

Eagle Eye Application Note - AN036

Configuring Eagle Eye LPR and Brivo Access to Utilize License Plate Credentials

2023-06-22 Revision 1.0

Target Audience

This Application Note is intended for Eagle Eye Networks Cloud VMS administrators who would like to integrate Eagle Eye LPR (License Plate Recognition) with the Brivo Access platform to open gates for vehicle access control through License Plate Credentials. A basic working knowledge of the Eagle Eye Cloud VMS and Eagle Eye LPR is recommended prior to making any changes to configuration settings.

If you need additional details on the camera installation side of LPR (and VSP), please make sure to review the [Camera Installation Considerations for LPR/ANPR](#) Application Note (AN033). There is also an Application Note (AN034) for the configuration of LPR titled, [Configuring LPR in the Eagle Eye VMS](#).

Overview

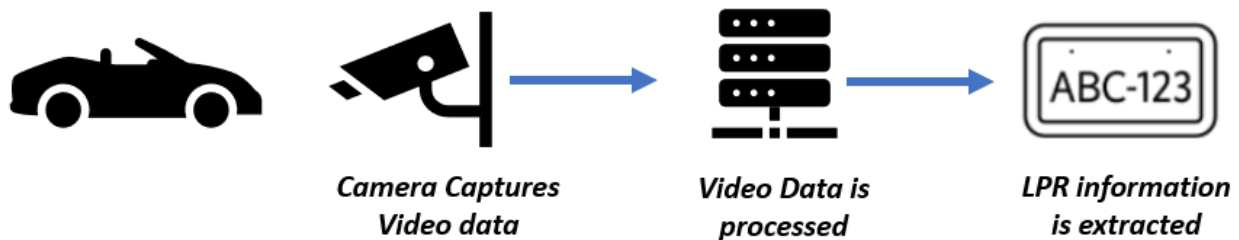
The Eagle Eye Cloud VMS allows for the use of License Plate Recognition (LPR) as a subscription service. This AI-based technology developed specifically by Eagle Eye Networks allows for any compatible model of camera to become a specialized LPR capable camera. The Eagle Eye VSP (Vehicle Surveillance Package) is a prerequisite for the use of LPR. Once enabled, capabilities include; logging, tracking, alerts, and searching for vehicles captured by this Analytic within the VSP Dashboard.

Eagle Eye LPR, when combined with Brivo Access, offers the ability to use License Plate Credentials to automate access to parking facilities by using LPR technology to read the license plate and grant access to authorized vehicles (or send alerts for non-authorized vehicles).

What is LPR?

Eagle Eye LPR is an AI-powered, cloud-managed, highly accurate license plate recognition technology that works with any surveillance camera in all kinds of challenging conditions – increasing business security and efficiency while lowering costs.

LPR stands for License Plate Recognition and is a video analytics solution that enables the reading of vehicle license plate information from the associated video data. Note that in some regions, LPR is referred to as ANPR (Automatic Number Plate Recognition).



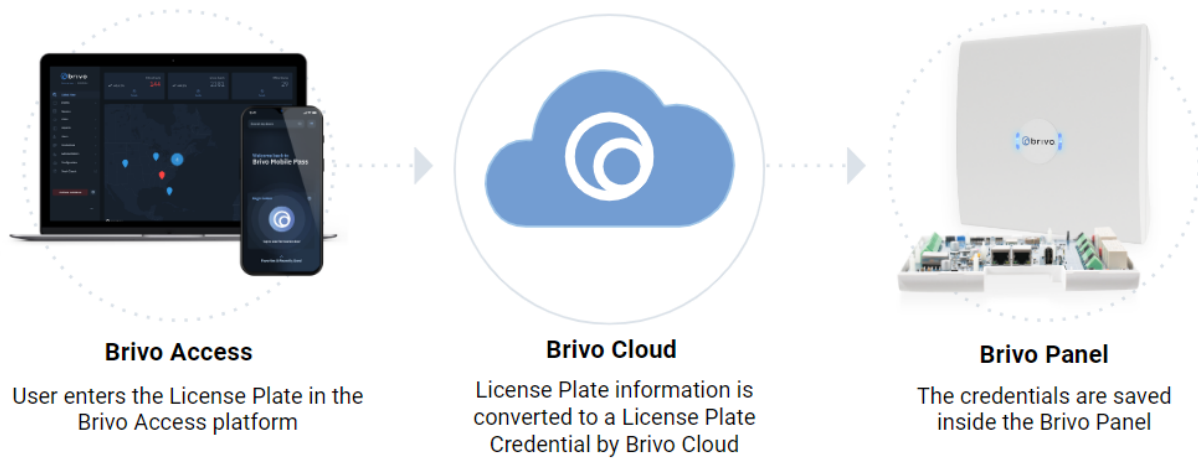
Eagle Eye LPR is offered on compatible Bridges/CMVRS; please refer to the [LPR Datasheet](#) for details of LPR compatible Bridges/CMVRS.

