



VAIDIO CORE 9.0.0

LICENSE PLATE RECOGNITION USER GUIDE

LICENSE PLATE RECOGNITION

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CAMERA PLACEMENT & SETTING



To detect **license plates** using the **License Plate Recognition (LPR) AI Engine**:

- ❑ **Camera > Edit > select License Plate Recognition** from the **AI Engines** dropdown menu.
- ❑ Ensure each **character** on the license plate is at least **16 px wide** for clear detection (e.g., a plate with 6 alphanumeric characters should be at least 100 px wide for clear detection).
- ❑ **Typical best-performance deployment:** Cameras at **parking lot entrances** and **traffic lights**, cars moving at **<10 mph**, and detecting **max. 3 lanes** of vehicles at the same time.

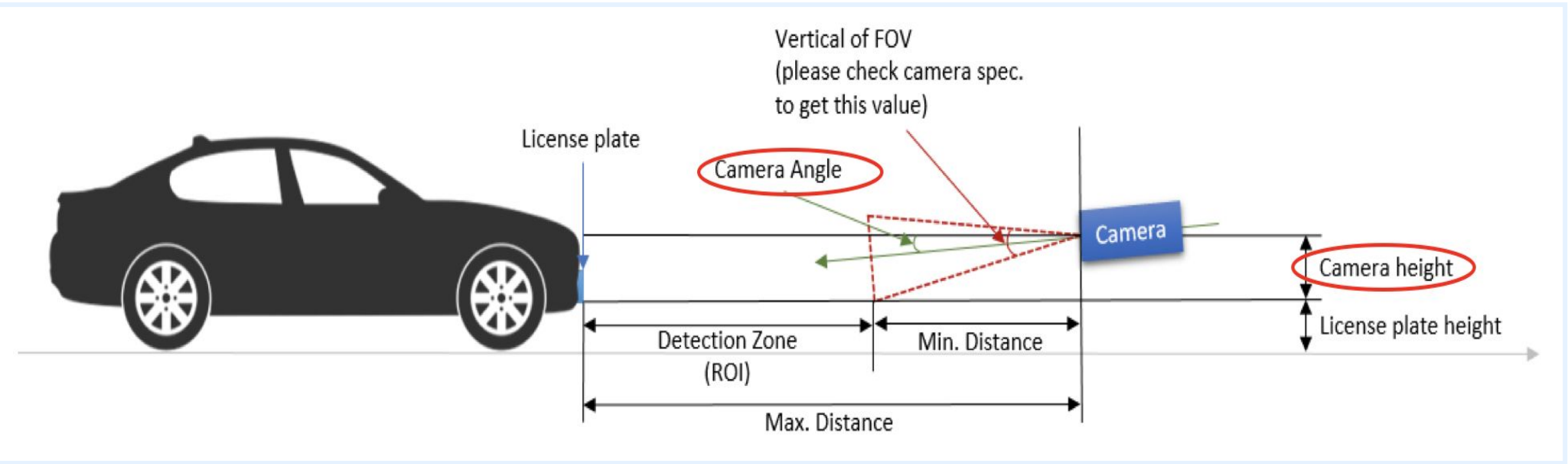
Maximum Speed Supported:

Depending on **camera height**, **vertical camera angle**, **camera vertical FOV** (provided by camera manufacturer), **camera resolution**, and **license plate character size**.

- ❑ **Example:** Camera height = 3m (typical street light), vertical angle = 25°, vertical FOV = 18°, resolution 1080p, license plate character = 7cm tall > maximum speed = 31.38 km/h ~19.5 miles per hour (for more calculations, file a ticket in the [Vaidio Support Portal](#)).

Recommended camera placement for LPR:

Place camera at an angle as close to the license plate level as possible.

