Quick Guide

Roughneck AI V2008B-W310LPR and V2008B-W818LPR

License Plate Recognition Outdoor Vandal Bullet Camera

XX324-20-02

Cybersecurity Notification: All network connected devices should use best practices for accessing the device. To that end, these network cameras do not have a default password. A user defined password with minimum password strength requirements must be set to access the device. **See page 15** of this Quick Guide for set-up instructions.

Be sure to check Vicon's website to be see if you have the most up-to-date camera firmware.

Link to Setup Guide

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WARNING

- This camera operates at 12 VDC/24 VAC/PoE+ (IEEE 802.3at Class 4).
- Installation and service should be performed only by qualified and experienced technicians and comply with all local codes and rules to maintain your warranty.
- We are NOT liable of any damage arising either directly or indirectly from inappropriate installation which is not depicted within this documentation.
- To reduce the risk of fire or electric shock, do not expose the product to rain or moisture.
- Wipe the camera with a dry soft cloth. For tough stains, slightly apply diluted neutral detergent and wipe with a dry soft cloth.
- Do not apply benzene or thinner to the camera, which may cause the surface to melt or lens fog.
- Avoid aligning the lens with extremely bright objects (e.g., light fixtures) for long periods of time.
- Although this camera is waterproof and suitable for both indoor and outdoor usages, please do not immerse the camera into water.
- Avoid operating or storing the camera in the following locations:
  - Extremely humid, dusty, or hot/cold environments (recommended operating temperature: -40°F to +140°F/-40°C to +60°C)
  - Close to sources of powerful radio or TV transmitters
  - Close to fluorescent lamps or objects with reflections
  - Under unstable or flickering light sources

CAUTION	THIS SYMBOL INDICATES
RISK OF ELECTRIC SHOCK DO NOT OPEN	THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THE UNIT.
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.	THIS SYMBOL INDICATES THAT IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS ACCOMPANY THIS UNIT.

WEEE (Waste Electrical and Electronic Equipment). Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems). This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

Get Started

This quick guide is designed as a reference for installation of the camera. For additional information on the camera's features, functions, and detailed explanation of the web interface controls, refer to User's Manual for details. Please read this quick guide thoroughly and save it for future use before attempting to install the camera. From this guide you will get:

- Product Overview: The physical parts, features and dimensions of the camera.
- Installation and Connection: The instructions on installation and wire connection for the camera.

FCC Compliance Statement

Information to the user: This unit has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This unit generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this unit does cause harmful interference to radio or television reception, which can be determined by turning the unit 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 unit and receiver.
- Connect the unit to 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.

Caution	Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the unit.

CE Statement

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. The manufacturer declares that the unit supplied with this guide is compliant with the essential protection requirements of EMC directive and General Product Safety Directive GPSD conforming to requirements of standards EN55022 for emission, EN 50130-4 for immunity, EN 300 and EN 328 for WIFI.

This product is IP67 rated for outdoor environments and IK10 rate for impact protection. The camera also meets regulations required to be NDAA, GSA schedule and TAA approved.
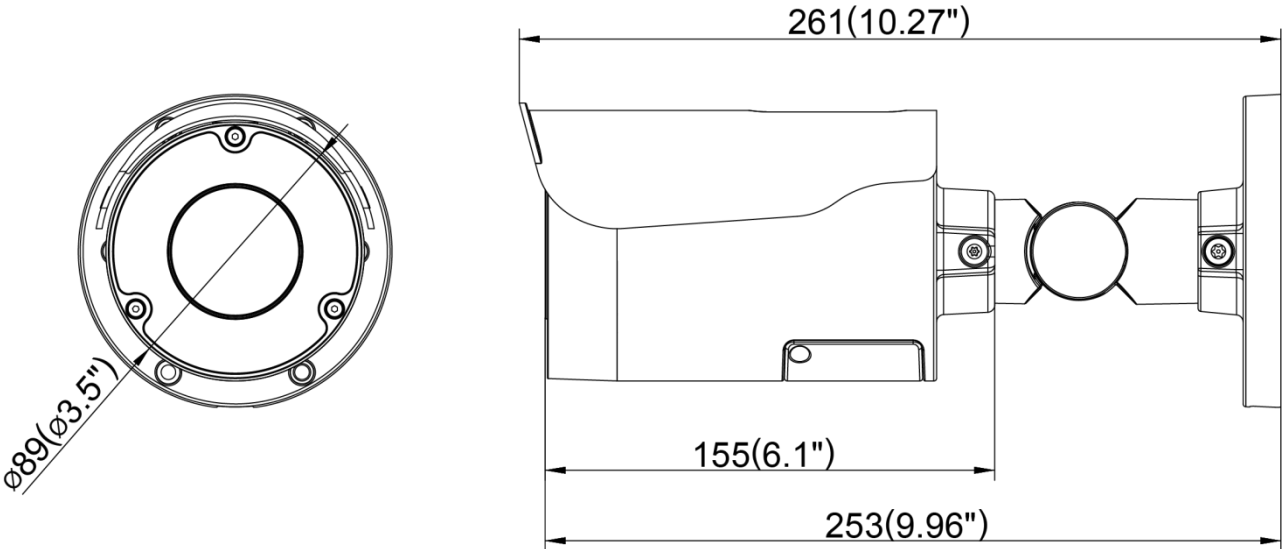
1 Product Overview

