INSTALLATION MANUAL

Version 1.2 OT Rev003

Please read through all instructions carefully before beginning the installation.

Contact BL-Innovare for support by email: support@bl-innovare.com or contact us at 1.855.233.8632 ext. 5.

Cabling Specifications			
Indoor		Outdoor	
Regular	Tall	Regular	Tall
1 x 16AWG 2-conductor 1 x Cat5 network cable	1 x 16AWG 2-conductor 1 x Cat5 network cable	1 x 16AWG 2-conductor 4 x Cat5 network cable	1 x 16AWG 2-conductor 6 x Cat5 network cable

Installation Instructions

1 - Site Requirements

Before the assembly and installation of the BODYGUARD towers, the necessary cables must be in place.

The BODYGUARD Server Box Requires:

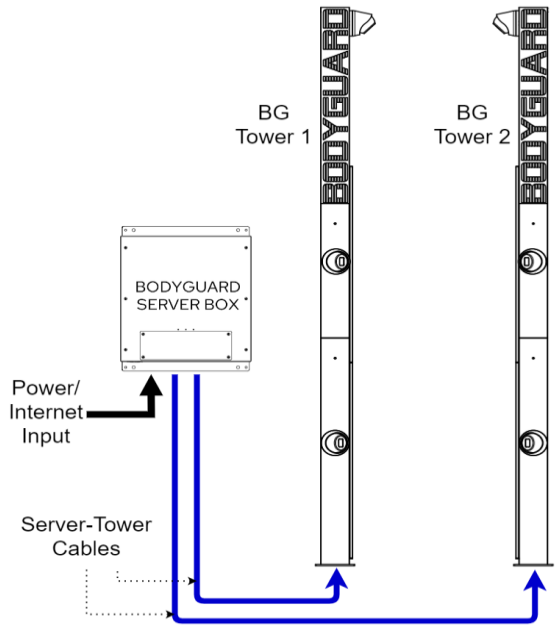
- 120-240VAC power using a locally sourced IEC C13 power cable. Each system consumes 300W.
- Cable internet access.
- To be installed in an indoor environment, no greater than 75' away from the BODYGUARD towers. For the outdoor system, the server box must remain indoors.

Cabled Internet Network Requirements:

- The BODYGUARD server is configured to use an IP address received via DHCP.
- The BODYGUARD server requires the ability to make outbound requests using port 443 (HTTPS).
- For optimal performance, BODYGUARD requires a minimum of 15 Mb/s upload speed. For higher volume sites (300 cars/day) 20-30 Mb/s is recommended.

Server - Tower Cables:
From the BODYGUARD server box to each tower, an amount of 2-conductor copper cables and cat 6 network cables are required. The amounts vary based on the type of BODYGUARD system being installed. Every BODYGUARD system has 2 towers.

Cabling must be secured along a wall or structure and protected from any potential mechanical damage. Ground cable covering is required if applicable.

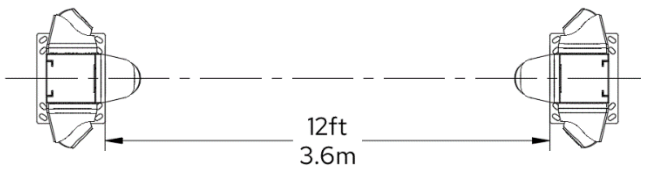


Positioning

Each BODYGUARD system comes with two towers that are nearly identical. One tower is placed on either side of a diving lane. BODYGUARDs are most often placed near the garage entrance at the service area intake. The positioning of the towers must satisfy the following criteria:

- The BODYGUARD Towers capture pictures optimally when they are 12 ft apart, up to a maximum distance of 14ft.
- Do not rotate the towers. Each tower must face each other straight on.

