



# Dinion Day/Night Camera

LTC0465



**BOSCH**

en Installation and Operation manual



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# 1 Safety

## 1.1 Safety precautions

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**DANGER!**

High risk: This symbol indicates an imminently hazardous situation such as "Dangerous Voltage" inside the product. If not avoided, this will result in an electrical shock, serious bodily injury, or death.

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**WARNING!**

Medium risk: Indicates a potentially hazardous situation. If not avoided, this could result in minor or moderate bodily injury.

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**CAUTION!**

Low risk: Indicates a potentially hazardous situation. If not avoided, this could result in property damage or risk of damage to the unit.

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**NOTICE!**

This symbol indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

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## 1.2 Important safety instructions

Read, follow, and retain for future reference all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operating the unit.

1. **Cleaning** - Generally, using a dry cloth for cleaning is sufficient but a moist, fluff-free cloth or leather shammy may also be used. Do not use liquid cleaners or aerosol cleaners.
2. **Heat Sources** - Do not install the unit near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
3. **Water** - Never spill liquid of any kind on the unit.
4. **Lightning** - Take precautions to protect the unit from power and lightning surges.
5. **Controls adjustment** - Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit.
6. **Power sources** - Operate the unit only from the type of power source indicated on the label.
7. **Servicing** - Unless qualified, do not attempt to service this unit yourself. Refer all servicing to qualified service personnel.
8. **Replacement parts** - Use only replacement parts specified by the manufacturer.
9. **Installation** - Install in accordance with the manufacturer's instructions and in accordance with applicable local codes.
10. **Attachments, changes or modifications** - Only use attachments/accessories specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Bosch, could void the warranty or, in the case of an authorization agreement, authority to operate the equipment.

## 1.3 Important notices



**Disposal** - Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. Please dispose of these units at an environmentally compatible recycling facility, per *European Directive 2002/96/EC*

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### WARNING!



Power disconnect for high voltage versions: A unit has power supplied whenever the power cord is inserted into the power source. The power cord plug is the main power disconnect for the unit. For pluggable equipment, install the socket outlet near the equipment so it is easily accessible.

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### WARNING!



All-pole power switch: Incorporate an all-pole power switch, with a contact separation of at least 3 mm in each pole, into the electrical installation of the building.

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### CAUTION!



Fuse rating: The branch circuit protection must be secured with a maximum fuse rating of 16 A. This must be in accordance with *NEC800 (CEC Section 60)*.

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### CAUTION!



The Low Voltage power supply unit must comply with EN/UL 60950. The power supply must be a SELV-LPS unit or a SELV - Class 2 unit (Safety Extra Low Voltage - Limited Power Source).

## 1.4 FCC & ICES compliance

### FCC & ICES Information

*(U.S.A. and Canadian Models Only)*

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to *part 15* of the *FCC Rules*. These limits are designed to provide reasonable protection against harmful interference in a **residential installation**. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna;
- increase the separation between the equipment and receiver;
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
- consult the dealer or an experienced radio/TV technician for help.

Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.



### Informations FCC et ICES

*(modèles utilisés aux États-Unis et au Canada uniquement)*

Suite à différents tests, cet appareil s'est révélé conforme aux exigences imposées aux appareils numériques de **classe B**, en vertu de la *section 15 du règlement de la Commission fédérale des communications des États-Unis (FCC)*, et en vertu de la norme *ICES-003 d'Industrie Canada*. Ces exigences visent à fournir une protection raisonnable contre les interférences nuisibles lorsque l'appareil est utilisé dans le cadre d'une **installation résidentielle**. Cet appareil génère, utilise et émet de l'énergie de radiofréquences et peut, en cas d'installation ou d'utilisation non conforme aux instructions, engendrer des interférences nuisibles au niveau des radiocommunications. Toutefois, rien ne garantit l'absence d'interférences dans une installation particulière. Il est possible de déterminer la production d'interférences en mettant l'appareil successivement hors et sous tension, tout en contrôlant la réception radio ou télévision. L'utilisateur peut parvenir à éliminer les interférences éventuelles en prenant une ou plusieurs des mesures suivantes:

- Modifier l'orientation ou l'emplacement de l'antenne réceptrice;
- Éloigner l'appareil du récepteur;
- Brancher l'appareil sur une prise située sur un circuit différent de celui du récepteur;
- Consulter le revendeur ou un technicien qualifié en radio/télévision pour obtenir de l'aide.

