

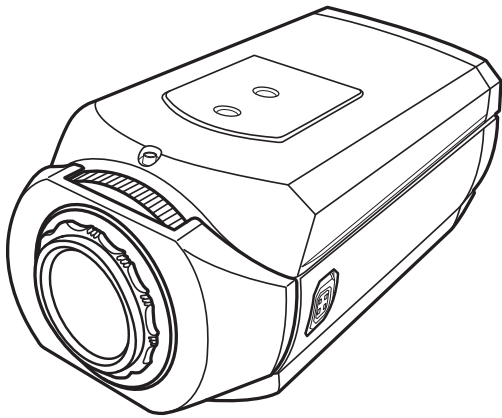
Getting to Know Your Camera

Getting to Know Your Camera (cont.)

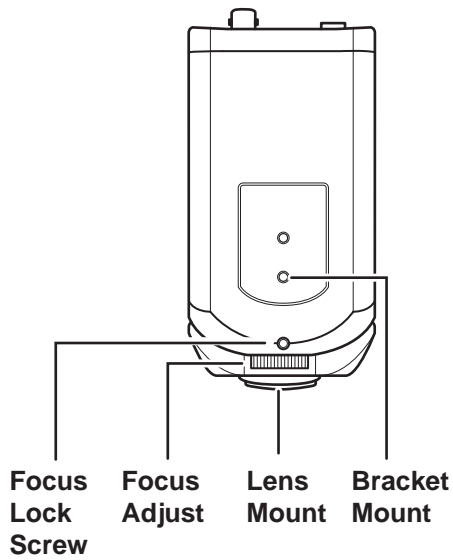
CF-Series

540TVLine High Resolution Box Camera

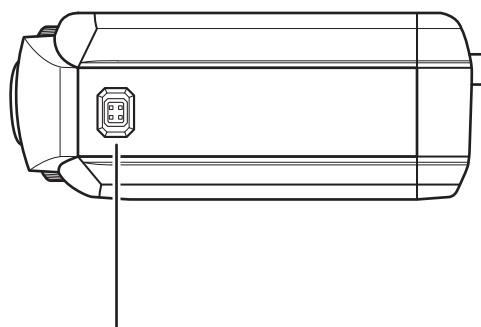
Quick Start Guide



This camera is the ideal solution for home security and surveillance needs. It provides excellent image quality even in low-light conditions, by using a software night mode to reduce color noise in reduced light.

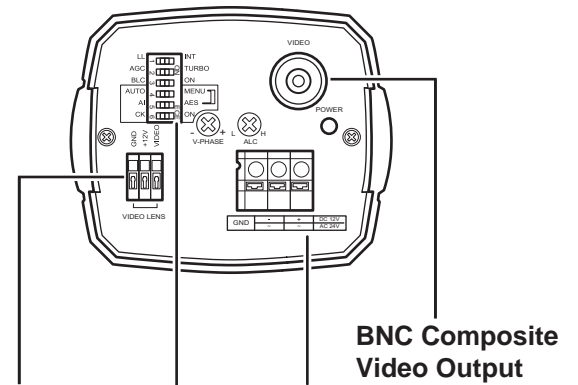


Top View



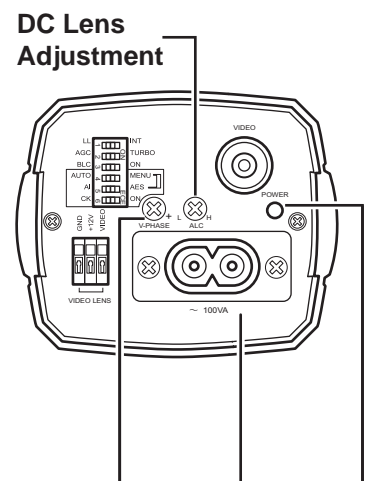
DC Lens Connector

Side View



Video Lens Drive Terminal Block Function Switches Power Input Terminal Block BNC Composite Video Output

Rear Panel Connections
(AC/DC low voltage)



DC Lens Adjustment V-Phase Adjustment Power Socket Power LED

Rear Panel Connections
(AC mains)

Important Notes

Safety Information

This product is intended for security and surveillance CCTV applications. It must be installed and maintained in accordance with good installation practice.

- Installation and servicing must only be carried out by qualified personnel.
- To avoid risk of damage or electric shock, do not attempt to service this product or open the chassis.
- This product contains no user-serviceable parts.
- Low voltage cameras must be powered from a UL listed class 2 power supply.
- For outdoor use, please employ an IP65 (or better) certified protective housing.
- Mains cameras are not evaluated by UL.

