Photometric Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002
UL1598-2008

Prepared For
Eye Lighting International of North America
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Mentor, OH 44060
United States

Catalog Number
LES-50-730-HWD-XXXX-UNV-XXXX
Order Number
11150987
Test Number
1205435

Test Date
2016-02-04 - 2016-02-09

Prepared By
Derek Smarr, Technician

Approved By
Kyle Spaziani, Project Handler

The results contained in this report pertain only to the tested sample. This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories. 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.
Laboratory results may not be representative of field performance
Ballast factors have not been applied
Absorption correction was employed for Sphere measurement

Tested in 30 planes left side, 30 planes right side, left and right averaged
Vertical test increments are 2.5 degrees
Test distance exceeds five times the greatest luminous opening of luminaire
**Luminaire Description:** LED retrofit kit installed in LexaLite 424 Type V reference housing

**Lamp:** 126 white LEDs, three boards with 42 LEDs

**Mounting:** Post Top

**Ballast/Driver:** One Osram OT50W/UNV/1250C/2DIMLT2/P6

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**Luminaire**

![Luminaire Image]

**Luminaire Characteristics**
- Luminous Diameter: 16.00 in.
- Luminous Height: 12.50 in.

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**Summary of Results**

**Integrating Sphere**
- Luminous Flux: 5248 Lumens
- Efficacy: 100.4 lm/w
- CCT: 3100 K
- CRI (Ra): 74.4

**Distribution**
- Roadway Classification: Type IV, Very Short
- Cutoff Classification: Noncutoff
- BUG Rating: B3 U3 G3

**Luminaire Characteristics**
- Type IV, Very Short
- Noncutoff

**In-Situ**
- Temperature: 80.1 °C
- Driver Temperature: 64.5 °C
- Measured LED Current: 0.06170 A
- Temperature is offset to an ambient temperature of 25°C as described in UL1598-2008.

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**Electrical Data at 277 VAC**
- Test Temperature: 25.9 °C
- Voltage: 277.0 VAC
- Current: 0.1956 A
- Power: 52.22 W
- Power Factor: 0.963
- Frequency: 60 Hz
- Current THD: 8.59 %

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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>25.1 °C</td>
<td>120.0 VAC</td>
<td>0.4386 A</td>
<td>52.26 W</td>
<td>0.997</td>
<td>60 Hz</td>
<td>4.80 %</td>
</tr>
</tbody>
</table>

Summary of Results

Total Output: 5248 Lumens
Efficacy: 100.4 lm/W
CCT: 3100 K
CRI (Ra): 74.4
CRI (R9): -15.8
Chromaticity (x): 0.4315
Chromaticity (y): 0.4052
Chromaticity (u): 0.2466
Chromaticity (v): 0.3473
Chromaticity (u’): 0.2466
Chromaticity (v’): 0.5210
Duv: 0.0007

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>74.4</td>
<td>71.7</td>
<td>82.2</td>
<td>90.9</td>
<td>72.1</td>
<td>70.2</td>
<td>74.6</td>
<td>81.5</td>
<td>52.2</td>
<td>-15.8</td>
<td>57.8</td>
<td>67.3</td>
<td>48.1</td>
<td>73.4</td>
<td>94.5</td>
</tr>
</tbody>
</table>

Flux vs Wavelength
**Distribution - Goniophotometer**

**Distribution 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>25.3 °C</td>
<td>120.0 VAC</td>
<td>0.4372 A</td>
<td>52.33 W</td>
<td>0.997</td>
<td>60 Hz</td>
<td>4.74 %</td>
</tr>
</tbody>
</table>

**Summary of Results**

- **IES Roadway Classification:** Type IV, Very Short
- **Cutoff Classification:** Noncutoff
- **BUG Rating:** B3 U3 G3
- **Total Lumen Output:** 5119 Lumens
- **Luminaire Efficacy:** 97.8 lm/w
- **Maximum Candela:** 1283 Candela

