

PlateAlert Quick Installation Guide

Preparation	1
Mounting Pole	3
Planning and Measurement	3
Assembling the Equipment	5
Installation	8
Connecting the Solar Panel	12
Adjustment and Configuration	12



Preparation

After unpacking, please inspect all contents of the package to ensure that there are no missing parts or accessories. Please keep all items properly stored during the installation process.



4G Solar-powered
Traffic Sensing
Camera x 1



Solar Panel Modules
(Optional)



Solar Panel
Cable (0.5m) x 1



USB Type-C
Charging Cable x 1



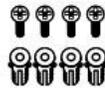
Screwdriver x 1



3-Axis Ball
Mounting Bracket x 1
Screw of Bracket x 1



Strap x 2



Screw Packet x 1

In addition to the materials mentioned above, there are also installation tools that need to be prepared.

A mobile phone

A ladder at least 3m in height

Mounting Pole

The camera will need to be mounted to a pole at a height of 2.5 to 4m. 3m is ideal.

Options include:

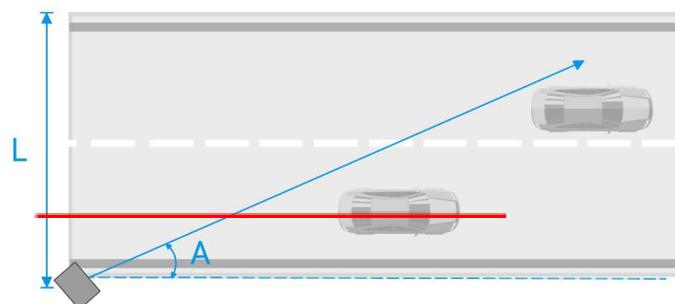
1. A steel pole
(Can be purchased online from a number of signage companies)
<https://www.fultonhogansigns.co.nz/default/pole-steel-white-galvanised-powder-coated.html>
<https://rtl.co.nz/product/ps12-6035w/60mm-galvanised-steel-poles>
2. Existing lamp post (If you have rights to mount hardware to it).
3. Deer fence post that is at the correct height.

Ensure the Pole is sturdy and can handle the environment. Factors such as wind etc should be taken into account. Ensure the pole is well anchored into the ground.

The pole should be positioned a **maximum of 10m** from the centre of the vehicle lane. Less is better to get a better angle and therefore reflection off the license plate.

Planning and Measurement

1. Once you have determined the camera mounting location and if there is minimal traffic within the viewing area, you can park the vehicle within a safe range of the capture field to determine if the camera installation position and angle are appropriate based on captured images.
2. The preset installation direction should ideally capture vehicles driving away to ensure that the camera captures the rear instead of the front of the vehicle. Although if it is a single lane for example a driveway, it will capture both directions.
3. From the camera perspective the distance to the vehicle should be 10-20 meters. The ideal camera angle is 14 degs, with a maximum of 30 degs (A).



4. The easiest way to determine this, is as follows:
 - a. Measure or pace out the distance from the camera location to the centre of the lane where the vehicle would typically drive past. (distance L above to the red line)
 - b. Use the following table to determine the ideal distance where to park the car or place a marker 10, 15 or 20m up the road.
Green is in the ideal angle range, yellow or orange means less reflection of the license plate but OK to use. Red is outside of the recommended range.

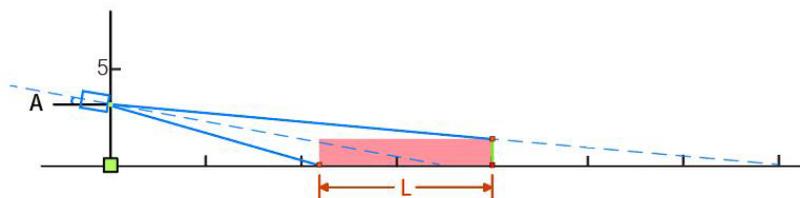
Camera Angle Reference Table

Camera to Lane Centre	Angle at 10m	Angle at 15m	Angle at 20m
3m	17.5	11.5	8.6
4m	23.6	15.5	11.5
5m	30	19.5	14.5
6m	36.9	23.6	17.5
7m	44.4	27.8	20.5
8m	53.1	32.2	23.6
9m	64.2	36.9	26.7
10m		41.8	30