Toute modification apportée au produit, non expressément approuvée par la partie responsable de l'appareil, est strictement interdite. Une telle modification est susceptible d'entraîner la révocation du droit d'utilisation de l'appareil. La brochure suivante, publiée par la Commission fédérale des communications (FCC), peut s'avérer utile : *How to Identify and Resolve Radio-TV Interference Problems (Comment identifier et résoudre les problèmes d'interférences de radio et de télévision)*. Cette brochure est disponible auprès du U.S. Government

Printing Office, Washington, DC 20402, États-Unis, sous la référence n° 004-000-00345-4.

## 1.5 UL certification

### **Disclaimer**

Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in UL's *Standard(s) for Safety for Closed Circuit Television Equipment, UL 2044*. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.

UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING RELATED FUNCTIONS OF THIS PRODUCT.

### **Disclaimer**

Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in UL's *Standard(s) for Safety for Information Technology Equipment, UL 60950-1*. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.

UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING-RELATED FUNCTIONS OF THIS PRODUCT.

## 1.6 Bosch notices

### Copyright

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### Trademarks

All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

### Note:

This manual has been compiled with great care and the information it contains has been thoroughly verified. The text was complete and correct at the time of printing. The ongoing development of the products may mean that the content of the user guide can change without notice. Bosch Security Systems accepts no liability for damage resulting directly or indirectly from faults, incompleteness or discrepancies between the user guide and the product described.

### More information

For more information please contact the nearest Bosch Security Systems location or visit [www.BoschSecurity.com](http://www.BoschSecurity.com)

## 2 Introduction

### 2.1 Features

The Dinion Day/Night is a professional surveillance day/night camera that incorporates 10-bit digital signal processing. The Dinion Day/Night camera is easy to install and ready to use, and offers good quality picture performance.

Features include:

- Day/Night camera with mechanically switching IR filter
- Bilinx™ bi-directional coaxial communications
- Enhanced video motion detection
- Backlight compensation
- Lens autodetection
- Lens wizard for easy backfocus
- Alarm input and relay output

### 2.2 Unpacking

Unpack carefully and handle the equipment with care.

The packaging contains:

- Dinion Day/Night camera
- CCD protection cap (mounted on camera)
- Spare lens connector (male)
- These instructions

If equipment has been damaged during shipment, repack it in the original packaging and notify the shipping agent or supplier.



#### **WARNING!**

Installation should only be performed by qualified service personnel in accordance with the National Electrical Code or applicable local codes.



#### **CAUTION!**

The camera module is a sensitive device and must be handled carefully.

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## 3 Connections

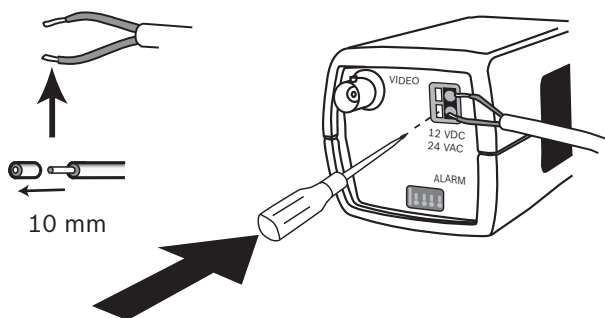


### CAUTION!

Before proceeding, disconnect the power from the power supply cable. Ensure that the voltage of the unit matches the voltage and type of the power supply being used.

### 3.1 Power connection

#### 3.1.1 Low voltage cameras



**Figure 3.1** Low voltage power connection

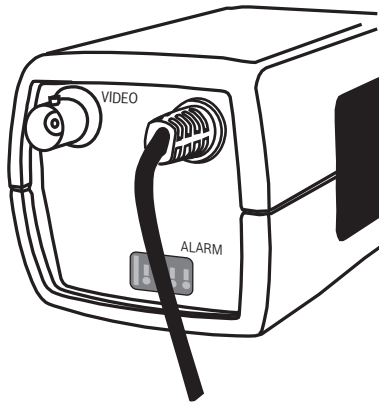
Connect power from a 24 VAC or 12 VDC class 2 power supply as follows:

- Use AWG16 to 22 stranded wire or AWG16 to 26 solid wire; cut back 5 mm (0.2 in) of insulation.
- Push in the tabs and insert the wires.