CAUTION: To prevent risk of fire or electric shock, do not expose this product to rain or moisture.

This camera is designed for indoor general-purpose CCTV applications only. Do not expose to extreme conditions such as temperatures outside the range of -10°C~50°C (14°F~122°F).

This camera must be used in a clean, dry, dust-free environment unless enclosed in an IP65 (or better) certified housing.

Electromagnetic Compatibility (EMC)

The manufacturer declares that this product is compliant with EMC directive 89/336, and Low Voltage Directive LVD 73/23 EEC, conforming to the requirements of standards EN 55022 for emissions, IEC801 parts 2, 3 and 4 for immunity, and EN 60065 for electrical equipment

NOTE: This is a class B product. In a domestic environment this product may cause radio interference.

Getting Started

Connecting to a Power Supply

Cameras are available in two types, AC mains and AC/DC low voltage. Your camera type is clearly labeled on the rear panel.

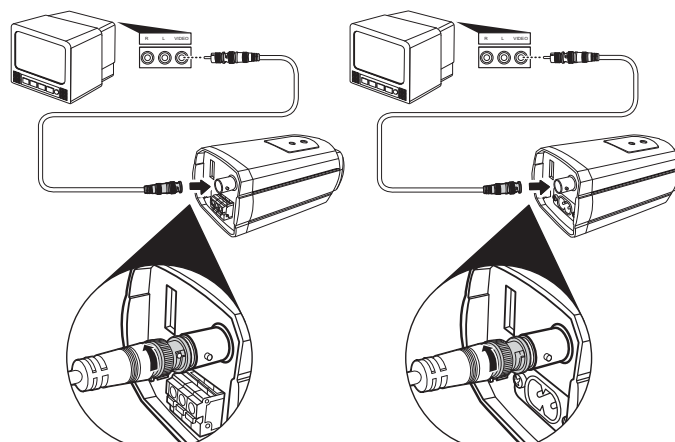
Mains Power Supply: This camera operates directly from the mains supply come with a detachable power supply cord. The operating voltage is 100~250VAC

Low Voltage Power Supply: This camera operates between 11~28 VDC and 20-29VAC. Connections are indicated above the terminals on the rear panel of the. The power LED on the rear panel is lit when the camera is connected to a power source.

NOTE: The typical power consumption of a camera is less than 5 Watts.

Connecting to a TV / Video

Connect a video coaxial cable terminated with a 75 Ohm BNC connector to the BNC socket labeled VIDEO OUT. Connect the other end of the cable to the VIDEO IN socket of your video or television equipment.



Mounting Your Camera

Your camera can be mounted from the top or bottom, either on a bracket or tripod. The mounting points accept standard photographic mounting bolts (1/4" BSW or 20 UNC).

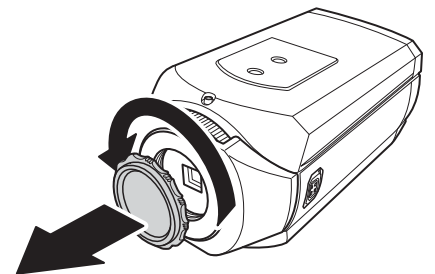
The mounting bracket must be capable of supporting the camera and the lens.

Should the lens be substantially heavier than the camera, it is recommended to use the mounting point on the lens itself.

NOTE: Ensure the bracket hardware and mounting surface can support the load of the camera and bracket.

Installing Lenses

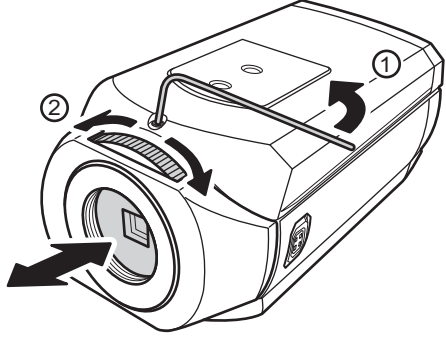
Before installing a lens, you must first remove the lens cover from the camera.



Setting the Focus

The picture focus is adjusted using the back focus adjustment mechanism which is located on the front of the camera, above and below the lens mount. The range of adjustment allows both C and CS mount lenses to be used without a spacer ring. Use the following procedure to adjust the focus:

1. Unscrew the back focus adjustment lock screw.
2. Turn the focus adjustment counter-clockwise (if facing the lens) to move the CCD sensor away from the back of the lens, or clockwise to move the CCD sensor towards the back of the lens.
3. Tighten the lock screw to fix the focus adjustment in place.