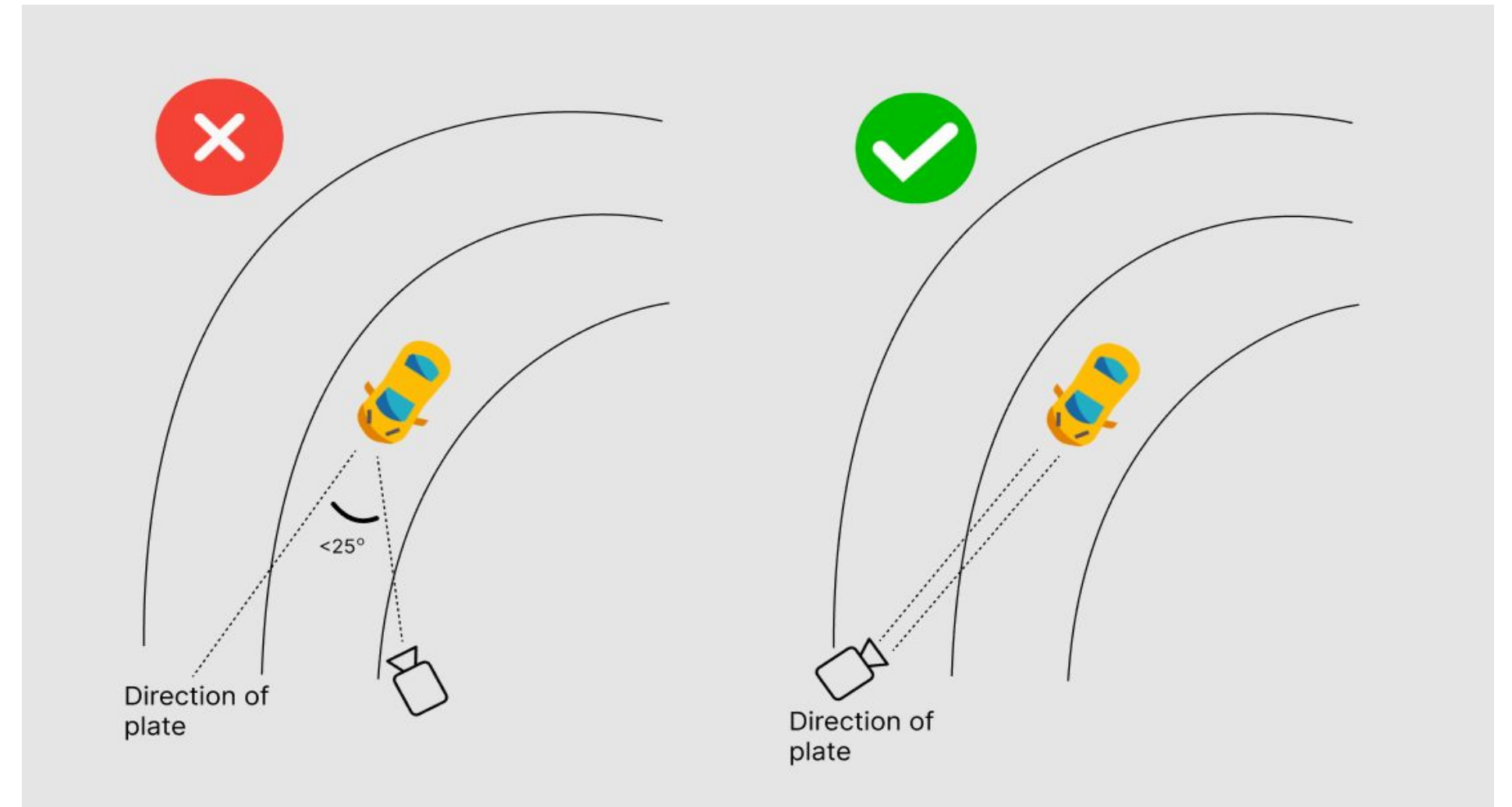
