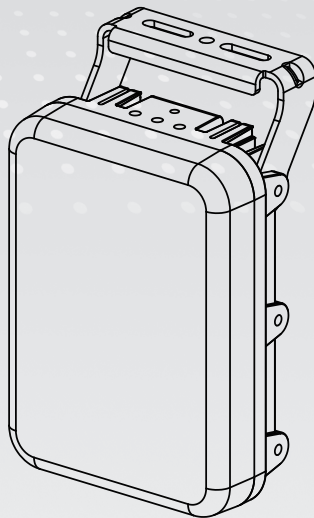




CM48 Series **Vari-Angle IR Illuminator**

Installation Guide



Rev. 1.2

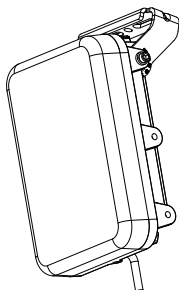
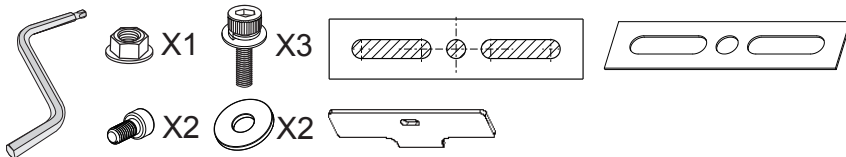
QIG Part no.: 625037102G

Revision History:

* Rev. 1.0: Initial Release
rear panel plug opener.

* Rev. 1.1: Updated illumination range and beam angles. Added the
* Rev. 1.2: Added safety instructions and warning messages.

Package Contents



The 1/4" screws and washers are used to secure the illuminator to an external camera housing.



NOTE:

- The wall-mount (CMA-B04), corner-mount (AM-412), pole-mount adaptor (AM-311/312), and other brackets are separately purchased.
- The screws and anchors for securing the illuminator to wall are user-supplied. Apply M6 anchors or screws.



WARNING:

- Please avoid eye exposure or apply appropriate protection, such as wearing a pair of Infrared protection glasses, when working with the product. Always use camera live view to observe IR lighting effects.
- The luminaire should be positioned so that prolonged staring into the luminaire at a distance closer than 2.5 m is not expected.
- The external flexible cable or cord of this luminaire cannot be replaced; if the cord is damaged, the luminaire shall be destroyed.
- The light source of this luminaire is not replaceable; when the light source reaches its end of life the whole luminaire shall be replaced.
- Please make sure Reinforce/Double insulation shall be maintained between LV supply and control circuits after installation.
- This flood light shall be used with a IEC/EN 61347-2-13 approved LED driver with SELV output equal to rated voltage of the luminaire, and output power of LED drivers shall be at least equal to rated power of the luminaire.
- Terminal block is not included. Installation may require advice from a qualified personnel.

RISK GROUP 3

WARNING IR emitted from this product.
Do not look at operating lamp.

IR illuminators RISK GRORP 3 / WARNING IR emitted from this product. / Avoid eye exposure. Use appropriate shielding or eye protection. Do not look at operating lamp.

CM48W5: RISK GRORP 2 / CAUTION Possibly hazardous optical radiation emitted from this product / Do not stare at operating lamp. May be harmful to the eyes.



Class III luminaires



Do not stare at the operating light source.

