FLIR CLI-30
30 W VCSEL-Based Compact Laser Illuminator

FLIR’s VCSEL-based Compact Laser Illuminator (CLI) is a high power, pulsed laser illuminator capable of up to 30 W of peak output power. Designed for SWaP-sensitive platforms, the CLI provides speckle-free illumination through use of FLIR’s proprietary VCSEL technology in a passively cooled compact package. Currently available in the NIR band at 860 nm and the SWIR band at 1060 nm, the CLI is controlled through a serial port and operates from 8 up to 1000 Hz. Various fixed beam divergences are offered. Designed as an OEM component, FLIR can customize the design to fit your specific requirements.

KEY FEATURES
- Uses proprietary Vertical-Cavity, Surface-Emitting Laser (VCSEL) technology
- Improved eye safety from VCSELs over conventional laser diodes
- 30 W peak output power, 2 power set points, variable brightness control
- Speckle-free, high-quality illumination
- Passively cooled
- Removable optic for fixed beam divergences from 3-30°
- Programmable frequency and pulse width operation

PLATFORMS
- Handheld
- Unmanned Vehicles
- Fixed Mount
- Gimbaled

APPLICATIONS
- Traffic Illumination
- Border Control Surveillance
- Law Enforcement / Security
- Industrial
- LED replacement for longer range, brighter, and higher efficiency illumination
### Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wavelengths</strong></td>
<td>860 nm or 1060 nm</td>
</tr>
<tr>
<td><strong>Output Power (max.)</strong></td>
<td>30 W</td>
</tr>
<tr>
<td><strong>Output Laser Settings</strong></td>
<td>Programmable: HI and LO power levels, frequency, pulse width</td>
</tr>
<tr>
<td><strong>Output Laser Control</strong></td>
<td>Via UART command control or follows strobe</td>
</tr>
<tr>
<td><strong>Brightness Control</strong></td>
<td>Via UART command control or subject to PWM signal</td>
</tr>
<tr>
<td><strong>System Efficiency</strong></td>
<td>20%</td>
</tr>
<tr>
<td><strong>Operating Frequency</strong></td>
<td>8 – 1000 Hz</td>
</tr>
<tr>
<td><strong>Max Pulse Width</strong></td>
<td>13 ms</td>
</tr>
<tr>
<td><strong>Max Operating Duty Cycle</strong></td>
<td>10%</td>
</tr>
<tr>
<td><strong>Beam Divergence</strong></td>
<td>3°-30° fixed divergence via screw-on lens mount</td>
</tr>
<tr>
<td><strong>Beam Pattern</strong></td>
<td>Top hat</td>
</tr>
<tr>
<td><strong>Laser Classification</strong></td>
<td>Class 3B</td>
</tr>
</tbody>
</table>

#### Electrical Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input Power Supply</strong></td>
<td>21 – 48 V</td>
</tr>
<tr>
<td><strong>Strobe</strong></td>
<td>Input or output</td>
</tr>
<tr>
<td><strong>Pulse width modulation</strong></td>
<td>Brightness control via PWM signal</td>
</tr>
<tr>
<td><strong>Control interface</strong></td>
<td>Via UART or Strobe/PWM</td>
</tr>
</tbody>
</table>

#### Mechanical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions (L x W x H)</strong></td>
<td>102.3 x 21.5 x 15.1 mm, not including lens mount</td>
</tr>
<tr>
<td><strong>System Weight</strong></td>
<td>50 grams</td>
</tr>
</tbody>
</table>

#### Environmental

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operation Temperature</strong></td>
<td>0°C to +80°C</td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>-55°C to +85°C</td>
</tr>
</tbody>
</table>

### Related Package Assemblies (VCSEL in High-Power Package)

<table>
<thead>
<tr>
<th>Available Wavelengths</th>
<th>860</th>
<th>1060</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser Output Power (QCW)</td>
<td>30 W</td>
<td>30 W</td>
</tr>
<tr>
<td>Conversion Efficiency</td>
<td>+28%</td>
<td>+26%</td>
</tr>
<tr>
<td>Threshold Current</td>
<td>9 A</td>
<td>9 A</td>
</tr>
<tr>
<td>Operating Current</td>
<td>40 A</td>
<td>46 A</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>2.7 V</td>
<td>2.5 V</td>
</tr>
<tr>
<td>FWHM Divergence</td>
<td>30°</td>
<td>12°</td>
</tr>
<tr>
<td>Package</td>
<td>HP-TO</td>
<td>HP-TO</td>
</tr>
</tbody>
</table>