VIVOTEK's IP9165-LPC Kit represents a total solution for LPC (License Plate Capture) applications by leveraging the top tier image quality and traffic monitoring ability of the IP9165-LPC box camera. The CaMate IR Illuminator utilizing CVA Tech provides adjustable beam angles for different distances. The Headlight filter is implemented to reduce instances of glare from direct headlight contact. The IP9165-LPC Kit delivers clear license plate images for reliable recognition, in both the sunniest days, and in the darkest nights.

Empowered with VIVOTEK Scene Mode, which provides different exposure levels to avoid overexposure in some lighting conditions, the IP9165-LPC Kit can capture clear plate images from the vehicles moving at speeds of up to 110MPH (180km/hr).

Value-added features such as DIS (Digital Image Stabilization) and remote IR beam angle adjustment ensure that the IP9165-LPC Kit can be easily installed and adjusted to provide the perfect LPR solution. Further, with the high-resolution images supporting a wide range of up to two lanes, the IP9165-LPC Kit is also the most economic solution in LPR applications.

Key Features

- Capture Vehicle Speed up to 110MPH (180km/hr)
- One Camera Covers Both Scene Overview & LPC View
- Supreme Anti-Glare Capability
- One Camera Covers Dual Lanes
- Easy Installation & Low Maintenance
- Certified by Numerous LPR Software Manufacturers around the World
- CaMate IR Illuminator with CVA Tech (Continuous Variable Angle Technology)
- Vandal-Proof IK10-rated and Weather-Proof IP68-rated Housing
Functions

One Camera Covers Both Scene Overview & LPC View
VIVOTEK’s 2 Mega-pixel resolution kit provides not only sufficient PPF for license plate capture, but also for a clear overview of moving vehicles, including car color, brand and type for general traffic surveillance purposes. Therefore, with only one VIVOTEK’s IP9165-LPC Kit, users can yield more information from one single location.

Supreme Anti-Glare Capability
Capturing images at night is a challenging issue for any surveillance application, but for License Plate Capture applications the challenge is even greater due to noise and glare caused by the headlights of cars. The IP9165-LPC Kit is equipped with external 48W/80W IR Illuminators and a delicate headlight filter, which help to filter out reflected light and only capture detailed information from the plates. Moreover, the IR threshold is also programmed to deploy the IR Illuminator automatically to ensure 24/7 & Day/Night performance.

One Camera Covers Dual Lanes
The high image quality of the IP9165-LPC Kit ensures wide coverage of two lanes with one Camera, whether used for Highway monitoring or for Street monitoring. With a single IP9165-LPC Kit covering dual lanes, the total cost of traffic monitoring will be reduced.
**Ordering Information**

<table>
<thead>
<tr>
<th>Kit</th>
<th>P/N.</th>
<th>Category</th>
<th>Model/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP9165-LPC Kit [Highway]</td>
<td>199004200G</td>
<td>IP Camera</td>
<td>IP9165-LPC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2MP, 60fps, WDR Pro 140dB, Remote Back Focus, 3DNR, DIS</td>
</tr>
<tr>
<td>IP9165-LPC Kit [Street]</td>
<td>199004100G</td>
<td></td>
<td>CA80I8-2040</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IR Illuminator</td>
<td>80W IR Illuminator, 850nm, 20° ~ 40° remote control beam angle with CVA Tech</td>
</tr>
<tr>
<td>IP9165-LPC-A Kit [Street]</td>
<td>199004500G</td>
<td></td>
<td>CA48I8-2040</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>48W IR Illuminator, 850nm, 20° ~ 40° adjustable beam angle with CVA Tech</td>
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<td>Enclosure</td>
<td>AE-23L</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Outdoor Enclosure with Anti-icing Heated Glass, Fan, 24VAC/DC in, IP68, IK10, Sunshield</td>
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<tr>
<td></td>
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<td></td>
<td>AE-23A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Outdoor Enclosure with Anti-icing Heated Glass, Fan, 24VAC/28VDC in, IP68, IK10, Sunshield, Optional IR Illuminators</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bracket</td>
<td>AM-21E</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Cable Management, Wall Mount Bracket</td>
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</tbody>
</table>
### Feature Comparison

<table>
<thead>
<tr>
<th>Kit</th>
<th>IP9165-LPC Kit (Highway)</th>
<th>IP9165-LPC Kit (Street)</th>
<th>IP9165-LPC-A Kit (Street)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P/N</td>
<td>199004200G</td>
<td>199004100G</td>
<td>199004500G</td>
</tr>
<tr>
<td>Max. Vehicle Speed</td>
<td>110MPH (180 km/hr)</td>
<td>60MPH (90 km/hr)</td>
<td>60MPH (90 km/hr)</td>
</tr>
<tr>
<td>Lane</td>
<td>Road-side: 2 Lanes, Gantry: 2 Lanes</td>
<td>Road-side: 2 Lanes, Gantry: 2 Lanes</td>
<td>Road-side: 1 Lane, Gantry: 2 Lanes</td>
</tr>
<tr>
<td>IR Pan/Tilt</td>
<td>Pan: +/- 15 degree, Tilt: 0~ 90 degree</td>
<td>Pan: +/- 15 degree, Tilt: 0~ 90 degree</td>
<td>-</td>
</tr>
<tr>
<td>IR Mount</td>
<td>External</td>
<td>External</td>
<td>Embedded</td>
</tr>
</tbody>
</table>