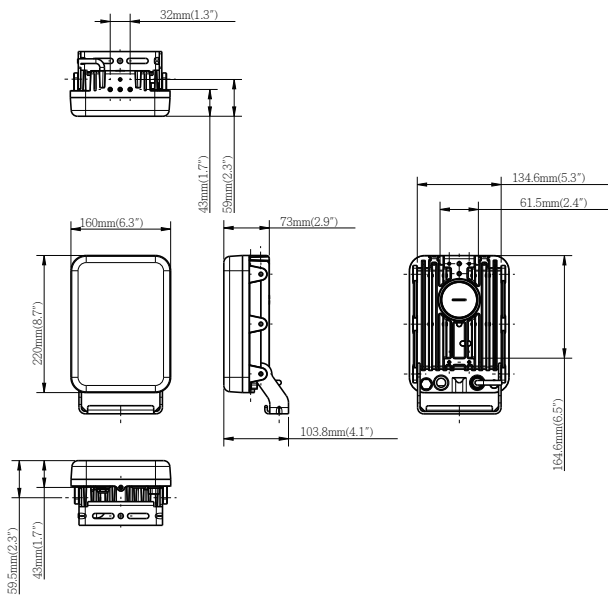


This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

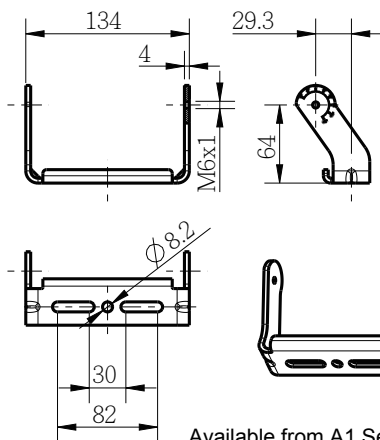


IMPORTANT:

- Do not install the product with unstable brackets, or installed on fragile mount surfaces.
- This product shall be used in compliance with local laws and regulation.
- Please avoid using chemical or aerosol cleaning fluids to clean the product. Use a clean cloth slightly moistened with water.
- This product contains no parts repairable by the users. Contact CaMate for services.
- Power off the Illuminator as soon as smoke or unusual odors are detected.
- Do not place the Illuminator on unsteady surfaces.
- Replacing or failing to properly install the waterproof components, e.g., cables or cable glands, will void our IP67 warranty.
- Refer to your datasheet for the operating temperature.
- Do not touch the Illuminator during a lightning storm.

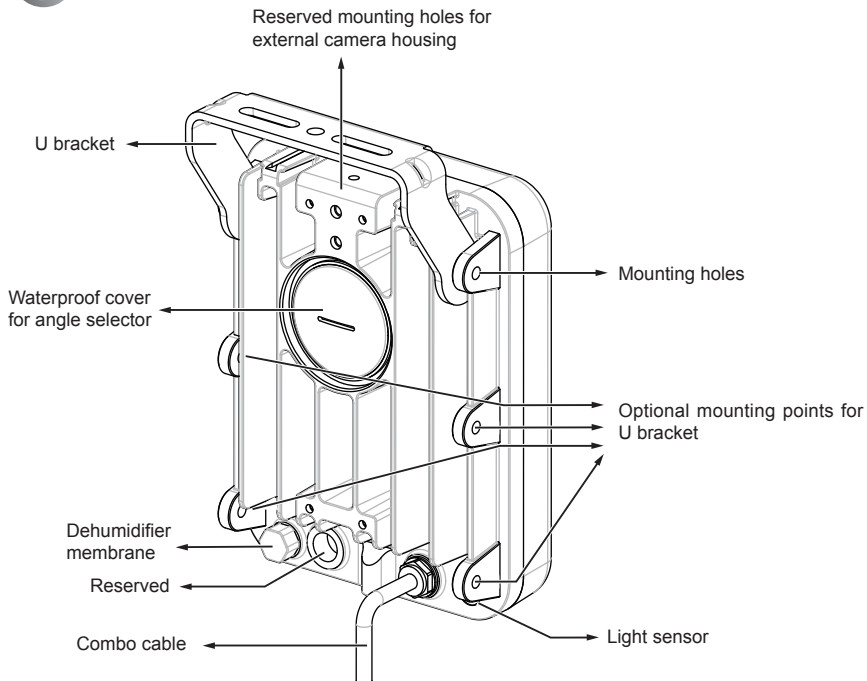


Standard Small U bracket



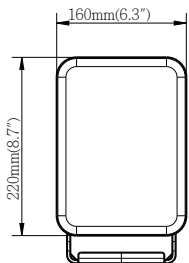


Hardware Overview



Unit Weight: 2.1KG.

Max. Project Area: 34684.7mm².