1.1 Physical Characteristics
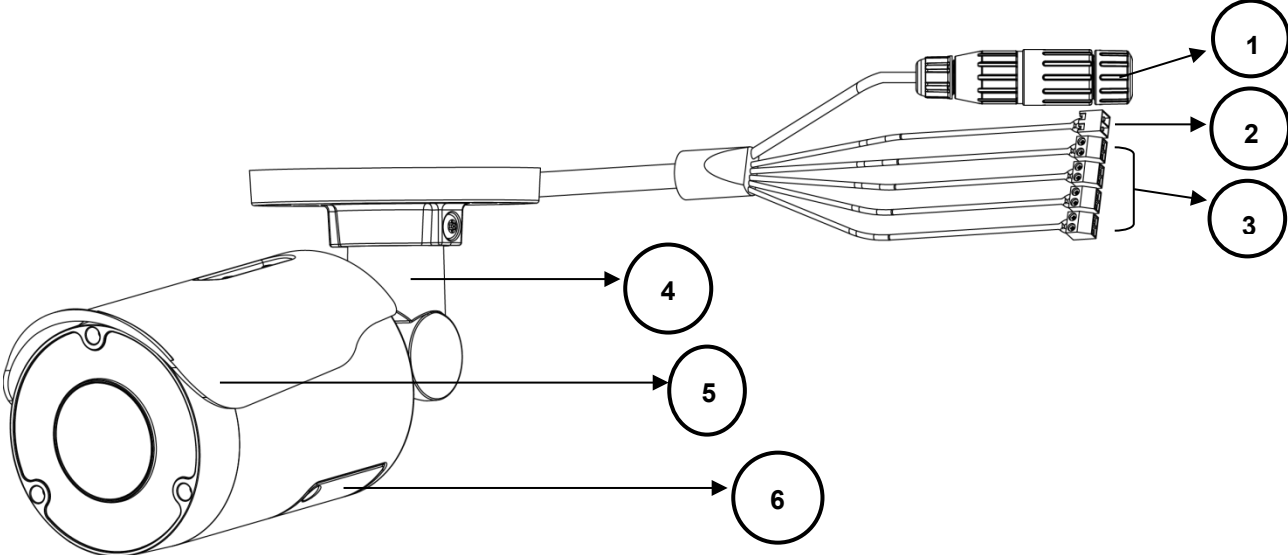

Figure 1 - 1: Physical Dimension
Unit: mm (in.)

Figure 1 - 2: Parts Pictorial Index

No	Name	Description
1	RJ-45 Ethernet/PoE Port	Connect an Ethernet cable terminated with RJ-45 connector to the **PoE RJ-45** port for both power supply and network connectivity purposes simultaneously.
2	12 VDC or 24 VAC Port	Power the camera via a 12 VDC or 24 VAC power source. Pay attention to the polarities when connecting to 12 VDC power supply.
3	DI/DO Port	DI/DO (Digital Input/Output) ports are equipped for external devices, e.g., smoke detector, siren, microphone. • **Audio In:** connect to external device like microphone that receives sound for camera. • **Audio Out:** connect to device like speaker to transmit sound for camera. • **Alarm In:** connect to external device that can trigger alarm input signals. • **Alarm Out:** connect to external device to be triggered through alarm output signals.
4	Mounting Bracket	Mount the camera onto surface. The mounting bracket is designed with 3 axes for flexible adjustment.
5	Protection Shield Hood	For minimizing the effects from rain and sunlight on image quality.
6	Internal Interface Cover	Use a cross screwdriver to loosen the 2 screws and open the cover so that the internal interfaces, including "RESET", "DEFAULT" button, "Micro SD Card Slot", etc., are uncovered. More details are described on the following table and figure.

Table 1 - 1: Parts Pictorial Index Description

Color	Name
Red	12 VDC (+)/24 VAC (~)
Black	12 VDC (-)/24 VAC (~)
Purple	Audio Out (+)
Green	Audio Out (-)
Yellow	Audio In (+)
Orange	Audio In (-)
Brown	Alarm Out (Signal)
Blue	Alarm Out (COM)
Red	Alarm In (Signal)
Black	Alarm In (GND)

