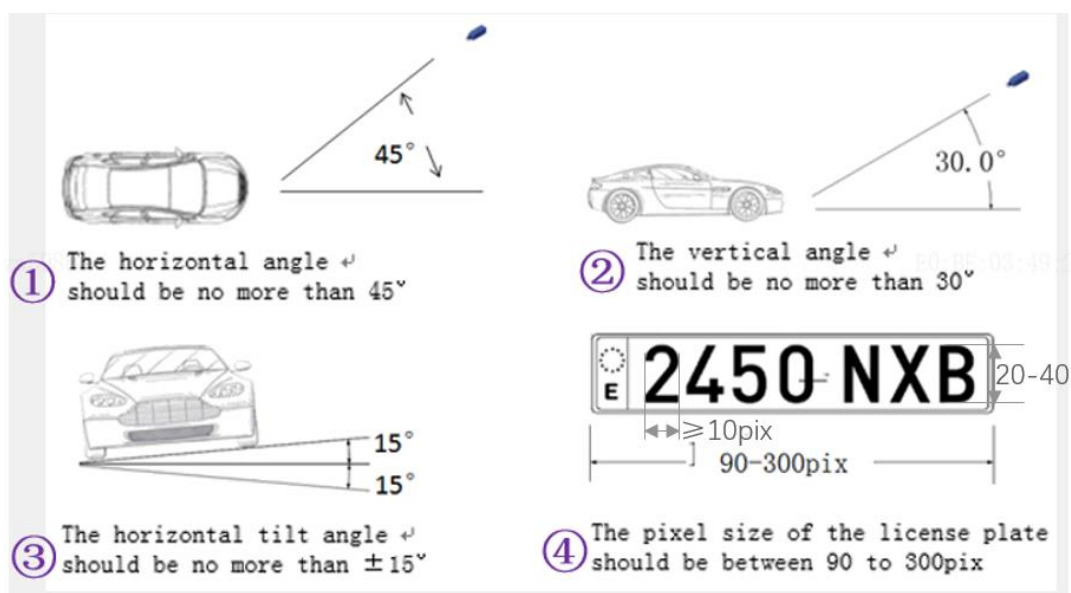


1 Installation

1.1 Installation Requirements

- 1) The horizontal angle between the camera installation position and the license plate center must not exceed 45° .
- 2) The vertical angle of the camera must not exceed 30° (recommended angle is approximately 20°).
- 3) The horizontal tilt angle of the license plate must not exceed $\pm 15^{\circ}$.
- 4) The pixel width of a single character must be greater than 10, height must be between 20–40, and the total pixel count of the entire license plate must be between 90–300.



