

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P436838

Luminaire Tested: **TT-D4-740-U-5CQ-PM-HSS**

Issue Date: 12/2/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P436838  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TT-D4-740-U-5CQ-PM-HSS  
Description: TOPTIER LED SITE LUMINAIRE  
4000K, 70 CRI LEDS AND CONCENTRATED DISTRIBUTION WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6330.1 lumens  
Efficiency: N/A  
Efficacy: 109.9 lumens/watt  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U2 - G1

Input Watts (W): 57.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

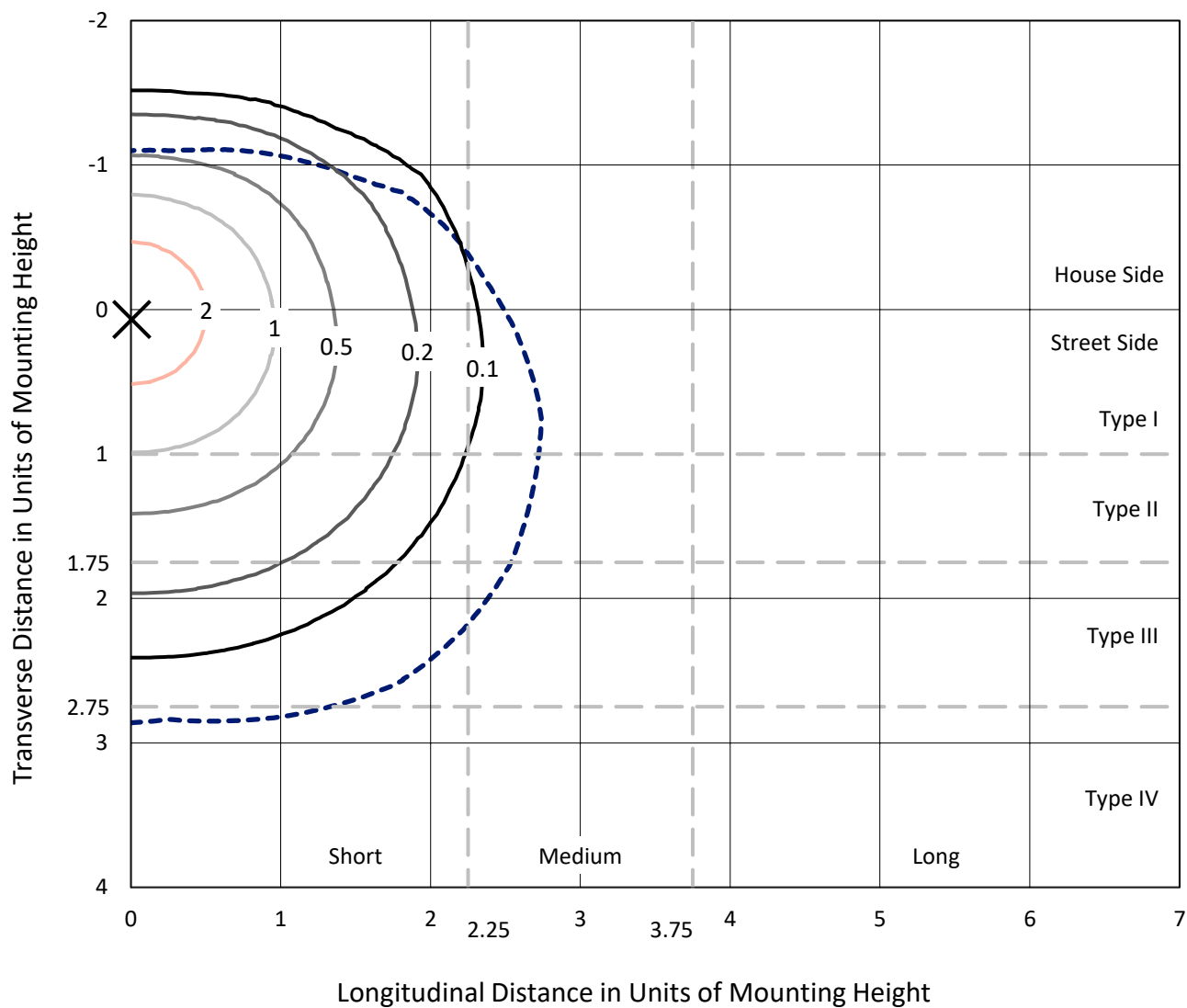


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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