### Technical Specifications - IP9165-LPC Kit

**Model**

IP9165-LPC Kit (Highway): 110MPH (180 km/hr), with CA80I8-2040 IR
IP9165-LPC Kit (Street): 60MPH (90 km/hr), with CM48I8-2040IR
IP9165-LPC-A Kit (Street): 60MPH (90 km/hr), with AI-109 IR

**Max. Speed**

IP9165-LPC Kit (Highway): 110MPH (180 km/hr)
IP9165-LPC Kit (Street)/LPC-A Kit (Street): 60MPH (90 km/hr)

**IR Threshold**

IR on: 300 Lux
IR off: 600 Lux
RS485 configurable

**Shutter Time**

IP9165-LPC Kit (Highway): 1/1,600 to 1/10,000 sec.
IP9165-LPC Kit (Street)/LPC-A Kit (Street): 1/1,000 to 1/10,000 sec.

**Max. Shutter Time**

1/5 to 1/32,000 sec.

**IR Illuminators**

IP9165-LPC Kit (Highway): CA80I8-2040 *1, 80W, 20° ~ 40° remote control beam angle
IP9165-LPC Kit (Street): CM48I8-2040 *1, 48W, 20° ~ 40° adjustable beam
IP9165-LPC-A Kit (Street): AI-109 *1, 48W, 10° ~ 30° remote control beam angle, embedded IR illuminator

**Capture Range**

Up to 35 meters
* Suggested Distance: 10 ~ 20 m

**Captured Lanes**

IP9165-LPC Kit (Highway)/(Street): Road-side: 2 Lanes, Gantry: 2 Lanes
IP9165-LPC-A Kit (Street): Road-side: 1 Lane, Gantry: 2 Lanes
* Suggested width per lane: 3.5 ~ 4M

**Power Input**

AC/DC 24V

**Power Consumption**

IP9165-LPC Kit (Highway): Max. 110 W, AC/DC 24V
Suggested Power: AC 24V or DC 24V / 5A
IP9165-LPC Kit (Street)/LPC-A Kit (Street): Max. 78 W, AC/DC 24V
Suggested Power: DC 24V or AC 24V / 3.5A

**Weight**

IP9165-LPC Kit (Highway)/(Street): 6.482 g
IP9165-LPC-A Kit (Street): 6.200 g

**Housing**

Weather-proof IP68-rated housing
Vandal-proof IK10-rated housing

**Operating Temperature**

Starting Temperature: 0°C ~ 60°C (32°F ~ 140°F)
Working Temperature: -20°C ~ 60°C (-4°F ~ 140°F)
-40°C ~ 60°C (-40°F ~ 140°F), with optional cold start heater

**Humidity**

90%

**Video**

Compression: H.265, H.264, MJPEG
Maximum Streams: 4 simultaneous streams

**Image Settings**

Adjustable image size, quality and bit rate; Time stamp, text overlay, flip & mirror; Configurable brightness, contrast, saturation, sharpness, white balance, exposure control, gain, backlight compensation, AE speed, privacy masks; Scheduled profile settings, HLC, defog, 3DNR, DIS, video rotation, lens profile, LPC scene mode

**Network**

Users: Live viewing for up to 10 clients

**ONVIF**

Supported; specification available at www.onvif.org

**Intelligent Video**

-
### Technical Specifications - IP9165-LPC Kit

**Video Motion Detection**
- Five-window video motion detection

**Alarm and Event**
- Motion detection, manual trigger, digital input, periodical trigger, system boot, recording notification, camera tampering detection, audio detection, advanced motion detection, MicroSD card life expectancy

**Alarm Triggers**
- Event notification using digital output, HTTP, SMTP, FTP, NAS server and MicroSD card
- File upload via HTTP, SMTP, FTP, NAS server and MicroSD card

**General**

#### IP Camera Connectors
- RJ-45 cable connector for Network/PoE connection *1
- Audio input *1
- Audio output *1
- DC 12V/AC 24V power input *1
- Digital input *2
- Digital output *2
- RS485 *1
- BNC *1

**Safety Certifications**
- IP Camera: CE, LVD, FCC Class B, VCCI, C-Tick, UL

**Warranty**
- 36 months

**System Requirements**
- Operating System: Microsoft Windows 8/7
- Web Browser: Mozilla Firefox 7~43 (streaming only), Internet Explorer 10/11
- Other Players: VLC: 1.1.11 or above, QuickTime: 7 or above

