

Advantage Line



AN traffic 4000 IR 960H IR License Plate Bullet Camera



BOSCH

en User Manual

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1 CAUTIONS

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.



Note!

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."



WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



CAUTION!

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



CAUTION!

1. A regulated DC12V 500mA power supply is recommended for use with this camera for the best picture and the most stable operation. An unregulated power supply can cause damage to the camera. When unregulated power supply is applied, product warranty will be out of subject.
2. It is recommended that the camera is used with a monitor that has a CCTV quality 75 video impedance level. If your monitor is switched to high impedance then please adjust accordingly.
3. Do not attempt to disassemble the camera to gain access to the internal components. Refer servicing to your dealer.
4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the CCD.
5. Do not remove the serial sticker for the warranty service.
6. Do not expose the camera to rain or other types of liquid.
7. The apparatus must be connected to a mains socket-outlet with a protective earthing connection.



Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract.

Household users should contact either the retailer where they for disposal.



CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER(OR BACK). NO USER. SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instruction in the literature accompanying the appliance.



CAUTION!

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Use Class 2 Power Supply Only

2 Important safety instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

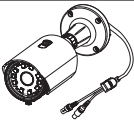





3 Features

The camera has the following features:

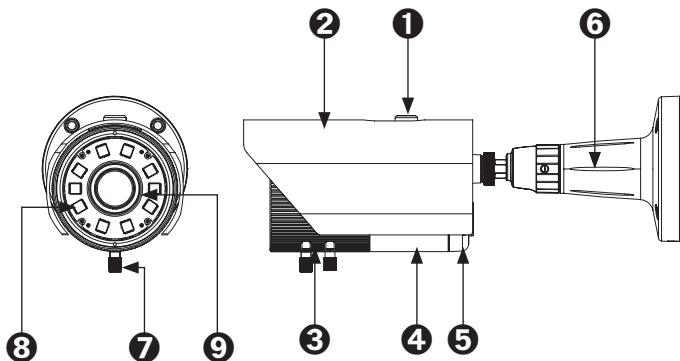
- 1/3" 960H SONY EXview HAD CCD II
- 720 TV Lines Horizontal Sensor Resolution.
- Adjustable high power IR beam in combination with special light filter technology for reliable license plate capturing in all lighting and weather conditions.
- 5-50mm varifocal lens providing variable capture range of 4.8 to 27 meters. (16 to 91 feet)
- Multi language On Screen Display (OSD) with joystick control.
- Plate capture up to 120 km/h (75 mph) External lens adjustment.
- Cable managed bracket for secure and clean installation.
- Vandal resistant (IK08)
- Outdoor rated (IP66)

NOTICE! This product works only in countries where license plates have a reflective coating. License plates without a reflective coating will not be visible. Capture range, speed and quality depends on the character font and size used on the license plate. Performance may be degraded by license plates with a poor coating/printing or dirt. Vibration or shaking of the camera will also degrade the performance, especially with a long capture distance. Make sure the camera is mounted with suitable mounting materials on a stable surface, and shorten the capture distance where possible.

4 Components

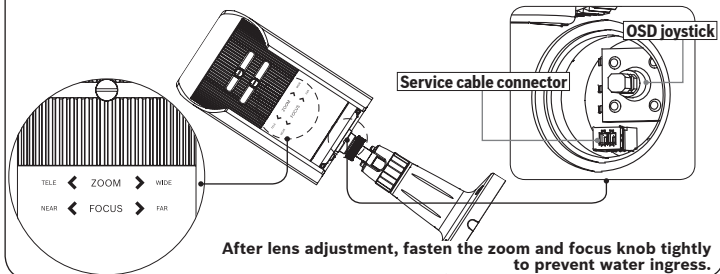
	Qty	Description		Qty	Description
	1	VLR-4075-V5x1 camera with integrated mounting bracket		1	Wrench (M6 hex)
	1	Video Output Test Cable		1	Guide Pattern
	4	Screws (PH/1(SUS) 5x30)		1	User Manual (this booklet)

5 Camera parts



- | | | | |
|---|-----------------------|---|------------------|
| 1 | Sunshield Fixing Bolt | 6 | Mounting Bracket |
| 2 | Sunshield | 7 | Lens Knob |
| 3 | Housing Front | 8 | LED |
| 4 | Housing Body | 9 | Lens |
| 5 | Housing Back | | |

After using the OSD joystick or Service cable connector, check rubber seal is in place on the protection cap, close and firmly tighten it to prevent water ingress.