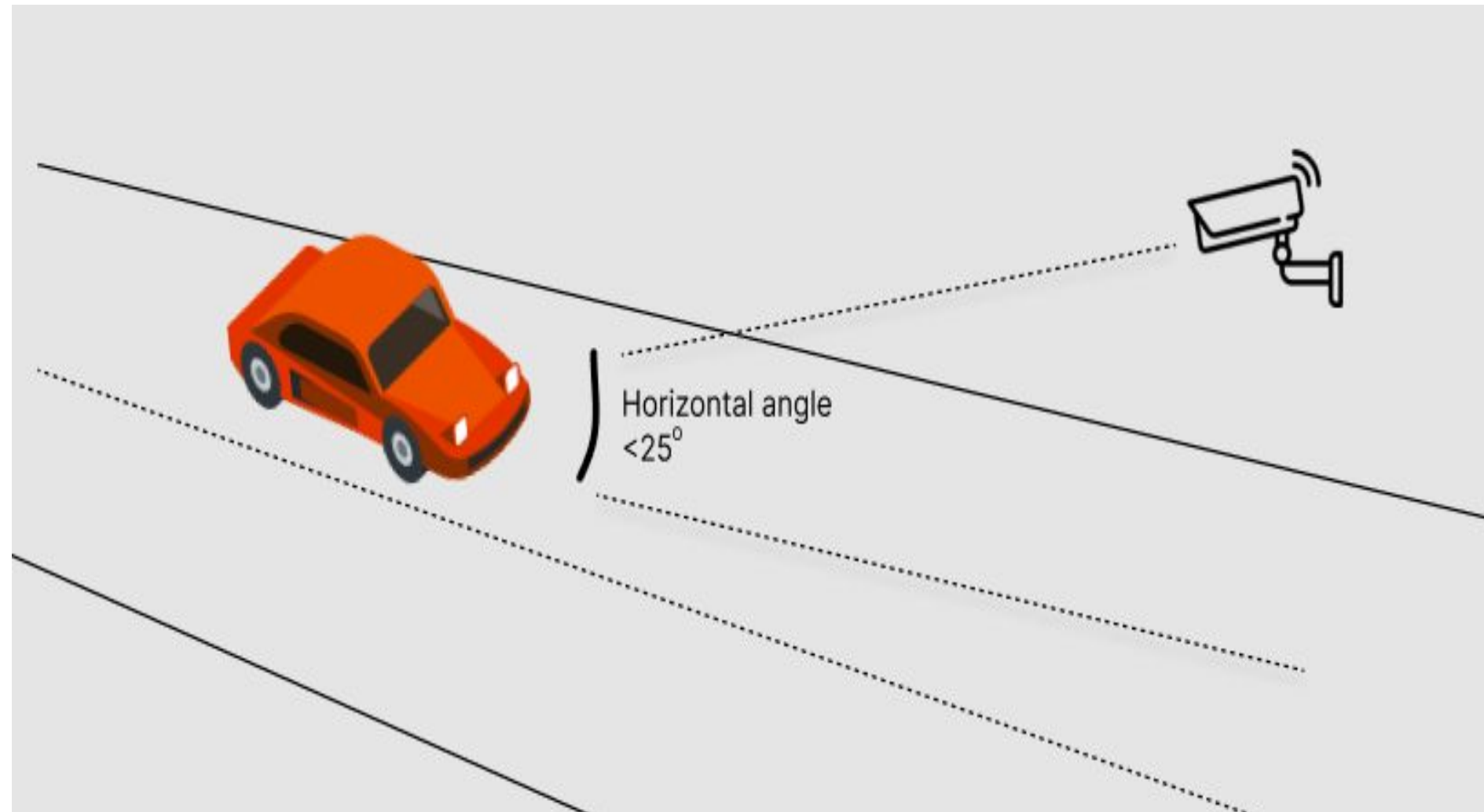