License Plate Credential Through Brivo Access

In the access control world, credentials are what get you into secured areas. Physical badges, keyfobs, or mobile credentials are all common examples. For Brivo and Eagle Eye customers, an additional option is to use a vehicle's license plate as the credential. The License Plate Credential process is further explained below:

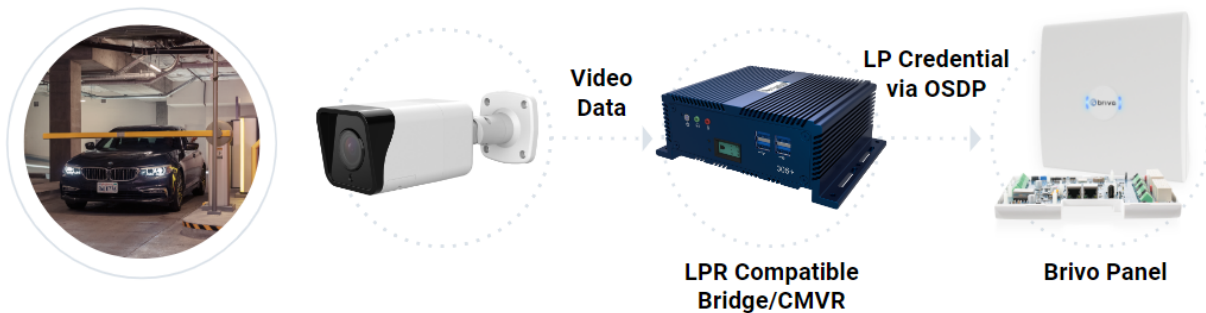
Registering a License Plate on the Brivo Access Platform

Users enroll the license plate into the Brivo Access platform. The entered license plate is then converted to a credential and saved in the Brivo Panel for verification.



Eagle Eye LPR Reads the Vehicle License Plate and Sends it to the Brivo Panel

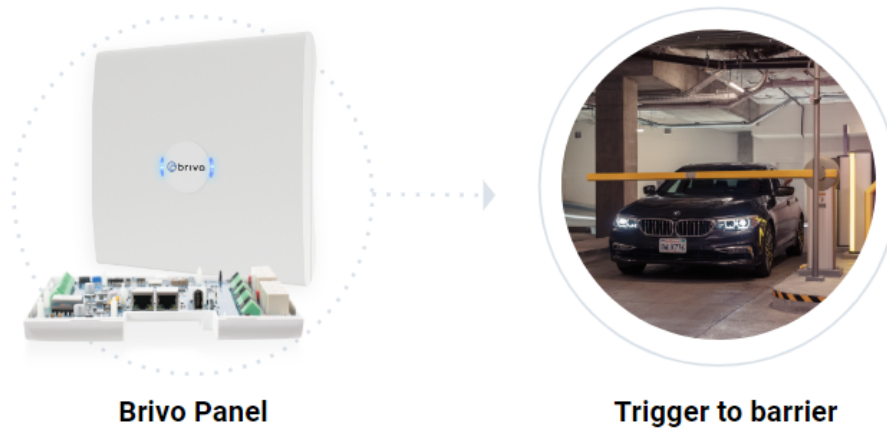
Eagle Eye LPR runs on the Bridge/CMVR and license plate reads are converted to a credential and sent to the Brivo Panel via OSDP (Open Supervised Device Protocol).



