

ANPR Bullet Camera Installation Guide V1.4.1

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1 About This Manual

This document provides guidance on installing and commissioning ANPR bullet cameras. The intended audience includes internal installation and commissioning staff, integrators, project personnel, and maintenance staff. It is strongly recommended to read through this guide before starting on-site construction.

2 Product Introduction

Product Introduction

Model	Description and Specification	Remarks
PKC2640@Z28-P	PKC2640@Z28-P-4MP ANPR Bullet Camera(2.8-12mm,PoE,H.265,White Light)	Recommended for entrance & exit scenes
PKC2640@Z28-IR-P	PKC2640@Z28-IR-P-4MP ANPR Bullet Camera(2.8-12mm,PoE,H.265,IR)	
PKC2641-Z28-P	PKC2641-Z28-P-4MP ANPR Bullet Camera (2.8-12mm,PoE,H.265,white light)	
PKC2641-Z28-IR-P	PKC2641-Z28-IR-P-4MP ANPR Bullet Camera (2.8-12mm,PoE,H.265,IR)	
PKC2630@Z28-P	PKC2630@Z28-P-3MP ANPR Bullet Camera(2.8-12mm,PoE,H.265,White Light)	
PKC2630@Z28-IR-P	PKC2630@Z28-IR-P-3MP ANPR Bullet Camera(2.8-12mm,PoE,H.265,IR)	
PKC2640@Z80-P	PKC2640@Z80-P-4MP ANPR Bullet Camera(8-32mm,PoE,H.265,White Light)	Recommended for road scenes
PKC2640@Z80-IR-P	PKC2640@Z80-IR-P-4MP ANPR Bullet Camera(8-32mm,PoE,H.265,IR)	
PKC2641-Z80-P	PKC2641-Z80-P-4MP ANPR Bullet Camera (8-32mm,PoE,H.265,white light)	
PKC2641-Z80-IR-P	PKC2641-Z80-IR-P-4MP ANPR Bullet Camera (8-32mm,PoE,H.265,IR)	
PKC2641-Z100-P	PKC2641-Z100-P-4MP ANPR Bullet Camera (10-50mm,PoE,H.265,white light)	
PKC2641-Z100-IR-P	PKC2641-Z100-IR-P-4MP ANPR Bullet Camera (10-50mm,PoE,H.265,IR)	
HC121@TS8C-Z	HC121@TS8C-Z-2MP ANPR Bullet Camera(4.7-47mm,Starlight,PoE,H.265,White Light)	Applicable to entrance & exit and road scenes
HC121@TS8CR-Z	HC121@TS8CR-Z-2MP ANPR Bullet Camera(4.7-47mm,Starlight,PoE,H.265,IR)	

3 Site Survey

Before conducting site survey, it is essential to understand the project overview, including: project background, scale, quality objectives, and project start and completion dates. Thoroughly review tender documents, engineering contracts, design plans, and drawings. Upon arriving at the site, conduct the survey based on the above project information, to assess the actual on-site conditions. This is followed by aligning with the client's specific layout requirements to determine the construction details.

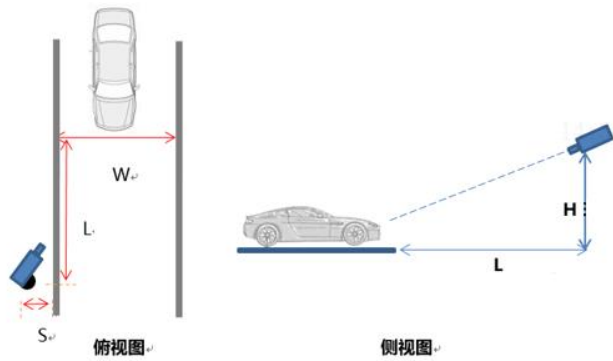
3.1 Site Survey Considerations

3.1.1 Entrance & Exit Scene

- 1) Supported speed ≤ 30 km/h.

- 2) Side installation is recommended for the camera. The ideal environment is a vehicle passage width between 3-4.5 meters, with a depth ensuring at least 3 meters of space beyond the capture point, so that the vehicle can align properly when passing the capture point. If the on-site environment significantly differs from the ideal, contact us to confirm the installation plan.
- 3) Avoid obstructions to illuminator and image capture from road signs, guide signs, trees, kiosks, or other structures.