#### Note

These connections are not polarity sensitive.

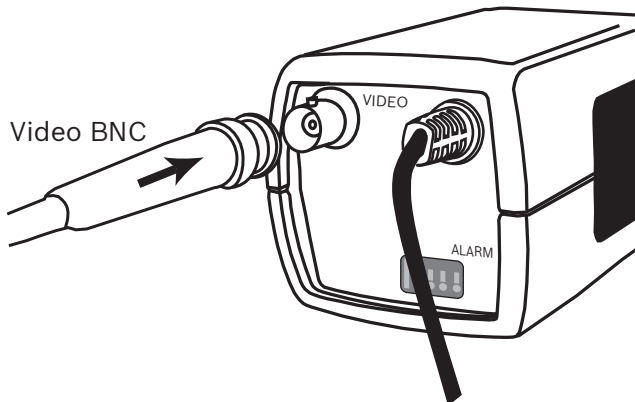
### 3.1.2 High voltage cameras



**Figure 3.2** High voltage power connection

Connect the power cable of a high voltage camera to either a 230 VAC or a 120 VAC power supply outlet depending on the version.

## 3.2 Video connection

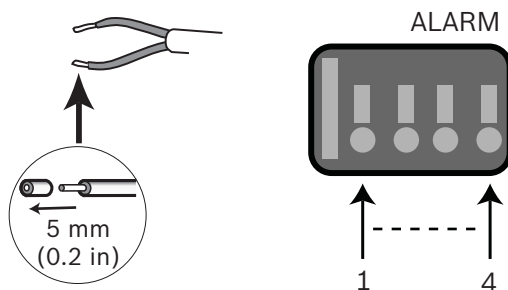


**Figure 3.3** BNC connectors

### 3.2.1 Output Video signal

The camera has a BNC connector to connect the video coax cable with a male BNC connector.

### 3.3 Alarm and relay connector



**Figure 3.4** Alarm and relay connector pins

Pin	Alarm socket
1	Alarm in ground
2	Alarm in
3	Relay out contact 1
4	Relay out contact 2

- Max. wire diameter AWG 22-28 for both stranded and solid; cut back 5 mm (0.2 in) of insulation.
- Default relay position normally open (n.o.); no alarm.
- Alarm output relay switching capability: Max voltage 30VAC or +40 VDC. Max 0.5 A continuous, 10 VA.
- Alarm in: TTL logic, +5V nominal, +40 VDC max, DC coupled with 22 kOhm pull-up to +3.3 V.
- Alarm in: configurable as active low or active high.
- Max. 42 V allowed between camera ground and each of the relay pins.

## 3.4 Lens mounting

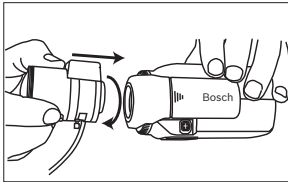
The camera accepts CS-mount lenses. C-mount lenses can be mounted using a lens adapter ring. DC-iris lenses are recommended for the best picture performance. The camera automatically detects the type of lens used and optimizes performance accordingly. A spare male lens connector is provided.



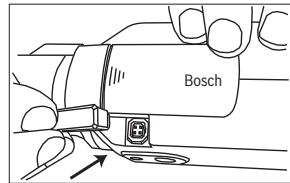
### CAUTION!

To avoid damaging the CCD sensor when using a C-mount lens, make sure a lens adapter ring (not included) is mounted onto the camera before mounting the lens.

Lenses weighing more than 0.5 kg (1.1lbs) must be separately supported.



**Figure 3.5** Mounting a lens



**Figure 3.6** Lens connector

Pin	Video iris lens	DC iris lens	
1	Supply (11.5V $\pm$ 0.5, 50mA max.)	Damp -	
2	Not used	Damp +	
3	Video signal 1Vpp 1kOhm	Drive +	
4	Ground	Drive -	

### Note

If a short circuit is detected on the lens connector, the on-screen display (OSD) failure message LENS SHORT CIRCUIT is shown. The lens circuit is automatically disabled to avoid internal damage. Remove the lens connector and check the pin connections.