The integration between Eagle Eye and Brivo is local, ensuring that access control works even in the event of an internet failure, and updates directly to the Eagle Eye Cloud when the internet resumes.

Brivo Verifies the Credential and Opens the Gate

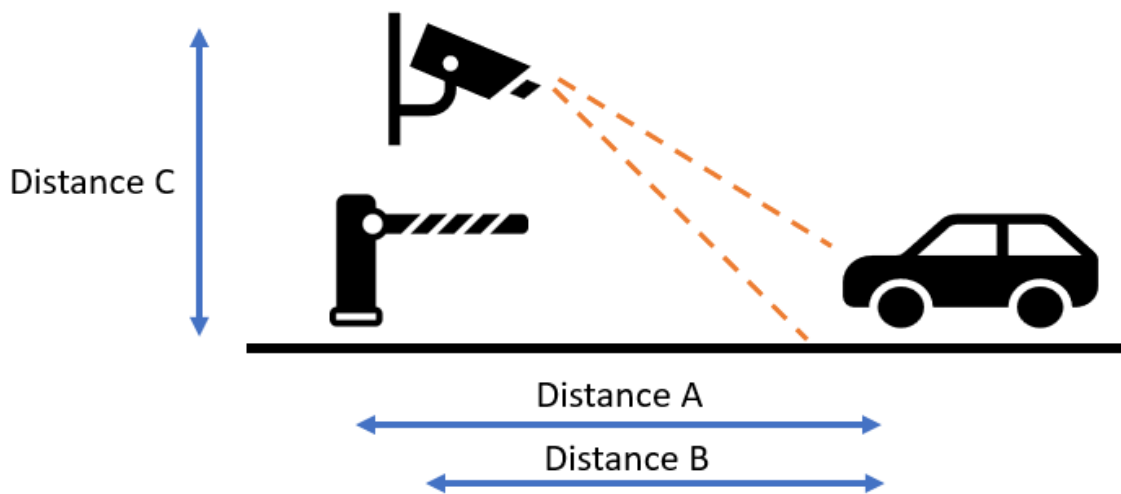
Upon receipt of the credential from Eagle Eye, Brivo then verifies the credential - if it's an authorized credential, it opens the gate as an authorized credential.



Camera Installation Considerations

Camera positioning is paramount to a smooth, high accuracy LPR installation. Once installed properly, implementing and utilizing a License Plate Credential becomes a seamless experience as the gate/barrier or door is automatically opened as authorized vehicles approach.

Front License Plate Capture



Front License Plate Capture Image - explanations detailed below

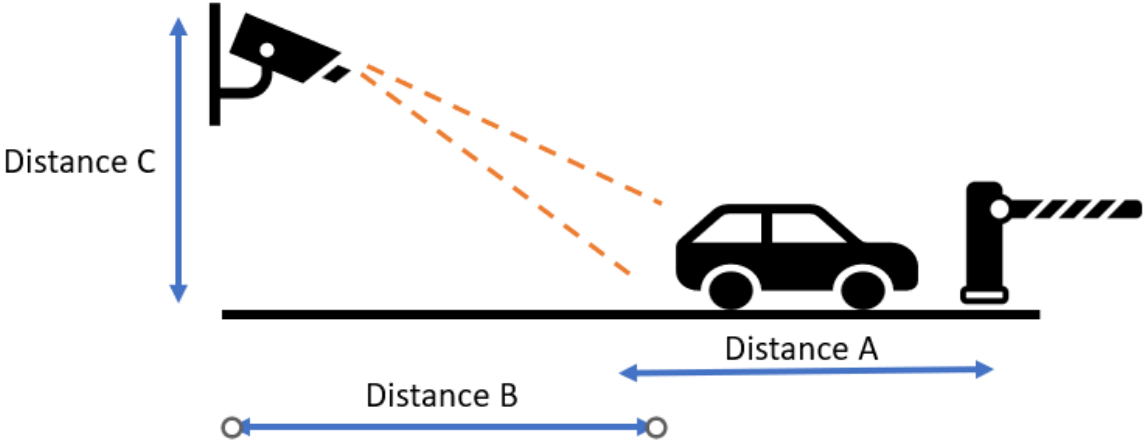
Note: Always keep in mind that the barrier should not block the camera's field of view or it could lead to issues reading license plates. It is also best if the camera is ahead of the gate/barrier.