II Installation

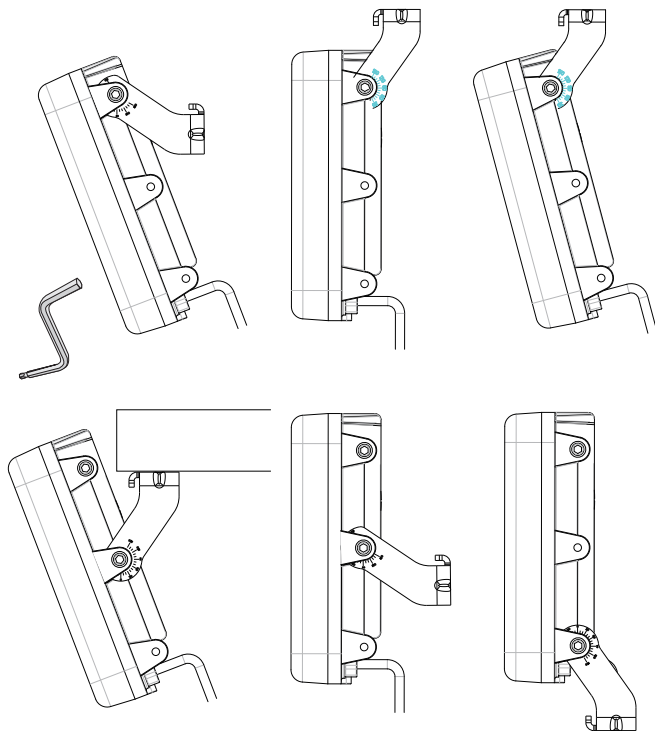


IMPORTANT:

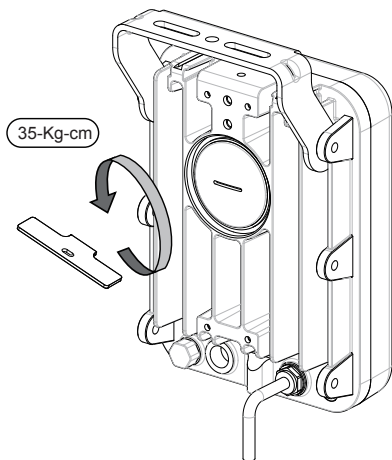
It is highly recommended that the illuminator should be installed at a position higher than **3 meters** from the ground.

U Bracket Positions & Orientation

Use the included allen wrench to attach and adjust the U bracket to your needs at the installation site.



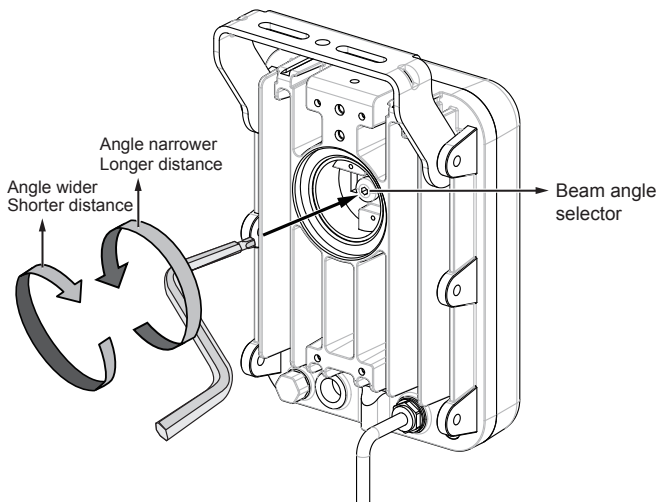
You must first survey the installation location distance.
Use a coin or flat blade screwdriver to open the waterproof cover at the back of the illuminator.



💡 Tips:

You may forget your current beam angle configuration. In this case, turn many full circles clockwise until the rotation resistance is felt (returns to the widest angle, reaches its mechanical stops), and then turn the selector counter-clockwise according to the angle listed on the tables. Each full circle corresponds to a preset beam angle.