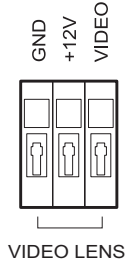


Installing Fixed and Manual Lenses

1. If using a C-mount lens, turn the back focus adjustment fully counter-clockwise with the lens facing towards you (see Setting the Focus).
2. Screw the lens on to the camera.
3. Ensure the electronic iris is enabled: AUTO/MAN set to **AUTO** or AUTO/MAN set to **MAN** AI/AES set to **AES**
4. Ensure that the AGC control is set to **TURBO**
5. If the lens has an iris, open this fully.
6. If the lens has a focusing ring fitted, set it to infinity (∞) and then adjust the back focus.
6. If the lens has an iris, close according to the required depth of field.

Installing a Video Drive Lens

1. If using a C-mount lens, turn the back focus adjustment fully counter-clockwise with the lens facing towards you (see Setting the Focus).
2. Fit the lens to the camera according to the following pin assignments.



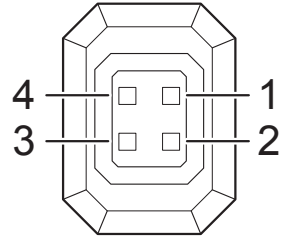
CAUTION: The maximum load for this type of lens must not exceed 50mA.

3. Set the lens type selector switch to **AUTO** (or **MAN** and AI/AES set to **AI**).
4. Set the AGC switch to **AGC**.
5. If a focus ring is fitted to the lens, set it to infinity (∞) and then adjust the back focus.
6. With typical scene illumination, set the **ALC Level** adjustment potentiometer to the correct exposure. This can be achieved manually or by using an oscilloscope or level meter to set the output of the camera to 1 V peak-peak. If lighting conditions are very uneven, it may be necessary to adjust the lens Peak/Average potentiometer.
6. Ensure the Automatic Gain Control switch is set to **TURBO**.

Installing a Direct (DC) Drive Lens

1. If using a C-mount lens, turn the back focus adjustment fully counter-clockwise with the lens facing towards you (see Setting the Focus).
2. Fit and connect the lens to the camera according to the following pin assignments.

DC LENS



| Pin Number | DC Drive |
|------------|----------|
| Pin 1 | Damp- |
| Pin 2 | Damp + |
| Pin 3 | Drive - |
| Pin 4 | Drive + |

CAUTION: The maximum load for this type of lens must not exceed 25mA.

3. Set the lens type selector switch to **AUTO** (or **MAN** and AI/AES set to **AI**).
4. Set the AGC switch to **AGC**.
5. If a focus ring is fitted to the lens, set it to infinity (∞) and then adjust the back focus.
6. With typical scene illumination, set the **ALC Level** adjustment potentiometer to the correct exposure. This can be achieved manually or by using an oscilloscope or level meter to set the output of the camera to 1 V peak-peak.
7. Ensure the Automatic Gain Control switch is set to **TURBO**.

Controls and Switches

LL / INT

Selects the camera's synchronization mode. When the camera is connected to an AC power supply, the Line Lock (LL) mode can be used.

AGC / TURBO

The Automatic Gain Control feature can improve picture quality in low lighting conditions. Select **TURBO** for most applications. Setting to **AGC** will remove 'noise' from the image, but it will also limit the camera's sensitivity.

BLC / ON

The Backlight Compensation feature eliminates the effect of strong background lighting, maintaining the correct exposure. Switch to **ON** to activate. When switched to **BLC**, the feature is off.

AUTO / MAN

The **AUTO** feature automatically detects the type of lens attached to the camera. Plugging a DC lens into the side connector will enable DD lens mode. Connecting a video lens to the rear connectors will enable Video Drive lens mode. If no lens connections are made the camera will assume a manual or fixed iris. The **MAN** setting is provided as a manual override in the case that a lens is incorrectly detected. If **MAN** is selected the AI/AES switch must also be set for the appropriate lens type - see below.

AI/ AES

This feature is only active when AUTO/MAN is set to MAN.

Selecting **AI** enables DD or Video Drive mode, depending on the type of lens connected.

Selecting **AES** enables Electronic Iris mode, which compensates for excessive light levels by automatically adjusting the camera shutter speed. This mode should only be used with fixed or manual iris lenses.