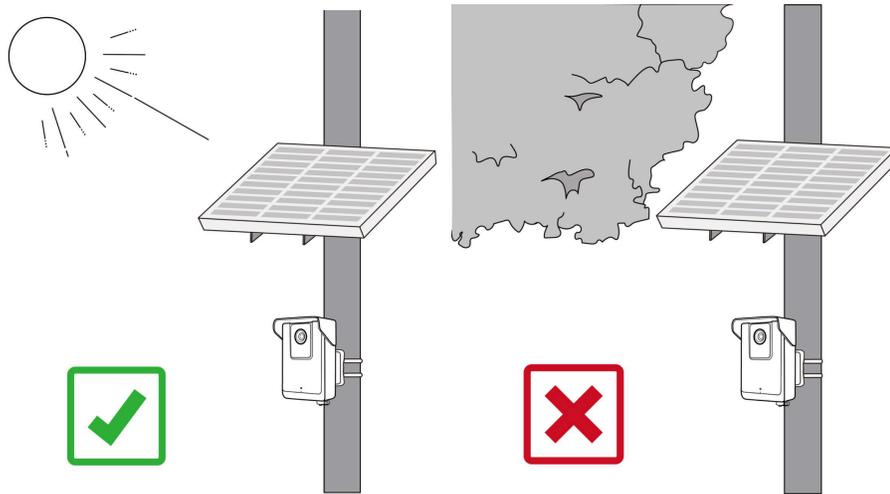
EG. If the camera is 5m from the centre of the lane or driveway, place a marker of vehicle 20m down the road.

5. The camera should be tilted downwards, as shown in the diagram below. A represents the pitch angle, and L represents the optimal monitoring distance.

It is recommended to set A at 10 degrees, with a maximum of 15 degrees. The optimal monitoring distance, L, is between 10 to 20 meters.



6. Please ensure that the installation point receives ample sunlight without obstruction from trees or buildings, as this may affect the solar panel's charging efficiency.



7. Please confirm that there are no text banners, bright lights, or highly reflective street signs within the camera's field of view, as they may impact recognition accuracy.

Assembling the Equipment

Before installation, we can make some preparations by partially assembling the equipment. This involves installing brackets, connecting components, and other related operations.

1. Take out the camera and screwdriver tool.



2. Use the screwdriver to remove the screws located at the bottom of the camera back panel, as shown in the diagram. The back panel can then be freely removed.



3. !! Note: Please store the removed screws and back panel properly! They will be needed for fixing the camera later on.
4. Take out the 3-axis ball bracket. Align the three points on the bracket center with the corresponding three points on the ball axis, then use screws to secure the back panel to the bracket.



! Note: Please make sure that the protruding part below the back panel (the part previously secured by the removed screws) is facing outward. Refer to the diagram for the specific direction, and ensure proper alignment before securing the back panel and the bracket.