Table 1 - 2: Wire Color Code Chart
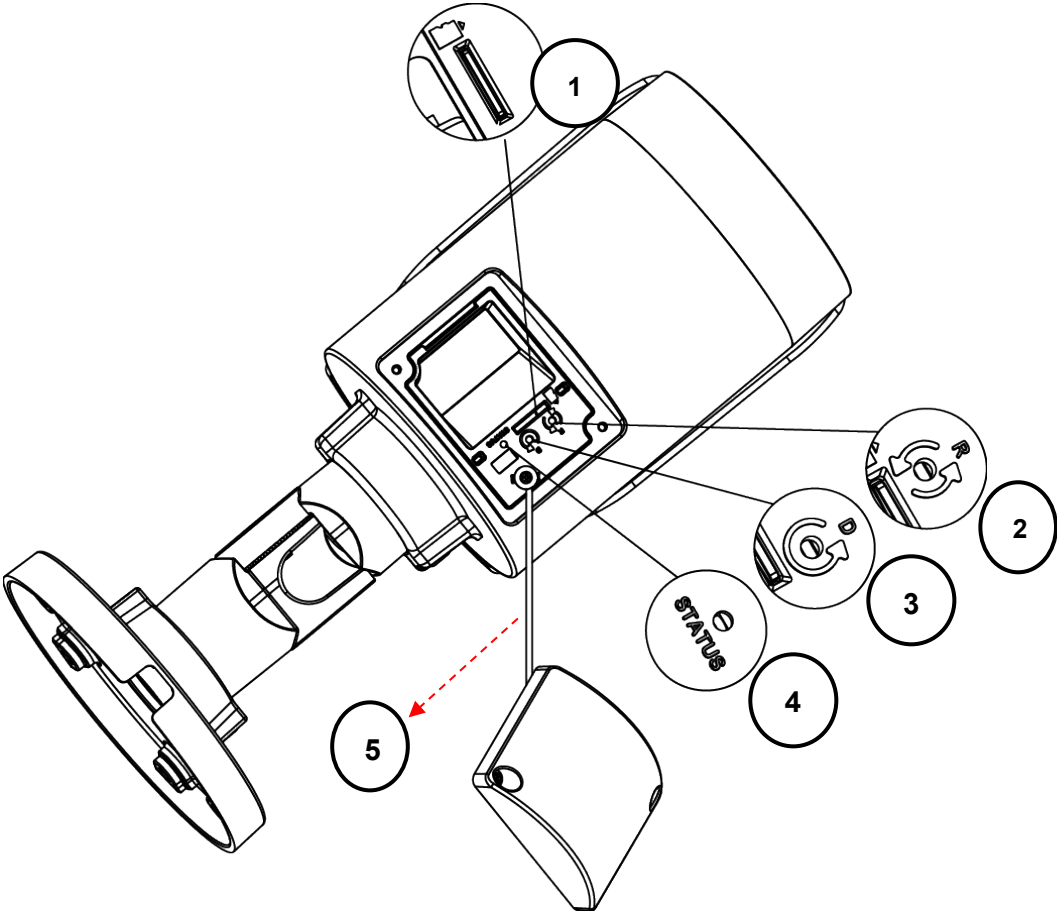
Figure 1 - 3: Internal Interface Pictorial Index

No.	Interface	Description	
1	Micro SD Card Slot	Insert a micro SD card (supplied) into the slot for recording and file storage.	
2	Reset Button	Press the button for 1 second to reboot the camera.	
3	Default Button	Press the button for 6 seconds to restore camera's settings to factory default settings.	
4	Status LED	Solid Red	Indicates **boot up** is running. After 2 ~ 3 seconds: - Solid Red to Flashing Green if boot up is normal. - Remains Solid Red if an error occurs. - Turns off 3 minutes after a successful boot.
		Flashing Amber	Indicates **firmware upgrade** is running.
5	Safety Wire	The safety lanyard is used to prevent the access cover from falling. Be sure to store the safety wire inside the camera before locking the access cover to ensure that the camera remains waterproof.	

Table 1 - 3: Internal Interface Pictorial Description

2 Installation and Connection

2.1   Package Contents

Check if all items listed below are included in the packing box.

1.   LPR Bullet Camera * 1
2.   Plastic Anchor * 6
3.   Self-tapping Screw (T10) * 6
4.   T10 Security Torx Bit * 1
5.   Mounting Template * 1
6.   SD Card * 1

2.2   Installation

The following tools might help you complete the installation:

- Drill
- Screwdrivers
- Wire cutters

2.2.1 Checking Appearance

When unpacking, check to see if there is any visible damage to the appearance of the camera and its accessories. The protective materials used for the packaging should protect the camera from most accidents during shipment. Remove the protective materials from the camera after every item is properly checked in accordance with the list in Package Contents.

2.2.2 LPR Installation Guidelines

When used to capture license plates, in order to obtain the maximum recognition rate, the LPR camera must be installed properly to capture license plate images that meet the required quality. There are three (3) aspects that must be taken into account when installing the LPR camera: minimum size of the plate, scene lighting and camera angle. This section will outline how the camera must be installed and what the most common mistakes are.

- **Installation Requirements**
  - License Plate Size: On the image, the characters on the license plate should have an average height between 20 and 70 pixels, with 25 pixels being a good reference value. While the software will recognize letters of 10 pixels in height, there are certain characters in some countries that would be difficult to discern at this size; the camera sensitivity also affects the ability to read characters of this size. This should be taken into account when setting up the detection range.

- **Camera Position**
  - The recommended vertical angle is about 20°. The maximum recommended value is 35°. The recommended horizontal angle is about 20°. The maximum recommended value is 35°. In a two-lane situation, the angle between the plates and the X axis of the scene must be less than 25°.