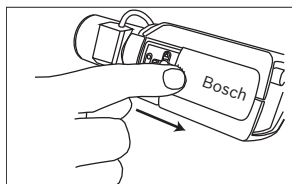
## 3.5 Back focus adjustment

To optimize picture sharpness in both bright and low-level lighting, adjust the back focus. Use the camera's unique Lens Wizard. This ensures that the object of interest always remains in focus, even when focusing at the maximum lens iris opening (for example, at night).

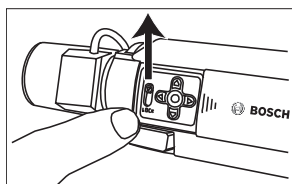
- When back focusing varifocal lenses, adjust to obtain a sharp picture in both wide-angle and tele positions for both far and near focus.
- When back focusing zoom lenses, ensure the object of interest remains in focus throughout the entire zoom range of the lens.

To adjust back focus:

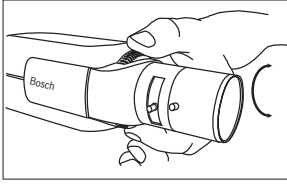
1. Open the slide door panel at the side of the camera.



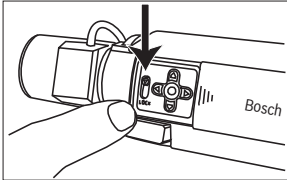
1. Unlock the back focus locking button.



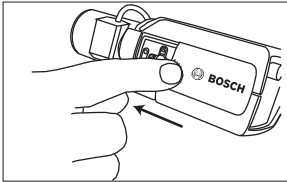
2. Press and hold the center key for more than 1 second until the **Install** menu appears.
3. Select **Wizard** and move cursor to the **Set Back Focus Now** item.
4. Turn the back focus adjustment as required.



5. Lock the back focus locking button.



6. Press and hold the center key for more than 1 second until all the menus disappear.
7. Close the side door panel.

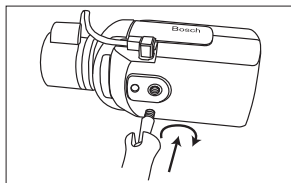


**Note:**

To backfocus a zoom lens, see the zoom lens installation guide.

## 3.6 Mounting the camera

The camera can be mounted either from the top or from the bottom (1/4" 20 UNC thread). The bottom mounting is isolated from ground to prevent ground loops.



**Figure 3.7** Mounting a camera



### CAUTION!

Do not point the camera/lens into direct sunlight as this may damage the sensors.

## 3.7 Day/Night switching

The camera is equipped with a motorized IR filter. The mechanical IR filter can be removed in low-light or IR illuminated applications by software configuration settings. If **Auto** switching mode is selected, the camera automatically switches the filter depending on the observed light level. The switching level is programmable. In **Auto** switching mode the camera prioritizes motion (the camera gives sharp images without motion blur as long as the light level permits) or color (the camera gives color pictures as long as the light level permits). The camera recognizes IR illuminated scenes to prevent unwanted switching to color mode.

There are three different methods of controlling the IR filter:

- via an alarm input,
- via Bilinx communication, or
- automatically, based on the observed light levels.

## 4 Configuration

The camera normally provides an optimal picture without the need for further adjustments. However, advanced set-up options are available in a menu system for getting the best results under special circumstances.

The camera implements your changes immediately so that before and after settings are easily compared.

### 4.1 Menu

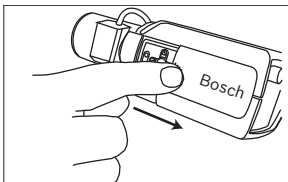
#### 4.1.1 Top level menus

There are two upper level menus: a **Main** menu and an **Install** menu. The menus have functions that can be selected directly or submenus for more detailed set-up.

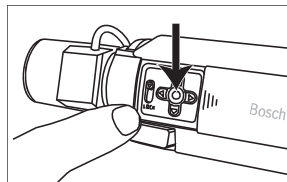
- To access the **Main** menu, press the menu/select button (center) for less than 1 second. The **Main** menu appears on the monitor. Select and set-up the picture enhancement functions. If not satisfied with your changes, recall the default values.
- The camera also has an **Install** menu in which the installation settings can be set. To access the **Install** menu, press the menu/select button (center) for longer than 2 seconds.