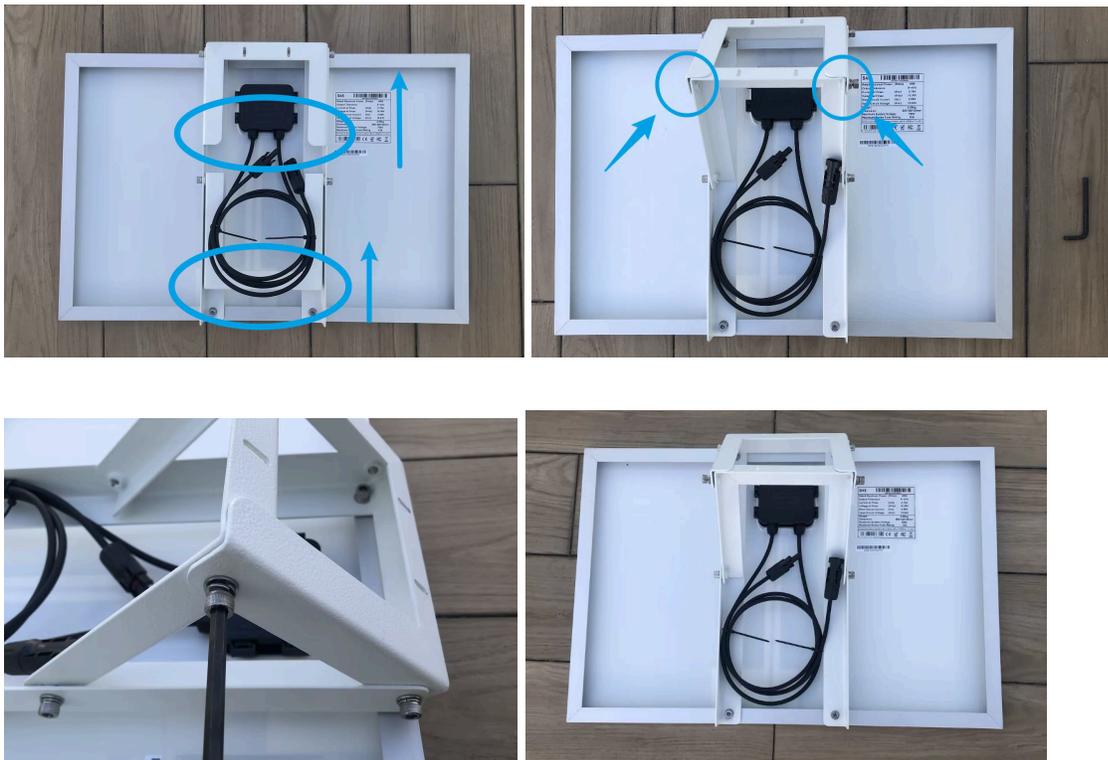


5. Use a screwdriver to unscrew the screws at the bottom of the camera and remove the cover.



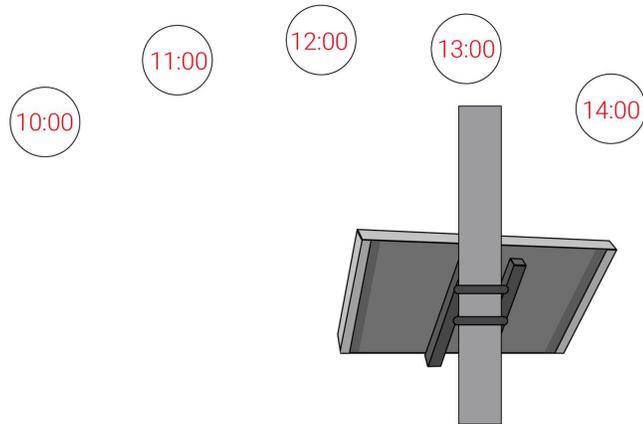
Note: The PlateAlert SD card and SIM card come pre-installed.

6. Assemble the solar panel by lifting it upward as shown in the diagram. Use screws to secure both ends in place.



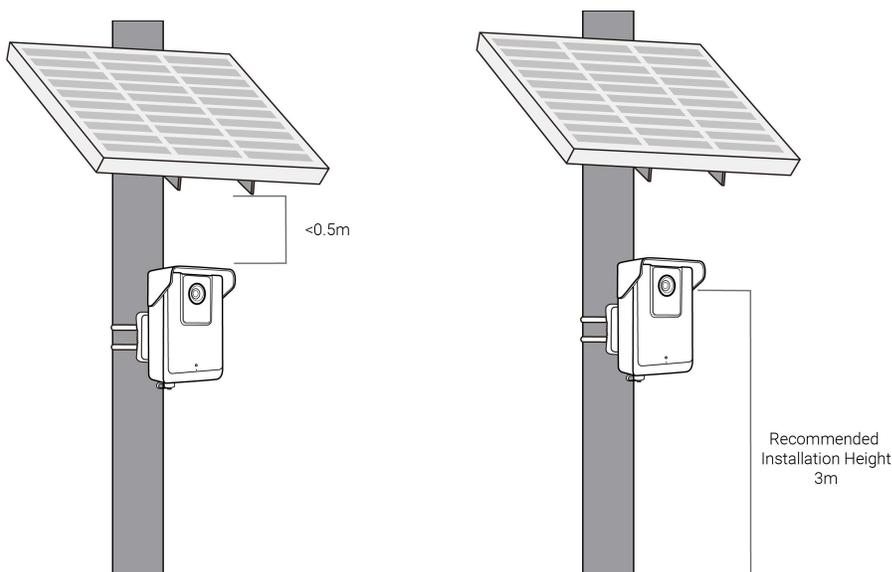
Installation

1. Determine the orientation of the solar panel to ensure it receives the majority of sunlight from 10 AM to 6 PM, maximizing charging efficiency. In New Zealand the panel should be angled to your latitude. 35-48 degs facing NNW.



