的性能。然而万一发生故障,我们建议使用者不要试图自行修理或打开机壳。维修必须委托指定经销商进行维修。

规格

型号	BTL-5660
成像器件	1/3 sony super HAD CCD
有效像素	752(水平)*582(垂直)
扫描	625行/50场/25帧
水平解析度	彩色540线,黑白600线
最低照度	日:0.01 lux/夜:0.002 lux/F1.4
增益控制	标准/高灵敏度
白平衡	2500K~10,000K
背光补偿	BLC开/关
电子快门	自动1/50~1/10,000S,手动:8段电子快门设置
信噪比	大于53dB
同步作用	内同步/电源同步
视频输出	1.0VPP PAL复合信号,75Ω/BNC接头
日夜模式	自动或手动设置
环境温度	-10℃~+50℃
环境湿度	小于90%
电源	AC24V/DC12V
外形尺寸	130(L)*53.5(H)*65(W)

设计和规格若有变更,恕不另行通知

BOTOL / Video

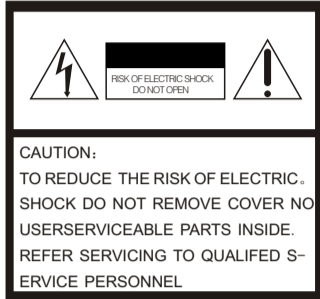
OPERATING INSTRUCTIONS

Depending on the conditions of use, installation and environment, please be sure to make the appropriate settings. If you need help with installation and/or settings, please consult your dealer.

The manual is fit for the following model:

BTL-5660 540TVL colour 0.01Lux B/W 0.002Lux (F1.2), IR ON, 0Lux

WARNING



The serial number of this product may be found on the top of the unit.
You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE

PREFACE

BTL-5660 series High Resolution D/N Colour Camera Introduces a new level of high picture quality and high resolution and low illumination through the use of a 1/3-inch interline transfer CCD image sensor having 752 horizontal pixels, and digital signal processing LSTs. This model offers cutting-edge technology for advanced video surveillance.

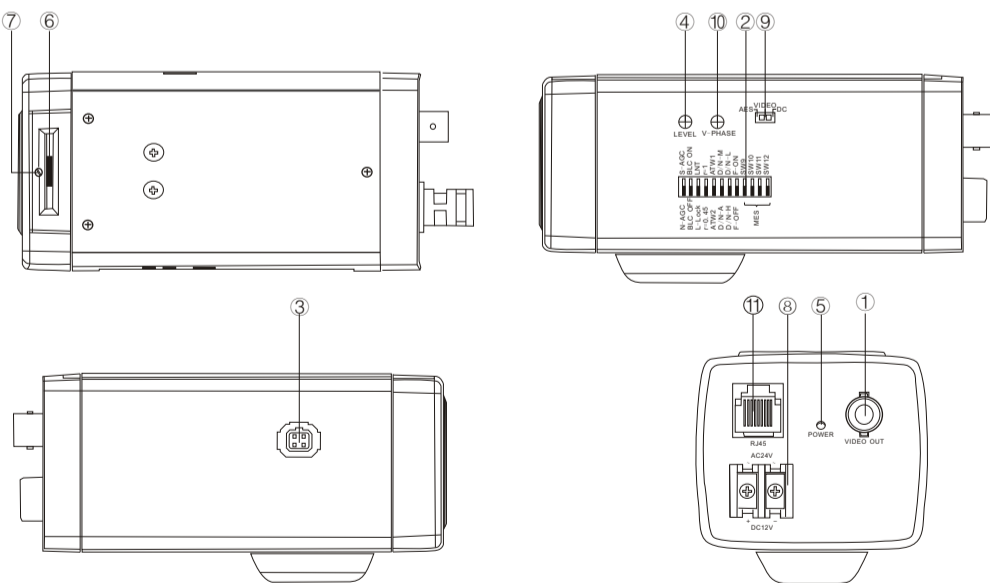
FEATURES

- The following functions are built in:
 1. Auto Light Control(ALC)/Electronic Light Control(ELC).
 2. SUPER HAD CCD Function.
 3. Auto/Manual White Balance Function.
- Signal-to-noise ratio of 53dB.
- Minimum illumination of 0.1 lux with F1.2 lenses.
- 540 lines of horizontal resolution.
- High quality picture.
- Ability to shoot indoor scenes with fixed iris lens by use Of Electronic Light Control(ELC)-function. Auto convert to monochrome mode. At this mode, the illumination is 0.01 lux.
- High light mask
- Electric shutter adjust

