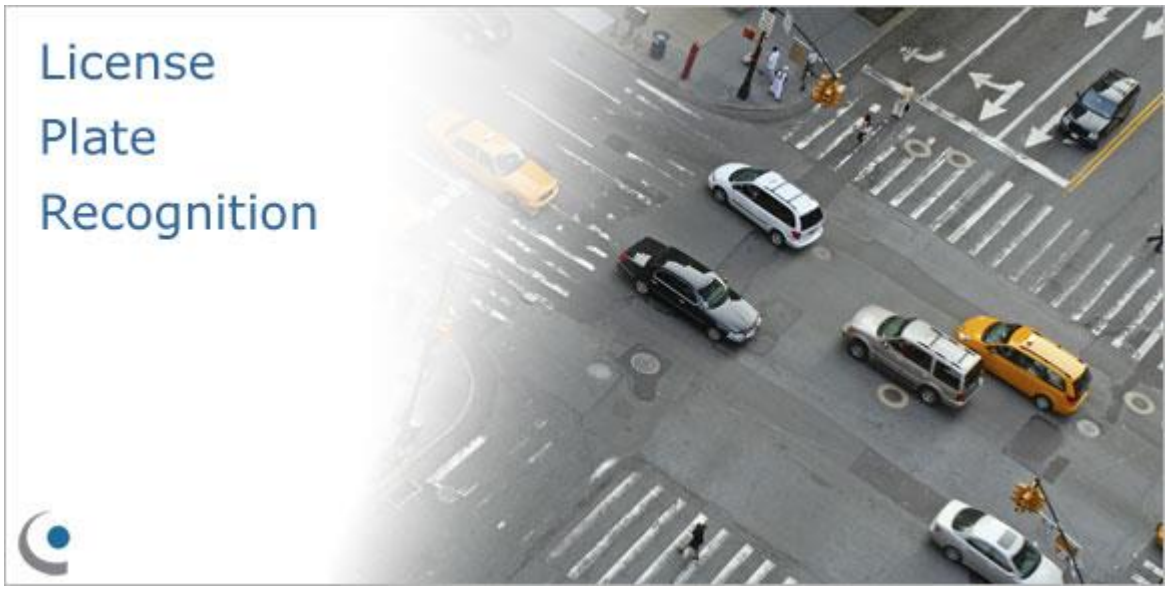
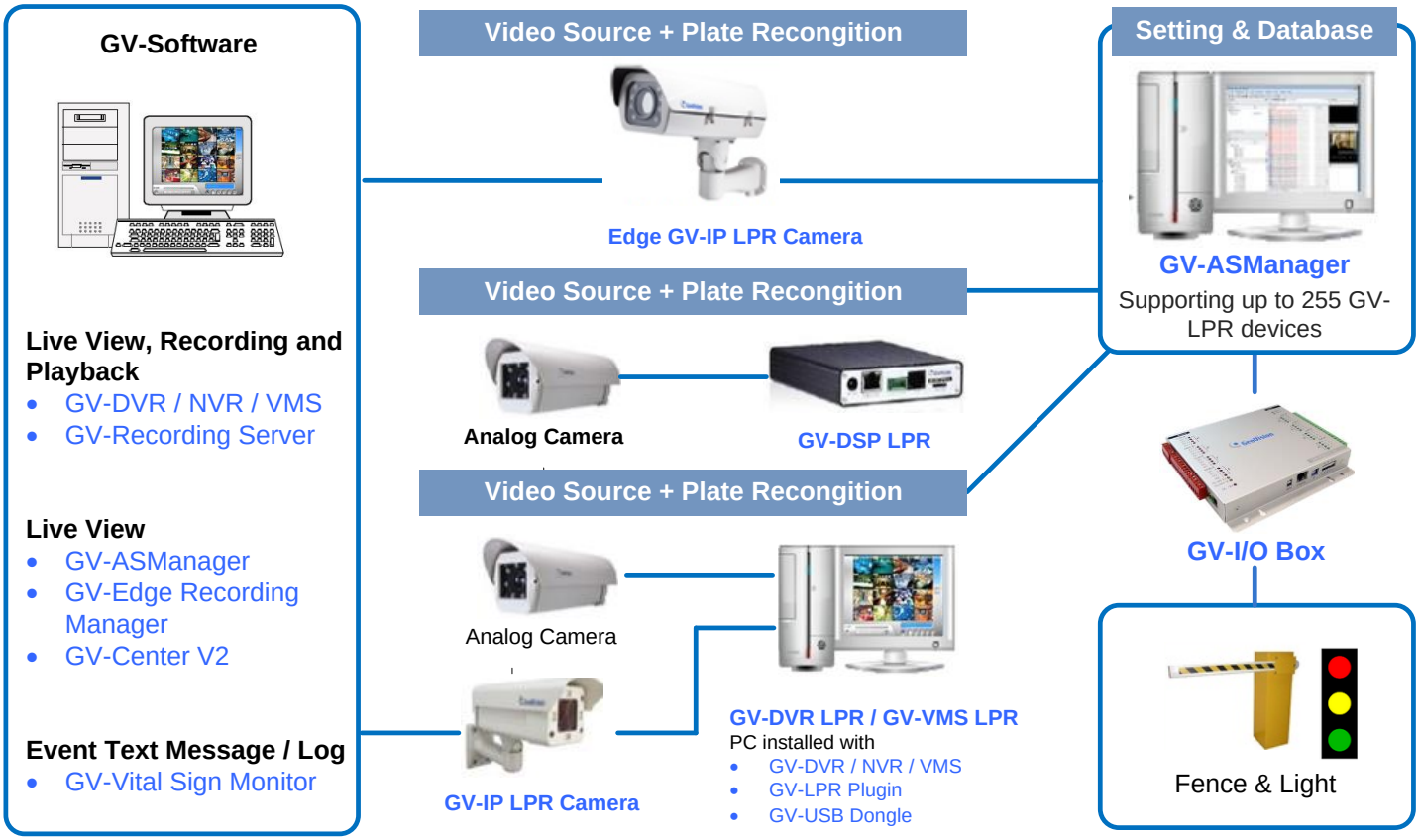