#### 4.1.2 Menu navigation

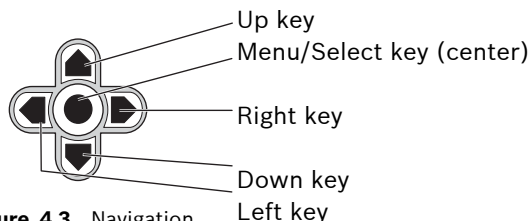
Five keys, located behind the side door panel, are used for navigating through menu system.



**Figure 4.1** Side panel door



**Figure 4.2** Menu/select key



**Figure 4.3** Navigation

- Use the up or down keys to scroll through a menu.
- Use the left or right keys to move through options or to set parameters.
- When in a menu, quickly double-press the menu/select key to restore the selected item to its factory default.
- To close all menus at once hold down the menu/select key until the menu display disappears or continually select the **Exit** item.

Some menus automatically close after about two minutes; other menus have to be closed manually.

## 4.2 Camera control communication (Bilinx)

This camera is equipped with a coaxial communications transceiver (also referred to as Bilinx). In combination with VP-CFGSFT, the camera setting can be changed from any point along the coaxial cable. All menus can be accessed remotely giving full control of the camera. With this method of communication it is also possible to disable the local keys on the camera. To avoid loss of communication on an installed camera, the **COMM On/Off** selection is not available while using remote control. This function can only be accessed with the camera buttons. Bilinx communications can only be disabled using the buttons on the camera.

### Disabled camera buttons

When the Bilinx communications link is active, the buttons on the camera are disabled.

## 4.3 Main menu structure

Item	Selection	Description
Level	-15 to +15	Video level control: A positive value is more useful for low-light conditions; a negative value is more useful for very bright conditions.
Shut/AGC	Submenu	Picture enhancement and performance
Day/Night	Submenu	Control day/night switching
BLC	On, Off,	Set to On to enable Back Light Compensation (BLC)
Color	Submenu	White balance and color rendition
Sync	Internal Line lock	Internal - for free running camera operation. Line lock - to lock to the AC power supply
Vphase	0, 2 . . . 358	Adjusts the vertical phase (only available if sync = line lock).
Exit		Exit the menu

### 4.3.1 Shutter/AGC submenu

Item	Selection	Description
Shutter	AES, FL, Fixed	AES (auto-shutter) - the camera automatically sets the optimum shutter speed. FL - flickerless mode avoids interference from light sources (recommended for video-iris or DC-iris lenses only). FIXED - forces a fixed shutter speed.
Gain	On, Off	On - the camera automatically sets the gain to the lowest possible value needed to maintain a good picture. Off - sets AGC off.
Autoblack	On, Off	Autoblack On automatically increases the visibility of details even when scene contrast is less than full-range due to mist, fog, etc.
EXIT		Returns to main menu.

### 4.3.2 Day/Night submenu

Item	Selection	Description
Day/Night	Auto, Color, Monochrome	Auto - the camera switches the IR cut-off filter on and off depending on the scene illumination level. Monochrome - the IR cut-off filter is removed, giving full IR sensitivity. Color - the camera always produces a color signal regardless of light levels.
Switch level	-15 to +15	Sets the video level in Auto mode at which the camera switches to monochrome operation. A low (negative) value means that the camera switches to monochrome at a lower light level. A high (positive) value means that the camera switches to monochrome at a higher light level.
EXIT		Returns to main menu.



### 4.3.3 Color submenu

Item	Selection	Description
White balance	ATW, AWBhold	ATW - Auto tracking white balance allows the camera to constantly adjust for optimal color reproduction. AWBhold - Puts the ATW on hold and saves the color settings.
Red gain	-5 to +5	Adjusts the Red gain to optimize the white point.
Blue gain	-5 to +5	Adjusts the B gain to optimize the white point.
EXIT		Returns to main menu.

### 4.3.4 VMD submenu (remotely via Bilinx only)

Item	Selection	Description
VMD	Off, Silent, OSD	Off - Video Motion Detection (VMD) is off. Silent - video motion generates silent alarm. OSD - video motion generates on-screen text message alarm.
VMD area	Submenu	Select to enter the area set-up menu to define the detection area.
Motion indicator		Indicates the peak of measured motion in the selected area. Press either the right, left or center navigation button to reset.