After lens adjustment, fasten the zoom and focus knob tightly to prevent water ingress.

6 Installation

6.1 Monitor connection

To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

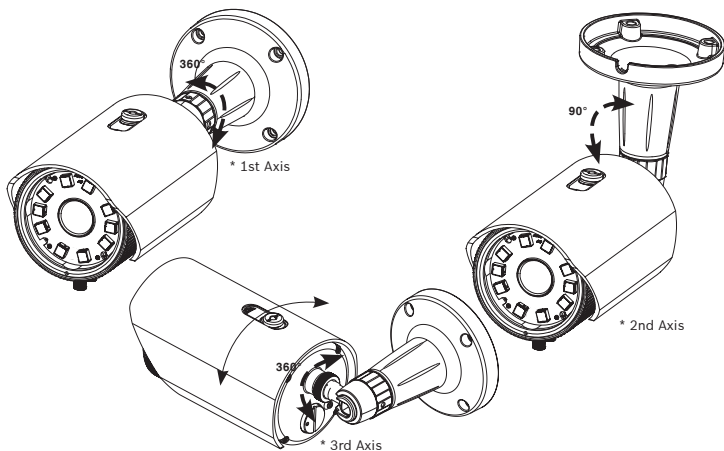
NOTICE! The image sensors in modern cameras are highly sensitive and require special care for proper performance and extended lifetime. Follow the guidelines for optimum results with your camera:

- Do not expose to direct sunlight or bright spotlights in operating and nonoperating conditions.
- Avoid bright lights in the field of view of the camera. Bright lights cause a "smearing" effect, which is visible as white lines above and below the highlight. Prolonged exposure to bright lights may cause bleaching of the sensor's color filters. This will be visible as colored spots in the picture and is irreversible.

WARNING! The mounting surface, mounting screws/plugs, and junction box must be stable and capable of supporting a maximum load of 10kg (22 pounds). Mounting to an improper surface or using improper mounting material can cause camera malfunction and is a potential safety hazard.

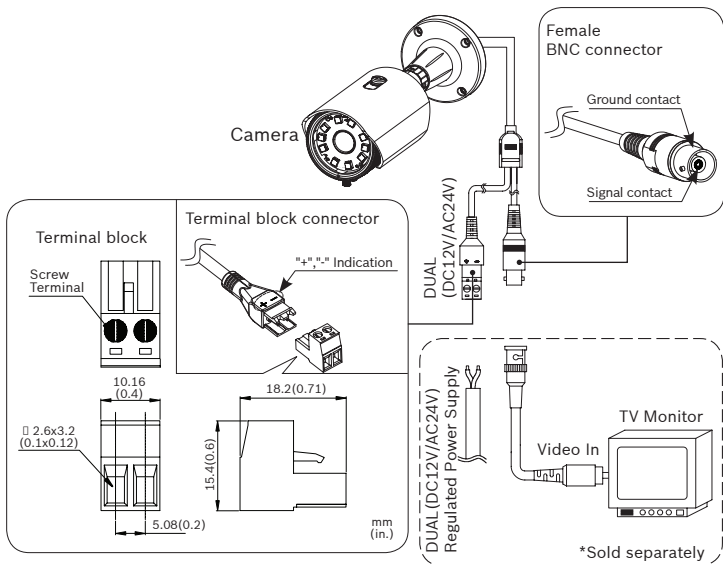
WARNING! Make sure that appropriate mounting screws and anchors are used for the surface to which the camera is mounted. The supplied universal mounting screws can be used with most plastic anchors, please confirm compatibility before mounting the camera.