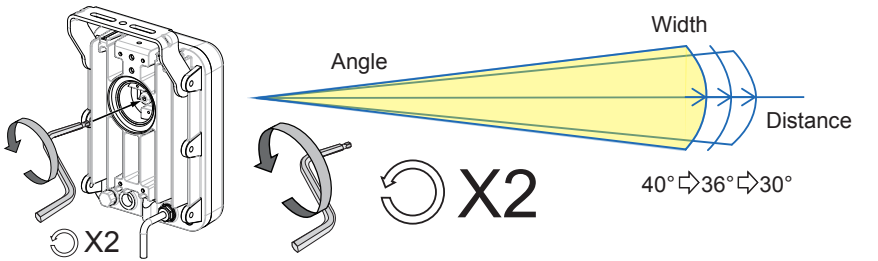
Use the 4mm side of the allen wrench to turn the beam angle to an estimated illumination distance, e.g., 200 meters. See the tables on the next page for how to do it.





The factory default for the beam angle is 40°. When you turn the selector many rounds to its widest or the narrowest position, a **rotation resistance** can be felt. That means the mechanical stop is reached, and you should not use more force.



Refer to the tables below for the configurable IR light **beam angles** and the number of **full circles** needed to change to the preferred beam angles. Each full circle corresponds to a preset beam angle.

For example, if you need to change CM4818-1040's beam angle to 30°, turn the beam angle selector **Counter-clockwise 2 full circles**. If you are at the narrowest angle (10°) and prefer to turn to 24°, turn 3 full circles clockwise. When done, install the waterproof cover.







| CM4818-1040 | | | | | | | | |
|---|-------------|------------|--------------|----------|--------------|----------|--------------|----------|
| Rotate direction | Full circle | Beam angle | Single mount | | Double mount | | Triple mount | |
| | | | Distance(m) | Width(m) | Distance(m) | Width(m) | Distance(m) | Width(m) |
| <div> <div>Counter-clockwise</div> <div>Narrower</div> <div>Clockwise</div> <div>Wider</div> </div> | 0 | 40° | 100 | 72.8 | 141.4 | 102.9 | 173.2 | 126.1 |
| | 1 | 36° | 107 | 69.5 | 151.3 | 98.3 | 185.3 | 120.4 |
| | 2 | 30° | 127 | 68.1 | 179.6 | 96.3 | 220.0 | 117.9 |
| | 3 | 27° | 137 | 65.8 | 193.7 | 93.0 | 237.3 | 113.9 |
| | 4 | 24° | 150 | 63.8 | 212.1 | 90.2 | 259.8 | 110.4 |
| | 5 | 16° | 206 | 57.9 | 291.3 | 81.9 | 356.8 | 100.3 |
| | 6 | 15° | 215 | 56.6 | 304.1 | 80.1 | 372.4 | 98.1 |
| | 7 | 10° | 250 | 43.7 | 353.6 | 61.9 | 433.0 | 75.8 |
| CM4818-2040 | | | | | | | | |
| Rotate direction | Full circle | Beam angle | Single mount | | Double mount | | Triple mount | |
| | | | Distance(m) | Width(m) | Distance(m) | Width(m) | Distance(m) | Width(m) |
| <div> <div>Counter-clockwise</div> <div>Narrower</div> <div>Clockwise</div> <div>Wider</div> </div> | 0 | 40° | 120 | 87.4 | 169.7 | 123.5 | 207.8 | 151.3 |
| | 1 | 36° | 125 | 81.2 | 176.8 | 114.9 | 216.5 | 140.7 |
| | 2 | 29° | 150 | 77.6 | 212.1 | 109.7 | 259.8 | 134.4 |
| | 3 | 27° | 158 | 75.9 | 223.4 | 107.3 | 273.7 | 131.4 |
| | 4 | 20° | 200 | 70.5 | 282.8 | 99.7 | 346.4 | 122.2 |