Distance A - The distance between the barrier to the LPR imaging area. The distance is best kept between 3 - 10 feet (~1 to 3 meters). This is to ensure that the vehicle triggers are sent to the barrier in a timely manner so it opens as the vehicle approaches but no additional space is left to allow for unauthorized vehicle access.

Distance B - The distance between the camera and the LPR imaging area. For gate access control, the distance is best kept between 6 - 12 feet (~2 to 4 meters). Access control necessitates high accuracy, which is only possible if the license plates are best imaged for LPR. A shorter distance allows for a better imaging at night as the IR power can best illuminate plates that are nearby.

Distance C - The height of camera installation. For gate access control, it is best if cameras are positioned between 4 - 8 feet (~1.5 to 2.5 meters). Note that the camera should be angled down by approximately 30 degrees to avoid direct sunlight.

Rear License Plate Capture



Rear License Plate Capture Image - explanations detailed below

Distance A - The distance between the barrier to the LPR imaging area. The distance is best kept between 15 - 25 feet (~5 meters to 8 meters). This is to ensure that vehicle triggers are sent to the barrier in a timely manner so it opens as the vehicle approaches but no space is left to allow for unauthorized vehicle access. The vehicle imaging area considered here is the rear license plate.

Distance B - The distance between the camera and the LPR imaging area. For gate access control, the distance is best kept between 6 - 10 feet (~2 meters to 4 meters). Access control demands high accuracy, which is only possible if license plates are best imaged for LPR. A shorter distance allows for a better imaging at night as the IR power can best illuminate nearby plates.

Distance C - The height of camera installation. For gate access control, it is best if cameras are positioned between 4 - 9 feet (1.5 to 3 meters). The camera should be angled down by approximately 30 degrees to avoid direct sunlight falling on the lens.

Physical Connection

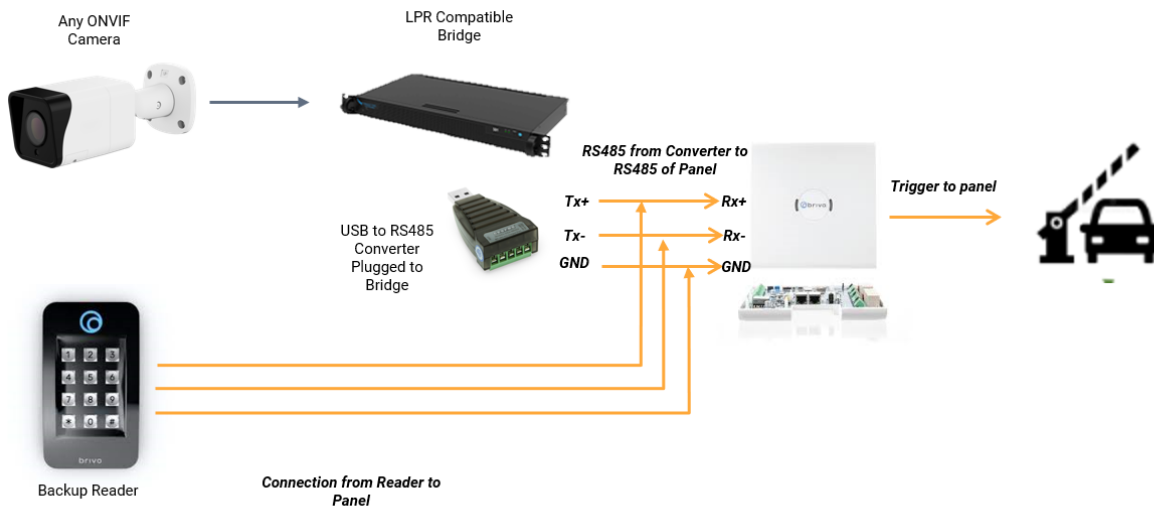
The physical connection between Eagle Eye and Brivo is via OSDP, which is based on a serial interface. A USB to RS485 converter is required in addition to the interface between Eagle Eye Bridge/CMVR to panel.