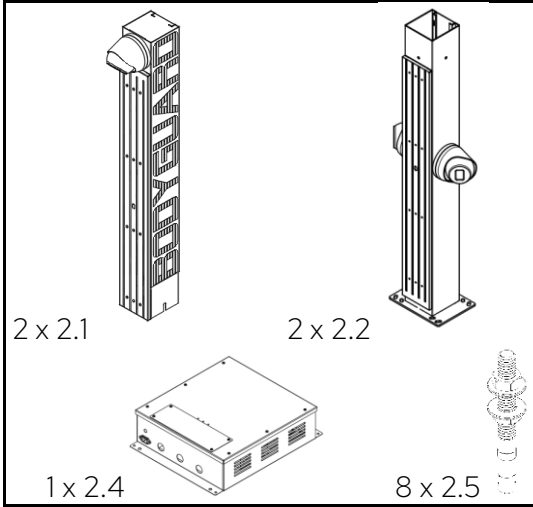
BODYGUARD Top View



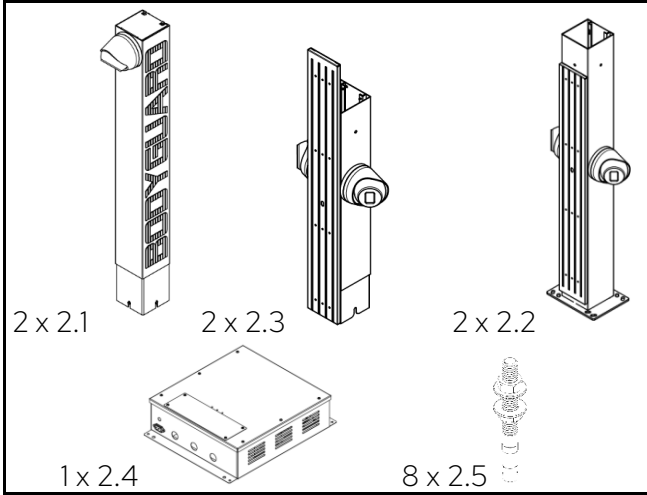
2 - Parts List

2.1 Top Post
2.2 Bottom Post
2.3 Middle Post (for Tall version)
2.4 Server Box
2.5 3/8" Concrete Anchors
2.6 16-Port POE Switch and Box

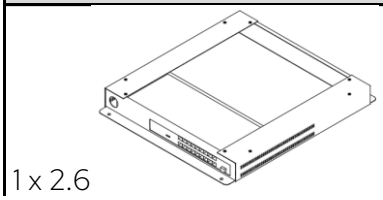
BG - Regular



BG - Tall Version



For Outdoor installations only:

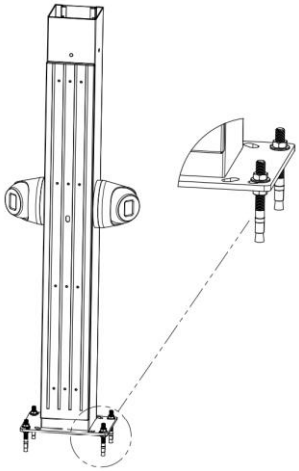


3 – Assembly

3. 1. Drill 4 holes in the ground at the desired location of each tower, using a ⅜" concrete drill bit, (minimum depth 1.75").

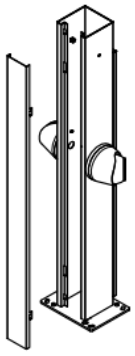
Consider the positions of the towers carefully before drilling holes. Refer to the positioning section on page 1.

Mounting Flange dimensions are found in section 5.