PRECAUTIONS

- Do not attempt to disassemble the camera.
To prevent electric shock, do not remove screws or covers. There are no user serviceable parts inside. Ask a qualified service person for servicing.
- Handle the camera with care.
Do not abuse the camera. Avoid striking, shaking, etc. The camera could be damaged by improper handling or storage.
- Do not expose the camera to rain or moisture, or try to operate it in wet areas.
If rain or moisture, turn the power off immediately and ask a qualified service person for servicing. Moisture can damage the camera and also create the danger of electric shock.
- Do not use strong or abrasive detergents when cleaning the camera body.
Use a dry cloth to clean the camera when dirty. In case the dirt is hard to remove, use a mild detergent and wipe gently.
- Clean the CCD faceplate with care.
Do not clean the CCD with strong or abrasive detergents. Use lens tissue or a cotton tipped applicator and ethanol.
- Never face the camera towards the sun.
Do not aim the camera at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects. Otherwise, blooming or smear may be caused.
- Do not operate the camera beyond the specified temperature, humidity or power source ratings.
Use the camera under conditions where temperature is between 10-+50 humidity is below 90%.
The input power source is DC12V/AC24V for all cameras

PRIMARY PART EXPLAIN



- VIDEO OUT**
Video out signal, 1.0V_{rms}[p-p] PAL composite video signal.
- SETTING SWITCH**
Auto Iris Lens Connector
Connect the lens cable to it when VIDEO driver or DC driver lens is supplied.
- DC drive lens voltage adjusting knob**
Power indicator
This indicator light up when the power of camera is on.
- Back Focal Adjusting Ring**
It is easy to focus adjust for C-mount lens and focus adjust CS-mount lens, Via adjust this Ring, the one screws on the ring
- POWER INPUT**
The input power source is AC24V or DC12V
- DC drive or VIDEO drive lens selected switch.**

- V-PHASE adjustment**
when using a camera switcher to connect 2 camera or more to one monitor, there may be a vertical roll of the images when switched. In such a case, set as described below.
Set the sync switch to the LL position, switch the display on the monitor from camera 1 to 2 camera. Adjust the V-PHASE volume on camera 2 until the vertical roll of the images stop.
If more than two camera are used, please repeat this procedure for all the cameras.
- RJ45 interface**

DIP-SWITCH FUNCTION DESCRIPTION

- Auto Gain Control(normal AGC/super AGC)**
NORMAL: Standard position, GAIN=22dB
Super: High-sensitivity position, GAIN=30dB
- Back Light Compensation(On/Off)**
OFF: The BLC function is off
ON: The BLC function is on
- SYNC System(Line-lock/internal)**
LL: The camera is in the Line-lock Mode. Adjusting degrees by V-phase control on the side panel.
INT: The camera control on the SYNC mode.
- Gamma(0.45/1)**
The selection of GAMMA curvature is used for GAMMA correction.
- Auto White Balance(ATW1/ATW2)**
ATW1: TTL auto trace white balance algorithm is designed to implement a perfect colour reproduction. colour temperature ranged from 2500k-6000k.
ATW2: TTL auto trace white balance algorithm is designed to implement a perfect colour reproduction. colour temperature ranged from 2500k-9500k.
- ICR Mechanism**
choosing day/night mode by simply set the switch at Auto or Manual position.
AUTO: When set to this mode, the camera will change to colour mode or B/W mode automatically according to subjects brightness.
MANUAL: When set to this mode, the camera will remain in colour or B/W mode by manual selection.
- DAY&NIGHT LEVEL(High/Low)**
set up a switch-over point B/W mode to Colour mode, the slide switch to select High/Low, under the AUTO mode, the switch-over point of brightness from Colour mode to B/W is 1.5lux(10s)
LOW: The switchover point of brightness from B/W to Colour is 4.5lux(15s)
- DUAL Mode(Filter ON/Filter OFF): Function Discard**
Filter ON: Y-signal filter of CCD output is narrow in B/W mode in this position, the horizontal is 480TV lines
Filter OFF: Y-signal filter of CCD output is narrow in B/W mode in this position, the horizontal resolution is 580TV lines
- 9-12 Manual Shutter**
Adjusting shutter speed by setting different profile of dip-switch

Shutter speed	1/50	1/120	1/250	1/500	1/1k	1/2k	1/4k	1/10k	Auto
Pin 9	0	0	0	0	0	0	0	0	1
Pin 10	0	0	0	0	1	1	1	1	1
Pin 11	0	0	1	1	0	0	1	1	1
Pin 12	0	1	0	1	0	1	0	1	1