CAUTION! To prevent humidity problems, the camera must be installed in dry conditions, and the cable leads should be sealed after they are connected.



6 Installation

6.2 Monitor connection



6.3 Camera adjustment

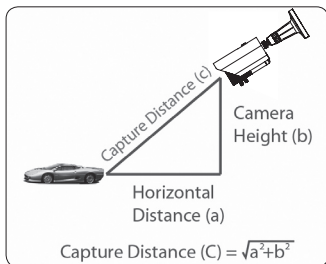
CAUTION! To prevent humidity problems, the camera must be installed in dry conditions. The lens knobs (located on the bottom of the camera) and protection cap (located on the rear of the camera) provide protection against water ingress when fully tightened. Therefore never remove or keep them loosened after installation. Doing so could cause water ingress and/or condensation on the inside of the camera window

1. Open the protection cap on the rear of the camera (only needed to access service monitor connection and OSD control)
2. Connect service monitor (optional)
3. Loosen the zoom and focus knob
4. Adjust zoom and focus
5. Fasten the zoom and focus knob tightly
6. Adjust OSD settings (refer to Camera Configuration section)
7. Disconnect service monitor cable (optional)
8. Check rubber seal is in place on the protection cap. Close and firmly tighten the protection cap on the rear of the camera.

7 Installation guideline

7.1 Camera height

- The camera has a 5-50mm varifocal lens providing variable capture range of 4.8 to 27 meters (16 to 91 feet)
- The camera height (the height where the camera is mounted) must be considered when determining capture distance.

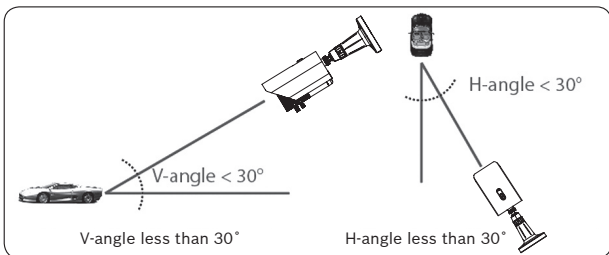


Below table illustrates how the camera height influences the capture distance (camera height and horizontal distance are examples).

Camera height (m/ft)	Horizontal Distance (m/ft)	Capture Distance (m/ft)
1 / 3.3	4 / 13.1	4.1 / 13.5
1.5 / 4.9	4 / 13.1	4.3 / 14.1
2 / 6.6	4 / 13.1	4.5 / 14.8
2.5 / 8.2	4 / 13.1	4.7 / 15.4
3 / 9.8	4 / 13.1	5 / 16.4

7.2 Camera angles

- It is advised to mount the camera at a horizontal and vertical angle of less than 30 degrees. A greater angle will distort the characters of the license plate and will reduce the capture performance. If the mounting position is fixed, the capture angle can be reduced by increasing the capture distance.



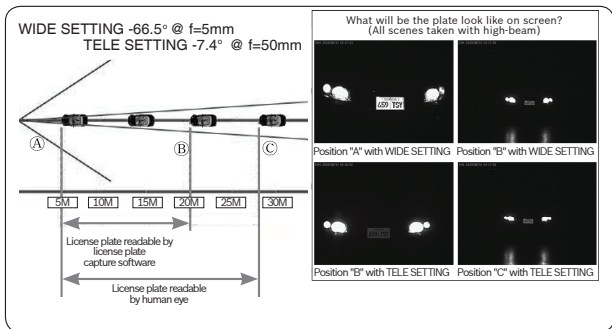
7 Installation guideline

Below table illustrates how the camera height influences the capture distance (camera height and horizontal distance are examples).

