White High-Intensity LED Lamp (5 mm, 15° Viewing Angle)

**OVLEW1CB9**
- Narrow beam angle
- High luminous intensity
- Water clear plastic package
- InGaN White
- Pb-free

The **OVLEW1CB9** is a round 5 mm white high-intensity lamp with a 15° viewing angle. It is designed for applications that require high luminous intensity, such as indoor and outdoor displays, marker lights and optical indicators. The phosphor used in the reflector converts the blue emission of the InGaN chip to ideal white light so that the best mode of white light intensity and CIE chromaticity are achieved.

**Applications**
- Indoor/outdoor displays and applications
- Message boards
- Store front signage
- Indicators

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Material</th>
<th>Emitted Color</th>
<th>Intensity Typ. mcd</th>
<th>Lens Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVLEW1CB9</td>
<td>InGaN</td>
<td>White</td>
<td>24000</td>
<td>Water Clear</td>
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</tbody>
</table>

**NOTICE**
DO NOT LOOK DIRECTLY AT LED WITH UNSHIELDED EYES OR DAMAGE TO RETINA MAY OCCUR.

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.
White High-Intensity LED Lamp
OVLEW1CB9

Absolute Maximum Ratings

\[ T_A = 25^\circ C \]

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
<th>Conditions</th>
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<tbody>
<tr>
<td>Storage Temperature Range</td>
<td>-40</td>
<td>+100</td>
<td></td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40</td>
<td>+95</td>
<td></td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td></td>
<td></td>
<td>5</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Continuous Forward Current</td>
<td></td>
<td></td>
<td>25 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Forward Current (10% Duty Cycle, 1 KHz)</td>
<td></td>
<td></td>
<td>100</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>Power Dissipation</td>
<td></td>
<td></td>
<td>100</td>
<td>mW</td>
<td></td>
</tr>
<tr>
<td>Lead Soldering Temperature (3 mm from the base of the epoxy bulb)(^1)</td>
<td></td>
<td></td>
<td>260°C</td>
<td></td>
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<tr>
<td>Electrostatic Discharge</td>
<td></td>
<td></td>
<td>150</td>
<td>V</td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. Solder time less than 3 seconds at temperature extreme.

Electrical Characteristics

\[ T_A = 25^\circ C \]

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>PARAMETER</th>
<th>MIN</th>
<th>TYP</th>
<th>MAX</th>
<th>UNITS</th>
<th>CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>( I_V )</td>
<td>Luminous Intensity</td>
<td>16800</td>
<td>24000</td>
<td></td>
<td>mcd</td>
<td>( I_F = 20 ) mA</td>
</tr>
<tr>
<td>( V_F )</td>
<td>Forward Voltage</td>
<td>----</td>
<td>3.2</td>
<td>4.0</td>
<td>V</td>
<td>( I_F = 20 ) mA</td>
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<tr>
<td>( I_R )</td>
<td>Reverse Current</td>
<td>----</td>
<td>----</td>
<td>100</td>
<td>µA</td>
<td>( V_R = 5 ) V</td>
</tr>
<tr>
<td>( 2 \Theta_{1/2} )</td>
<td>50% Power Angle</td>
<td>----</td>
<td>15</td>
<td>----</td>
<td>deg</td>
<td>( I_F = 20 ) mA</td>
</tr>
<tr>
<td>( x )</td>
<td>Chromaticity Coordinates</td>
<td>----</td>
<td>0.2877</td>
<td>----</td>
<td>----</td>
<td>( I_F = 20 ) mA</td>
</tr>
<tr>
<td>( y )</td>
<td></td>
<td>----</td>
<td>0.2831</td>
<td>----</td>
<td>----</td>
<td>( I_F = 20 ) mA</td>
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Standard Bins (\( I_F = 20 \) mA)

Lamps are sorted to luminous intensity (\( I_V \)) and chromaticity coordinates (\( x, y \)) bins shown. Orders for OVLEW1CB9 may be filled with any or all bins contained as below.

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<thead>
<tr>
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<table>
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<tr>
<th>Forward Voltage (( V_F ))</th>
<th>V7</th>
<th>V8</th>
<th>V9</th>
<th>V10</th>
<th>V11</th>
<th>V12</th>
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<tbody>
<tr>
<td>Voltage</td>
<td>2.8-3.0V</td>
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<td>3.2-3.4V</td>
<td>3.4-3.6V</td>
<td>3.6-3.8V</td>
<td>3.8-4.0V</td>
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Notes:
1. All ranks will be included per delivery, rank ratio will be based on the chip distribution.
2. Pb content <1000 PPM.
3. To designate luminous intensity ranks, please contact OPTEK.

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White High-Intensity LED Lamp
OVLEW1CB9

Chromaticity Coordinates (x, y)

<table>
<thead>
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OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.
Typical Electro-Optical Characteristics Curves

- Relative Luminous Intensity vs Forward Current
- Maximum Forward Current vs Ambient Temperature
- Forward Current vs Forward Voltage
- Relative Luminous Intensity vs. Wavelength
- Far Field Pattern
- Reverse Current vs. Reverse Voltage

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Packing Information: 500 pieces per bag