**ISO FootCandle Plot at 20 Feet**

![ISO FootCandle Plot](image-url)
Zonal Lumen Summary

<table>
<thead>
<tr>
<th>Zone</th>
<th>Lumens</th>
<th>% of Luminaire</th>
<th>Zone</th>
<th>Lumens</th>
<th>% of Luminaire</th>
<th>Zone</th>
<th>Lumens</th>
<th>% of Luminaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>2.1</td>
<td>0.0%</td>
<td>60-65</td>
<td>518.6</td>
<td>10.1%</td>
<td>120-125</td>
<td>42.3</td>
<td>0.8%</td>
</tr>
<tr>
<td>5-10</td>
<td>6.7</td>
<td>0.1%</td>
<td>65-70</td>
<td>575.6</td>
<td>11.2%</td>
<td>125-130</td>
<td>36.7</td>
<td>0.7%</td>
</tr>
<tr>
<td>10-15</td>
<td>13.8</td>
<td>0.3%</td>
<td>70-75</td>
<td>580.5</td>
<td>11.3%</td>
<td>130-135</td>
<td>32.9</td>
<td>0.6%</td>
</tr>
<tr>
<td>15-20</td>
<td>24.2</td>
<td>0.5%</td>
<td>75-80</td>
<td>552.2</td>
<td>10.8%</td>
<td>135-140</td>
<td>30.5</td>
<td>0.6%</td>
</tr>
<tr>
<td>20-25</td>
<td>36.7</td>
<td>0.7%</td>
<td>80-85</td>
<td>479.2</td>
<td>9.4%</td>
<td>140-145</td>
<td>28.2</td>
<td>0.6%</td>
</tr>
<tr>
<td>25-30</td>
<td>48.9</td>
<td>1.0%</td>
<td>85-90</td>
<td>373.2</td>
<td>7.3%</td>
<td>145-150</td>
<td>24.8</td>
<td>0.5%</td>
</tr>
<tr>
<td>30-35</td>
<td>66.1</td>
<td>1.3%</td>
<td>90-95</td>
<td>249.0</td>
<td>4.9%</td>
<td>150-155</td>
<td>19.5</td>
<td>0.4%</td>
</tr>
<tr>
<td>35-40</td>
<td>91.4</td>
<td>1.8%</td>
<td>95-100</td>
<td>130.4</td>
<td>2.5%</td>
<td>155-160</td>
<td>13.6</td>
<td>0.3%</td>
</tr>
<tr>
<td>40-45</td>
<td>120.3</td>
<td>2.3%</td>
<td>100-105</td>
<td>72.5</td>
<td>1.4%</td>
<td>160-165</td>
<td>8.8</td>
<td>0.2%</td>
</tr>
<tr>
<td>45-50</td>
<td>162.0</td>
<td>3.2%</td>
<td>105-110</td>
<td>56.7</td>
<td>1.1%</td>
<td>165-170</td>
<td>5.1</td>
<td>0.1%</td>
</tr>
<tr>
<td>50-55</td>
<td>236.5</td>
<td>4.6%</td>
<td>110-115</td>
<td>51.2</td>
<td>1.0%</td>
<td>170-175</td>
<td>2.7</td>
<td>0.1%</td>
</tr>
<tr>
<td>55-60</td>
<td>377.7</td>
<td>7.4%</td>
<td>115-120</td>
<td>47.5</td>
<td>0.9%</td>
<td>175-180</td>
<td>1.0</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Maximum Intensity (Candlepower): 1297.6 Candela
IES "BUG" Rating
(Back Light, Uplight, Glare)
Per IES TM-15-11

Luminaire Classification System (LCS)

<table>
<thead>
<tr>
<th>LCS</th>
<th>Zone</th>
<th>Lumens</th>
<th>Luminaire %</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL</td>
<td>(0-30)</td>
<td>64.6</td>
<td>1.3%</td>
</tr>
<tr>
<td>FM</td>
<td>(30-60)</td>
<td>506.7</td>
<td>9.9%</td>
</tr>
<tr>
<td>FH</td>
<td>(60-80)</td>
<td>1120.0</td>
<td>21.9%</td>
</tr>
<tr>
<td>FVH</td>
<td>(80-90)</td>
<td>453.3</td>
<td>8.9%</td>
</tr>
<tr>
<td>BL</td>
<td>(0-30)</td>
<td>67.8</td>
<td>1.3%</td>
</tr>
<tr>
<td>BM</td>
<td>(30-60)</td>
<td>547.3</td>
<td>10.7%</td>
</tr>
<tr>
<td>BH</td>
<td>(60-80)</td>
<td>1106.9</td>
<td>21.6%</td>
</tr>
<tr>
<td>BVH</td>
<td>(80-90)</td>
<td>399.0</td>
<td>7.8%</td>
</tr>
<tr>
<td>UL</td>
<td>(90-100)</td>
<td>379.4</td>
<td>7.4%</td>
</tr>
<tr>
<td>UH</td>
<td>(100-180)</td>
<td>474.1</td>
<td>9.3%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>5119.0</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

BUG Rating: B3 U3 G3
In-Situ Test

In-Situ 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>23.5 °C</td>
<td>120.0 VAC</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>60 Hz</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Summary of Results

LED Temperature: 80.1 °C
Driver Temperature: 64.5 °C
Measured LED Current: 0.06170 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

LED Temperature Location

Driver Temperature Location