# Architectural and Engineering Specifications

# GeoVision License Plate Recognition Cameras

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*The document is written using industry standard formatting and language, and is designed for use by architects, consultants, and specifying engineers who are preparing bid specifications for security cameras, surveillance systems and access control systems.*

*The electronic version of these specifications may be copied into the appropriate sections of a complete bid specification by using the "cut and paste" method. They are written to highlight the features and specifications of GeoVision products. Specific models mentioned are only for clarity – these may be deleted after insertion into the complete specification.*

*Products covered in this document include:*

***GV-LPC2211 / 2011 (P-Iris model)***

*The LPR IP camera is a color network camera specifically designed for recognition of reflective license plates on vehicles. This camera adheres to IP67 and IK10 protection standards. With the equipped automatic IR-cut filter and IR LEDs, the camera provides a complete day and night surveillance solution. The motorized varifocal lens takes the advantage of its motorized focus / zoom in that the user can remotely adjust the focus and zoom through the Web interface. The camera also allows automatic and precise control of exposure using its P-Iris, producing images with better clarity and contrast.*

*GV-LPC2211 / 2011 shall work with the following software and hardware for license plate recognition or surveillance use.*

- ***GV-DVR / NVR / VMS**: GV-DVR / NVR / VMS software*
- ***GV-DVR / NVR / VMS LPR:** GV-DVR / NVR /VMS software with LPR processor*

All specifications are subject to change. For more information on GeoVision products, please visit www.geovision.com.tw.

# GV-IP LPR Camera

## A. General Requirements

1. The camera shall be capable of capturing reflective license plates on vehicle traveling under the following speed:

| Models | Vehicle Speed |
|---|---|
| GV-LPC2211 | 120 km/h (75 mph) |
| GV-LPC2011 | 60 km/h (37 mph) |

2. The camera shall be a dual-stream, day/night, and color network camera equipped with the following image sensor:

| Models | Image Sensor |
|---|---|
| GV-LPC2211 / 2011 | 1/2.8” color progressive scan super low lux CMOS |

3. The camera shall process one video stream in two different settings. The main / sub stream shall utilize H.264 and MJPEG video compression methods with the maximum resolution and frame rate as below.

| Models | Streams | Max. Resolution & Frame Rate |
|---|---|---|
| GV-LPC2211 / 2011 | Main stream | 1920 x 1080 at 30 fps (60/50 Hz) |
| | Sub stream | 640 x 360 at 30 fps (60/50 Hz) |

4. The camera shall be capable of filtering out the background of license plates and capturing only the license plate numbers.
5. Under low-light conditions, the camera shall be capable of producing clear license plate capture with IR LED or IR illuminator turned on.
6. The camera shall support capturing license plates for two (2) lanes in a single shot.
7. The camera shall be able to transmit the images of license plates to GV-DVR / NVR / VMS LPR (GV-DVR / NVR / VMS software with LPR processor).
8. The camera shall be capable of connecting with GV-DVR / NVR / VMS to transmit the vehicle images for live monitoring.
9. Up to eight (8) streams shall be supported simultaneously over the network. When one camera is connected to IE browser or any other application, it takes up one (1) stream. When one camera is connected to GV-DVR / NVR / VMS, it takes up two (2) streams.
10. The camera shall provide administrator and guest level settings on the Web interface. The administrator account shall have full access to all functions, and the guest account shall have access to camera live video and network status information only.

**B. Alarm and Notification Requirements**

1. The camera shall be capable of motion detection.
2. A privacy mask function shall be provided to allow users to specify areas of the image to be blocked off on the camera view for privacy purpose. The function shall also be supported through ONVIF/RTSP connection.
3. The camera shall support tampering alarm such that an E-mail notification shall be triggered when the camera is being tampered with.
4. The camera shall have E-mail and FTP ability for alert notification.
5. The camera shall be capable of integration with video surveillance/management software or a central monitoring station. The video or text alerts shall be sent upon alarm event.

## C. Recording and Playback Requirements

1. The camera shall be capable of beginning recording according to a schedule and upon motion detection.
2. The camera shall be able to connect to GV-DVR / NVR / VMS for live monitoring of vehicles and recording.
3. The camera shall be able to connect to GV-DVR / NVR / VMS LPR (GV-DVR / NVR / VMS with LPR processor) for license plate recognition and recording.
4. Users shall be able to play back recorded data on the GV-DVR / NVR / VMS over network.