Focal Length	f = 2.8 ~ 12 mm
Aperture	F1.4 ~ F2.8
Auto-iris	P-iris
Field of View	32° ~ 93° (Horizontal) 18° ~ 50° (Vertical) 37° ~ 110° (Diagonal)

Example of camera specification

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CAMERA PLACEMENT & SETTING (CONT.)



Camera placement for best LPR results:

1. **Horizontal angle <25°** (i.e., angle between the line of sight (straight line from license plate to camera) and the ground)
2. **Side angle <25°** (i.e., angle between the line of sight and the vehicle's direction of movement)

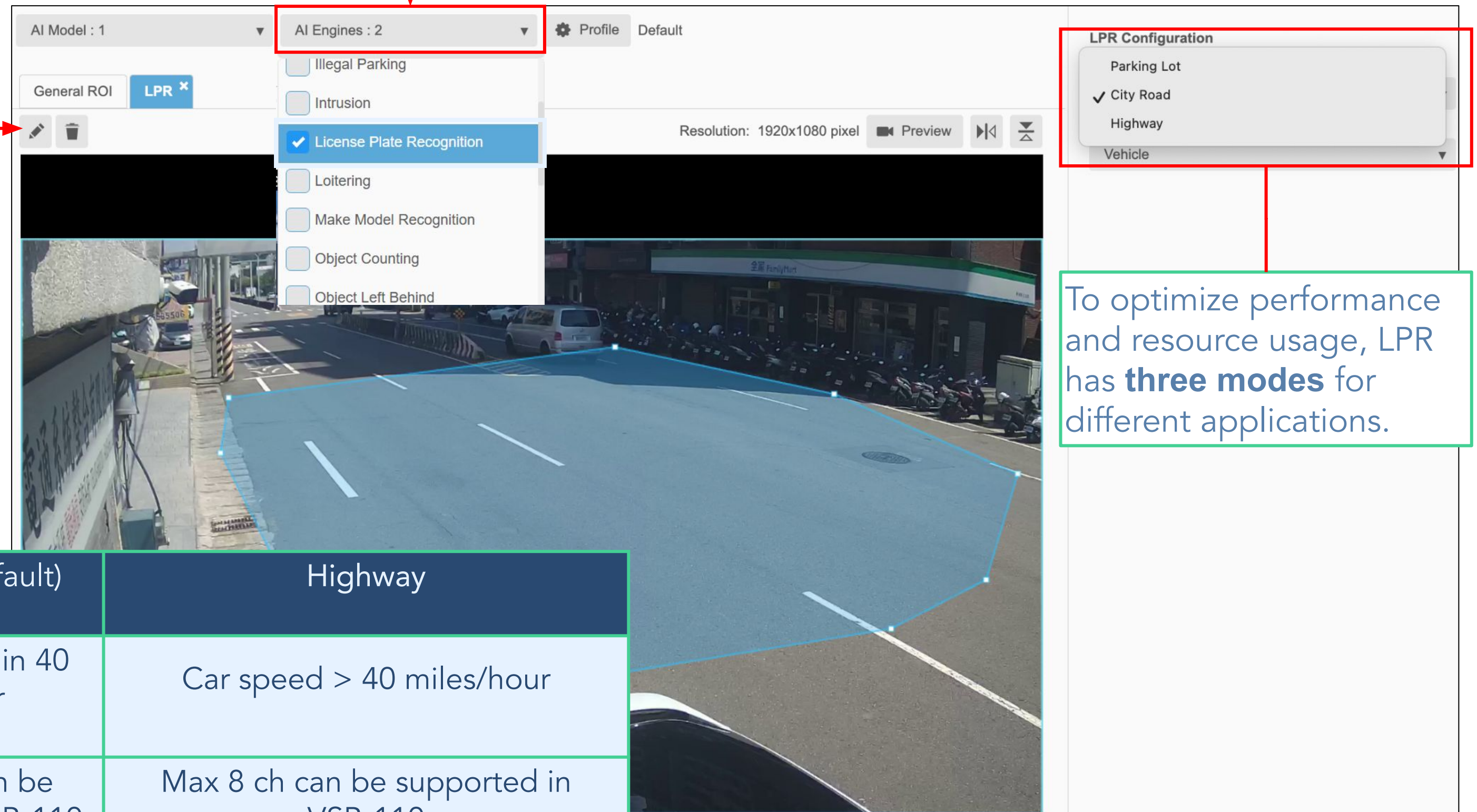
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ROI SETUP



Camera > Edit to activate the **LPR AI Engine**.