Camera height (m/ft)	Horizontal Distance (m/ft)	V-angle (°)
1 / 3.3	4 / 13.1	14
1.5 / 4.9	4 / 13.1	21
2 / 6.6	4 / 13.1	27
2.5 / 8.2	4 / 13.1	32 (exceeds the advised mounting angle)
3 / 9.8	4 / 13.1	37 (exceeds the advised mounting angle)

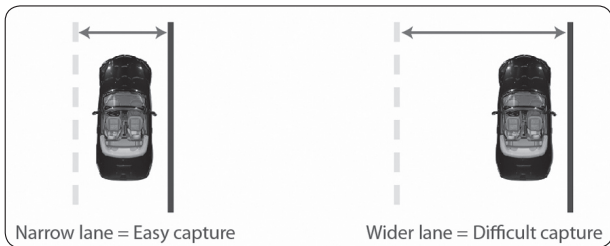
7.3 Capture zone

- Wide angle provides shorter capture distance and increased capture angle, but could result in the better image quality and stability.
- Tele angle provides longer capture distance and reduced capture angle, but could result in reduced image quality and stability.
- While a license plate can still be read by human eye, license plate capture software might not be able to recognize it.



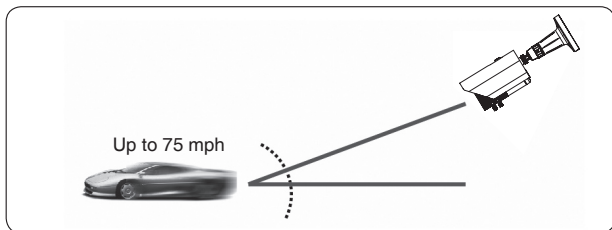
7.4 Lane width

- Narrow lanes = less variation in plate location.
- Wider lanes = more variation in plate location.
- Lens should cover entire width of the lane.
- Ensure horizontal field of view is wide enough.



7.5 Speed

- Camera can capture moving vehicles up to 120 km/h (75 mph).
- Keep camera as low as possible.
- Minimize horizontal angle.
- Zoom in the lens as close as possible.



8 Camera configuration

After the camera is properly installed, the focus and zoom should be adjusted, and OSD menu should be configured to optimize the camera's performance. To enter the OSD menu, press the OSD joystick located on the rear of the camera.

- Step1:** The first time the camera is turned on, the camera is in installation mode. In this mode, the camera will display the complete monochrome picture (not only the license plate). This will help to correctly aim and focus the camera on the target object. If the camera is not in installation mode, change MODE from LICENSE-PLATE to INSTALLATION in the OSD menu.
- Step2:** Adjust the zoom and focus (and camera position if needed) to the target object.
- Step3:** Change the camera mode from INSTALLATION to LICENSE-PLATE in the OSD menu. In this mode, the camera will only display reflective objects such as the license plate.
- Step4:** Adjust the SHUTTER value (= shutter speed) in order to prevent over- or underexposure of the license plate. In applications with short capture distance, the IR intensity may be reduced by lowering the LED level in the OSD menu to further prevent overexposure. Note that if the camera is installed outdoors, the license plate image may be slightly different during daytime and nighttime. This effect will increase when lowering the LED level, or when using a long capture distance.
- Step5:** If required, the image may be inverted by turning on NEGATIVE in the OSD menu. In negative mode, light areas in the image will appear dark and vice versa. In some applications this may improve the readability of the license plate.
- Step6:** Exit the OSD menu.