Vertical   Horizontal   Angle between Plates
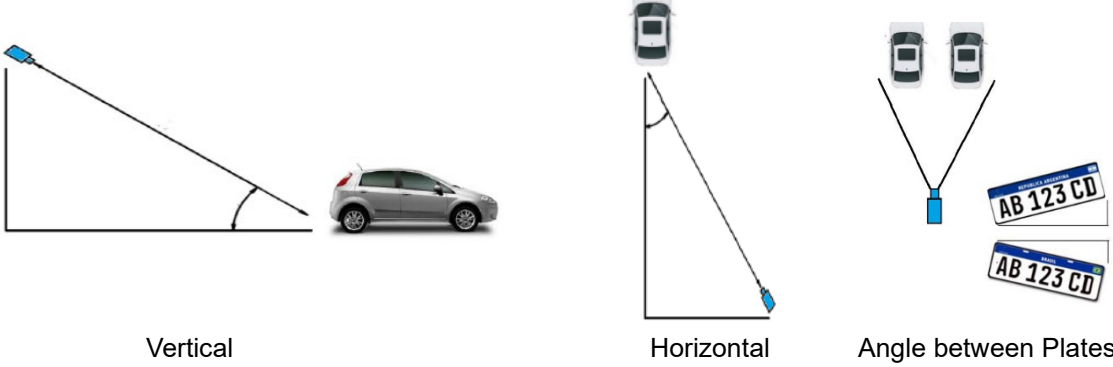
  - The suggested installation height is 3.3 – 9.8 ft (1 - 3 m). The suggested installation distance is 6.6 – 19.7 ft (2 - 6 m) for the 3.6-10 mm lens or 16 – 36 ft (5 – 11 m) for the 8-18 mm lens.
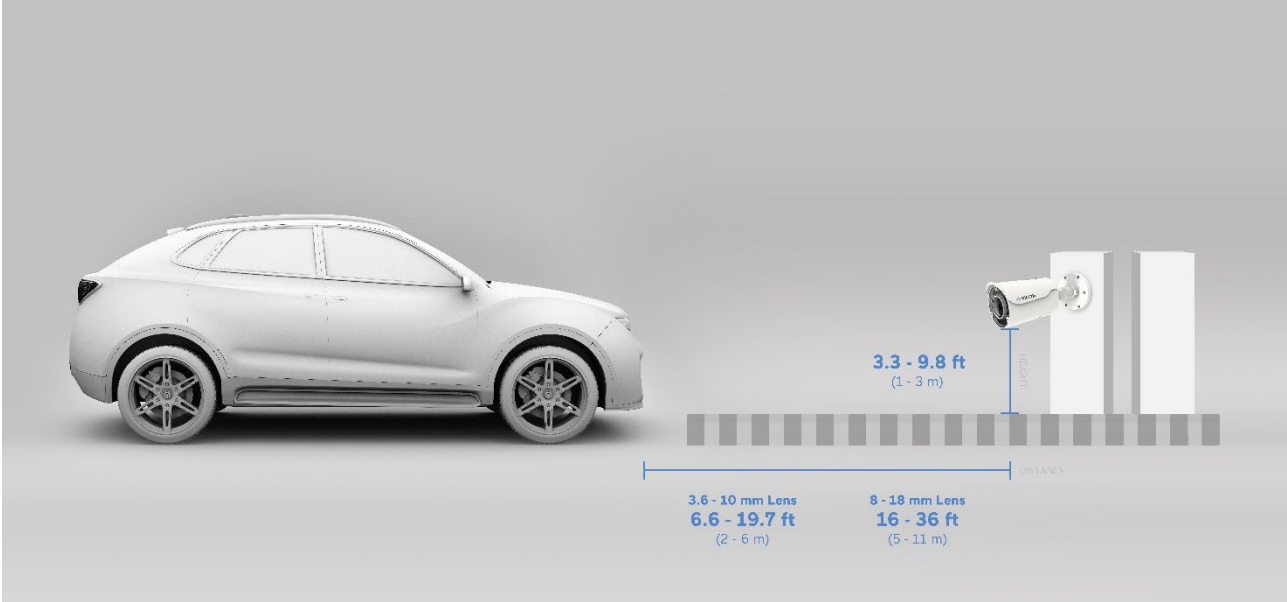
Refer to the Vicon LPR Camera Setup and Integration Guide for details on setting up the proper field-of-view (FOV). On the Live screen on the camera interface, the Calibration pattern can be enabled; calibration lines are shown at 20 pixels. Verify that license plates are at or above 20 pixels for optimal reading. Adjust FOV from the main camera page.
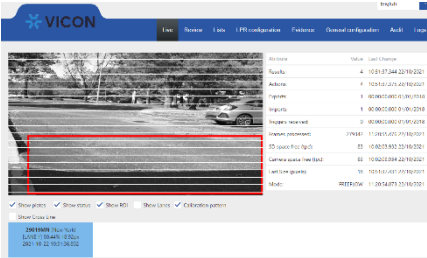
2.2.3 Mounting Preparation

● **Insert the SD card into the slot.**

Refer to Figure 1-3. The SD card then has to be recognized and formatted in the camera's GUI, Event Setting, SD Card tab. Refer to the LPR Camera Setup Guide for details.

● **Use the guide pattern to mark out and prepare a mounting area.**

1. Place the supplied guide pattern (template) on a mounting surface. Drill 6 mm (0.25") outer holes x 6 at the mounting surface corresponding to the 6 indicated positions for plastic anchors.

