



# DINION IP starlight 7000 HD

NBN-73013 | NBN-73023



**BOSCH**

en Installation Manual



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# 1 Safety

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## **Caution!**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

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## **Notice!**

Indicates a situation which, if not avoided, could result in damage to the equipment or environment, or data loss.

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## 2 Short information

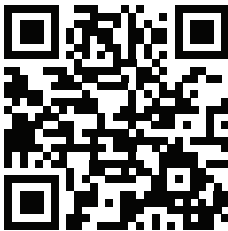
This manual has been compiled with great care and the information it contains has been thoroughly verified. The text was correct at the time of printing, however, the content can change without notice. Bosch Security Systems accepts no liability for damage resulting directly or indirectly from faults,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

### **Trademarks**

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

### **More information**

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



[http://www.boschsecurity.com/catalog\\_overview.htm](http://www.boschsecurity.com/catalog_overview.htm)

## 3 System overview

### 3.1 Performance

This camera provides clear images 24/7 – even at night or under low-light conditions.

The exceptional starlight sensitivity enables this camera to work with a minimum of ambient light. The extended dynamic mode provides detailed images in scenes with challenging lighting.

The camera is available in 1080p or 720p resolution versions and provides up to 60 images per second.

There is a selection of high quality lenses separately available.

### 3.2 Using the camera

Use a web browser to access the camera features and to view the camera streams live. Use the same browser interface to access and change the camera configuration parameters and recording/storage functions (including local alarm recording, and recording to iSCSI-based systems).

Refer to the software manual for more information on the browser interface.

The web browser is the most direct way of using the camera, however, the Bosch download store provides several other free applications (listed below) for viewing and controlling the camera.

#### **Download store**

Download the latest applications and firmware from:

<http://downloadstore.boschsecurity.com/>



### **Video Security Client**

The Video Security Client is a free, easy-to-use video-surveillance application provided by Bosch for local and remote monitoring of IP cameras and appliances. The software supports up to 16 cameras.

### **Bosch Video Client**

The Bosch Video Client is a free Windows application to view, operate, control, and administer surveillance cameras and installations at remote locations. It offers a user-friendly interface for easy live viewing of multiple cameras, playback, forensic search and export.

### **IP Helper**

The IP Helper tool is a free PC application that makes it easy to detect Bosch cameras and devices on your network.

### **Video security app**

The Bosch video security mobile app has been developed to enable Anywhere access to HD surveillance images allowing you to view live images from any location. The app is designed to give you complete control of all your cameras, from panning and tilting to zoom and focus functions. It's like taking your control room with you.

This app, together with the separately available Bosch transcoder, will allow you to fully utilize our dynamic transcoding features so you can play back images even over low-bandwidth connections.



### 3.2.1 Larger surveillance systems

#### **Bosch Video Management System**

The Bosch Video Management System is a unique enterprise IP video surveillance solution that provides seamless management of digital video, audio and data across any IP network. It is designed to work with Bosch security products as part of a total video surveillance management system.

#### **Third-party integration**

Third-party integrators can easily access the internal feature set of the camera for integration into large projects. Access to metadata is available to integrators via RTSP.

When connected to external systems, many of the camera configuration parameters are controlled by the system and not by the settings made via a web browser.

## 3.3 Application variants

The camera has a choice of application variants that set up the camera for optimum performance in a specific environment. Select the application variant best suited to your installation. The application variant must be selected before any other changes are made, as the camera reboots automatically and resets the factory defaults when the application variant is changed.

This camera has the following application variants:

- Starlight mode (default) – to continue viewing in color at very low light levels
- Extended Dynamic mode - simultaneously see details in very bright and very dark objects in the same scene

## 4 Planning information

### 4.1 Unpacking

This equipment should be unpacked and handled with care. If an item appears to have been damaged in shipment, notify the shipper immediately.

Verify that all parts are included. If any items are missing, notify your Bosch Security Systems Sales or Customer Service Representative.

The original packaging is the safest container in which to transport the unit and can be used if returning the unit for service.