| Rotate direction | Full circle | Beam angle | Single mount | | Double mount | | Triple mount | |
|---|-------------|------------|--------------|----------|--------------|----------|--------------|----------|
| | | | Distance(m) | Width(m) | Distance(m) | Width(m) | Distance(m) | Width(m) |
|  Counter-clockwise Narrower  Clockwise Wider | 0 | 80° | 60 | 100.7 | 84.9 | 142.4 | 103.9 | 174.4 |
| | 1 | 77° | 62 | 98.6 | 87.7 | 139.5 | 107.4 | 170.8 |
| | 2 | 74° | 64 | 96.5 | 90.5 | 136.4 | 110.9 | 167.1 |
| | 3 | 66° | 67 | 87.0 | 94.8 | 123.1 | 116.0 | 150.7 |
| | 4 | 63° | 69 | 84.6 | 97.6 | 119.6 | 119.5 | 146.5 |
| | 5 | 60° | 71 | 82.0 | 100.4 | 115.9 | 123.0 | 142.0 |
| | 6 | 55° | 75 | 78.1 | 106.1 | 110.4 | 129.9 | 135.2 |
| | 7 | 52° | 79 | 77.1 | 111.7 | 109.0 | 136.8 | 133.5 |
| | 8 | 50° | 82 | 76.5 | 116.0 | 108.2 | 142.0 | 132.5 |
| | 9 | 45° | 86 | 71.2 | 121.6 | 100.8 | 149.0 | 123.4 |
| | 10 | 40° | 90 | 65.5 | 127.3 | 92.7 | 155.9 | 113.5 |



| CM4818-90120 | | | | | | | | |
|---|-------------|------------|--------------|----------|--------------|----------|--------------|----------|
| Rotate direction | Full circle | Beam angle | Single mount | | Double mount | | Triple mount | |
| | | | Distance(m) | Width(m) | Distance(m) | Width(m) | Distance(m) | Width(m) |
|  Counter-clockwise Narrower  Clockwise Wider | 0 | 120° | 45 | 155.9 | 63.6 | 220.5 | 77.9 | 270.0 |
| | 1 | 105° | 50 | 130.3 | 70.7 | 184.3 | 86.6 | 225.7 |
| | 2 | 90° | 55 | 110.0 | 77.8 | 155.6 | 95.3 | 190.5 |
| | | | | | | | | |

| CM4818-180 | | | | | |
|------------------|-------------|------------|--------------|--------------|--------------|
| Rotate direction | Full circle | Beam angle | Single mount | Double mount | Triple mount |
| | | | Distance(m) | Distance(m) | Distance(m) |
| Fixed angle | N/A | 180° | 40 | 56.6 | 69.3 |

| CM4819-1040 | | | | | | | | |
|--|-------------|------------|--------------|----------|--------------|----------|--------------|----------|
| Rotate direction | Full circle | Beam angle | Single mount | | Double mount | | Triple mount | |
| | | | Distance(m) | Width(m) | Distance(m) | Width(m) | Distance(m) | Width(m) |
|  Counter-clockwise Narrower  Clockwise Wider | 0 | 40° | 60 | 43.7 | 84.9 | 61.8 | 103.9 | 75.6 |
| | 1 | 36° | 64.2 | 41.7 | 90.8 | 59.0 | 111.2 | 72.3 |
| | 2 | 30° | 76.2 | 40.8 | 107.8 | 57.8 | 132.0 | 70.7 |
| | 3 | 27° | 82.2 | 39.5 | 116.2 | 55.8 | 142.4 | 68.4 |
| | 4 | 24° | 90 | 38.3 | 127.3 | 54.1 | 155.9 | 66.3 |
| | 5 | 16° | 123.6 | 34.7 | 174.8 | 49.1 | 214.1 | 60.2 |
| | 6 | 15° | 129 | 34.0 | 182.4 | 48.0 | 223.4 | 58.8 |
| | 7 | 10° | 150 | 26.2 | 212.1 | 37.1 | 259.8 | 45.5 |