Item	Selection	Description
VMD sensitivity		Sets the sensitivity for motion to the desired level. The longer the white bar, the more motion is required to activate the VMD alarm. Motion above this level activates alarm.
OSD alarm text	Alphanumeric	Text for on-screen display alarm (16 characters maximum).
EXIT		Returns to main menu.

### Selecting an area for VMD masking

To set-up an area for VMD masking, access the area menu by selecting the **VMD Area** option from the VMD menu. Upon entering the **Area** menu, the current area is displayed with the upper left corner flashing. The flashing corner of the image can be moved with the Up, Down, Left, Right arrow keys. Pressing the Select key moves the flashing cursor to the opposite corner, which can now be moved. Pressing Select again freezes the area and exits the area menu.

There is one programmable VMD area.

#### Note:

When VMD is enabled, normal light fluctuations or environmental factors can contribute to false-positive alarms. Because of this, it is recommended to **not** connect the VMD-triggered alarm output of the camera to a monitored alarm system, as the false-positive alarms may be considered a nuisance.

## 4.4 Install menu structure

Item	Selection	Description
Lens type	Auto, Manual, DC-iris, Video	Auto: - the camera automatically selects the type of lens. Manual, DC-iris, Video modes: select the matching lens type to force the camera to the correct lens mode.
Lens Wizard	Submenu	Select to optimize the camera-lens combination backfocus point.
Comm	On, Off	Communications enabled or disabled. If Off, Bilinx communication is disabled.
Alarm	Submenu	Program the alarm input and output functionality.
Defaults	Submenu	Returns all settings for all modes to factory defaults

### 4.4.1 Lens Wizard submenu

Item	Selection	Description
Detected lens		Shows the type of lens detected when auto lens detection is used.
Set Backfocus now		Select to fully open the iris. Follow the instructions below for setting the backfocus for your particular lens type. After focusing the object of interest remains in focus under bright and low light conditions.

Item	Selection	Description
Set LVL		Only for video-iris lenses. Adjust the level control on the lens to center the level detector indicator (see below).
EXIT		Returns to Install menu.

### Adjustment procedure DC-iris Lens

1. Unlock the back focus locking button.
2. Access the **Lens Wizard** menu.
3. **Set Back Focus Now** is highlighted in the menu.
4. Turn the back focus adjustment as required.
5. Lock the back focus locking button.
6. Exit the menu.

### Adjustment procedure Manual-iris Lens

1. Unlock the back focus locking button.
2. Adjust the lens to the maximum lens opening.
3. Turn the back focus adjustment as required.
4. Lock the back focus locking button.
5. Adjust lens opening to suit scene.

### Adjustment procedure Video-iris Lens

1. Unlock the back focus locking button.
2. Access the **Lens Wizard** menu.
3. **Set Back Focus Now** is highlighted in the menu.
4. Turn the back focus adjustment as required.
5. Lock the back focus locking button.
6. Select **Set LVL** in the menu; the **Level** bar appears.
7. Point the camera at the scene it will be mostly viewing.
8. Adjust the level potentiometer located on the lens until the **Level** bar is in the central position.
9. Exit the menu.

## 4.4.2 Alarm submenu

Item	Selection	Description
Alarm In - Active	None, high, low	Select none to disable the alarm input. Select active-high or active-low for the alarm input connector.
Alarm In - Action	None, Mono	Selects the action of the camera when the alarm input is active.
Alarm out - Action	VMD, Remote, Day/Night, Filter move	VMD: - output relay activates on VMD alarms. Remote: - make the output relay available to remote communication devices. Day/Night: - output relay activates when camera is in monochrome mode. Filter move: - output relay activates just before the IR filter starts moving and de-activates when video level has stabilized (2 to 3 seconds)
Alarm out - Relay	Normally open, Normally closed	Select how the output relay activates.
EXIT		Returns to Install menu.

### 4.4.3 Defaults submenu

Item	Selection	Description
Restore All	No, Yes	Restores all settings to their default (factory) values. Select YES, then press the Menu/Select button to restore all values. When completed the message RESTORED! is shown.
EXIT		Returns to Install menu.