In the **LPR tab**, select the **Pencil icon** to draw the **LPR Region of Interest (ROI)**. The ROI can be of **any shape**.



To optimize performance and resource usage, LPR has **three modes** for different applications.

Parking Lot	City Road (Default)	Highway
Car speed < 10 miles/hour	Car speed within 40 miles/hour	Car speed > 40 miles/hour
Max 24 ch can be supported in VSB-110	Max 12 ch can be supported in VSB-110	Max 8 ch can be supported in VSB-110

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ROI SETUP (CONT.)



1. **Camera > Edit > Profile > LPR tab.**
2. Adjust the **License Plate Confidence** and the **Min/Max License Plate Width** and **Height dimensions** to optimize detection results.

Notes

- ❑ Default settings work for most use cases.
- ❑ **License Plate Confidence** MUST be between **0.1** and **1**.

The screenshot displays the Vaidio software interface for configuring the ROI (Region of Interest) for License Plate Recognition (LPR). The main window is titled "Profile" and shows a "Default" profile selected. The "Object Type" is set to "LPR". The interface includes a "Resolution" field showing "1920x1080 pixel" and a "Preview" button. A red box highlights the "Profile" tab in the top navigation bar, and another red box highlights the "LPR" tab in the "Object Type" section. The "License Plate Confidence" field is set to "0.30", with a "Suggested Value: 0.30" displayed. The "License Plate Width size" field is set to "Minimum 40 ~ Maximum --", with a "Suggested Value: 40 ~ --" displayed. The "License Plate Height size" field is set to "Minimum 20 ~ Maximum --", with a "Suggested Value: 20 ~ --" displayed. The background image shows a street scene with a car and a building.

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VEHICLE TYPE & LICENSE PLATE PATTERN



- ❑ **System > Setting** > scroll to **License Plate Recognition** for additional optional settings.
- ❑ **LPR pattern** (Optional): Use to detect **specific license plate patterns ONLY**. To detect every plate, leave this field blank.
- ❑ **Vehicles allowed in LPR**: Enable **specific vehicle object types** to display on the LPR screen for license plate search.
 - ❑ Unselect **uncommon vehicle types** or those **without a license plate** to declutter the results.

VAIDIO® System

General Time Storage Mail Authentication Log Audit Trail License **Setting** AI Model Utility

License Plate Recognition

Enter LPR pattern :

Enter LPR pattern

Fill in vehicle license plate pattern (Optional)

A : Alphabet
9 : Numerical digit
@ : Unicode character except English character
? : don't care

Vehicles allowed in LPR :

Vehicle

- ☒ Vehicle
- ☒ Bicycle
- ☒ Bus
- ☒ Car
- ☒ Forklift
- ☒ Jeepney
- ☒ Motorcycle
- ☒ Tricycle
- ☒ Truck
- ☒ Tuktuk

Select vehicle type(s) to display in LPR results

Theme Selection :

Light Rustic Black

LOGO

LOGO

LOGO

Suggested Value : 3 ~ 60 Seconds.

Log Retention Time : 7 days 3 ~ 365 days

Audit Trail Retention Time : 7 days 3 ~ 365 days

Search Result Display : 1,000 1,000-10,000 Suggested value: 1,000

GPS Map : ☒

Alert acknowledgement : ☒

Show Model in MMR : ☐

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LICENSE PLATE RECOGNITION - DASHBOARD



License Plate Recognition

Dashboard
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Detected information like **License Plate, Vehicle Type, Color, Make** and **Model, US State,** and **Disabled License Plate** displays in the **Vehicle Information** column.

LPR results update in **real-time**.
 Click **Auto-Refresh** to STOP updates.