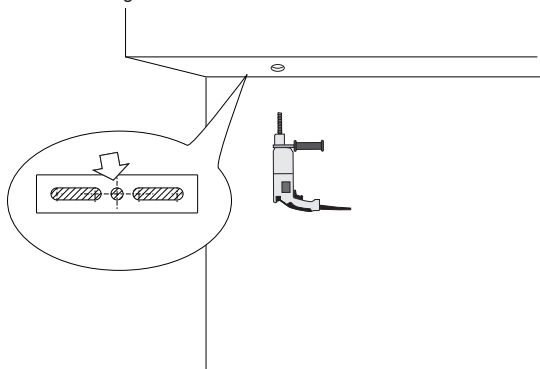
| Rotate direction | Full circle | Beam angle | Single mount | | Double mount | | Triple mount | |
|---|-------------|------------|--------------|----------|--------------|----------|--------------|----------|
| | | | Distance(m) | Width(m) | Distance(m) | Width(m) | Distance(m) | Width(m) |
|  Counter-clockwise Narrower  Clockwise Wider | 0 | 40° | 72 | 52.4 | 101.8 | 74.1 | 124.7 | 90.8 |
| | 1 | 36° | 75 | 48.7 | 106.1 | 68.9 | 129.9 | 84.4 |
| | 2 | 29° | 90 | 46.6 | 127.3 | 65.8 | 155.9 | 80.6 |
| | 3 | 27° | 94.8 | 45.5 | 134.1 | 64.4 | 164.2 | 78.8 |
| | 4 | 20° | 120 | 42.3 | 169.7 | 59.8 | 207.8 | 73.3 |

| CM48I9-4080 | | | | | | | | |
|---|-------------|------------|--------------|----------|--------------|----------|--------------|----------|
| Rotate direction | Full circle | Beam angle | Single mount | | Double mount | | Triple mount | |
| | | | Distance(m) | Width(m) | Distance(m) | Width(m) | Distance(m) | Width(m) |
|  Counter-clockwise Narrower  Clockwise Wider | 0 | 80° | 36 | 60.4 | 50.9 | 85.4 | 62.4 | 104.6 |
| | 1 | 77° | 37.2 | 59.2 | 52.6 | 83.7 | 64.4 | 102.5 |
| | 2 | 74° | 38.4 | 57.9 | 54.3 | 81.8 | 66.5 | 100.2 |
| | 3 | 66° | 40.2 | 52.2 | 56.9 | 73.8 | 69.6 | 90.4 |
| | 4 | 63° | 41.4 | 50.7 | 58.5 | 71.8 | 71.7 | 87.9 |
| | 5 | 60° | 42.6 | 49.2 | 60.2 | 69.6 | 73.8 | 85.2 |
| | 6 | 55° | 45 | 46.9 | 63.6 | 66.3 | 77.9 | 81.1 |
| | 7 | 52° | 47.4 | 46.2 | 67.0 | 65.4 | 82.1 | 80.1 |
| | 8 | 50° | 49.2 | 45.9 | 69.6 | 64.9 | 85.2 | 79.5 |
| | 9 | 45° | 51.6 | 42.7 | 73.0 | 60.5 | 89.4 | 74.0 |
| | 10 | 40° | 54 | 39.3 | 76.4 | 55.6 | 93.5 | 68.1 |

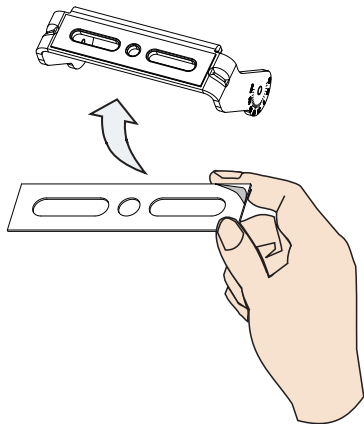
| CM48I9-90120 | | | | | | | | |
|--|-------------|------------|--------------|----------|--------------|----------|--------------|----------|
| Rotate direction | Full circle | Beam angle | Single mount | | Double mount | | Triple mount | |
| | | | Distance(m) | Width(m) | Distance(m) | Width(m) | Distance(m) | Width(m) |
|  Counter-clockwise Narrower  Clockwise Wider | 0 | 120° | 27 | 93.5 | 38.2 | 132.3 | 46.8 | 162.0 |
| | 1 | 105° | 30 | 78.2 | 42.4 | 110.6 | 52.0 | 135.4 |
| | 2 | 90° | 33 | 66.0 | 46.7 | 93.3 | 57.2 | 114.3 |

| CM48I9-180 | | | | | |
|------------------|-------------|------------|--------------|--------------|--------------|
| Rotate direction | Full circle | Beam angle | Single mount | Double mount | Triple mount |
| | | | Distance(m) | Distance(m) | Distance(m) |
| Fixed angle | N/A | 180° | 24 | 34 | 42 |