Introduction

GeoVision's License Plate Recognition is an effective and low-maintenance solution to ensure the security of parking lots, which are prone to crimes due to isolated and unstaffed corners. In addition to providing high-resolution video monitoring, the LPR solution can detect and recognize vehicle license plates upon motion or I/O trigger.

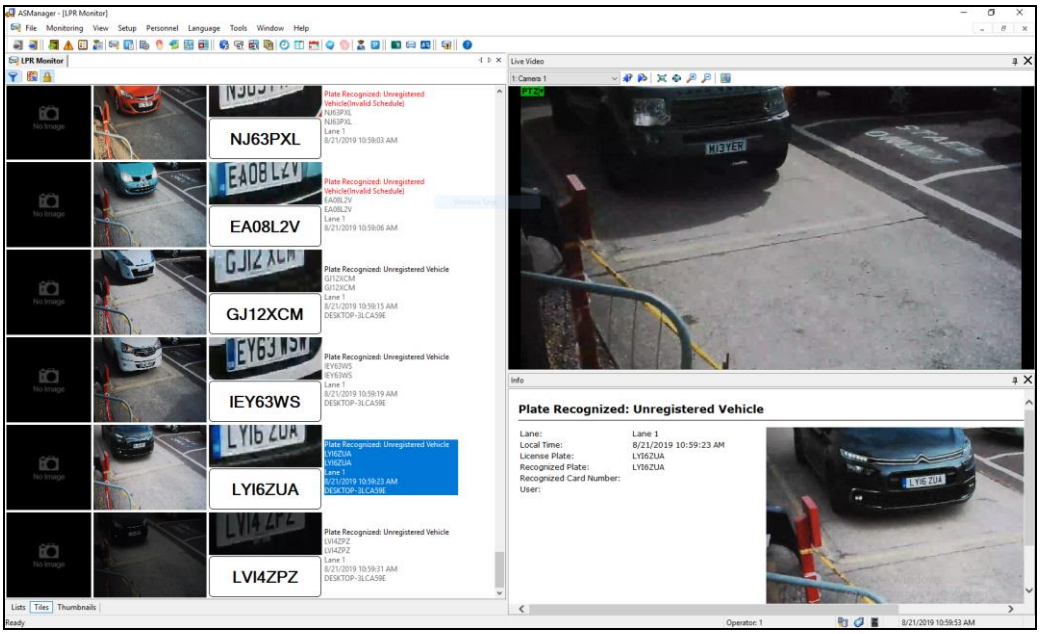
When a GV LPR device -- Edge GV-IP LPR Camera, GV-DSP LPR, or PC-based GV-DVR LPR / VMS LPR -- detects or recognizes license plates in video sources, it sends the LPR results to the access control system GV-ASManager. Access can be granted when the detected license plate numbers match the vehicles registered in GV-ASManager's database. Alarm notifications and playing back LPR results are also supported.