### 4.2 Contents

Qty	Component
1	DINION camera
1	Sensor protection cap (mounted on camera)
1	Power connector (2 Pins)
1	Data/Alarm connector (12 Pins)
1	Installation Guide
1	Identification label sheet
1	C/CS mount adapter ring for mounting a lens with a C-mount

## 5 Installation

### 5.1 Lens Mounting



**Notice!**

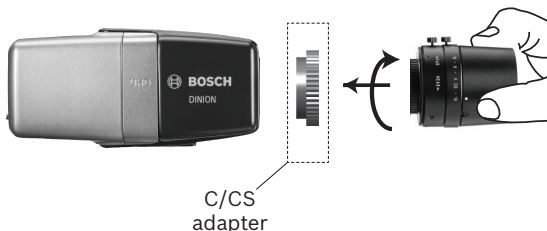
Optical elements are sensitive and should be protected at all times. Do not allow objects to come into contact with glass surfaces and do not touch optical elements with your fingers.



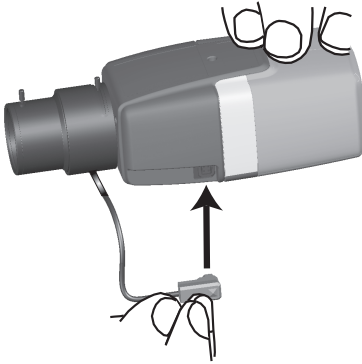
**Notice!**

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

1. Remove the sensor protection cap from the camera (if present).
2. Screw the lens onto the camera using the CS or C-mount (use the supplied adapter ring to attach a C-mount lens).



Plug the lens connector into the camera (it automatically detects the type of lens).

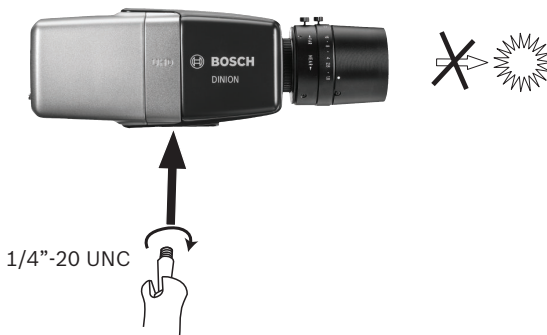


## 5.2 Mounting the camera



**Notice!**

Do not expose the image sensors to direct sunlight.  
Do not obstruct the free flow of air around the camera.



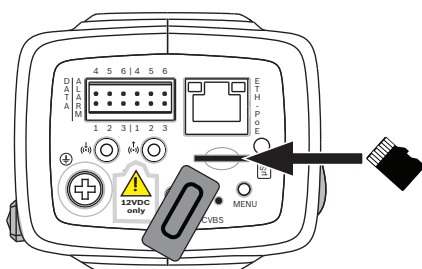
The camera can be mounted either from the top or from the bottom (1/4" 20 UNC thread).

## 5.3 Local storage

### Notice!



Local storage on memory cards should only be used for alarm recording. To minimize the risk of losing information, use multiple, redundant recording systems and a procedure to back up all digital information.



1. Unscrew the card slot cover.
2. Slide the memory card into the slot until it locks in place.
3. Screw the cover into place to seal the slot.

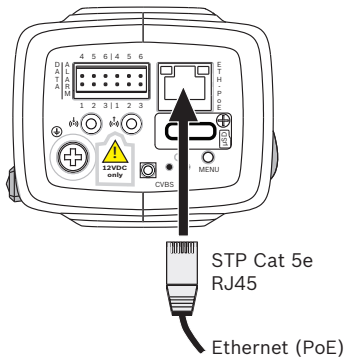
## 6 Connection



### Notice!

Use proper surge suppression on network/video/power/audio/data/alarm cables that are routed outdoors, or close to large inductive loads or electrical mains supply cables.

### 6.1 Network (and PoE power)



Connect the camera to a 10/100 Base-T network:

- Use STP Category 5e cable with RJ45 connectors (the camera network socket is Auto MDIX compliant).
- Power can be supplied to the camera via the Ethernet cable compliant with the Power-over-Ethernet standard.

The LEDs beside the Ethernet connection indicate network connection (green lit) and IP traffic (orange flashing).

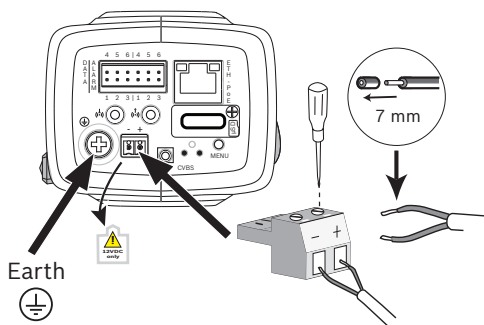


### Notice!

Use only PoE approved devices.

Power-over-Ethernet can be connected at the same time as a 12 VDC power supply. If auxiliary power (12 VDC) and PoE is applied simultaneously, the camera selects PoE and shuts off the auxiliary input.