2. Then hammer the 6 plastic anchors into the 6 drilled holes on the mounting surface.
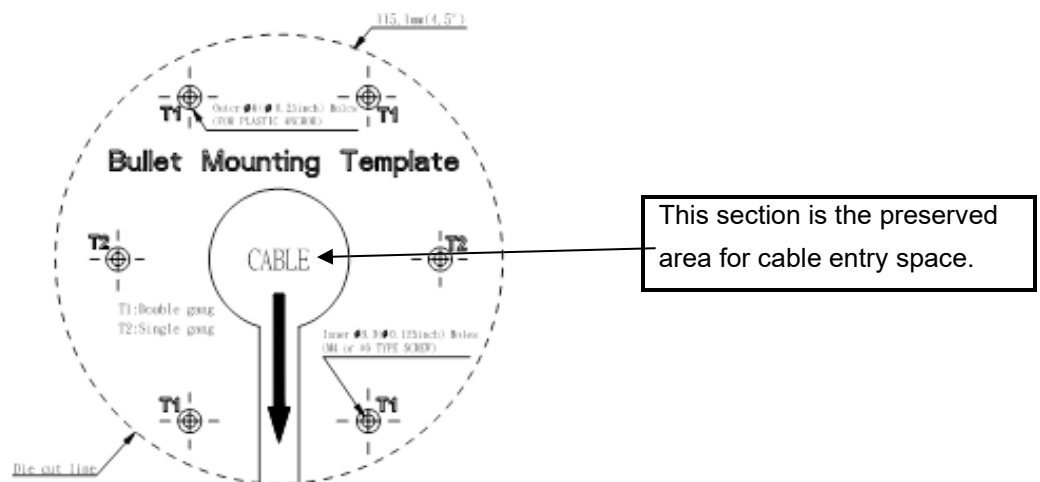

Figure 2 - 1: Guide Pattern

2.2.4 Mounting the Camera

1. There are two ways to connect the wires, depending on your application. Pass all cables that exit from the mounting bracket through the hole of mounting surface (Figure 2-2, Type I) or place them by the side hole of the mounting bracket (Figure 2-3, Type II), as illustrated by the following figures.
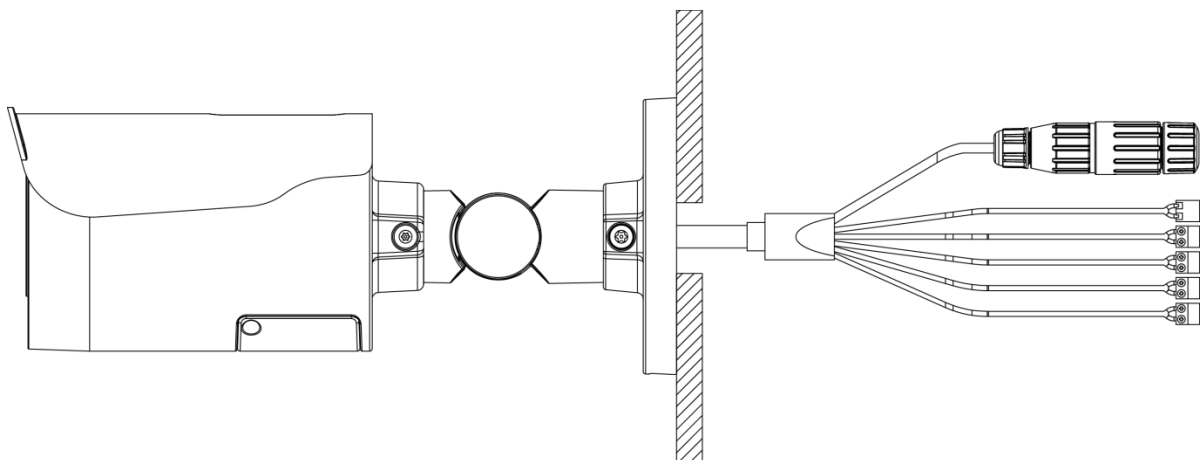

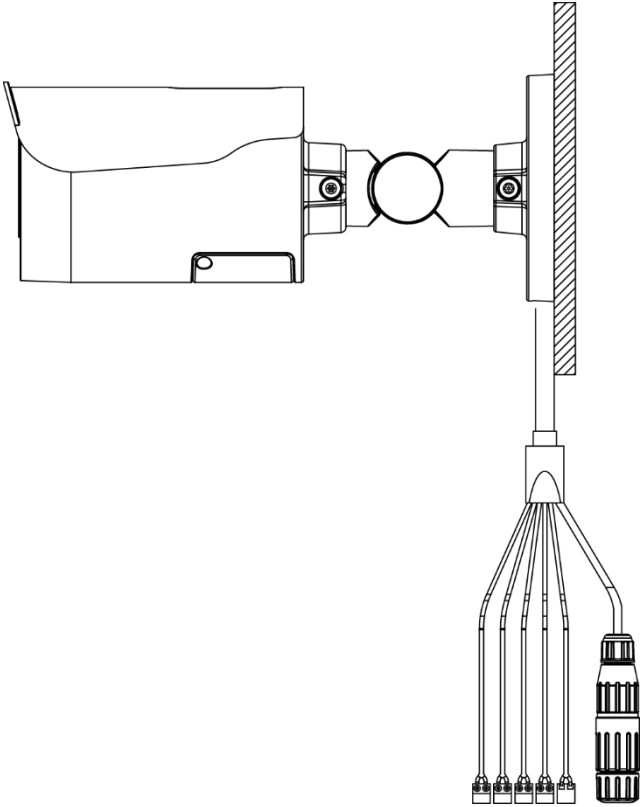**Figure 2 - 2: Connecting the Wires Type I - Bracket Side Hole**

Figure 2 - 3: Connecting the Wires Type II – Mounting Surface Hole

Note	When installing your camera using method (Type II), it is recommended that the connections be made in a junction box to protect against environmental factors such as dust and water.