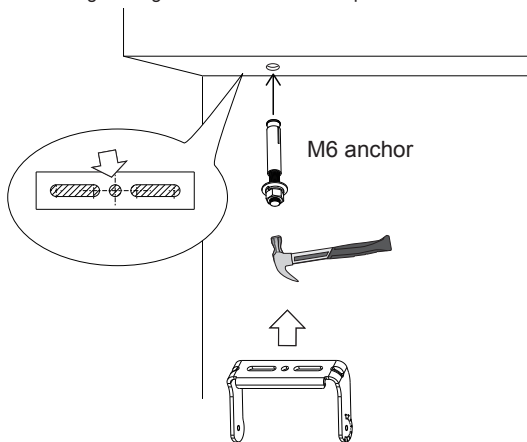
Select a position at the installation site and start drilling a hole on the roof.



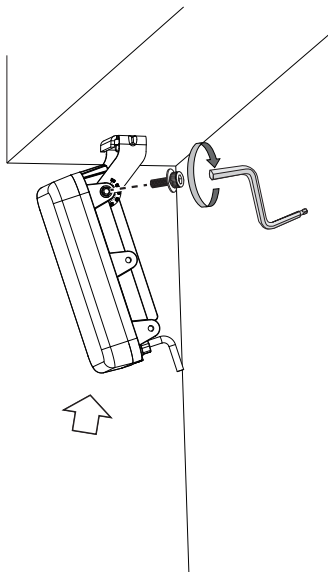
Apply the included grip sticker to the U bracket.



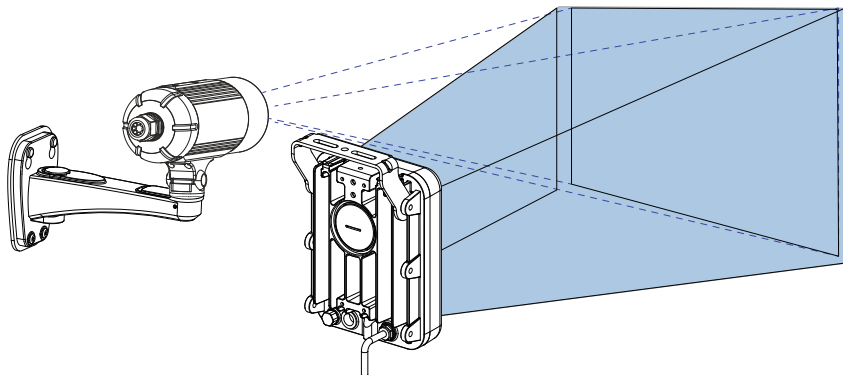
Hammer the anchor in (user supplied, as securing it using the bolt on a threaded pole. d). Secure the U bracket to it, such



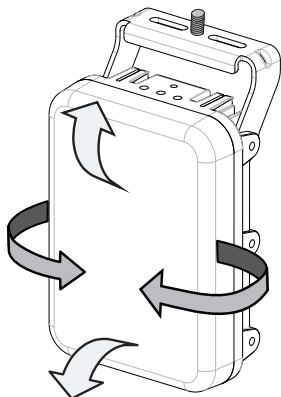
Secure the illuminator to bracket using the hex socket screws.



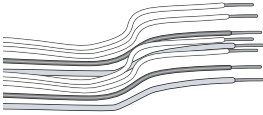
You will need to turn on both the partner camera and the illuminator to precisely match the illuminated area with the camera's field of view. If necessary, adjust the beam angle again.