9 OSD menu structure

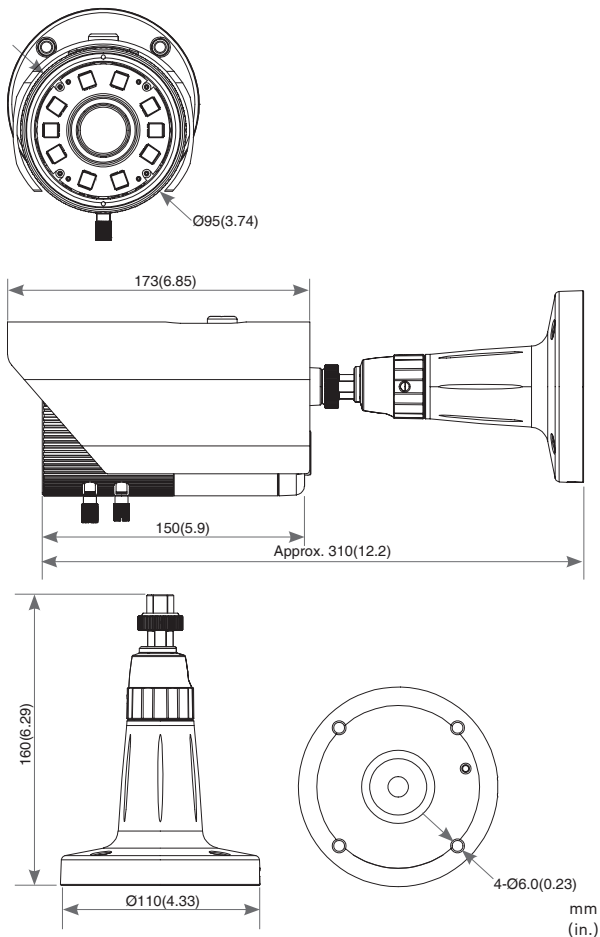
MAIN MENU	1st Sub
MODE	INSTALLATION LICENSE-PLATE
SHUTTER	---- (INSTALL MODE)
	1/250, 1/500, 1/1000~1/10000 (adjusted 1/500sec measure) 1/30K,1/50K,1/70K, 1/90K, 1/100K
NEGATIVE	OFF
	ON
LED LEVEL	0~10
LANGUAGE	English, Russian, Spanish, German, French, Portuguese
EXIT	

* **SHUTTER:** adjusted when LICENSE-PLATE MODE is performed.

10 Specification

Model	VLR-4075-V521(NTSC)	VLR-4075-V511(PAL)
Image Device	1/3" 960H SONY EXview HAD CCD II	
Scanning System	2 : 1 Interlace	
Scanning Frequency	15.734 KHz(H), 59.94 Hz(V)	15.625 KHz(H), 50 Hz(V)
H. Sensor Res.	720TVL	
Actual H. Res.	620TVL	
Total Pixels	1028(H) x 508(V)	1028(H) x 596(V)
Effective Pixels	976(H) x 494(V)	976(H) x 582(V)
S/N Ratio	More than 50dB (AGC Off)	
Min. Illumination	0 Lux (IR LED On)	
Sync. System	Internal	
Gamma	r = 0.45	
Video Output	1.0 Vp-p Composite (75Ω)	
Lens	Varifocal Auto IRIS & DC Lens Built-in	
Lens focal length	5~50mm	
Aperture	F1.4~360	
Lens adjustment	External	
Electronic Shutter	1/250 ~ 1/100,000	
Function	Installation Mode, License Plate Mode, Shutter speed Changeable, Focus Adjust Mode, Negative Image	
Language	English, Russian, Spanish, German, French, Portuguese	
OSD	Built-in	
OSD Control	External	
IR LED	850 nm, up to 28 m	
IP Rating	IP66 (Water resistant)	
Operating Temperature	-30 °C to +50 °C (-22 °F to +122 °F)	
Storage Temperature	-20 °C to +60 °C (-4 °F to +140 °F)	
Power Consumption	Dual : DC12V(±10%), Max. 600 mA / AC24V(±10%), Max. 7.7 W	
Cable Management Bracket	Yes	
Video interface	1 standard BNC connector for analog output	
Weight	Approx. 1.9kg(including bracket)	
Housing material	Casted/machined Aluminium	
Paint color	White RAL9003	
Vandal resistant	Yes (IK08)	
Outdoor rated	Yes (IP66)	

10-1 Dimensions



Bosch Security Systems

www.boschsecurity.com

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