2. Position the camera to match the 6 holes embedded with the plastic anchors on the surface.

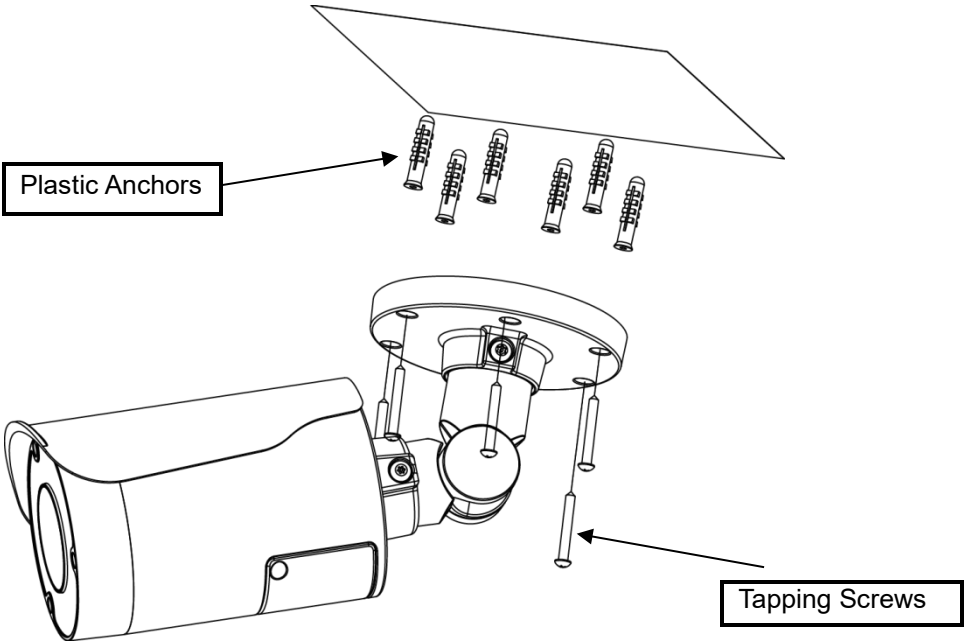3. Secure the 6 tapping screws tightly to fasten the camera with the mounting surface.

Figure 2 - 4: Mounting the Camera

2.2.5 Connecting the Cables

1. Based on your needs, connect the power cable to the power port via one of the following 3 options.

    *   **24 VAC:** Connect a power cable that supplies 24 VAC power source to the terminal block and then insert the terminal block into the power port.

    *   **12 VDC:** Connect a power cable that supplies 12 VDC power source to the terminal block and then insert the terminal block into the power port.

        NOTE: Make sure the polarities match when using 12 VDC power source.

    *   **PoE (Class 3):** Connect an Ethernet cable terminated with an RJ-45 connector to the PoE RJ-45 port for both power supply and network connectivity purposes simultaneously.

2. Insert audio in/out cables and alarm in/out cables to the corresponding terminals of the camera if required.
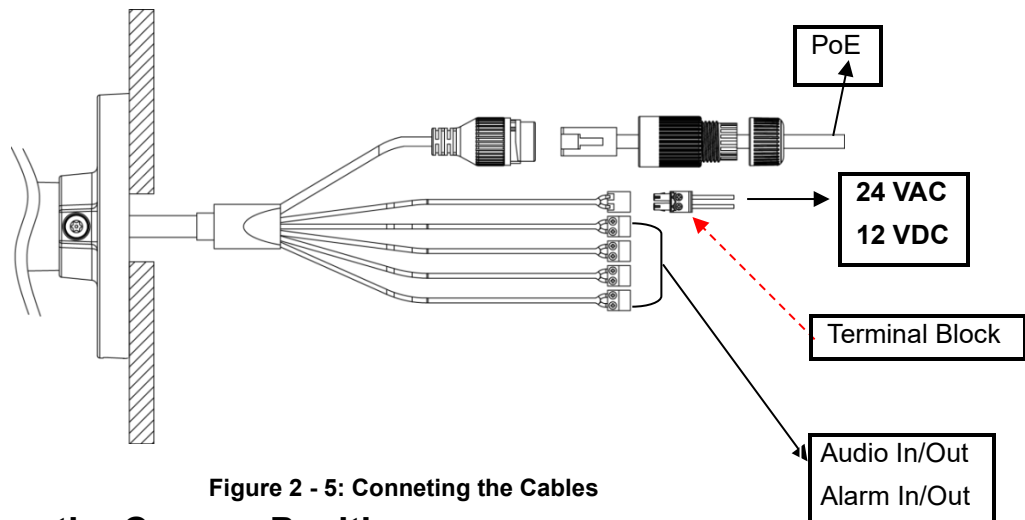
Figure 2 - 5: Conneting the Cables

2.2.6 Adjusting the Camera Position

*   **Pan Adjustment (A)**
    Loosen the locking screw using the T10 torx wrench and rotate the A joint to adjust the camera horizontally for a variety of installations.