1.2 Applicable Scenarios

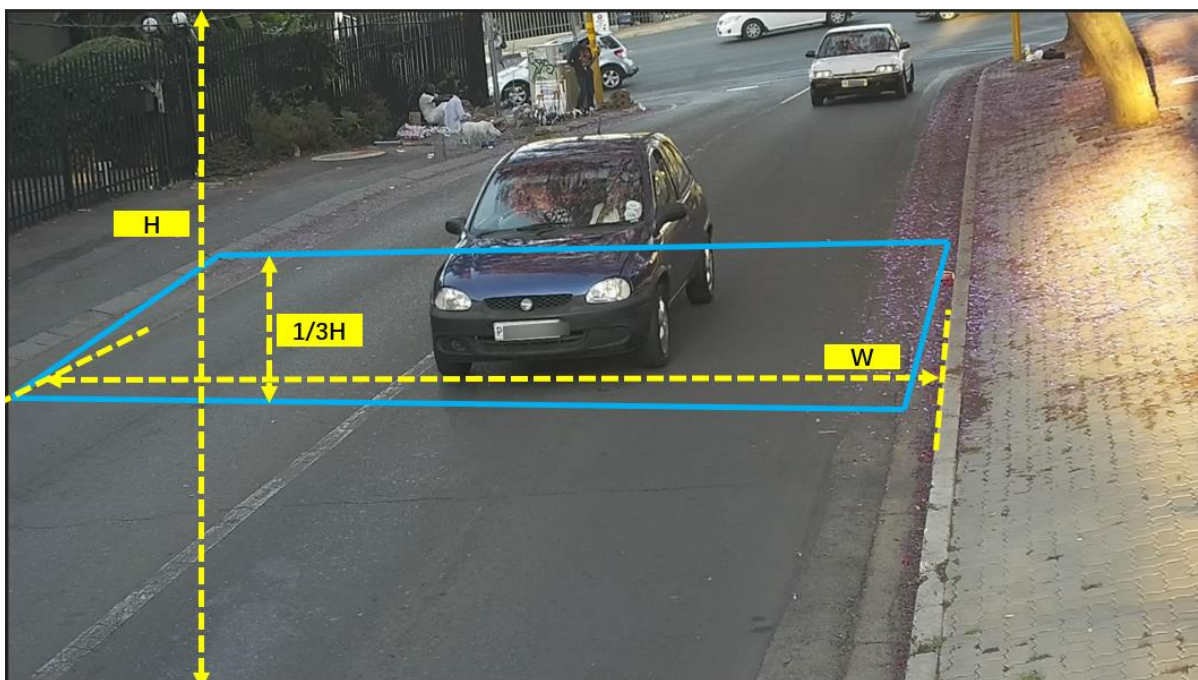
1. Entrance & Exit Scenarios

- 1) Entrance & exit usage scenarios (supports speed ≤ 18.64 mph)
- 2) Side-mounting of the camera is recommended for entrance & exit scenarios. The ideal environment is a vehicle lane with a width between 9.84–14.76 ft, with a depth of at least 9.84 ft beyond the capture point to ensure vehicles are properly aligned when passing through the capture point. If the on-site conditions differ significantly from the ideal environment, please contact the product department to confirm the installation plan;
- 3) Avoid obstructions to illuminator and image capture from road signs, guide signs, trees, guard booths, or other objects.



2. Roadway Scenarios

- 1) Roadway usage scenario (supports speed ≤ 49.71 mph);
- 2) Front-mounting of the camera is recommended for roadway scenarios. The ideal environment is a straight road. In cases involving curves or steep inclines/declines, please contact the product department to confirm the installation plan.
- 3) For roadway applications, verify the feasible pole installation positions at the site, as this may affect capture rate.
- 4) Avoid obstructions to illuminator and image capture from road signs, guide signs, trees, guard booths, or other objects.



3. Installation Height and Capture Distance

Scenario	Road Width W (ft)	Recommended Setup (ft)	Supported Speed (mph)
Entrance & Exit (Camera focal length: 2.8-12mm)	$W \leq 13.12$	H=4.92, L=13.12	$V \leq 18.64$
	$13.12 < W \leq 16.40$	H=6.56, L=16.40	
	$16.40 < W \leq 19.69$	H=8.20, L=22.97	
Roadway	$19.69 < W \leq 22.97$ (Camera focal length: 8-32mm)	H=9.84, L=26.25	$V \leq 49.71$
		H=13.12, L=32.81	
		H=16.40, L=42.65	
		H=19.69, L=52.49	
	$19.69 < W \leq 22.97$ (Camera focal length: 10-50mm)	H=9.84, L=26.25	
		H=13.12, L=32.81	
		H=16.40, L=42.65	
		H=19.69, L=52.49	

2 Basic Configuration

NOTE!

- Entrance & exit and roadway scenarios use two separate sets of parameters. Standard scenarios can operate using default settings without requiring on-site parameter adjustments.
- If image quality is poor due to site-specific environmental conditions, it is recommended to contact our technical support staff for assistance.

2.1 Image Configuration

1. Shutter and Gain (use default settings)

- For entrance & exit scenarios: shutter speed 1/500, gain 45;
- For roadway scenarios: shutter speed 1/500, gain 40;
- Confirm that the day/night switching mode is set to Automatic;
- If the overall image appears too dark, gain may be slightly adjusted on-site as needed.

2.2 Advanced Configuration

1. License Plate Pixel Size Requirements

- The effective pixel range is 60–500. Within this range, capture performance is optimal. To ensure good license plate recognition at the site, the license plate should be as large as possible when the vehicle enters the recognition area.

2.3 Detection Configuration

1. Drawing the Detection Area via LPR

1. When the device is powered on for the first time, log in to the camera's web interface and use the setup wizard to adjust the recognition and detection area (the blue recognition box serves as the target capture zone; simply position it appropriately within the image). Subsequent adjustments to the recognition area can be made directly through the web interface.
2. The recognition box should be positioned in the lower half of the image (in the figure below, the blue box is the recognition box; its function: when a license plate enters this area, capture and recognition are triggered)
3. The height of the recognition box should be approximately one-third of the total image height, ensuring the license plate at the capture point is fully included.
4. The horizontal position of the recognition box must cover the full road width (W) to ensure license plates of vehicles traveling on both the leftmost and rightmost lanes fall within the recognition box.
 - In the figure below, the blue box (labeled ①) is the recognition box; once a license plate enters this area, capture and recognition are initiated.
 - In the figure below, the red box (labeled ②) is the system license plate reference box; if the license plate size in the live video matches or exceeds this reference box, correct recognition can be ensured.



5. Set trigger mode to **Video Trigger**;
6. Set detection range to **General**;
7. Set vehicle movement direction to **Bidirectional**;