CK / ON

The CK (Chroma Killer) mode can be activated when AGC is in **TURBO** mode, and suppresses chroma information within the image in low light, producing a monochrome image. Switch to **ON** to activate.

V-Phase

When the camera is connected to analogue display equipment that is connected to a different mains supply phase, picture roll may be experienced. The **V-Phase** potentiometer can be used to reduce this effect by varying the field sync trigger point. This feature is only active when the camera is connected to an AC supply and the LL/INT switch is set to **LL**. The control will give 0~270° of adjustment

ALC

The ALC control is used to adjust the video signal level when using a DC Iris lens.

See: **Installing a Direct (DC) Drive Lens**

Specifications

| General | NTSC | PAL |
|-------------------------------|---|---|
| Image Size | 1/3 Format Interline CCD Sensor | |
| Pixel Element | 768(H) x 494(V) 380K pixels | 752(H) x 582(V) 430K pixels |
| Scanning Frequency | NTSC 2:1 Interlace H:15750Hz V:59.94Hz | PAL 2:1 Interlace H:15625Hz V:50.0Hz |
| Operation/Storage Temperature | -10°C~+50°C / -20°C~+60°C | |
| Output Terminal | BNC 75Ω unbalanced | |
| Input Terminal | 3pin Push Lock Terminal Block | |
| Power Source | AC Power Supply | 20~28VAC |
| | DC Power Supply | 11VDC~28VDC |
| Power Consumption | 4W Max | |
| Power Indicator | 3Ø Green LED on Rear Panel | |
| IRIS Connector | Video Drive | 3pin Push Lock Terminal Block on Rear |
| | DC Drive | 4pin Connector on Side |
| Lens Mount | CS ~ C Mount Adjustable | |
| Back Focus Adjust | CS Mount 11mm ~ 18mm | |
| Mounting Hole | 1/4" Top and Bottom | |
| External Dimension | 67.5mm(W) x 58.5mm(H) x 133.5mm (L) | |

| Functional Specification | NTSC | PAL |
|--------------------------|---|--------------------------------|
| Exposure Control | Auto Detect : Auto Electronic Shutter / Video | |
| | Auto IRIS / DC Auto IRIS | |
| AES | Auto Luminance Control | |
| | 1/60 (1/50) ~ 1/100000 sec Max. | |
| Auto IRIS Control | Video Drive / DC Drive - Separate Outputs | |
| Video IRIS Output | 1.0Vpp (100 IRE Video Output) | |
| DC IRIS Output | 650mV at 85Ω Impedance | |
| BLC | Center Area for Auto IRIS and AES | |
| Auto White Balance | Auto White Balance | |
| Auto White Balance Range | AWB : 2700K ~ 11000K | |
| | AWB-EX : 2000K ~ 18000K | |
| Day & Night | Fuzzy Software Nightmode ON/OFF | |
| AGC Boost | Enhanced AGC Gain to Max. 36dB | |
| SYNC System | INT / Line Lock | |
| Line Lock | Phase Adjust Range | 0°C~270°C |
| | Frequency Range | 60Hz +/- 1Hz 50Hz +/- 1Hz |

| Video Specification | NTSC | PAL |
|----------------------|--------------------------------------|--------------------------|
| Resolution | Normal Mode 540 TV Line | S-DN Mode 570 TV Line |
| Minimum Illumination | 0.7Lux @ F=1.2 (50 IRE Video Output) | |
| Video Output | 1.0Vpp 75Ω BNC unbalanced | |
| S/N Ratio | 50dB | |
| AGC Turbo Gain | 36dB | |
| AGC Preset Gain | 26dB | |
| H Aperture | 10 IRE (r 0.45 100 IRE Video Output) | |
| V Aperture | 10 IRE (r 0.45 100 IRE Video Output) | |
| Gamma Compensation | 0.45 | |

| Function Control or Adjustment | NTSC | PAL |
|--------------------------------|---|-----|
| Exposure Control | Auto Detect : Auto Electronic Shutter / Auto IRIS | |
| Color Killer | Fuzzy ON / OFF | |
| BLC | ON / OFF Switchable | |
| AGC Gain Control | AGC Normal / AGC Turbo | |
| SYNC System | INT / LL Switchable on Rear Panel | |
| V-Phase | Via Resistor on Rear Panel | |
| Lens Level Control | Via Resistor on Rear Panel for DC Drive Lens | |