METHOD OF INSTALLING

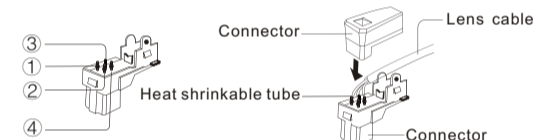
CONNECTIONS

- Video Cable.**
 1. It is recommended to use a monitor whose resolution is at least equal to that of the camera.
 2. Set the termination switch to the 75Ω position on the last monitor.
 - A. Use a 75Ω coaxial cable.
 - B. Set the termination switch to the 75Ω position on the last monitor and to the Hi-Z position on the other monitors.
 - C. The maximum extensible coaxial cable length between the camera and the monitor is shown below.
- Wiring precaution:**
 - Do not bend the coaxial cable into a curve whose radius is smaller than 10 times the cable's diameter. Never staple the cable even if with circular staples. Impedance mismatching will occur, Never crush or pinch the cable.
 - All of the above will change the impedance of the cable and cause poor picture quality.

Installation of auto Iris C lens

- The installation should be made by qualified service personnel or system installers.**
- Cut the iris control cable at the edge of the lens connector to remove the existing lens connector and then remove the outer cable cover.
The pin assignment of the lens connector is as follows:
- After connection, assemble the lens connect as follows
Note: When the iris control cable is too thick to lock the connector cover with the connector base, cut off the rib on the connector.

	Video Drive	DC Drive
PIN1	Power source: DC+12V50mA(max)	DAMP-
PIN2	Not used	DAMP+
PIN3	Video signal(1.3Vpp)	DRIVE+
PIN4	Shield GND	DRIVE-



Caution:

- Before you mount the lens, loosen the one screws on the ring, and rotate this ring clockwise until it stops. If the ring is not at the end, the inner glass or CCD image sensor may be damaged.
- Mount the lens by turning it clockwise on the lens mount of the camera.
- Connect the lens cable to the auto iris lens connector on the side of the camera.

FOCUS OR BACK FOCAL ADJUSTMENT

- The following adjustment should be made by qualified service personnel or system installers.
- Loosen the screws on the back focal adjusting ring.
- Turn the back focal adjusting ring to the desired position.
Caution:
When the C-mount lens is mounted, do not rotate the ring counterclockwise by force after it. If the ring is rotated by force, the inner lens or CCD image sensor may be damaged.
- Tighten the screws on the back focal adjusting ring.

INSTALLATION OF CAMERA

- Mounting from the bottom**
This camera is designed to be mounted from the bottom, as shown below. The mounting hole is a standard photographic pan-head screw size.
- Mounting from the top**
Remove the mount adapter from the bottom of the camera by removing the two fixing screws. Attach the mount adapter to the top as shown in the diagram, then mount the camera on the mounting bracket. Make sure that the two original fixing screws are used when mounting the mount adapter as longer length screws may damage inner components.

Setting and adjustment

- Luminance Control Setting**
Electronic Luminance Control(ELC). When you select it, the shutter speed can be changed continuously in the range of 1/50s from 1/10000s. Auto luminance Control(ALC). It should be selected when you select the lens driving by video signal or DC voltage.
- Lens Drive Signal Selected**
This item is used to select the type of auto iris lens drive signal to be supplied to the auto iris lens connector. Select DC if you are using the auto iris lens that requires a DC drive signal. Select VIDEO if you are using the auto iris lens that requires video drive signal.
Adjust DC Drive lens level
Rotating the knob of DC level to adjusting voltage of lens, obtain suitability illumination image, when use DC Drive lens.
- Gain Control Setting**
You can set the gain(brightness level portion of an image) to automatic level adjustment(ON) or fixed level I(OFF).
- White Balance Setting**
You can select one of two modes for white balance adjustment as follows.
- Synchronization Setting(SYNC)**
You can select internal sync mode (INT) or line-lock mode(LL). Additionally this model accepts the VBS signal (Color Composite Video or Black burst Signal) and VS signal(B/W Composite Video or Composite Sync Signal) with the composite video output signal from external equipment such as Matrix Switcher is also acceptable.

SPECIFICATIONS

Model	BTL-5660
Image device	1/3 sony super HAD CCD
Effective pixels	752(H)*582(V)
Scanning system	625lines/50field/25frames
Horizontal Resolution	540TVL
Minimum illumination	Colour:0.01lux/F1.2,B/W:0.002lux IR ON, 0Lux
Gain Control	selectable AGC ON or OFF
White Balance	auto white balance
Back Light Control	selectable BLC or OFF
Electric shutter	auto 1/50 to 1/10000sec/MANUAL
S/N ratio	more than 53dB
Synchronization system	internal/LL
Video output	1Vpp composite output 75 ohm
Day/Night mode	auto(AGC ON)/colour
Operating Temp	-10°C - 50°C
Operating humidity	≤90%
Power supply	AC24V/DC12V
Dimensions	130(L)*53.5(H)*65(W)

Design and specifications are subject to change without notice