## 6.2 Auxiliary power



### Caution!

Use **only** a +12 VDC power supply for auxiliary power, and check this supply complies with EN/UL 60950.



### Caution!

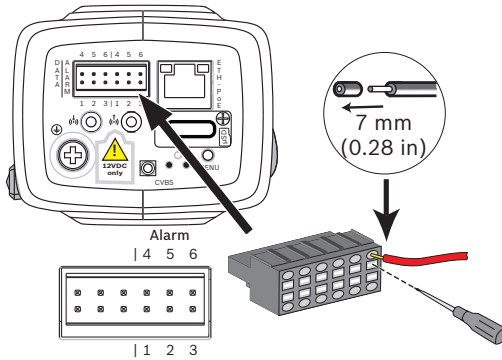
Ensure the output from the power supply is isolated from earth.

The camera is originally supplied with a warning sticker over the 12VDC connections on the back of the camera (stating that only a 12VDC power supply may be used). Always first peel off this sticker before connecting power wires.

Connect an approved power supply unit with a rated supply voltage of 12 VDC as follows:

1. Strip back 7 mm (0.28 in) of insulation on the power supply cable; must be 14-30 AWG (stranded wire) or 16-28 AWG (solid wire).
2. Loosen the screws of the supplied 2-pole connector and insert the stripped wires, then tighten the screws again.
3. Insert the 2-pole connector into the camera power socket.

## 6.3 Alarm



Pin	Alarm socket
1	Alarm in 1
2	Alarm in 2
3	Alarm out contact 1
4	Ground
5	Ground
6	Alarm out contact 2

The maximum wire diameter is AWG 18-28 (CSA) or AWG 16-28 (UL); cut back 7 mm (0.28 in) of insulation.

### Alarm out

Use the alarm output for switching external devices such as lamps or sirens.

Alarm output switching capability:

- Max. voltage 30 VAC or +40 VDC. Max. 0.5 A continuous, 10 VA.

### Alarm in:

Use the alarm input to connect external alarm devices such as door contacts or sensors:



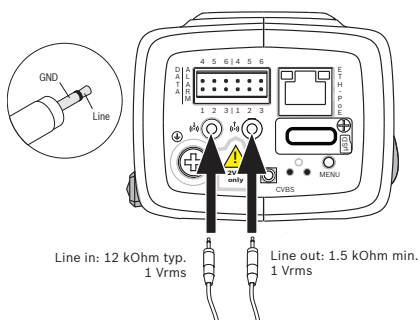
- TTL logic, +5 V nominal, +40 VDC max, DC coupled with 50 kOhm pull-up to +3.3 V.
- Configurable as active low or active high.

A zero potential make-contact or switch can be used as the actuator (use a bounce-free contact system).

**Note:**

If IR illumination is used, the alarm interface provides a stable switching control of the day/night function of the camera.

## 6.4 Audio



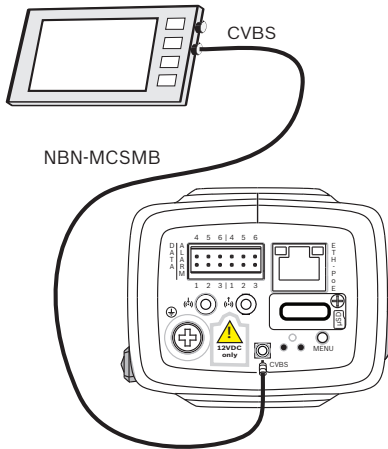
Connect audio devices to the **Audio In** and **Audio Out** connectors.

The unit has full-duplex mono audio for two-way communication between a speaker or door intercom system. The audio input signal is transmitted in sync. with the video signal.

**Audio input:** Line input level (not suitable for direct microphone signal); impedance 18 kOhm typical; 1 Vrms maximum input voltage.

**Audio output:** Line output level (not suitable for direct speaker connection); impedance 1.5 kOhm minimum; 0.85 Vrms maximum output voltage.

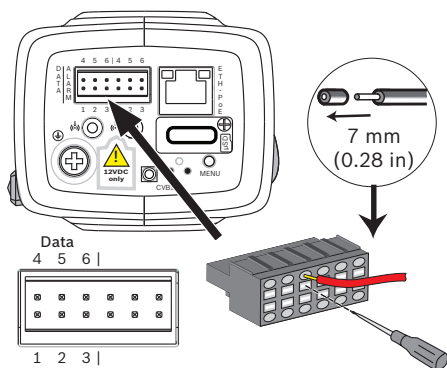
## 6.5 Video monitor



Use the SMB video connector (CVBS) to connect an analog monitor for setting up the camera:

- To connect a monitor, use the optional 3 m cable (NBN-MCSMB-30M) to connect directly to the CVBS connector of a monitor.
- To connect to a coax cable, use the optional 0.3 m cable (NBN-MCSMB-03M).