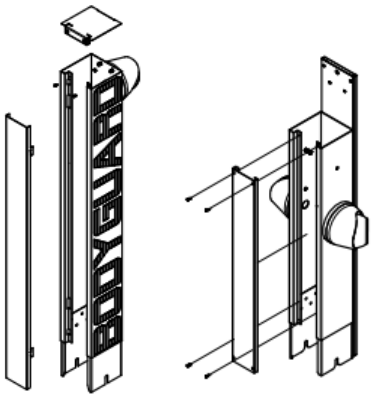


3.2 Anchor the bottom post to the ground using the provided concrete anchors.

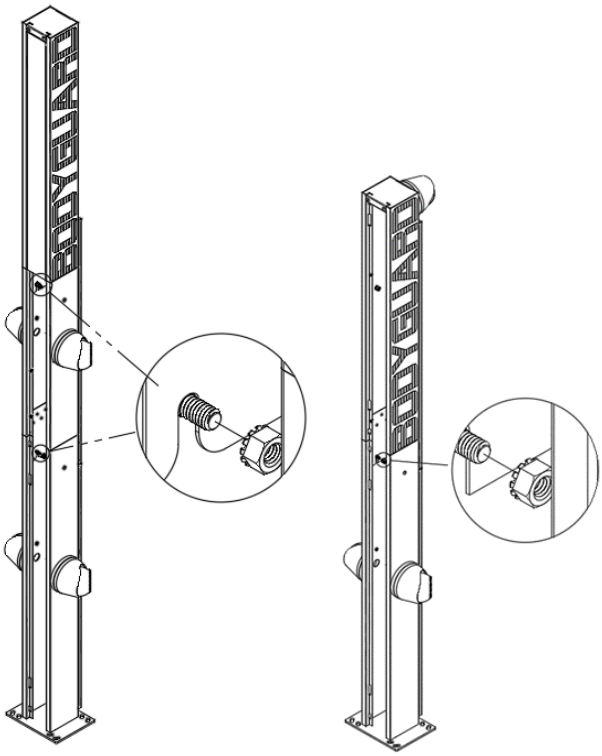
3.3 Remove back access panels from Bottom Posts.



3.4 Remove the back access panel from the Top Post, and Middle Post by unscrewing the sheet metal screws.

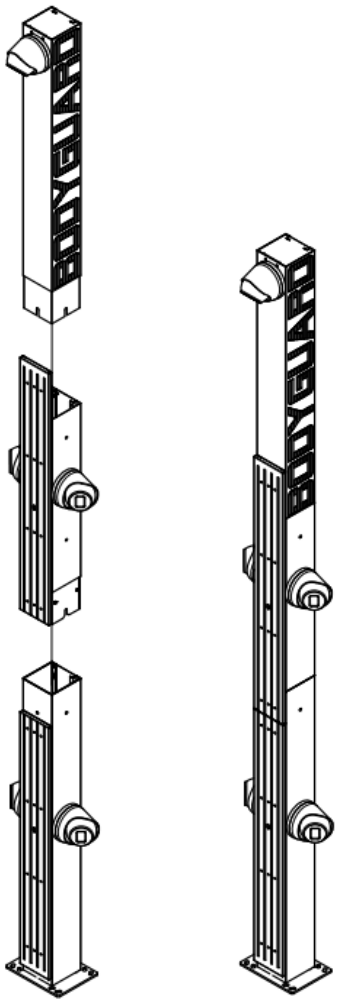


3.5 Loosen the K-lock nuts on the Bottom Post and place the Top Post on the Bottom Post. Tighten the same locknuts to join the Middle and Bottom Posts.



3.6 For installing the BODYGUARD Tall:

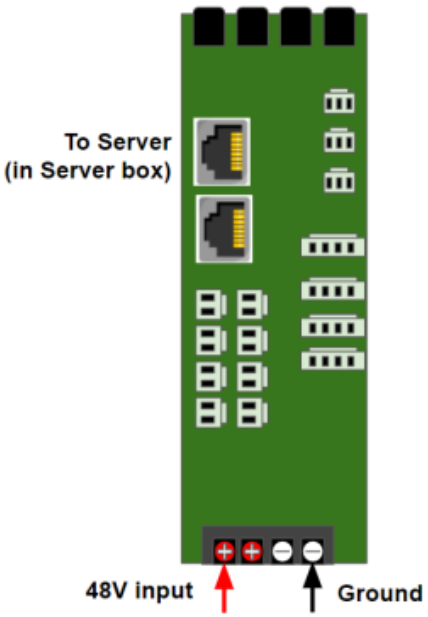
The Middle Post mounts on top of the Bottom Post, then the Top Post mounts on top of the Middle Post.



4 - Internal Wiring

Indoor Installations

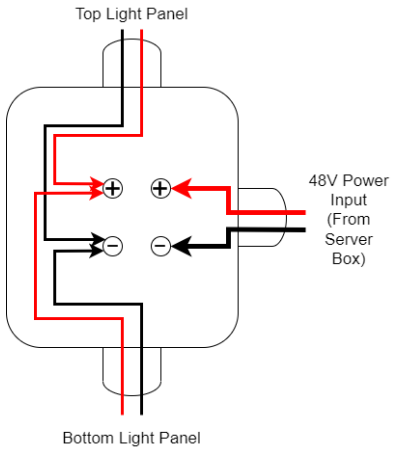
1. Run the network cable and the 2-conductor copper cable into each tower. Cables are commonly routed through the hole in the base of the tower, but some installers prefer to drill holes in the top or sides of the tower.