### Technical Specifications - Network Camera

**Model**
- IP9165-LPC

**CPU**
- Multimedia SoC (System-on-Chip)

**Flash**
- 128 MB

**RAM**
- 1 GB

**Camera Features**
- Image Sensor: 1/2” Progressive CMOS
- Maximum Resolution: 1920x1080 (2MP)
- Lens Type: Vari-focal, Remote Back Focus
- Focal Length: f = 12 ~ 40 mm
- Aperture: F1.8 ~ F2.3
- Auto-iris: P-iris (i-CS/DC-iris reserved)

**Field of View**
- 11.6° ~ 34.2° (Horizontal)
- 6.6° ~ 18.7° (Vertical)
- 13.3° ~ 39.8° (Diagonal)

**WDR Technology**
- WDR Pro II

**Day/Night**
- Removable IR-cut filter for day & night function
  - (Headlight filter design for Anti-Glare)

**Pan/Tilt/Zoom Functionalities**
- ePTZ: 48x digital zoom
  - (4x on IE plug-in, 12x built in)

**On-board Storage**
- Slot type: MicroSD/SDHC/SDXC card slot
  - (Max. SD card capacity: 128GB)
  - Seamless Recording

**Video**
- Maximum Frame Rate: 60 fps @ 1920x1080
- S/N Ratio: 66.2 dB
- Dynamic Range: 140 dB

**Audio**
- Audio Capability: Two-way Audio

**Compression**
- G.711, G.726

**Interface**
- External microphone input
- External line output

### Technical Specifications - IR Illuminator

**Model**
- CA80I8-2040
- CM48I8-2040
- AI-109

**Max. Distance**
- CA80I8-2040: 170 ~ 280 meters
- CM48I8-2040: 120 ~ 200 meters
- AI-109: 150 ~ 350 meters

**Beam Angle**
- CA80I8-2040: 20° ~ 40° remote adjustable
- CM48I8-2040: 20° ~ 40° adjustable
- AI-109: 10° ~ 30° remote adjustable

**Input Power**
- CA80I8-2040: 24VDC ±10%, 24VAC[50/60Hz] ±10%
- CM48I8-2040: 12 ~ 24VDC ±10%, 24VAC[50/60Hz] ±10%
- AI-109: 24VAC/28VDC with AE-23A enclosure

**Power Consumption**
- CA80I8-2040: 80W
- CM48I8-2040: 48W
- AI-109: 48W

**Weight**
- CA80I8-2040/CM48I8-2040: 2.1 kg
- AI-109: 1.2 kg

**Housing**
- Weather-proof IP68-rated housing
- Vandal-proof IK10-rated housing

**Operating Temperature**
- CA80I8-2040: -40 °C ~ 60 °C (-40°F ~ 140 °F)
- CM48I8-2040: -40 °C ~ 50°C (-40°F ~ 122 °F)
- AI-109: -40 °C ~ 50 °C (-40°F ~ 122°F)

**Color**
- CA80I8-2040/CM48I8-2040: Black
- AI-109: White

**Wavelength**
- 850nm

**Dimensions**
- CA80I8-2040/CM48I8-2040: 220 x 150 x 73 mm
- AI-109: 135 x 106 x 111 mm

**Included Accessories**
- CA80I8-2040/CM48I8-2040: U-Type Bracket [134 x 34 x 81.5 mm]
Technical Specifications - IR Illuminator

| Certifications | CA80I8-2040: IEC 62471, EN 50130-4, CE: EN61000-6-3, EN60598-1, EN60598-2-5, FCC Class A, EN60529  
CM48I8-2040: IEC 62471, EN 50130-4, CE: EN61000-6-3, EN60598-1, EN60598-2-5, FCC Class B, EN60529  
AI-109: CE, FCC class B, EN62471 |

Integrated Control | Built-in photocell for automatic IR on/off |

Compatible Accessories

***Lens***

<table>
<thead>
<tr>
<th>Lens</th>
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<tbody>
<tr>
<td>AL-239</td>
<td>AL-24A</td>
</tr>
<tr>
<td>8 ~ 80 mm, F1.6, DC-Iris</td>
<td>12 ~ 40 mm, F1.8, P-iris</td>
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<tr>
<td>(Standard Package)</td>
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***Brackets***

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<tbody>
<tr>
<td>AM-314</td>
<td>AM-315</td>
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<tr>
<td>Pole Mount Bracket</td>
<td>Pole Mount Bracket</td>
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***Power***

<table>
<thead>
<tr>
<th>Power</th>
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<tbody>
<tr>
<td>HLG-120H-24</td>
<td>AA-351</td>
</tr>
<tr>
<td>120W Single Output Switching Power Supply, DC24V</td>
<td>Outdoor Power Box, IP67, IK10</td>
</tr>
<tr>
<td>AA-352</td>
<td></td>
</tr>
<tr>
<td>Outdoor Power Box, IP67, IK10</td>
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</table>