Note: Edge GV-IP LPR Camera includes GV-LPR2811-DL / GV-LPR2800-DL / GV-LPR1200.

Features

- Up to 255 units of GV-DSP LPR, Edge GV-IP LPR Cameras, and PC-based GV-DVR / VMS LPR
- Up to 8 recognition channels per GV-DVR / VMS LPR
- Up to 100,000 vehicle data supported
- Up to 100 Web browser connections supported
- Multiple vehicles assigned to a single user available
- Import / export of vehicle data in Access or Excel file format
- Vehicle hotlist to identify stolen vehicles or vehicles of interest
- Parking lot management to regulate vehicle access, parking space availability, parking duration, anti-passback, and shared parking
- Various notifications upon LPR events: e-mail, alarm, trigger recording, push notification, popup message
- GV-ASWeb to remotely access LPR settings and logs
- GV-Access mobile app to remotely monitor the alert status of each lane, open parking gates, and access live view
- User Interfaces supported in English, French, Hebrew, Japanese, Persian, Polish, Portuguese, Russian, Serbian, Spanish, Traditional Chinese, and Turkish
- DL (Deep Learning) engines supported for PC-based LPR in Europe, France, Germany, Hungary, Israel, Italy, Netherlands, Slovakia, Taiwan, UK, Ukraine, USA (California, Georgia), and Vietnam



System Requirements

GV-ASManager

The following are minimum system requirements to run GV-ASManager.

No of connected controllers	0-50	51-100	101-1000
OS	64-bit Windows 10 / Windows 11 / Server 2016 / Server 2019		
CPU	Intel Core i3, 3.4 GHz (2 Cores, 2 Threads)	Intel Core i5, 3.4 GHz (2 Cores, 2 Threads)	Intel Core i7, 3.0 GHz (4 Cores, 8 Threads)
Memory	8 GB		16 GB
Database	MDB or Microsoft SQL database		Microsoft SQL database
Hard Disk	500 GB		1 TB
VGA	PCI-Express, 1280 x 1024, 32-bit color and support DirectX 10		
DirectX	End-User Runtimes (November 2008)		
Software	.NET Framework 4.5 Microsoft SQL Server 2005 Express (optional)		
Browser	Internet Explorer 9.0 or later		

GV-DVR / NVR / VMS LPR (Machine Learning)

Number of LPR Channels		1-4 Channels	5-8 Channels
OS		64-bit Windows 10 / Windows 11 / Server 2016 / Server 2019 *Windows 11 is only supported by GV-VMS LPR.	
CPU	1.3 M	Intel Core i5 2400, 3.1 GHz	Intel Core i7 2600, 3.4 GHz
	2 M	Intel Core i7 4770, 3.4 GHz	Intel Core i7 6700, 3.4 GHz
Memory		2 x 2 GB Dual Channels	
Hard Disk		500 GB	
Processor Graphics		PCI-Express, 1280 x 1024, 32-bit color and support DirectX 10	
DirectX		End-User Runtimes (November 2008)	
Hardware		External or internal GV-LPR Capture Dongle	
GV-DVR / NVR / VMS		See the *Compatibility between GV-DVR / NVR / VMS and GV-LPR Plugin (Machine Learning)* table below	

Note:

1. It is recommended to use separate PCs for GV-ASManager and GV-DVR / NVR / VMS LPR.
2. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
3. GV-LPR Plugin needs to be downloaded and installed separately.
4. GV-DVR / NVR LPR does not support Authentication Schedule and Card Mode functions.
5. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-DVR / NVR / VMS LPR (Machine Learning) + 32CH 2MP Camera Monitoring