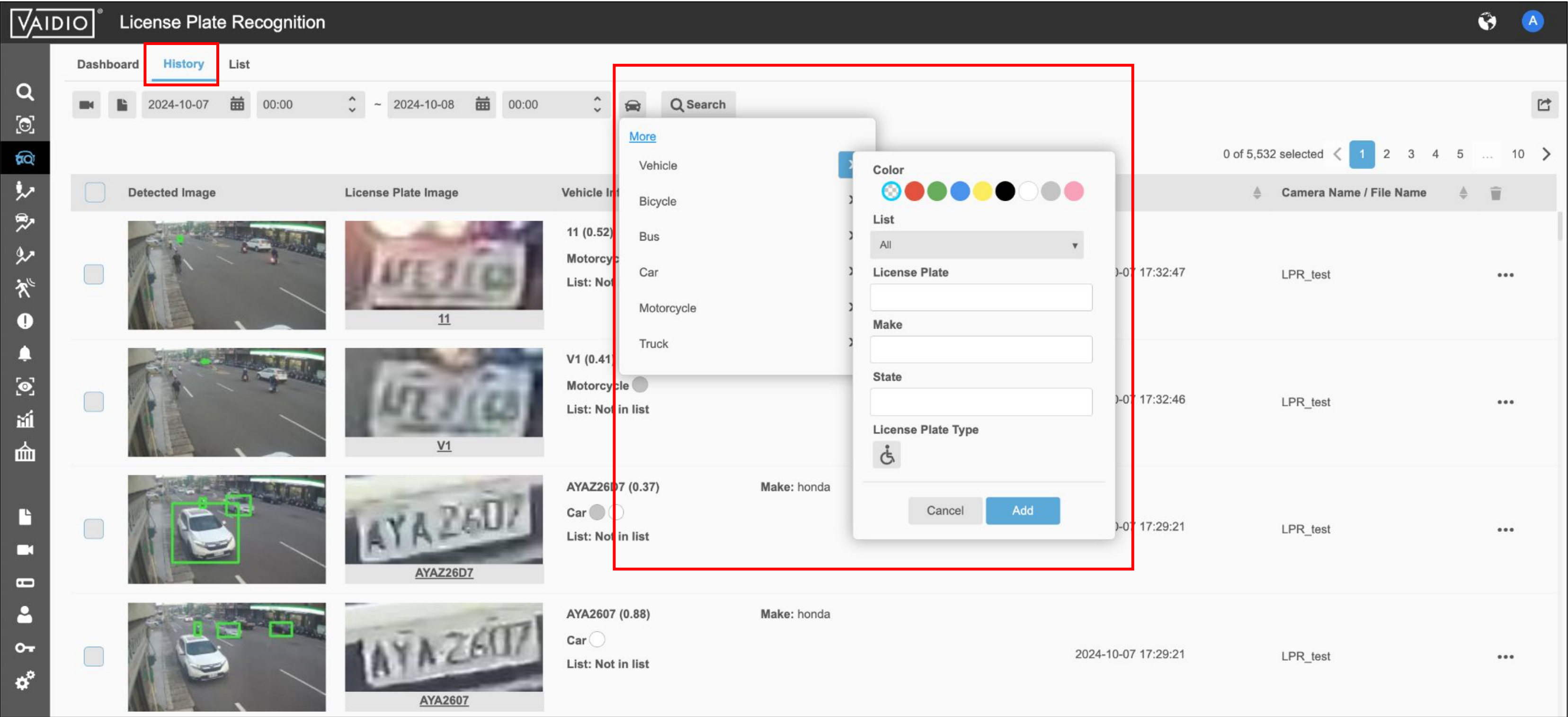
Detected Image	License Plate Image	Vehicle Information	Time		
	 <u>RDX8091</u>	Car ● List: Not in list	2024-10-04 17:09:38		
	 <u>01Y8091</u>	01Y8091 (0.5) Car ● List: Not in list	2024-10-04 17:09:38	LPR_test	...
	 <u>ARP07D5</u>	ARP07D5 (0.91) Car ● ● List: Not in list	2024-10-04 17:09:13	LPR_test	...
	 <u>ARPO0705</u>	ARPO0705 (0.56) Car ● List: Not in list	2024-10-04 17:09:07	LPR_test	...

Recommended Setup:

- ### Recommended Setup:
- ❑ Camera height **<10 ft**, plate tilt **<25°**.
 - ❑ Plate width **≥100 px** for high detection accuracy.