2. Plug in the network cable to the printed circuit board (PCB) inside the tower.
3. Connect the red and black leads of the 2-conductor cable to the terminals at the bottom of the tower PCB. The two left screws are positive, the two black screws are negative.
4. Close up the tower by reinstalling the back access panels, starting from the Bottom Post.

Outdoor Installations

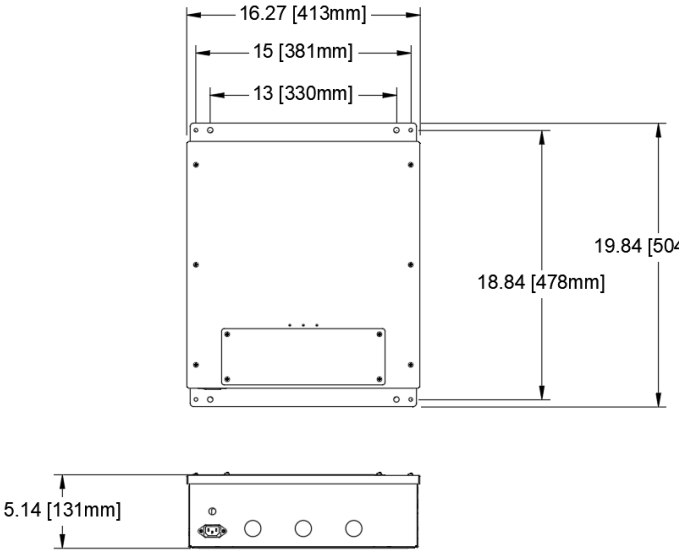
1. Run all network cables and the 2-conductor copper cable into each tower. Cables are commonly routed through the hole in the base of the tower, but some installers prefer to drill holes in the top or sides of the tower.
2. Plug one of the network cables into the sensor box inside the tower.
3. Plug in the remaining network cables to the cameras.



4. A waterproof box is wired to the bottom LED panel, run the cable from the top LED panel into that box and connect it to the same terminals as the bottom LED panel.
5. Connect the incoming 16 AWG low voltage cable to the terminals in the LED box.
6. Close up the tower by reinstalling the back access panels, starting from the Bottom Post.

5a – BODYGUARD Server Setup

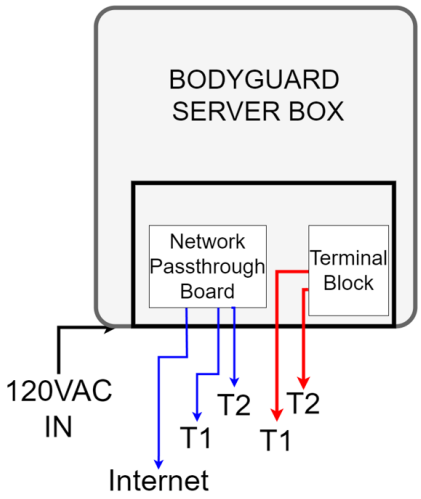
The BODYGUARD server box and POE switch must be mounted to a wall or stored on a shelf, anywhere within 75 ft of the BODYGUARD towers. The server box and POE switch are not waterproof and must be placed in an indoor environment. The server box will be connected to each tower using cables that do not exceed 100 ft in length. They are most often positioned on a wall in the service area but may be placed in an adjacent server room if the cables do not exceed the 100ft constraint. Longer cables will increase the system's current load drop and may damage the equipment. (Server box mounting hardware is not included.)



The server box interior is fully prewired. An installer needs only to run the cables (preferably using cable conduits) to the server box and open the access panel to plug in the cables which include the network and power cables coming from the 2 BODYGUARD towers, and the internet drop.

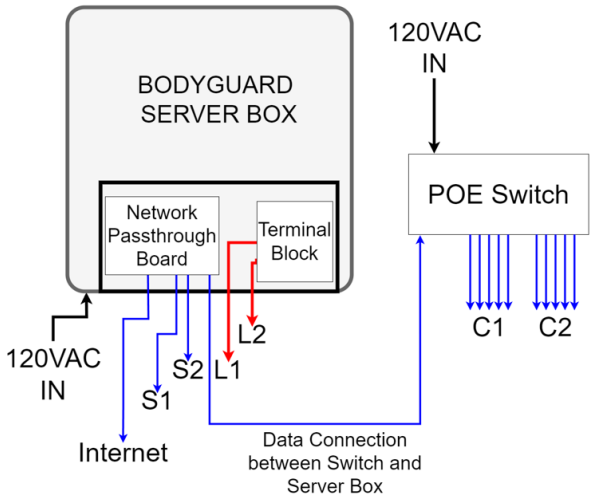
The wiring configuration will vary depending on whether the installation is indoor/outdoor, or if the BODYGUARD is the regular or Tall version.