## 5 Technical Data

### 5.1 Specifications

Type number	LTC0465/11	LTC0465/21	LTC0465/51	LTC0465/61
<b>Standard</b>	PAL	NTSC	PAL	NTSC
<b>Active pixels</b>	752 x 582	768 x 494	752 x 582	768 x 494
<b>Rated supply voltage</b>	+12 VDC 24 VAC (50 Hz)	+12 VDC 24 VAC (60 Hz)	230 VAC 50 Hz	120 VAC 60 Hz
<b>Minimum illumination</b>	<0.26 lux <0.06 lux (in monochrome mode)			

#### All versions

Imager	1/3-inch Interline CCD
Resolution	540 TVL
SNR	> 50 dB
Video output	1 Vpp, 75 Ohm
Synchronization	Internal, Line Lock selectable
Shutter	AES (1/60 [1/50] to 1/150000) automatic flickerless, fixed selectable
Day/Night	Color, Mono, Auto
AGC	AGC On (20 dB) or Off (0 dB) selectable
Back Light Compensation (BLC)	One area, center-weighted
White Balance	ATW, AWBhold (2500 to 10000K)
Lens mount	CS compatible, C-mount compatible with adapter ring
ALC lens	Video or DC iris auto detect
Video Motion Detection (VMD)	One area, fully programmable remotely
Communication	Two-way Bilinx (bi-directional)

Power consumption	<4 W
Dimensions (H x W L)	58 x 66 x 122 mm (2.28 x 2.60 x 4.80 in) without lens
Weight	450 g (0.99 lb) without lens
Tripod mount	Two 1/4" 20 UNC - isolated (bottom) and non-isolated (top)
Operating temperature	-20 °C to +55 °C (-4 °F to +131 °F)
Controls	OSD with softkey operation



# Glossary

## A

### AES

Automatic Electronic Shutter (see Electronic iris).

### Aperture

The size of the opening in the lens iris that controls the amount of light reaching the CCD Sensor. The larger the F-number, the less light reaches the sensor. An increase of one F-stop, halves the amount of light reaching the sensor.

### Auto Level Control (ALC)

The adjustment of the video level to give the desired brightness level. This can be done electronically or by means of an iris control.

### Auto White Balance (AWB)

A feature that allows a color camera to automatically adjust its output color to give a natural color, independent of the lighting used.

### AutoBlack

A technique of boosting the video signal level to produce a full amplitude video signal, even when the scene contrast is less than full range (glare, fog, mist, etc.).

### AutoIris

The lens iris opening is automatically adjusted to allow the correct illumination of the camera sensor. With a direct drive (DC) iris lens, the camera controls the aperture size. A video iris lens has the control circuit in the lens itself.

### Automatic Gain Control (AGC)

The electronics that regulate the gain or amplification of the video signal. AGC is used in low-light conditions with the iris fully open.

## B

### Back Light Compensation (BLC)

Selectively amplifies parts of the image to compensate for large

contrast differences when only a portion of the image is brightly lit (e.g. a person in a sunlit doorway). See also Smart BLC.

#### Backfocus

The distance between the image plane and the rear portion of the lens. Correct backfocus adjustment ensures that the camera remains in focus under various conditions.

#### Bilinx

A communications protocol that allows remote control, configuration, and updates to be performed over the video cable (Coax or Passive UTP).

#### Bilinx address

The address may be set locally using the Bilinx Configuration Tool for Imaging Devices (CTFID).

## C

#### CCD Format

Indicates the size of the camera sensor used. In general, the larger the sensor, the more sensitive the camera and the better the image quality. The format is quoted in inches, for example 1/3 or 1/2 inch.

#### Charged Coupled Device (CCD)

A CCD is a type of solid state image sensor used in CCTV cameras. The sensor converts light energy into electrical signals.

#### Color Temperature

A measure of the relative color of illumination. Generally used to specify the color balance correction of a camera to achieve a natural color image.

## D

#### Day/Night (infrared sensitive)

A camera that has normal color operation in situations where there is sufficient illumination (day conditions), but where the sensitivity can be increased when there is little light available (night conditions). This is achieved by removing the infrared cut filter required for good color rendition. The sensitivity can be

further enhanced by integrating a number of fields to improve the signal-to-noise ratio of the camera (this may introduce motion blur).