*   **Tilt Adjustment (B)**
    Loosen the locking screw using the T10 torx wrench and tilt the B joint to adjust the camera vertically for a variety of installations.

*   **Rotation Adjustment (C)**
    Loosen the locking screw using the T10 torx wrench and rotate the camera body (C) to adjust the camera for variety of installations.
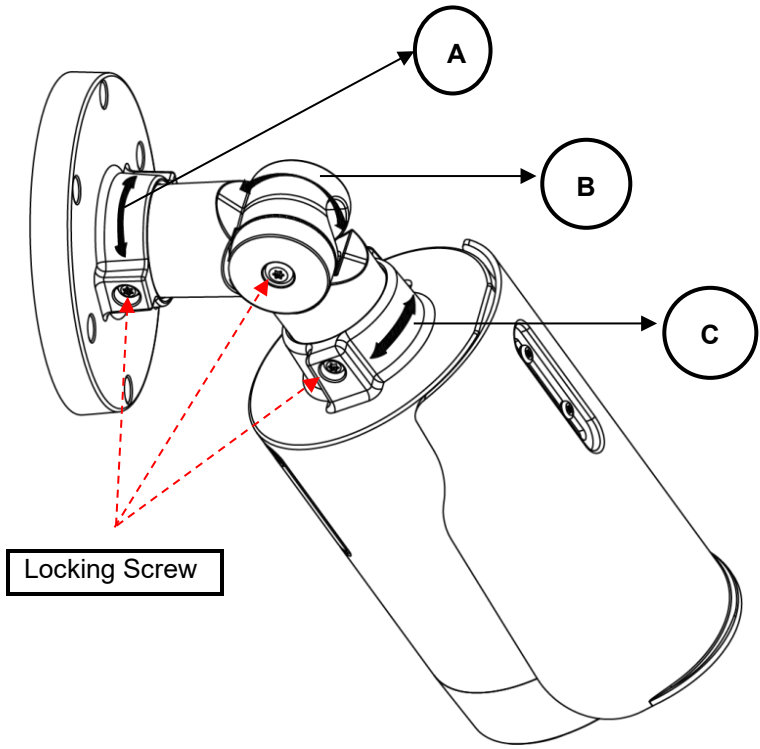
Figure 2 - 6: Adjusting the Camera Position

Caution	Limitation for three axes position:
	• Pan range: ±360°
	• Tilt range: 0° ∼ 90°
	• Rotation range: ±360°

Note	After adjustments, make sure to tighten each joint to prevent the camera from moving.

2.2.7 Adjusting the Protection Shield Hood

This camera is designed with capability to operate under rugged environments and may possibly be subject to the influence from sunlight or rain. The protection shield hood is consequently attached to the camera to prevent from impact from those outside effects. To adjust the protection shield hood:

1. Loosen the 2 cross screws above the hood.
2. Move the protection shield hood forward or backward to the desired position based on your need for different applications.
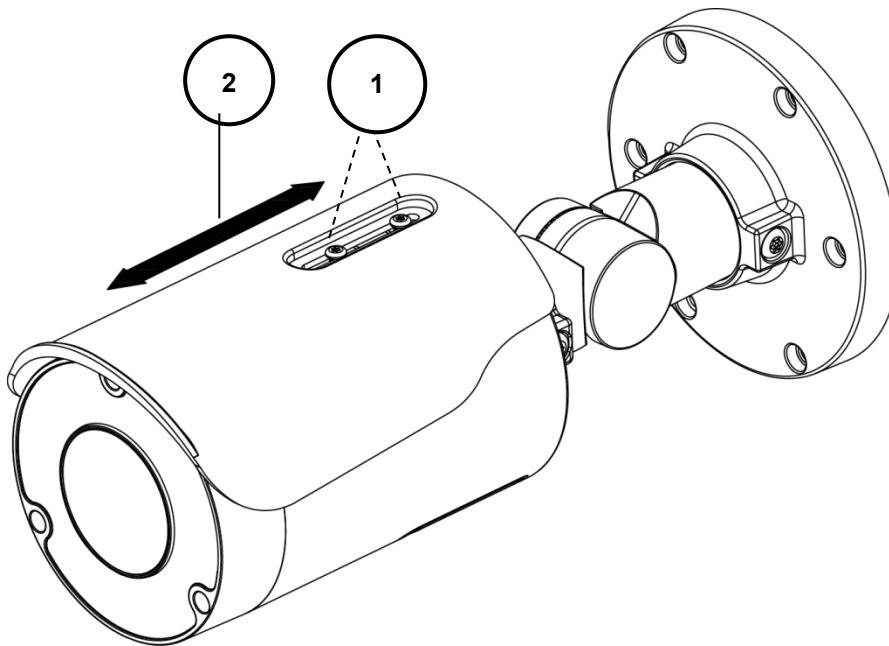
Figure 2 - 7: Adjusting the Protection Shield Hood

Caution	• Be sure to adjust the protection shield hood in accordance with the lens coverage in case shadow problems occurred.
	• To avoid housing damage, DO NOT adjust the protection shield hood position excessively.