Number of LPR Channels		**1-4 Channels**	**5-8 Channels**
OS		64-bit Windows 10 / Windows 11 / Server 2016 / Server 2019 *Windows 11 is only supported by GV-VMS LPR.	
CPU	1.3 MP	Intel Core i7 3770, 3.4 GHz	Intel Core i7 4770, 3.4 GHz
	2 MP		
Memory		2 x 4 GB Dual Channels	
Hard Disk		500 GB	
Processor Graphics		PCI-Express, 1280 x 1024, 32-bit color and support DirectX 10	
DirectX		End-User Runtimes (November 2008)	
Hardware		External or internal GV-LPR Capture Dongle	
GV-DVR / NVR / VMS		See the *Compatibility between GV-DVR / NVR / VMS and GV-LPR Plugin (Machine Learning)* table below	

Note

1. It is recommended to use separate PCs for GV-ASManager and GV-DVR / NVR / VMS LPR.
2. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
3. GV-LPR Plugin needs to be downloaded and installed separately.
4. GV-DVR / NVR LPR does not support Authentication Schedule and Card Mode functions.
5. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-VMS LPR (Machine Learning) + 64CH 2MP Camera Monitoring

Number of LPR Channels		**1-4 Channels** (*only up to 4 LPR channels are supported)
OS		64-bit Windows 10 / Windows 11 / Server 2016 / Server 2019
CPU	1.3 MP	Intel Core i7 6770, 3.4 GHz
	2 MP	
Memory		2 x 4 GB Dual Channels
Hard Disk		500 GB
Processor Graphics		PCI-Express, 1280 x 1024, 32-bit color and support DirectX 10
DirectX		End-User Runtimes (November 2008)
Hardware		External or internal GV-LPR Capture Dongle
GV-VMS		See the *Compatibility between GV-DVR / NVR / VMS and GV-LPR Plugin (Machine Learning)* table below (*only GV-VMS is supported)

Note:

1. It is recommended to use separate PCs for GV-ASManager and GV-VMS LPR.
2. GV-LPR Plugin needs to be downloaded and installed separately.
3. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
4. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-NVR / VMS LPR (Deep Learning)

Number of LPR Channels		1-4 Channels	5-8 Channels
OS		64-bit Windows 10 (version 1909 or later) / Windows 11 (version 21H2) / Server 2019 (version 1909 or later) *Windows 11 is only supported by GV-VMS LPR	
CPU	1.3 MP	Intel Core i5 7600, 4.1 GHz	Intel Core i7 7700, 4.2 GHz
	2 MP		
Memory		2 x 8 GB Dual Channels	
Hard Disk		500 GB	
Processor Graphics		Intel UHD Graphics 630 or Intel HD Graphics 630 Driver date: 2019/09/25 or later Driver version: 26.2.100.7262 or later	
Hardware		External or internal GV-LPR Capture Dongle	
GV-NVR / VMS		See the *Compatibility between GV-NVR / VMS and GV-LPR Plugin (Deep Learning)* table below	

Note:

1. It is recommended to use separate PCs for GV-ASManager and GV-NVR / VMS LPR.
2. GV-LPR Plugin needs to be downloaded and installed separately.
3. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
4. The utilization of the graphics processor of 7th-gen Intel Core i5 / i7 or above is required, which only works when a monitor is connected to its PC, and only Intel Core processors are compatible. Other brands of CPU do not work with the DL engine.
5. DL engines only support H.264 and H.265 video codecs with resolutions of **1920 x 1080 and 1280 x 720**.
6. DL engines do not support the recognition of two-line plates.
7. The minimum height of license plates required for recognition is 40 pixels.
8. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-NVR / VMS LPR (Deep Learning) + 32CH 2MP Camera Monitoring

Number of LPR Channels		1-8 Channels
OS		64-bit Windows 10 (version 1909 or later) / Windows 11 (version 21H2) / Server 2019 (version 1909 or later) *Windows 11 is only supported by GV-VMS LPR.
CPU	1.3 MP	Intel Core i7 8700, 4.6 GHz
	2 MP	
Memory		2 x 8 GB Dual Channels
Hard Disk		500 GB
Processor Graphics		Intel UHD Graphics 630 or Intel HD Graphics 630 Driver date: 2019/09/25 or later Driver version: 26.2.100.7262 or later
Hardware		External or internal GV-LPR Capture Dongle
GV-NVR / VMS		See the *Compatibility between GV-NVR / VMS and GV-LPR Plugin (Deep Learning)* table below

Note:

1. It is recommended to use separate PCs for GV-ASManager and GV-NVR/VMS LPR.
2. GV-LPR Plugin needs to be downloaded and installed separately.
3. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
4. The utilization of the graphics processor of 8th-gen Intel Core i7 or above is required, which only works when a monitor is connected to its PC, and only Intel Core processors are compatible. Other brands of CPU do not work with the DL engine.
5. DL engines only support H.264 and H.265 video codecs with resolutions of **1920 x 1080 and 1280 x 720**.
6. DL engines do not support the recognition of two-line plates.
7. The minimum height of license plates required for recognition is 40 pixels.
8. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-VMS LPR (Deep Learning) + 64CH 2MP Camera Monitoring

Number of LPR Channels		**1-4 Channels** (*only up to 4 LPR channels are supported)
OS		64-bit Windows 10 (version 1909 or later) / Windows 11 (version 21H2) / Server 2019 (version 1909 or later)
CPU	1.3 MP	Intel Core i7 9700, 4.7 GHz
	2 MP	
Memory		2 x 8 GB Dual Channels
Hard Disk		500 GB
Processor Graphics		Intel UHD Graphics 630 or Intel HD Graphics 630 Driver date: 2019/09/25 or later Driver version: 26.2.100.7262 or later
Hardware		External or internal GV-LPR Capture Dongle
GV-VMS		See the *Compatibility between GV-NVR / VMS and GV-LPR Plugin (Deep Learning)* table below (*only GV-VMS is supported)

Note:

1. It is recommended to use separate PCs for GV-ASManager and GV-VMS LPR.
2. GV-LPR Plugin needs to be downloaded and installed separately.
3. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
4. The utilization of the graphics processor of 9th-gen Intel Core i7 or above is required, which only works when a monitor is connected to its PC, and only Intel Core processors are compatible. Other brands of CPU do not work with the DL engine.
5. DL engines only support H.264 and H.265 video codecs with resolutions of **1920 x 1080 and 1280 x 720**.
6. DL engines do not support the recognition of two-line plates.
7. The minimum height of license plates required for recognition is 40 pixels.
8. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

License Purchase

Free License	N/A
Maximum License	8 channels
Increment for Each License	1 channel
Dongle Type	Internal or external
Optional Combinations	1. LPR 2. GV-VMS + LPR (1 to 8 licenses) 3. GV-NVR + LPR (1 to 8 licenses) 4. GV-DVR + LPR (1 to 8 licenses)

Note: LPR dongles can be used in conjunction with GV-VMS Software Licenses.

Compatibility between GV-DVR / NVR / VMS and GV-LPR Plugin (Machine Learning)

GV-DVR / NVR	**GV-ASManager 5.1.1:** (GV-LPR Plugin V5.1.4.A) + V8.8.0 **GV-ASManager 5.2.0:** (GV-LPR Plugin V5.3.0) + V8.8.0 **GV-ASManager 5.3.0 – 5.3.1:** (GV-LPR Plugin V5.3.1) + V8.8.0 **GV-ASManager V5.3.2:** (GV-LPR Plugin V5.3.2) + V8.9.1 **GV-ASManager V5.3.2 – V5.3.3**: (GV-LPR Plugin V5.3.2 – V5.3.3) + V8.9.1 **GV-ASManager V5.3.4**: (GV-LPR Plugin V5.3.4) + V8.9.1 **GV-ASManager V6.0.0:** (GV-LPR Plugin V6.0.0) + V8.9.1
GV-VMS	**GV-ASManager 5.1.1**: (GV-LPR Plugin V5.1.2) + V17.1.0 **GV-ASManager 5.2.0**: (GV-LPR Plugin V5.3.0) + V17.3.0 **GV-ASManager V5.3.2 – V5.3.3:** (GV-LPR Plugin V5.3.2 – V5.3.3) + V17.4.1 / V18.2.1 **GV-ASManager V5.3.4:** (GV-LPR Plugin V5.3.4) + V17.4.3 / V18.2.1 **GV-ASManager V6.0.0:** (GV-LPR Plugin V6.0.0) + V17.4.3 / V18.2.1

Compatibility between GV-NVR / VMS and GV-LPR Plugin (Deep Learning)