#### Default Shutter

A feature allowing the shutter speed to be set to a fast speed to eliminate motion blur and provide a detailed and clear image of fast-moving objects while there is sufficient light. When light levels fall and other adjustments have been exhausted, the shutter speed reverts to the standard setting to maintain sensitivity.

#### Depth of Field

The distance from the nearest to the furthestmost point that appears in focus. The smaller the aperture, the greater the depth of field.

#### Dynamic Noise Reduction (DNR)

A digital video processing technique that measures the noise (image artifacts) in the picture and automatically reduces it.

## E

#### Electronic iris

Electronic iris (or AES - Automatic Electronic Shutter) adjusts the camera shutter speed to compensate for lighting changes. In some cases this can eliminate the need for an autoiris lens.

## F

#### F-Number

The standard measure of the lens aperture, which is the iris diameter, divided by the focal length of the lens. The lower the maximum aperture (F-Number or F-Stop), the more light that passes through the lens.

F-Stop *See F-Number*

#### Field of View

The measure of the visible area within the camera's field of view. The larger the focal length, the smaller the field of view. The smaller the focal length, the wider the field of view.

## Focal Length

The distance from the optical center of the lens to the image of an object located at an infinite distance from the lens. Long focal lengths give a small field of view (e.g. telephoto effect), while short focal lengths give a wide angle view.

## I

### Infrared Illumination

Electromagnetic radiation (light) with a longer wavelength than is visible to the human eye. IR illumination is prominent at dusk and dawn and in incandescent lamps. IR illuminators come in the form of lamps with the appropriate filters, LEDs, or lasers. CCD sensors are less sensitive to IR than visible light, but IR can significantly increase the total illumination level, leading to a much better image at low light levels.

### IRE (Institute of Radio Engineers)

A measurement of video amplitude that divides the area from the bottom of sync to peak white level into 140 equal units - 140 IRE equals 1V peak-to-peak. The range of active video is 100 IRE.

## L

### Lens wizard

The lens wizard is used when setting the backfocus. It opens the iris fully while maintaining the correct video level using AES.

### Lux

The international (SI) unit of measurement of the intensity of light. It is equal to the illumination of a surface one meter away from a single candle.

## O

### OSD

On-screen Display: Menus are shown on the display monitor.

## P

### Privacy Masking

The ability to mask out a specific area to prevent it from being viewed in order to comply with privacy laws and particular site requirements.

### PWIE

Peak White Inverse Engine: White highlights are automatically turned black to reduce bright spots. Useful in traffic and car park applications.

## R

### Region of Interest

A specific area within a field of view, used by the motion detection algorithm to identify motion.

### Resolution

The measure of the fine detail that can be seen in an image. For analog systems this is typically measured in horizontal Television Lines or TVL. The higher the TVL rating, the higher the resolution.

## S

### Saturation

The amplitude of the chrominance signal affecting the vividness of the color.

### Sensitivity

A measure of the amount of light required to provide a standard video signal. Sensitivity values are stated in lux (see Lux).

### SensUp (sensitivity up)

Increases camera sensitivity by increasing the integration time on the CCD (lowering shutter time from 1/50 to 1/5 s). This is accomplished by integrating the signal from a number of consecutive video fields to reduce signal noise.

### Signal-to-noise ratio

The ratio between a useful video signal and unwanted noise measured in dB.

**Smart BLC (Back Light Compensation)**

Smart back-light compensation allows the camera to automatically compensate for bright areas of a high contrast scene without having to define a window or area.

**U****UTP (Unshielded Twisted Pair)**

A variant of twisted pair cabling, UTP cable is not surrounded by any shielding. The wires in a twisted pair cable are twisted around each other to minimize interference from the other twisted pairs in the cable. UTP is the primary wire type for telephone usage and the most commonly used type of networking cable.

**V****VMD**

**Video Motion Detection:** An algorithm for motion detection in which the camera compares the current image with a reference image and counts the number of pixels that have changed between the two images. An alarm is generated when the number of pixel changes exceeds a user-configured threshold.

**W****WDR (Wide Dynamic Range)**

A camera's dynamic range is the difference between the minimum and maximum acceptable signal levels. A scene with both very low and very high illumination levels requires a camera with a wide dynamic range to handle it correctly and produce a useful image.



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