! Note: You can use auxiliary tools such as the Lumos app (for iOS) or the SunPosition app (for Android) to view the position and capture multiple screenshots displaying the sun's position from 10 AM to 6 PM.

2. Install the solar panel at an appropriate height and orientation, ensuring a secure fixation. The camera can be placed between 2-4m.

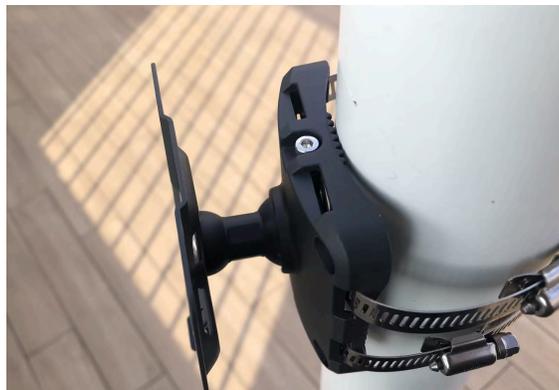




Securely fix the camera bracket at a height of 2 to 4 meters with a recommended height of 3 meters, ensuring correct orientation and a sturdy fixation. If installing on a wooden pole with screws, now is the time to check the general angle of the camera bracket is approximately where you need it.



! Note: Please ensure that there are screws in the vertical direction of the bracket.



3. Align the camera with the four mounting holes on the bracket and hang the camera on top of the bracket.



4. Reattach the previously removed screws to ensure the camera is secure and firmly fixed.



5. You can adjust the angle of the bracket by tightening or loosening the screws at the top. Please ensure that the angle and direction are approximately aligned. Do not tighten the bottom screw as well, the design pulls a plate with the top screw, gripping the ball in place.



The bracket fixation at this point is only to temporarily secure the camera at a reasonably suitable angle. The final fixation angle should be adjusted based on the image results in the Adjustments and Configuration Chapter.

Connecting the Solar Panel

1. Unscrew the protective cover of the solar charging cable interface on the camera. Align the solar charging cable and insert it into the interface. Connect the solar charging cable to the cable of the solar panel.



Adjustment and Configuration

1. Adjust the switch button to On to start the device.



When the device is being powered on, the indicator in front of the device will blink

green until the device is powered on. Once the LED stops blinking it will remain on for approximately 5 minutes. During this time the camera is in a Wake Mode.

The camera will be shipped with a charged battery, however in the unlikely event there has been an issue, the indicator light will be red to indicate when the device cannot be started due to low power. In this case please charge the device with the USB cable for 8 hours prior to installation.

Should the green LED switch off, you have two options.

You can turn the camera off and on again to start the cycle above.

Or Call the Camera to turn Wake Mode. This setting can be found in the PlateAlert App, under Settings > Help and Support > Take Snapshot.

Taking a Snapshot to fine tune the camera angle.

During the time the green camera light is on (the camera is in Wake Mode) you may use the Snapshot feature in the PlateAlert app to take photos and fine tune the camera angle on the mounting bracket.

The camera position is fine tuned when the vehicle (or marker) is centred in the image. Refer back to the Planning and Measurement Chapter on where to position the Vehicle or Marker in relation to the camera position.

Once the camera is adjusted, ensure to tighten the upper bracket screw so the camera angle is secure and fixed in place.

Leaving the power on, please screw the bottom cover back on the camera.

Next step is to email support@farmalert.net, we will schedule a time to calibrate the camera image and vehicle detection and finish the camera installation remotely.

Please feel free to call us if you need any assistance.

FarmAlert Ltd

Phone: 027 242 2253

Email: support@farmalert.net