## D. Video Requirements

1. The camera shall support both constant bitrate (CBR) and variable bitrate (VBR). For variable bitrate (VBR), the maximal bit rate shall be selectable to restrict the system from exceeding a specified bit rate.
2. The camera shall have both automatic shutter and manual shutter with a speed range of 1/120 – 1/2000 seconds.
3. The following image settings shall be adjustable from the Web interface of the camera: brightness, contrast, saturation, sharpness, gamma, auto exposure, white Balance, flicker less, image orientation, shutter speed, maximum video gain, D/N sensitivity, denoise, defog, metering.
4. The camera shall be equipped with motorized varifocal lens and support remote focus and zoom change through the Web interface. The user shall be able to focus in and focus out.
5. The camera shall support the super low lux function with which the camera can display color live views in near darkness.
6. The camera shall support one aspect ratio: 16:9.

| | | | |
|---|---|---|---|
| **GV-LPC2211 / 2011** | **Main Stream** | **16:9** | 1920 x 1080 (Default), 1280 x 720 |
| | **Sub Stream** | **16:9** | 640 x 360 |

7. The S/N ratio for the camera shall be 56 dB.

## E. Networking Requirements

1. Network interface shall be via an Ethernet (10/100 Base-T), RJ-45 connector.
2. The camera shall be built with a Web server with which the live view is accessible using Web browsers, without the need for special viewer software.
3. The camera shall support the following network protocols: HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, SNMP, QoS (DSCP), ONVIF (Profile S).
4. Users shall be able to configure port settings.
5. The camera shall be capable of setting IP filtering to restrict access to the camera.
6. QoS (DSCP) shall be supported to allow differentiated bandwidth control.

## F. Lens Requirements

1. The camera shall be equipped with a lens of the lens type and focal length as below.

| Models | Lens Type | Focal Length |
|---|---|---|
| GV-LPC2211 | 2.5x optical zoom, motorized varifocal lens with P-iris | 9 ~ 22 mm |
| GV-LPC2011 | 3x optical zoom, motorized varifocal lens with P-iris | 3 ~ 9 mm |

2. The camera shall have a maximum aperture as below.

| Models | Max. aperture |
|---|---|
| GV-LPC2211 | F/2.0 ~ F/3.5 |
| GV-LPC2011 | F/1.7 |

3. The camera shall be equipped with a removable IR-cut filter to switch from color to monochrome mode automatically by sensing the illumination level.

4. The camera shall be equipped with 24 IR LEDs with the maximum IR distance described below.

| Models | Maximum IR Distance |
|---|---|
| GV-LPC2211 | 10 ~ 20 m (32.8 ~ 65.6 ft) |
| GV-LPC2011 | 5 ~ 9 m (16.4 ~ 29.6 ft) |

5. The camera shall have the image format of 1/2.7 inch.
6. The dynamic range for each model shall be as described below.

| Models | Dynamic Range |
|---|---|
| GV-LPC2211 / 2011 | Up to 72 dB |

7. The horizontal field of view for each model shall be as described below.

| Models | Horizontal FOV |
|---|---|
| GV-LPC2211 | 39° ~ 17° |
| GV-LPC2011 | 102° ~ 40° |

8. The camera shall have the minimum illumination as described below.

| Models | Minimum Illumination |
|---|---|
| GV-LPC2211 / 2011 | 0.05 lux in color mode<br>0.04 lux in B/W mode<br>0 lux with IR on |

**G. Mechanical Requirements**

1. The camera body shall have the dimensions of 142.14 x 77.72 x 102.75 mm / 5.6 x 3.06 x 4.05 in (with supporting rack).
2. The camera shall weigh 810 g (1.8 lb).
3. The camera shall be of ø 14 mm lens mount.
4. The camera shall have a built-in temperature detector to detect the chipset temperature inside the camera.
5. The camera shall support a panning range of 0° ~ 360°, and a tilting range of 90° ~ 180°.
6. The camera shall support ceiling and wall installation with the standard package.

## H. Power Requirements

1. Power shall be connected using the optional power adapter or the Power over Ethernet (PoE).
2. The camera shall be capable of receiving power from 12V DC and IEEE802.3af Power over Ethernet (PoE).
3. The camera shall have a maximum power consumption of 12.3 W.

## I. I. Environmental Requirements

1. The camera shall be able to tolerate between -20°C ~ 50°C (-4°F ~ 122°F) at startup and -30°C ~ 50°C (-22°F ~ 122°F) during operation.
2. The humidity shall be within the range of 10% to 90% with no condensation.
3. The camera shall comply with IP67 protection classification.
4. The camera shall comply with IK10 vandal resistance.

## J. System Requirements

1. The camera shall be accessible through Web browsers including Microsoft Internet Explorer (version 8.0 or later), Google Chrome, Mozilla Firefox, Safari and Microsoft Edge.
2. The camera shall support the following languages on the Web interface: Arabic, Bulgarian, Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hebrew, Hungarian, Indonesian, Italian, Japanese, Lithuanian, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Serbian, Simplified Chinese, Slovakian, Slovenian, Spanish, Swedish, Thai, Traditional Chinese and Turkish.

## K. Certifications and Approvals

1. CE, FCC, RCM, RoHS Compliant

## L. Packing List

1. The GV-LPC2211 / 2011 camera
2. Sun-shield Cover
3. Screw for Sun-shield Cover x 2
4. Screw for Supporting Rack x 3
5. Screw Anchor x 3
6. Silica Gel Bag
7. Washer x 2
8. Terminal Block
9. Screw for Mounting Kit x 3
10. Nut for Mounting Kit x 3
11. Hex Key
12. Download Guide
13. Warranty Card