Indoor Installations



T1-2: Network and power cables that connect to the PCBs in towers 1 and 2

Outdoor Installations

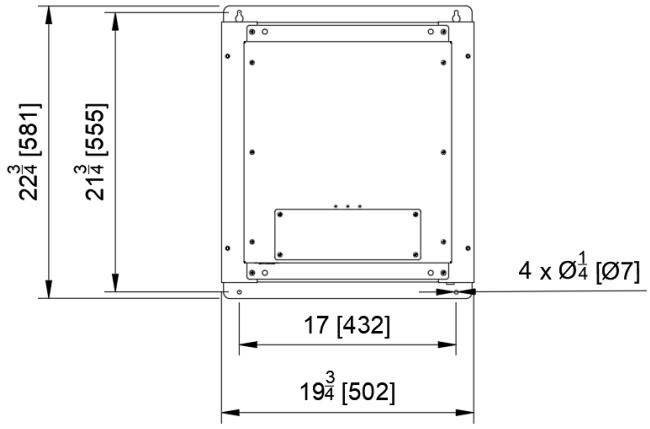


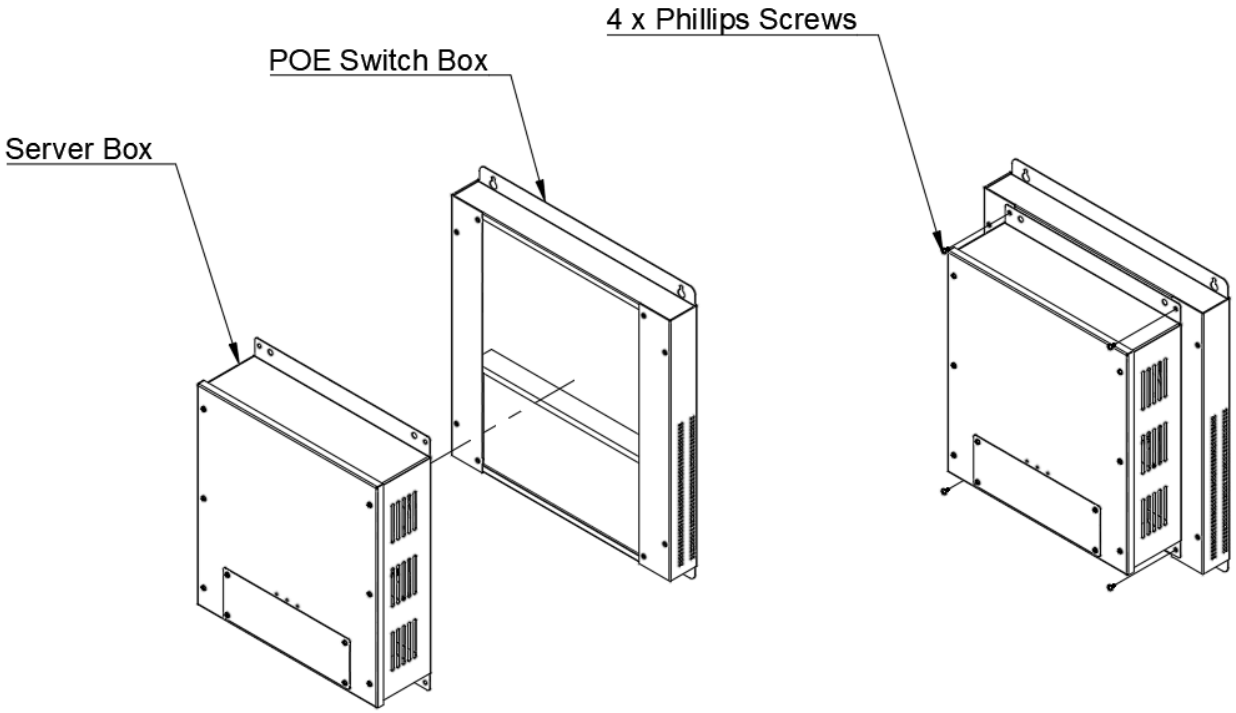
S1-2: Network cables for Sensors in towers
C1-2: Network cables for each Camera in towers (3 cameras per tower or, 5 cameras per tower for BODYGUARD Tall.)
L1-2: 2-Conductor Power cable for LEDs in towers

5b – BODYGUARD Outdoor Server box

The outdoor server box comes with an additional box to house the POE switch. The two boxes are joined using 4 screws (included).

