Integrating Sphere Test Report

Relevant Standards
IES LM-79-2008
ANSI C78.377-2011, ANSI C82.77-2002

Prepared For
Elemental LED Inc, DBA Diode LED
Wes Buck
Suite 211,1195 Park Ave.
Emeryville, CA 94608
United States

Catalog Number
DI-12V-2VA27-9016
Order Number
11358060
Test Number
1124757

Test Date
2015-07-10

Prepared By
Javier Caban, Technician

Approved By
Zachary Mooney, Senior Engineering Associate

The results contained in this report pertain only to the tested sample.
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This report must not be used by the client to claim product certification, approval, or endorsement by
NVLAP, NIST, or any agency of the Federal Government.
Luminaire Description:
Gray aluminum housing, frosted plastic enclosure
Lamp:
18 white LEDs
Mounting:
Surface

**Summary of Results**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiant Flux (mW)</td>
<td>894.2</td>
</tr>
<tr>
<td>Luminous Flux (lm)</td>
<td>237</td>
</tr>
<tr>
<td>Luminaire Efficacy (lm/W)</td>
<td>53.5</td>
</tr>
<tr>
<td>CCT (K)</td>
<td>2740</td>
</tr>
<tr>
<td>CRI (Ra)</td>
<td>93.1</td>
</tr>
<tr>
<td>Chromaticity (x)</td>
<td>0.4555</td>
</tr>
<tr>
<td>Chromaticity (y)</td>
<td>0.4081</td>
</tr>
<tr>
<td>Chromaticity (u)</td>
<td>0.2608</td>
</tr>
<tr>
<td>Chromaticity (v)</td>
<td>0.3505</td>
</tr>
<tr>
<td>Duv</td>
<td>-0.0008</td>
</tr>
</tbody>
</table>

**Test Conditions**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Temperature (°C)</td>
<td>24.3</td>
</tr>
<tr>
<td>Voltage (VDC)</td>
<td>12.00</td>
</tr>
<tr>
<td>Current (A)</td>
<td>0.3684</td>
</tr>
<tr>
<td>Power (W)</td>
<td>4.430</td>
</tr>
</tbody>
</table>

Testing was performed in a 2-meter integrating sphere using the 4π geometry method. Absorption correction was employed for this measurement.
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Voltage</th>
<th>Current</th>
<th>Power</th>
<th>Power Factor</th>
<th>Frequency</th>
<th>Current THD</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.3 °C</td>
<td>12.00 VAC</td>
<td>0.3684 A</td>
<td>4.430 W</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Summary of Results

Total Output: 237 Lumens
Efficacy: 53.5 lm/w
CCT: 2740 K
CRI (Ra): 93.1
CRI (R9): 72.9
Peak Wavelength: 634.2 nm
Dominant Wavelength: 584.2 nm
S/P Ratio: 1.27

Chromaticity (x): 0.4555
Chromaticity (y): 0.4081
Chromaticity (u’): 0.2608
Chromaticity (v’): 0.5257
TM-30 R_f: 90.4
TM-30 R_g: 101.9
Duv: -0.0008

Color Rendering Index Detail

<table>
<thead>
<tr>
<th>Ra (CRI)</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>R8</th>
<th>R9</th>
<th>R10</th>
<th>R11</th>
<th>R12</th>
<th>R13</th>
<th>R14</th>
</tr>
</thead>
<tbody>
<tr>
<td>93.1</td>
<td>93.9</td>
<td>94.9</td>
<td>93.7</td>
<td>93.5</td>
<td>92.6</td>
<td>92.7</td>
<td>94.8</td>
<td>88.4</td>
<td>72.9</td>
<td>86.4</td>
<td>93.2</td>
<td>79.3</td>
<td>94.0</td>
<td>95.4</td>
</tr>
</tbody>
</table>

Flux vs Wavelength

Spectral Flux (mW/nm)

Wavelength (nm)

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