A couple example product links are below but these specific models don't necessarily need to be used:

Reference Product 1 : [Link](#)

Reference Product 2: [Link](#)

The basic requirement for a USB to RS485 Converter is that it supports the Linux operating system and should have three terminal pins (For D+, D-, and GND). A Bridge/CMVR can support a maximum of up to 4 USB Ports. This is limited with the size of the USB to RS485 Converter being used as some are bulky and do not allow a nearby USB to be plugged into the USB port. If this is the case, please use a USB extender.



LPR systems are not 100% accurate so backup readers are recommended for installs. This also ensures that non-LPR vehicle events are captured in the Brivo Access platform. This might not be a requirement if the gate is staffed at all times and can be manually opened by a person.

Please ensure that you use an OSDP recommended shielded, twisted pair cable between the Eagle Eye Bridge/CMVR and the Brivo Access Panel. It is also recommended to keep the panel and bridge close to each other. For more information on OSDP wiring, please reach out to your Brivo sales or sales engineering representative.

Enabling LPR Analytics and Configuration within Brivo Access

Eagle Eye LPR Analytics are enabled from the Analytics section within the Cloud VMS and can be found under Camera Settings. Once enabled, LPR configuration is accessed by clicking to open LPR Settings. Please make sure the LPR Add-on Feature '**Local ID**' is enabled as this activates the access control tab in the configuration UI.

Enable LPR

Enable Analytics



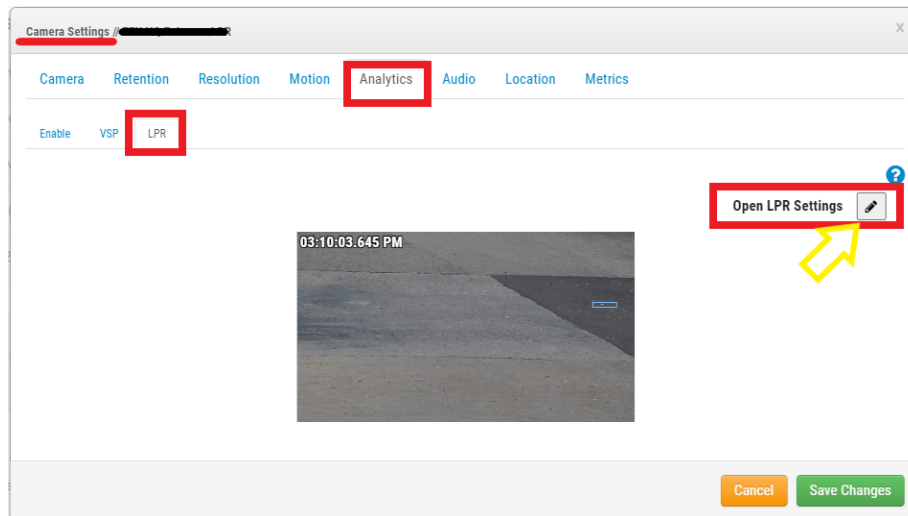
- Counting: **Counting** - Object counting is used to count the number of objects crossing over a line. This can be used for counting cars, people, or other objects. Total count per day is maintained. Graphs are available.
- Line Crossing: **Line Crossing** - Detects when an object crosses a line. Direction may be specified and Notifications may be generated
- Intrusion Detection: **Intrusion Detection** - Intrusion detection is used to generate an alert when an object enters a forbidden area. The forbidden area may be any size and shape. Notifications may be sent.
- Loitering: **Loitering** - Loitering detection is used to generate an alert when a moving object remains in a predefined area for a specific amount of time. Notifications may be sent.
- Tampering: **Tampering** - Tampering detection is used to generate an alert when someone is trying to block the camera's view or the image is greatly altered.
- License Plate Recognition(LPR): **LPR** - License Plate Recognition/ Number Plate Recognition is used to read the license plate of the vehicle. Database functionality is available which allows to have alert for a specific license plates.

LPR Add-On Features

- Local ID** - Enable LPR system to integrate with external access control system using locally stored license plate information.