GV-NVR	**GV-ASManager 5.3.0 – 5.3.1**: (GV-LPR Plugin V5.3.1) + V8.8.0 **GV-ASManager V5.3.2 – V5.3.3**: (GV-LPR Plugin V5.3.2 – V5.3.3) + V8.9.1 **GV-ASManager V5.3.4**: (GV-LPR Plugin V5.3.4) + V8.9.1 **GV-ASManager V6.0.0:** (GV-LPR Plugin V6.0.0) + V8.9.1
GV-VMS	**GV-ASManager 5.3.0 – 5.3.1**: (GV-LPR Plugin V5.3.1) + V17.3.0 / V18.1.1 **GV-ASManager V5.3.2 – V5.3.3:** (GV-LPR Plugin V5.3.2 – V5.3.3) + V17.4.1 / V18.2.1 **GV-ASManager V5.3.4:** (GV-LPR Plugin V5.3.4) + V17.4.3 / V18.2.1 **GV-ASManager V6.0.0:** (GV-LPR Plugin V6.0.0) + V17.4.3 / V18.2.1

GV-DSP LPR and GV-LPR1200 Compatible Versions

GV-ASManager V4.2.1 – 4.2.2 is only compatible with GV-DSP LPR firmware V2.0.3.

GV-ASManager V4.2.3 is only compatible with GV-DSP LPR firmware V2.0.4.

GV-ASManager V4.3 – 4.3.5 is only compatible with GV-DSP LPR firmware V2.10 and GV-LPR1200 V1.01.

GV-ASManager V4.4 – 4.4.3 is only compatible with GV-DSP LPR firmware V2.20 and GV-LPR1200 V1.1.

GV-ASManager V5.0 – 5.0.2.0 is only compatible with GV-DSP LPR firmware V2.30 and GV-LPR1200 V2.0.

GV-ASManager V5.1.0.0 – 5.3.3 is only compatible with GV-DSP LPR firmware V2.33 and GV-LPR1200 V2.03.

Machine Learning (ML) Recognition Engines for PC-based LPR

	Argentina		Australia		Austria		Belgium
	Brazil		Canada		China		Chile
	Columbia		Croatia		Czech Republic		France
	Germany		Hungary		India		Ireland
	Israel		Italy		Morocco		Mexico
	Norway		Poland		Portugal		Qatar
	Russia		Slovakia		South Africa		Spain
	Taiwan		UK		USA		Vietnam

Note: There is a Global version which is suitable for most of the other countries. More are to be implemented.

Deep Learning (DL) Recognition Engines for PC-based LPR

	Europe		France		Germany		Hungary
	Israel		Italy		Netherlands		Slovakia
	Taiwan		UK		Ukraine		USA - California
	USA - Georgia		Vietnam				

Note: The DL recognition engines are only supported by GV-LPR Plugin V5.3.1 or later.

Options

For GV-DVR / NVR / VMS LPR

GV-IO Box Series	GV-IO Box series provides 4 / 8 / 16 inputs and relay outputs, and supports both DC and AC output voltages, with optional support for Ethernet module and 4E additionally supporting PoE connection.
GV-LPC1200	GV-LPC1200 is a 1 MP B/W network camera designed for recognition of reflective license plates on vehicles traveling at 200 km/h (124.27 mph) or less.
GV-LPR1200	GV-LPR1200 is a 1 MP B/W network camera designed for recognition of reflective license plates on vehicles traveling at 200 km/h (124.27 mph) or less. With a built-in LPR processor, the camera can recognize the plate numbers and comparing the captured license plates on edge.
GV-LPC2210	GV-LPC2210 is a 2 MP color network camera designed for recognition of reflective license plates on vehicles traveling up at 120 km/h (75 mph) or less.
GV-LPC2211	GV-LPC2211 is a 2 MP color network camera designed for recognition of reflective license plates on vehicles traveling up at 120 km/h (75 mph) or less.
GV-LPC2011	GV-LPC2011 is a 2 MP color network camera designed for recognition of reflective license plates on vehicles traveling up at 60 km/h (37 mph) or less.
GV-LPR2800-DL	GV-LPR2800-DL is a deep learning, varifocal, 2 MP color network camera designed for recognition of non-reflective license plates on vehicles traveling at up to 100 km/h (62 mph).
GV-LPR2811-DL	GV-LPR2811-DL is a deep learning, motorized, 2 MP color network camera designed for recognition of non-reflective license plates on vehicles traveling at up to 100 km/h (62 mph).