## 6.6 Data



Pin	Data socket
1	Ground
2	RxD / Rx+
3	Rx-
4	Ground
5	TxD / Tx-
6	Tx+

The maximum wire diameter is AWG 18-28 (CSA) or AWG 16-28 (UL); cut back 7 mm (0.28 in) of insulation.

Use the data connector to connect to an external device for sending control data from the camera to the external device. This data connection supports RS485, RS422, and RS232.

---

## 7 Configuration

### 7.1 Setting up the camera

Configure the settings (such as application variant, focus and picture orientation) using one of the following methods:

- Locally using the **Menu** button on the camera to step through the basic camera settings.
- Via a web browser; this method also enables you to change other camera parameters.

**Notice!**

Changing the application variant overwrites your camera settings with the factory defaults.

---

**Note:**

The Menu button on the camera is used for camera settings in the application variants “Starlight mode” (default) and “Starlight mode 1.3 MP”. In other application variants, pressing Menu will only switch the analog output on/off; use the web browser to set up camera settings (focus, zoom, etc.) for these variants.

### 7.2 Configuration via web browser

The unit must have a valid IP address and a compatible subnet mask to operate on your network. By default, DHCP is pre-set at the factory to **On** and so your DHCP server assigns an IP address. With no DHCP server the default address is 192.168.0.1

To view the camera in your web browser:

1. Start the Web browser.
2. Enter the IP address of the unit as the URL.
3. During initial installation, confirm any security questions that appear.

**Note:**

To see live images in your browser it might be necessary to download and install the MPEG-ActiveX from the Bosch download store.

### Protected network

If a RADIUS server is used for network access control (802.1x authentication), the unit must be configured first. To configure the unit, connect it directly to a computer using a network cable and configure the two parameters, **Identity** and **Password**. Only after these have been configured can communication with the unit via the network occur.

### IP Helper tool

Alternatively, use the IP Helper tool to detect Bosch devices on the network:

1. Access the Bosch download store (<http://downloadstore.boschsecurity.com/>).
2. Download and install IP Helper.
3. Choose your specific camera from the list of cameras shown in the table on the left of the screen
4. Click **Open in browser** to view the camera interface.

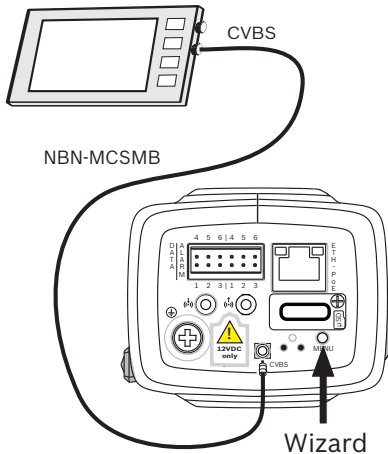
## 7.2.1 Set-up via web browser

1. Open the camera in the web browser.
2. Click **Configuration** in the title bar.
3. Select **Camera >> Installer Menu** from the side bar.
4. Click the **Lens Wizard** button and follow the steps to configure the lens.

If required, configure the other parameters to suit your working environment (for example, ID, passwords, date and time). Refer to the operation manuals of the software for more information.

## 7.3 Local set-up

For local set-up, first connect a monitor to the CVBS output of the camera and then use the **Menu** button to access an install wizard for camera settings.

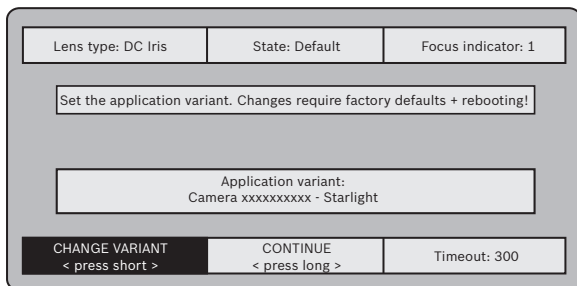


Use the install wizard for the following functions:

