



# How to Improve License Plate Recognition Accuracy at European Sites

**Article ID: GV4-25-09-04-T**

**Release Date: Sep. 4, 2025**

## Applied to

GV-LPR2812-DL

GV-LPR Plugin

## Symptom

License plate recognition accuracy may be low at European sites.

## Solution

To improve recognition accuracy, follow the steps below.

### 1. **Country-specific engine:**

Select the recognition engine that matches the country where the site is located (e.g., the “Germany” engine for a site in Germany).

If recognition accuracy is low after using this engine, or if no country-specific engine exists for that site (e.g., no “Spain” engine available for a Spanish site), continue to the next step.

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**Note:** The available recognition engines vary depending on the chosen GeoVision LPR solution. However, the list of country-specific engines is the same for both “LPR Camera: GV-LPR2812-DL” and “PC-Based LPR: GV-LPR Plugin Deep Learning (DL) Recognition Engines”, as shown below:

- Czech Republic, France, Germany, Hungary, Italy, Lithuania, Netherlands, Romania, Slovakia, Ukraine, United Kingdom
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2. **Pan-Europe engine:**

Select the Pan-Europe engine.

- **For GV-LPR2812-DL:** This engine is referred to as the “European Union” engine.
- **For GV-LPR Plugin DL recognition engines:** This engine is referred to as the “Europe” engine.

If recognition accuracy remains low after using this engine, continue to the next step.

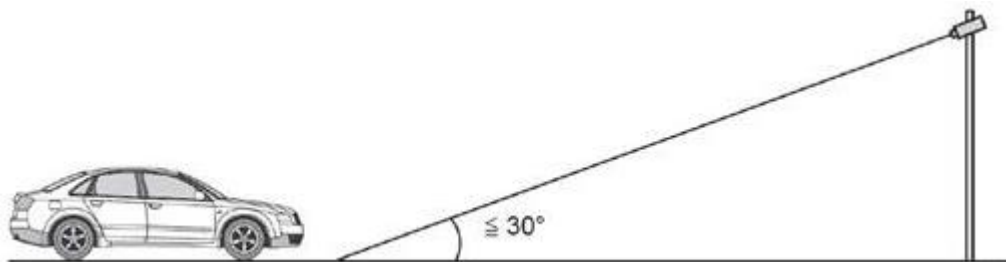
3. **Germany Border engine:**

- **For GV-LPR2812-DL:** Select the “Germany Border” engine. If recognition accuracy remains low after using this engine, continue to the next step.
- **For GV-LPR Plugin DL recognition engines:** The “Germany Border” engine is currently not supported. Continue to the next step.

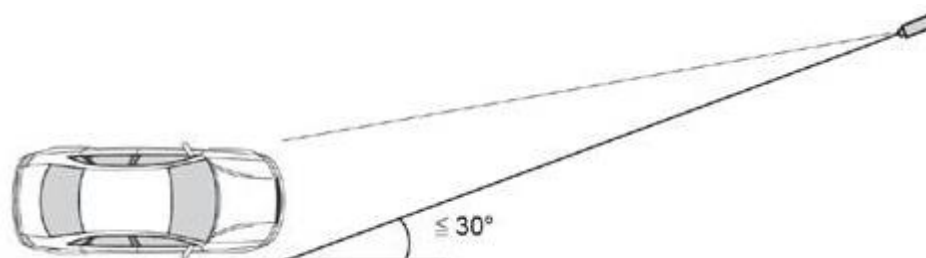
4. **Submit images for training:**

If recognition accuracy still does not improve, submit license plate images from your site to HQ for training. The images must meet the following requirements:

- **License plate height:** Each license plate must be at least 40 pixels high; a height of 50 pixels or less is recommended for optimal recognition accuracy.
- **Camera vertical angle:** When installing the camera, ensure the vertical view angle of the camera is within 30 degrees relative to the license plate.



- **Camera horizontal angle:** When installing the camera, ensure the horizontal view angle of the camera is within 30 degrees relative to the license plate.





- **Color / black-and-white coverage:** Submit images covering both color and black-and-white conditions, with approximately 50% of each, for both initial verification and post-verification.

The submission amounts must be as follows:

- **Initial verification:** First, submit 500 images to HQ for verification of plate height and camera angles.
  - **Post-verification:**
    - **New region training:** If the site is in a region not yet trained (i.e., no supported country-specific recognition engine exists), submit 30,000 images from that region.
    - **Site optimization in trained region:** If the site is in a region already trained (i.e., a supported country-specific recognition engine exists, see Step 1 note), but site optimization is needed, submit two weeks' worth of images from the site.
5. After training, HQ will provide a patch or firmware update to improve recognition accuracy.