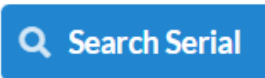
Cancel

Save Changes



Within the LPR Configuration User Interface, a user needs to input standard configuration like Processing Resolution, Frame Rate, and that the Direction of Vehicle

Movement have all been configured for LPR. Note that the Brivo Settings are configured under the Access Control tab.

Integration Type	Brivo
	
USB Convertor Serial Number	
Peripheral Device ID	0

Search Serial : Click on Search Serial and it will show the serial number of USB Converters attached to the Bridge/CMVR. Select the Serial number of the USB Converter corresponding to the door (LPR Lane).

	A10MMNR6 /dev/ttyUSB0
USB Convertor Serial Number	A10MMNR6 /dev/ttyUSB0 A10M23KC /dev/ttyUSB1
Peripheral Device ID	0

USB Converter Serial Number: Once the serial number is selected above, the serial number will be displayed. In case there are troubleshooting needs, the serial number can be verified here.

If the USB Converter is interchanged or replaced with a new USB Converter (within the configuration UI) the user should change the serial number of the USB Converter attached to the camera.

Peripheral Device ID:

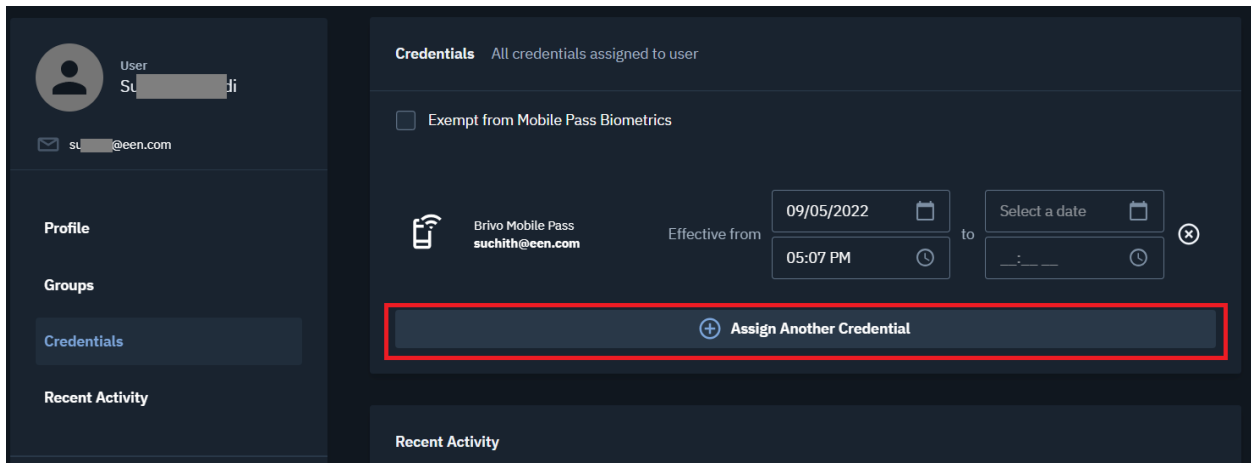
- **0** - If no other reader is connected to the door