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LICENSE PLATE RECOGNITION - HISTORY



In the **History** tab, filter **License Plate Images** by **type**, **color**, **make**, **model**, **state**, and/or **partial/full license plate** (alphanumeric & special characters allowed).

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LICENSE PLATE LIST



VAIDIO

> License Plate Recognition

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List

+ Add License Plate

License Plate	List	Vehicle Owner
582FT	BUS	
FA0G203	BUS	
4038D0	BUS	
BLP1505	VIP	
MXX7359	VIP	

List

New List

List Name	Created Time	
Zhudong2竹東	07-10 14:19:17	
BUS	07-10 14:26:44	
VIP	07-10 14:24:58	

New List

* List Name :

* List Color :

Cancel

OK

New List: Create a new list.

Edit List: Modify the name/color code of an existing list.

Import List: Upload a .txt file of license plate numbers.

Use color codes to distinguish Lists for clearer event notifications.

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LICENSE PLATE LIST (CONT.)



Set an **expiration date** to **auto-remove** a target. It turns **orange** **seven days** before removal.

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> License Plate Recognition

DashboardHistoryList

List: AllLicense Plate: Search

List

Add License Plate

License Plate	List	Vehicle Owner	Registration Date	Address	Expiration Date	Description	Created Time	
582FT	BUS				2023-07-24		2023-07-10 14:28:06	<div></div> <div></div>
							2023-07-10 14:27:18	<div></div> <div></div>
							2023-07-10 14:27:02	<div></div> <div></div>

Add License Plate

*License Plate :

*List :VIP

Vehicle Owner :

Registration Date :

Address :

Expiration Date :

Description :

Cancel

OK

Add License Plate: Enter the **License Plate** number (no spaces/dashes) from the drop-down menu, select a **List**, and add details if needed.

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LICENSE PLATE LIST (CONT. 2)



Import a **License Plate List** in the following **.txt file format**:

❑ **Plate#/Owner/RegistrationDate/Address/ExpirationDate/Description** (e.g. 123ABC/John Smith/2020-01-01/New York/2024-12-31/Has been terminated)

Fields can be left **empty**, but MUST be separated with a **/**

❑ ABC123/////

❑ ABC/John//NY//

Note

When importing license plate numbers, ensure there are NO **spaces** or **dashes**.

The screenshot shows two windows. The top window, titled 'List', contains a table with the following data:

Created Time	List Name	
2020-07-27 14:59:57	VIP	[Edit] [Import] [Delete]
2020-07-22 12:02:39	Hsinchu Bus	[Edit] [Import] [Delete]

The bottom window is a text editor titled 'license_plate_import_example.txt'. It contains the following text:

```
123ABC/John Smith/2020-01-01/New York/2028-04-01/Not allow entrance - has been terminated
ABC123/////
ABC/John//NY//
```

A red box highlights the 'Import' icon in the 'List' window and the text editor window.

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LICENSE PLATE LIST (CONT. 3)



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License Plate Recognition

DashboardHistoryList

2024-10-0700:002024-10-0800:00

Search

Add License Plate

*License Plate :

*List :

VIP

Vehicle Owner :

Registration Date :

Address :

Expiration Date :

Description :

Cancel

OK

2024-10-07 17:12:32LPR_test

2024-10-07 17:12:32LPR_test

State: US_FL

Add to LPR List

Modify

Delete

Modify

License Plate Detected:

AUF3806

* License Plate :

AUF3806

Cancel

OK

REF83519 (0.42)

Car

List: Not in list

REF83519

Add License plate numbers to a list directly from a Source Image.

Add to LPR List: Directly add a detected license plate to an existing list.

Modify: Correct the detected license plate number if the detection was inaccurate.

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For technical support, please go to the [Support Portal](#) to fill out a ticket.

For additional guides and training, please visit the [Vaidio Partner Portal](#).

Request access at vaidio.ai/support to register for an account.



THANK YOU

For more information, visit [Vaidio Support Page](#) on the Partner Portal