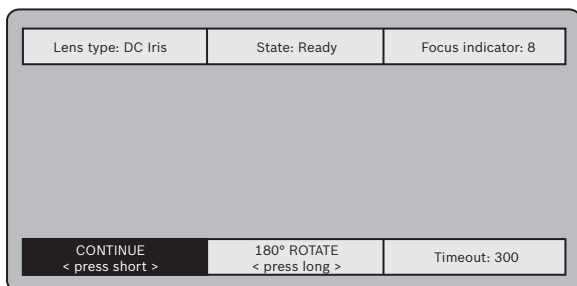
- Choose application variant
- Center camera focus
- Manually adjust lens
- Activate automatic back focus

### 7.3.1 Using the install wizard

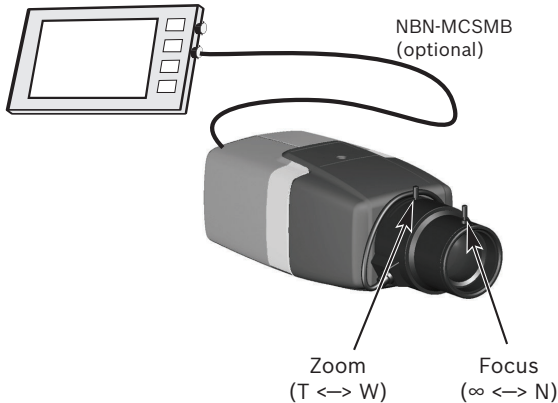
1. Power-up the camera and wait briefly until all LEDs show green.
2. Open the camera install wizard by pressing the **Menu** button – the following screen appears:



3. To change the variant, briefly press **Menu** a number of times until the desired variant is shown (remember that changing the variant will reboot the system and may eventually need a reset to return to factory defaults).
4. To confirm the selected variant, press **Menu** for a longer time until the following screen appears on the monitor:



5. Point the camera at the desired object of view.
6. To rotate the image 180°, press and hold **Menu** until the image flips.
7. Briefly press **Menu** to access the focus screen.
8. Manually adjust the Zoom lever on the lens to obtain the required field of view.



9. Manually adjust the Focus lever on the lens to obtain the sharpest image possible.
10. Briefly press **Menu** to start the automatic back focus adjustment (AUTO FOCUS).
  - The motorized automatic back focus process runs.
  - The progress is shown on the monitor.
11. If the camera is not in focus, press **Menu** for a longer time to re-run the auto focus.
12. If the camera is correctly focused, briefly press the **Menu** button to access the video analog output format screen.
13. Briefly press **Menu** to change the format as required.
14. When the correct format is shown, press **Menu** for a longer period to exit the wizard.

## 7.4 True Day/Night switching

The camera is equipped with a motorized IR filter. This mechanical IR filter is taken out of the optical path in low-light conditions.

The IR filter is controlled either:

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

If **Auto** switching mode is selected, the camera automatically switches the filter depending on the observed light level. The switching level is adjustable. (If the day to night switching level



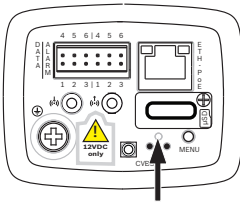
is set to -15, certain borderline scene lighting conditions can cause the camera to switch back and forth between day and night modes. Set a different switching level to avoid this.)

**Note:**

If IR illumination is used, the alarm interface provides a stable switching control for the day/night function of the camera.

## 7.5 Reset

Use the factory reset button to restore the unit to its original settings. Any changes to the settings are overwritten by the factory defaults. A reset may be necessary, for example, if the unit has invalid settings that prevent it from functioning as desired.



## 8 Troubleshooting

### 8.1 LED error status

The camera has four LEDs on the rear panel:

- Two LEDs indicate the camera status (red for error; green for OK)
- Two LEDs (green and orange) beside the network connection indicate the LAN and PoE status

### 8.2 Resolving problems

The following table is intended to help identify the causes of malfunctions and correct them where possible.

Malfunction	Possible causes	Solution
No image transmission to remote location.	Defective camera.	Connect a local monitor to the camera and check the camera function.
	Faulty cable connections.	Check all cables, plugs, contacts and connections.
	Incorrect encoder stream property set for connection to hardware decoder.	Select the H.264 MP SD option on the <b>Encoder Streams</b> configuration page.
No connection established, no image transmission.	Incorrect unit configuration.	Check all configuration parameters (reset to factory default if necessary).