3 Connection

3.1 Network

The camera, which is equipped with Ethernet RJ-45 network interface, can deliver live view image in real time via both Internet and Intranet manners. Review the topology drawings shown below.

3.2 System Requirements

The table below lists the minimum requirement to implement and operate the camera. It is recommended not to use any hardware/software component below these requirements for proper performance.

Table 3 - 1: System Requirements

System Hardware	
CPU	i5-2430M CPU@ 2.40GHZ
RAM	6 GB or above
Display	NVIDIA GeForce 6 Series or ATI Mobility Radeon 9500
System Software	
Operating System	Windows 7 SP1, Windows 8, Windows 10
Browser	Mozilla Firefox, Chrome, Safari, Microsoft Edge
Unit	
Power Supply	12 VDC/24 VAC/PoE+ (IEEE 802.3at Class 4)
Networking	
Wired*	10/100BASE-T Ethernet (RJ-45 connector)

A switch is required for surveillance on multiple cameras.

Note	All the installation and operations should comply with your local electricity safety rules.

Caution	When using PoE, this camera is to be connected only to PoE networks without routing to any heterogeneous devices. A heterogeneous network is a network connecting computers and other devices where the operating systems and protocols have significant differences.

3.3   Connecting Process

3.3.1 Accessing the Camera

The camera can be accessed directly from its web page or using Vicon's <u>PRONTO Device Manager</u>, which can be found on Vicon's website. Note that when accessing the camera for the first time, a message will display to reset the password.

Since this is a network-based camera, an IP address must be assigned. The camera's default IP address is obtained automatically through a DHCP server in your network; be sure to enable DHCP in "Network Settings." If DHCP is not available, the camera will use APIPA (link-local address); IPv4 link-local addresses are assigned from address block 169.254.0.0/16 (169.254.0.0 through 169.254.255.255).

3.3.2 Connecting from a computer

Connecting from a computer

1. Make sure the camera and your computer are in the same subnet.
2. Check whether the network available between the camera and the computer by executing ping the default IP address. To do this, simply start a command prompt (Windows: from the "Start Menu", select "Program". Then select "Accessories" and choose "Command Prompt"), and type "Ping" and then type in your IP address. If the message "Reply from…" appears, it means the connection is available.
3. Start a browser, e.g., Internet Explorer, and enter IP address. A login window as shown below should pop up. In the window, enter the default user name: **ADMIN**; it is required to change the password when you login for the first time for added security**,** which requires at least 8 characters including 1 uppercase letter, 1 special character, alphanumeric characters to log in.
    Further administration on the unit can be found in "**User Manual**".

This Camera is Not Secure

Please setup the password for this device.

User Name: ADMIN
Password:
Re-type Password:

Save

Figure 3 - 1: Login Window

3.4   PRONTO Device Manager

PRONTO is Vicon's device manager (Discovery tool) that can be used to discover all Vicon cameras on a system. The complete User Manual can be found on Vicon's website.
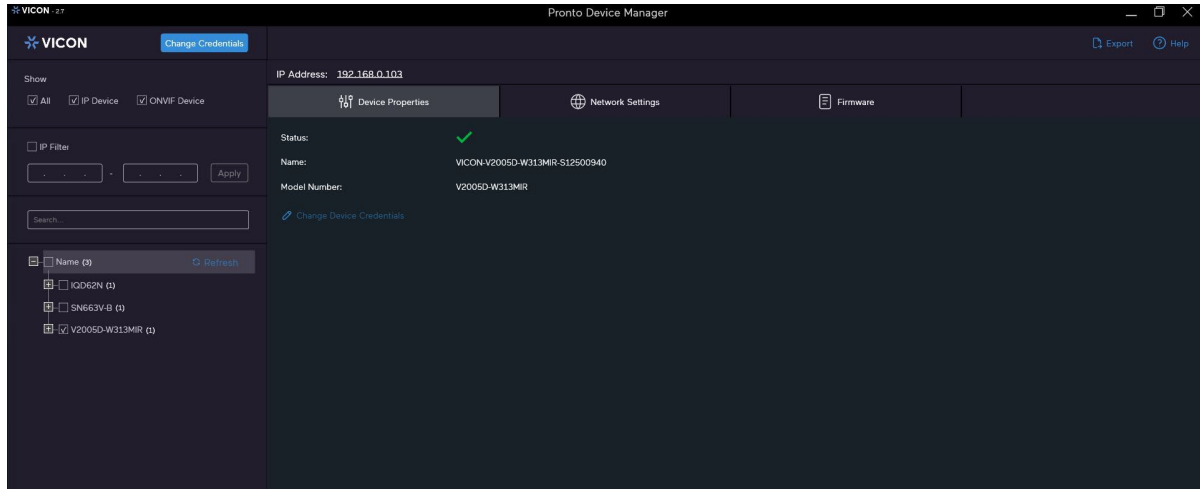

Figure 3 - 2: PRONTO Interface

- Upon startup of the PRONTO Device Manager, the tool's auto-discovery function generates a list of the discovered cameras on the network in a resource list.
- There are a variety of filtering options, including filter by All Devices/IP Device/ONVIF Device; IP range or text.
- There are tabs for Device Properties, Network Settings and Firmware.

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For office locations, visit the website: vicon-security.com