- 1 - If any other reader is connected to the door

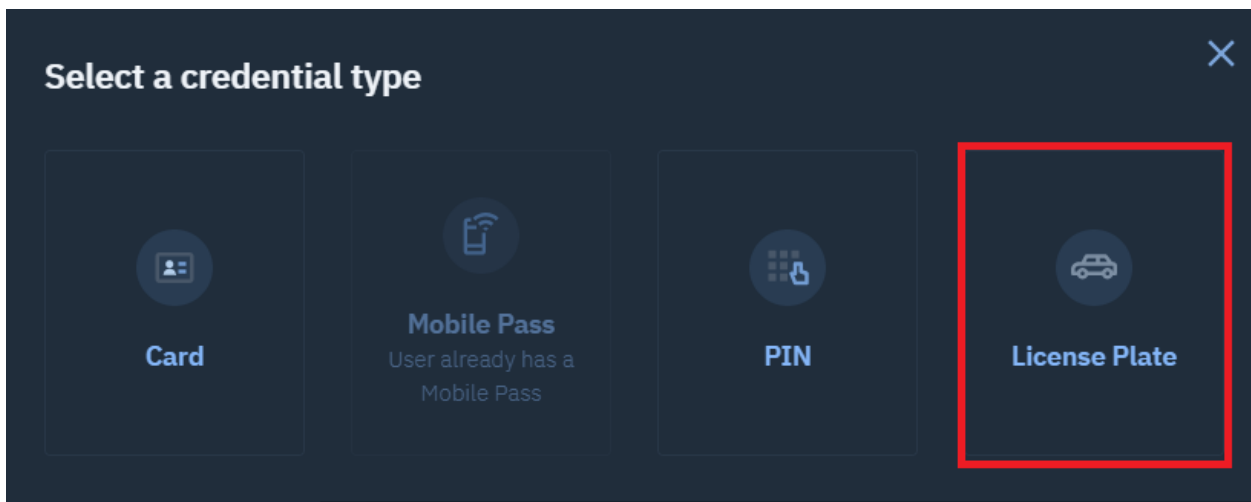
For additional help and assistance, you can contact our Sales Engineering team at se@een.com or Technical Support.

The Brivo Panel should be installed as per the recommendations by Brivo and each camera will be added as a door as per reference document (please reach out to your Brivo representative if you need this).

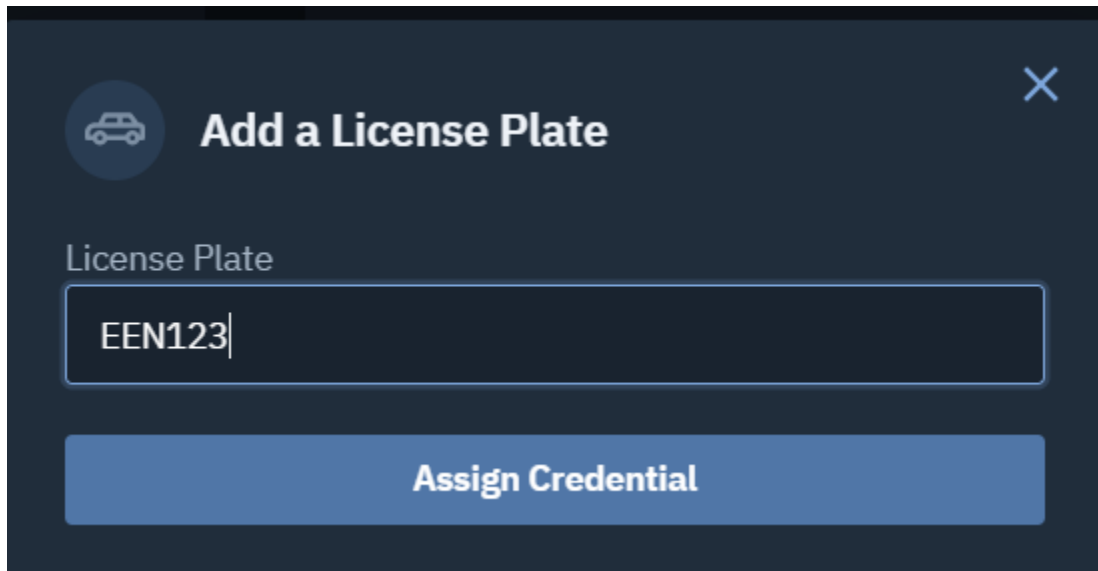
License plates are enrolled within the **User Section**. Add a License Plate Credential for each user by clicking on the plus sign next to **Assign Another Credential Option** as outlined below.



Select **License Plate** to add it as a credential as shown below.



Enter the license plate number without any spaces and click Assign Credential to add the License Plate Credential.



Add a License Plate

License Plate

EEN123

Assign Credential

Related Application Notes and Collateral

AN033 - Camera Installation Considerations for LPR/ANPR - [Link](#)

AN034 - Configuring LPR in Eagle Eye VMS - [Link](#)

AN035 - Configuring VSP in Eagle Eye VMS - [Link](#)

Eagle Eye LPR Brochure - [Link](#)

Eagle Eye Bridge/CMVR Data Sheets - [Link](#)

Eagle Eye LPR Website - [Link](#)