Malfunction	Possible causes	Solution
	Faulty installation.	Check all cables, plugs, contacts and connections.
	Wrong IP address.	Check the IP addresses (terminal program).
	Faulty data transmission within the LAN.	Check the data transmission with ping.
	The maximum number of connections has been reached.	Wait until there is a free connection and call the transmitter again.
No audio transmission to remote station.	Hardware fault.	Check that all connected audio units are operating correctly.
	Faulty cable connections.	Check all cables, plugs, contacts and connections.
	Incorrect configuration.	Check audio parameters on the <b>Audio</b> configuration and <b>LIVE</b> page functions pages.
	The audio voice connection is already in use by another receiver.	Wait until the connection is free and then call the sender again.

<b>Malfunction</b>	<b>Possible causes</b>	<b>Solution</b>
The unit does not report an alarm.	Alarm source is not selected.	Select possible alarm sources on the Alarm sources configuration page.
	No alarm response specified.	Specify the desired alarm response on the Alarm connections configuration page; if necessary change the IP address.
Control of cameras or other units is not possible.	The cable connection between the serial interface and the connected unit is not correct.	Check all cable connections and ensure all plugs are properly fitted.
	The interface parameters do not match those of the other unit connected.	Make sure that the settings of all units involved are compatible.
The unit is not operational after a firmware upload.	Power failure during programming by firmware file.	Have the unit checked by Customer Service and replace if necessary.
	Incorrect firmware file.	Enter the IP address of the unit followed by /main.htm in your Web browser and repeat the upload.

<b>Malfunction</b>	<b>Possible causes</b>	<b>Solution</b>
Placeholder with a red cross instead of the ActiveX components.	JVM not installed on your computer or not activated.	Install JVM.
Web browser contains empty fields.	Active proxy server in network.	Create a rule in the local computer's proxy settings to exclude local IP addresses.
The camera LED flashes red.	Firmware upload failed.	Repeat firmware upload.

## 8.3 Testing the network connection

The ping command can be used to check the connection between two IP addresses. This allows testing whether a device is active in the network.

1. Open the DOS command prompt.
2. Type `ping` followed by the IP address of the device.

If the device is found, the response appears as "Reply from ... ", followed by the number of bytes sent and the transmission time in milliseconds. Otherwise, the device cannot be accessed via the network. This might be because:

- The device is not properly connected to the network. Check the cable connections in this case.
- The device is not correctly integrated into the network. Check the IP address, subnet mask, and gateway address.

## 8.4 Customer service

If a fault cannot be resolved, please contact your supplier or system integrator, or go directly to Bosch Security Systems Customer Service.

The version numbers of the internal firmware can be viewed on a service page. Please note this information before contacting Customer Service.

1. In the address bar of your browser, after the unit IP address, enter: `/version`  
for example: `192.168.0.80/version`
2. Write down the information or print out the page.

## 9 Maintenance

It is generally sufficient to use a dry cloth for cleaning, but a moist lint-free cloth or leather shammy may also be used.

Do not use liquid cleaners or aerosol cleaners.

It is important to keep the lens clean to ensure optimum performance. Dust, grease, or fingerprints should be removed from the lens surface. When cleaning the lens, take extra care not to damage the special coating used to reduce light reflections.

- Remove dust with a blower-brush or grease-free soft brush.
- Wipe water drops off the lens with a clean soft lint-free cloth and dry the lens surface.
- Use special lens cleaning paper or cloth treated with lens cleaning fluid to gently wipe off any remaining dirt (wipe spirally from the lens center towards the edge).



## 10 Decommissioning



**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 2012/19/EU*.

## 11 Technical data

<b>Mechanical</b>	
Dimensions (W x H x L)	78 x 66 x 140 mm (3.07 x 2.6 x 5.52 inch) without lens
Weight	690 g (1.52 lb) without lens
Color	RAL 9007 Metallic Titanium
Tripod Mount	Bottom (isolated) and top 1/4-inch 20 UNC

<b>Power</b>	
Input voltage	Power-over-Ethernet (48 VDC nominal) and/or +12 VDC $\pm$ 10% (auxiliary)
PoE IEEE standard	802.3af (802.3at Type 1) Power level: Class 3

Power Consumption	7.2 W max.
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Current draw (PoE)	200 mA max.
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Current draw (12 VDC)	600 mA max.
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<b>Environmental</b>	
Operating Temperature	-20°C to +50°C (-4°F to 122°F)
Storage Temperature	-30°C to +70°C (-22°F to +158°F)

<b>Environmental</b>	
Operating Humidity	20% to 93% RH
Storage Humidity	up to 98% RH

Refer to the product datasheet for a complete list of technical specifications.





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