It is recommended to mount the POE switch box to the wall first, using concrete screws, then mount the server box on top after. Together the two boxes weigh approximately 45lbs (20kg).





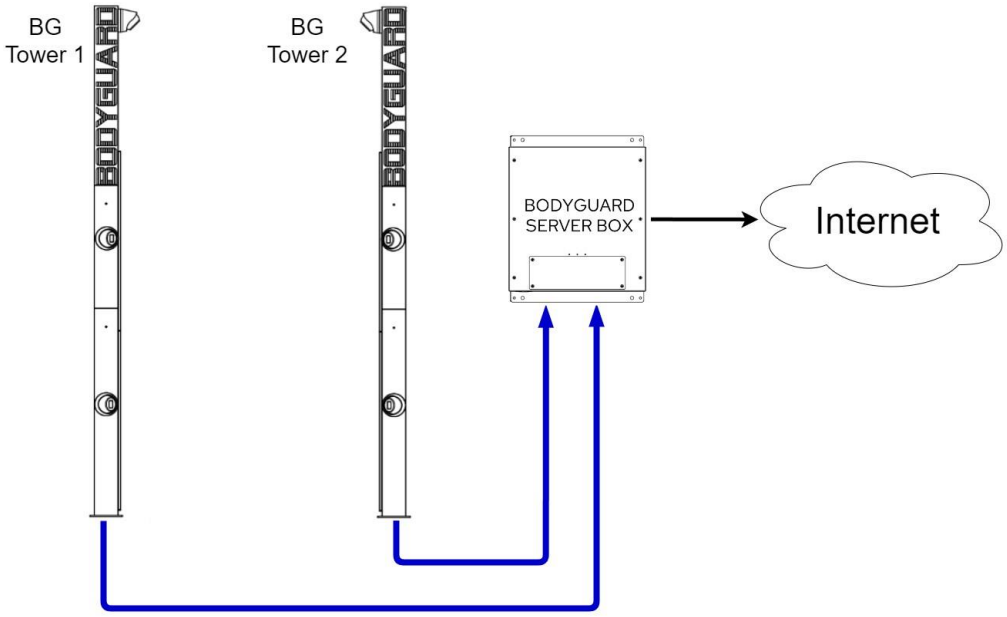
6 - Networking

The BODYGUARD system requires FULL OUTBOUND access to the following sites:

- app.bodyguardcam.com
- prod-vpn.bodyguardcam.com
- *.s3.amazonaws.com.
- *.bitbucket.org
- *.docker.com
- *.docker.io
- *.auth0.com
- Ubuntu Linux OS Update repository servers

The BODYGUARD server is configured to use an IP address received via DHCP.

Network Flow Diagram:



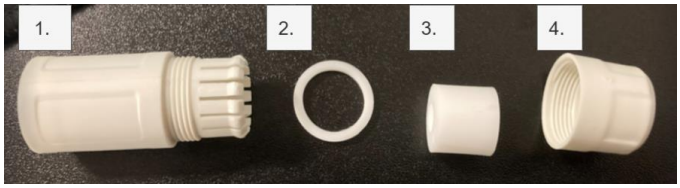
7 - Outdoor Waterproofing

IMPORTANT

Each of the individual components in an outdoor BODYGUARD tower are waterproof. When connecting the cables it is imperative that the connections are sealed in a waterproof enclosure or in a cable cover.

Cameras:

The cameras come with cable covers to protect the RJ45 connection:



Each of the four parts must be used to ensure a watertight seal.

