

3VR VISIONPOINT™ VMS

STANDARD AND PREMIUM LICENSE PLATE RECOGNITION (LPR) REFERENCE SHEET



License plate recognition (LPR) is a technology that uses optical character recognition on images to read vehicle registration plates. It can use existing cameras, road-rule enforcement cameras, or cameras specifically designed for the task. LPR is also used by police forces around the world for law enforcement purposes, including to check if a vehicle is registered or licensed. electronic toll collection on pay-per-use roads and as a method of cataloguing the movements of traffic for example by highways agencies. With the advent of LPR based sensor cameras, it is used in high speed roadways as well.

LICENSE PLATE CAPTURE OPTIMIZATION

- Application** — LPR sites should be used where traffic stops or moves less than 25mph (e.g. traffic stops, toll booths, vehicle gates, stop signs). 3VR LPR support US and international plates.*
- Cameras** — Analog or IP cameras. For IP cameras, video quality must be set to “highest” (if there is no video quality setting, set to lowest compression).
- Lighting** — Uniform lighting is ideal. Outdoor lighting situations should employ wide dynamic range cameras. Backlighting (bright conditions behind the car) will negatively affect performance.

- Mounting** — Choose either vertical or horizontal mounting option:
 - Vertical** — Camera should be directly above the lane of traffic. Use the Mounting chart below.
 - Horizontal** — Camera should be mounted at the same height as the license plates. Use the Mounting chart below.
 - Diagonal** — (both at the side and above) mounting is not recommended.
- Field of View** — For accurate recognition of North- American plates, license plate characters should be 30 pixels high or greater, or use the Field of View chart below for reference.

* Use 3VR Standard LPR for stopped U.S. plates and 3VR Premium LPR for moving or international plates

Good lighting conditions



Bad lighting conditions

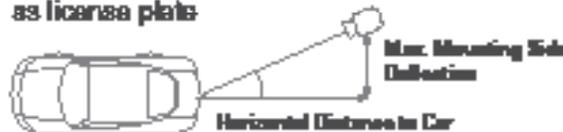


MOUNTING

Vertical — Camera above lane of traffic



Horizontal — Camera mounted at the same height as license plate



Vertical Mounting

Horizontal Distance to Car:	10'	12'	16'	20'	30'	40'	50'
Max. Mounting Height:	7'	8'	10'	12'	17'	22'	27'

$$(D / 2) + 2' = H$$

D = Horiz. Distance to Car
H = Max. Mounting Height
Assuming a plate height of 2'

Horizontal Mounting

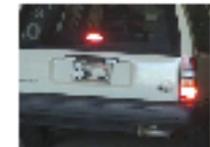
Horizontal Distance to Car:	10'	12'	16'	20'
Max Mounting Side Deflection:	5'	6'	8'	10'

$$(D / 2) = M$$

D = Horizontal Distance to Car
M = Max. Mounting Side Deflection

FIELD OF VIEW

Plate sizes are easiest to calculate based on the determining “Car Widths” in the camera FOV. For example, for accurate recognition using an analog camera, the car width should fill the full FOV on an analog camera.



Car Width

Resolution	Megapixels	Approx. Max. Car Widths	Max. Feet
Analog	0.3	1.0	5'
1024 x 768	0.7	1.4	7'
1280 x 1024	1.3	1.8	9'
1600 x 1200	2	2.2	11'
2048 x 1536	3	2.8	14.5'

INSTANT LPR FEEDBACK

For instant feedback on license plate capture, after inputting the live feed and installing the LPR plug-in on the appropriate camera, conduct a drive-through on that camera. Go to the Monitor panel and choose to view the “License Plate” event type.

3VR LPR Plug-in Version 1.0.1.1547 is supported with 3VR Releases 7.3.2.x and 8.1.1.x above. Please download at partners.3vr.com/?q=3vr-plug-ins