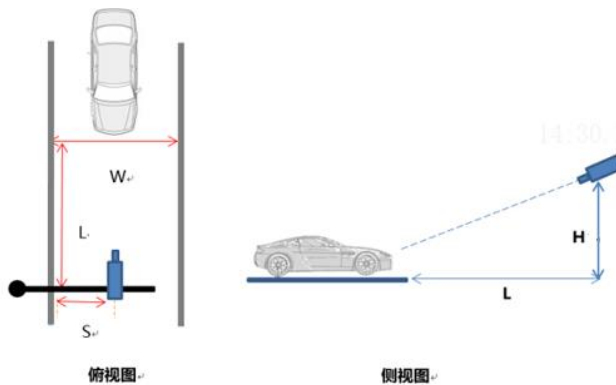
Normal Snapshot in Entrance & Exit Scene



3.1.2 Road Scene

- 1) Supported speed ≤ 80 km/h.
- 2) Front installation is recommended for the camera. The ideal environment is a straight road; if there are curves or steep uphill/downhill sections, contact us to confirm the installation plan.
- 3) Verify the feasible pole installation position at the site, as this may affect capture rate.
- 4) Avoid obstructions to illuminator and image capture from road signs, guide signs, trees, kiosks, or other structures.

Normal Snapshot in Road



4 Installation Scheme

4.1 Angle Requirements Diagram

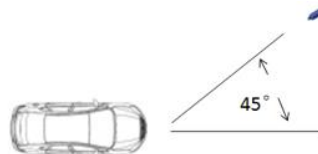
Installation Requirements

- 1) The horizontal angle between the camera installation position and the license plate center should not exceed 45° .
- 2) The vertical angle should not exceed 30° (recommended angle is approximately 20°).
- 3) The horizontal tilt angle of the license plate should not exceed $\pm 15^{\circ}$.
- 4) The pixel size of the license plate should be 90 to 300(optimal: about 130).

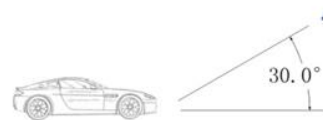
Angle Requirements Diagram



Wrong: Horizontal angle > 45°
If the angle meets the requirements, the LPR accuracy can reach 95% or higher
If the angle is out of the specifications, the



The horizontal angle ψ should be no more than 45°



The vertical angle ψ should be no more than 30°



Wrong: Vertical angle > 30°



Wrong: Horizontal tilt angle > 15°



The horizontal tilt angle ψ should be no more than $\pm 15^{\circ}$



The pixel size of the license plate should be between 90 to 300pix



Wrong: Plate size too small

4.2 Project Scheme Comparison Table

Comparison Table

Scene	Device Model	Road Width W (m)	Camera Height H (m)	Capture Distance L (m)	Camera-to-Roadside Distance S (m)	Recommended Plan	Supported Speed (km/h)
Entrance & Exit	PKC2630@Z28 PKC2640@Z28 PKC2641@Z28 HC121@TS8C-Z HC121@TS8CR-Z	W≤4	1.5-2	3-11	0-0.3	H=1.5m, L=4m	V≤30
		4<W≤5	2-2.5	4-13		H=2m, L=5m	
		5<W≤6	2.5-3	5-16		H=2.5m, L=7m	
Road	PKC2640@Z80 PKC2641@Z80	6<W≤7	3-6	6-48	0-7	H=3m, L=8m	V≤80
						H=4m, L=10m	
						H=5m, L=13m	
						H=6m, L=16m	
	HC121@TS8C-Z HC121@TS8CR-Z	6<W≤7	3-6	6-60	0-7	H=3m, L=8m	
						H=4m, L=10m	
						H=5m, L=13m	
						H=6m, L=16m	
	PKC2641@Z100	6<W≤7	3-6	6-55	0-7	H=3m, L=8m	
						H=4m, L=10m	
						H=5m, L=13m	
						H=6m, L=16m	