

License Plate Recognition (LPR) Camera Setup *Positioning & Adjusting*

When considering a License Plate Recognition Camera or LPR, there are some very important key points that must be considered prior to purchasing CCTV Camera Pros LPR cameras.

To increase recognition accuracy, there are certain criteria that need to be considered, such as distance, vehicle speed, plate size, lighting condition and camera angle. In this document, we provide two base image examples, and the problem examples, along with a common fix. The last page covers installation instructions for distance, height and angle.

You should capture and fill the image with a full width of vehicle. In this way, the height of the captured plate characters would approximately fall between 30 and 35 pixels.



Day



Night

Why are two cameras recommended?

It is very important to understand that LPR cameras are typically designed to focus on a single lane of traffic with the sole purpose of recording license plates. LPR cameras deliver a high-contrast dark image which highlights the plate, but are not capable of providing both a wide-angle overview of an area with enough detail to capture license plates anywhere within that large area. This is why license plate cameras are typically used in conjunction with an overview camera that captures the overall vehicle, make, model, and color.

Here are some **overview cameras** we typically recommend:

- [BIPRO-S600VF12](#) – Typically used in closer proximity applications with the [LPR-SC600HC](#) high contrast LPR camera.
- [DPRO-AS700](#) – Also used in closer proximity LPR applications with the [LPR-SC600HC](#) high contrast LPR camera. This model is very similar to the [BIPRO-S600VF12](#), but used when installer prefers a dome camera for the overview camera.
- [BIPRO-S700VF50](#) – Can be used with the longer range [LPR-800](#) license plate recognition camera because of the larger 6-50mm varifocal lens.

The camera duality will ensure that you not only capture the plate but you also capture video of everything else, which could include, people, bicycling, even a car with no plates and more.

Common problems & fixes

Problem: The plate is the hollow-letter type

Try reducing INFRARED illumination.



Problem: The image is unclear

Try Adjust the focus or the shutter speed of the camera.



Problem: The image is overexposed

Try to reduce the illumination, or adjust the angle or the setup direction of the camera.



Problem: The image is interfered by the headlight

Try to use the professional LPR camera to avoid the headlight interference.



Problem: The plate size is either too small or too large

Use the camera's Zoom feature, to zoom in or out. If that is not sufficient, see if the camera itself can be repositioned closer or further from capture area. Ideally, one should try to fill the image with the width of vehicle.



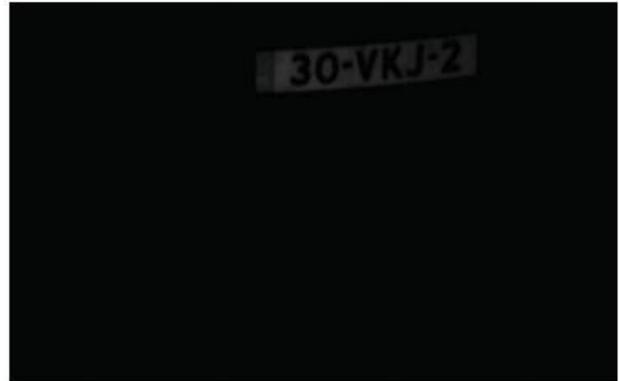


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Problem: The image contrast is low

See if lighting conditions could be improved



Problem: The plate is slanted

Adjust setup angle, making sure that angle of deviation is within **8 degrees**.



Problem: Plate image is shadowy

Try to avoid placing the camera where it can be subjected to direct sunlight or reflections. Visible shadow edges in the camera view may degrade the recognition accuracy.

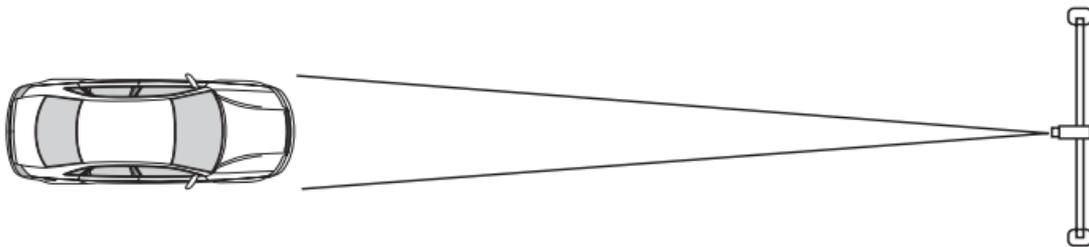


LPR Camera Installation Guidelines

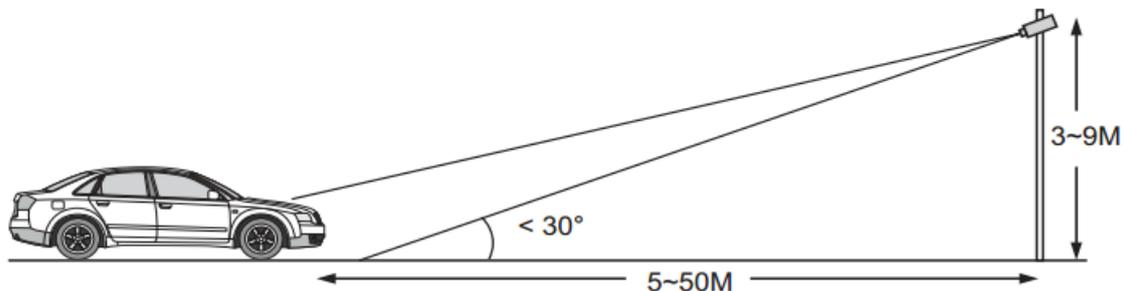
Installing the camera with a **vehicle frontal view** is always recommended

Align the camera with the upper front of the vehicle as shown below, will ensure that the height of the captured plate characters would approximately fall between 30 and 35 pixels.

The captured image should be filled with a full width of the vehicle.



The distance between the vehicle and the camera should be within 5 to 50 meters / 15 to 164 feet. The camera's **height** should be within 3 to 9 meters / 3 to 29 feet; furthermore the camera setup **angle** should be within 30 degrees.



Installing the camera on the side

Install the camera in the side front of the vehicle as shown below. To avoid capturing unnecessary contents in the image, the camera should be installed in a higher position to capture the front part of the vehicle only. The camera setup angle should also be within 15 degrees.