Sensor:

The photo-sensor connection is protected using this junction box:

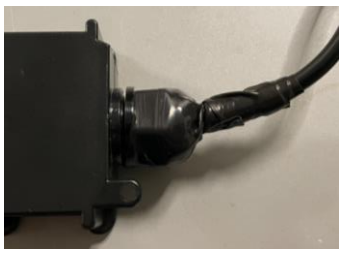
LEDs:

The LED power cables are protected using this junction box:

The three entry points allow for the power source, the top LED panel, and the bottom LED panel.

Tape:

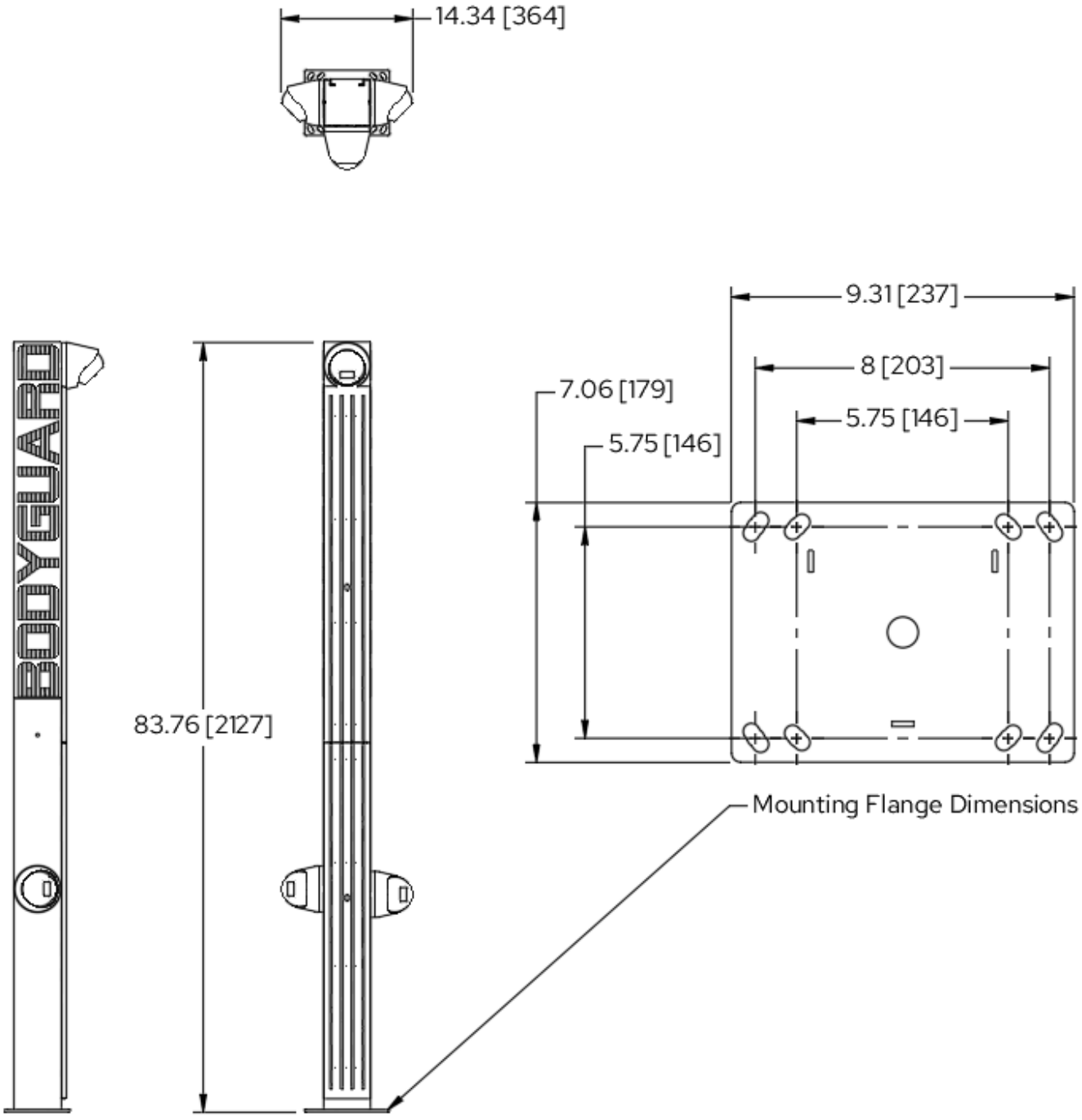
Once all the cable covers and enclosures are installed, cover all the connecting points with silicone self-sealing tape to ensure long lasting water ingress protection.