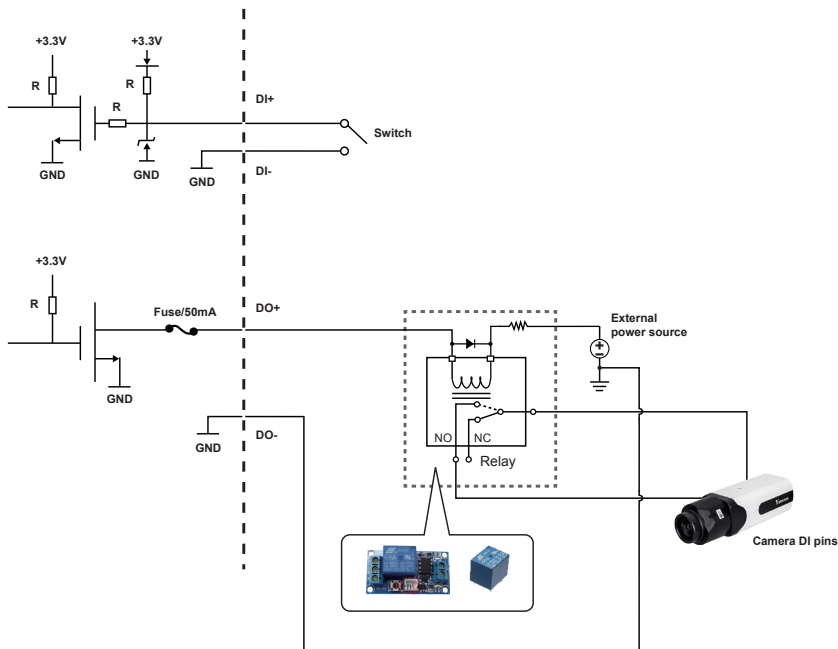
Turn the illuminator toward the FOV of the partner camera, shift the tilt angle, and then tighten the screw to secure the illuminator.



Cable Pinouts



| Name | Color | Gauge | Description |
|--------|--------|---------|---|
| V+ | Red | (20AWG) | Power input |
| V- | Black | (20AWG) | 12~24V DC \pm 10% 24V AC \pm 10% (50~60Hz), (14.5VDC current controlled) |
| DI+ | Green | (26AWG) | LED ON/OFF control * Dry contact Logic level 1(Open) = LED off Logic level 0(Close to GND) = LED on * Wet contact Logic level 1: 4V~40 V = LED off Logic level 0: 0.8V MAX = LED on |
| DI- | Yellow | (26AWG) | Ground |
| DO+ | Purple | (26AWG) | Light sensor status output 1. Open = Day 2. Short = Night (300 lux for IR ON) |
| DO- | Blue | (26AWG) | Ground |
| RS485+ | Orange | (26AWG) | RS485 interface control |
| RS485- | Brown | (26AWG) | |



IR LED ON/OFF control (Green & Yellow wires)

This mode means that CaMate illuminator On/Off control is triggered by camera or other alarm system. User can decide using the appropriate dry/wet contacts depending on wiring condition.

DI+: Green = TTL + voltage

DI-: Yellow = TTL - voltage (GND)

* Dry contact

Logic level 1 (Open) = LED off

Logic level 0 (Close to GND) = LED on

* Wet contact

Logic level 1: 4V~40 V = LED off

Logic level 0: 0.8V MAX = LED on



This mode means that camera Day/Night mode switching is coordinated with and is triggered by the illuminator's light sensor via the DO(Digital output) connection (connected to the camera's DI pins). Users can configure the camera configuration to control the corresponding illuminator On/Off status.

DO+: Purple= Open drain output, 45V Max. (current must be under 100mA)

DO-: Bule = GND

Light sensor status output

1. Open = Day
2. Short = Night (lower than 300 lux for IR to turn ON)

Stand-alone illuminator mode

This mode means that the illuminator's On/Off control is triggered by its light sensor, in the case, the default wiring is connecting the green wire with purple wire.

Some cameras have related settings that need the inter-connection with the illuminator. For example, some cameras come with an IR cut filter that need to be turned off when entering night mode; or, automatically turn on the adjacent illuminator when entering night mode.

Media > Image

System

Media

Image

Video

Audio

Network

Security

PTZ

Event

Applications

Recording

Local storage

General settings

Image settings

Exposure

Privacy mask

Video settings

Video title

Show timestamp and video title in video and snapshots

Position of timestamp and video title on image:

Top

Timestamp and video title font-size:

30

Video font (.ttf):

Default

Upload

Color:

B/W

Color

Power line frequency:

50 Hz

60 Hz

Video orientation:

Flip

Mirror

Day/Night settings

Turn on external IR illuminator in night mode

IR cut filter:

Auto mode

Day mode

Night mode

Synchronize with digital input

Schedule mode