8 – Dimensions

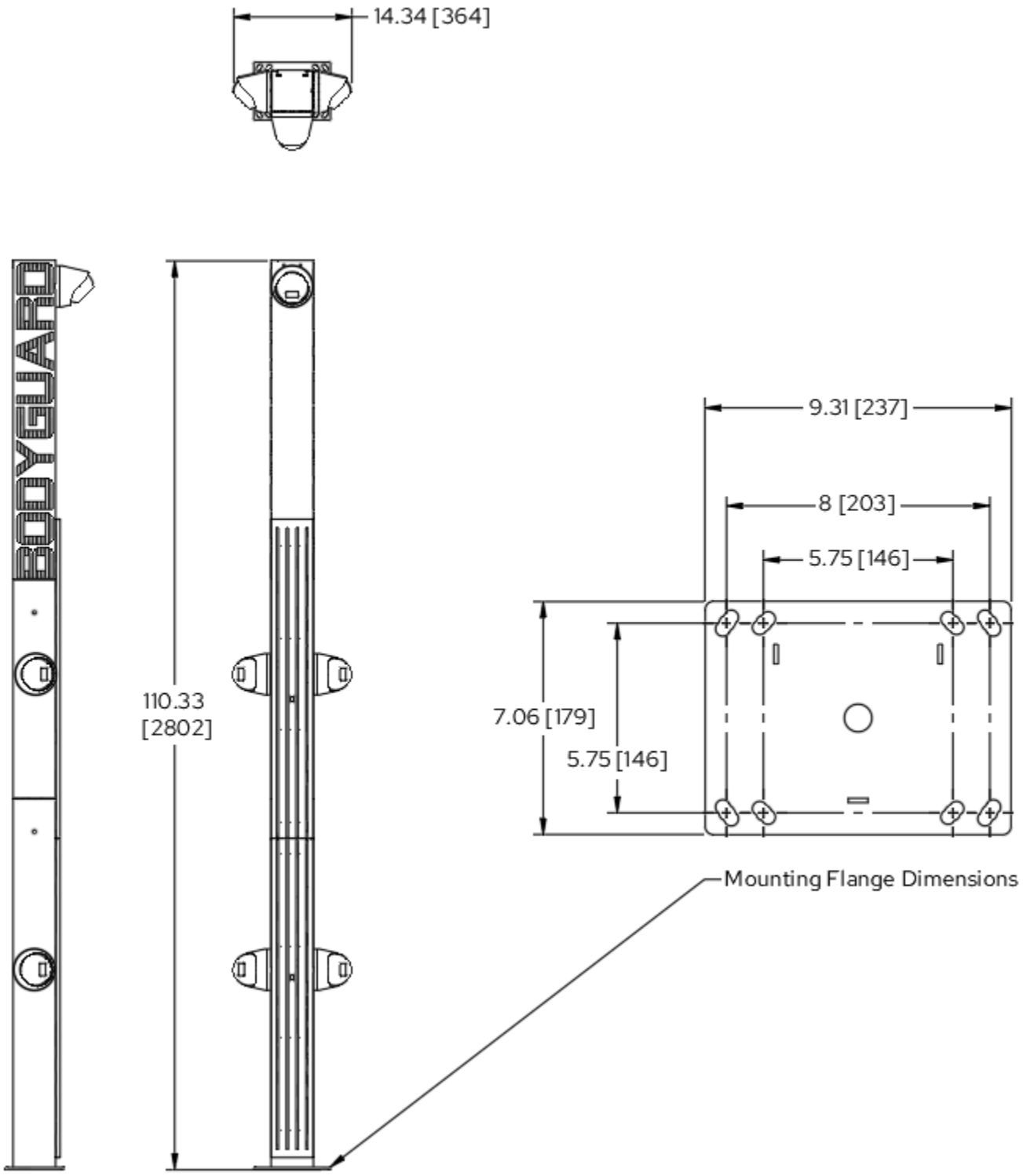
BODYGUARD - REGULAR

Units: Inches[mm]



BODYGUARD – TALL VERSION

Units: Inches[mm]



INSPIRATION AT WORK

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support@bl-innovare.com
855.233.8632 ext. 5

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