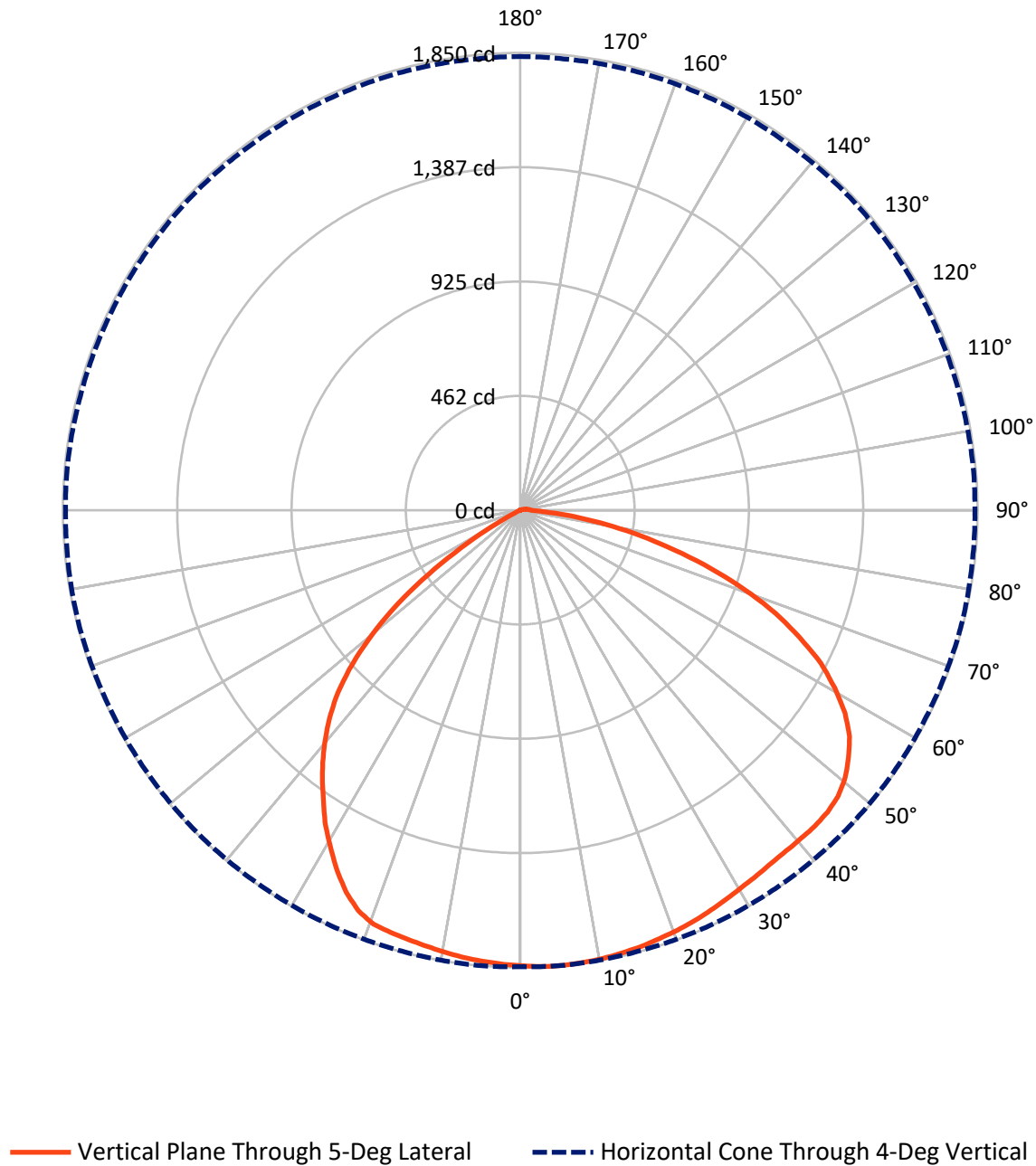
--- 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.9 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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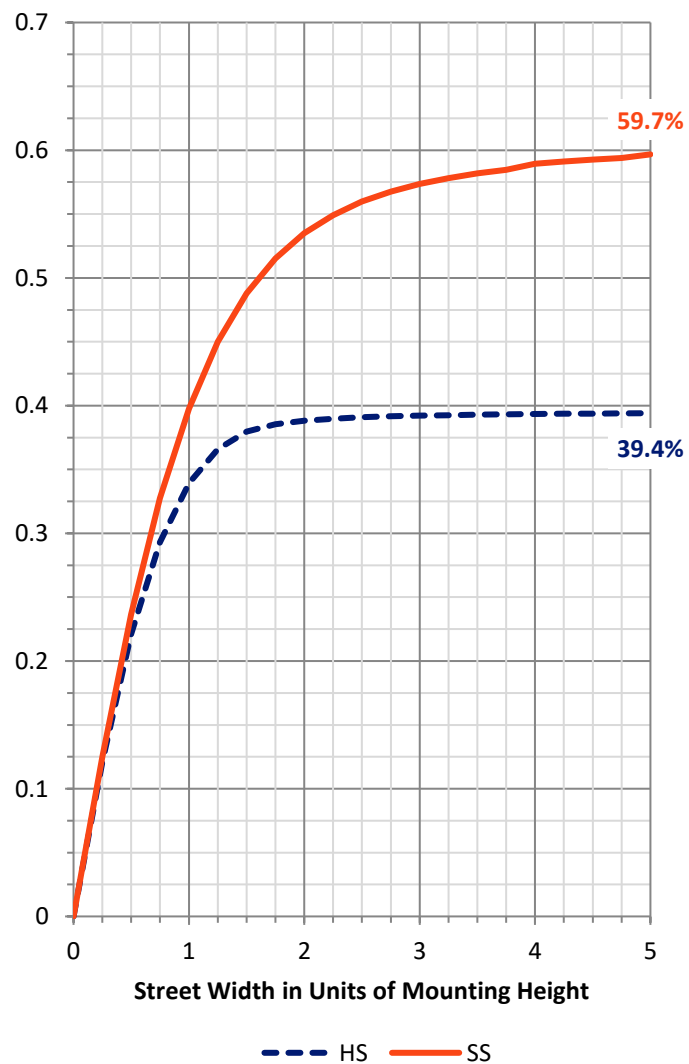
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 2508.5   | 3.3    | 2511.8 |
|                    | % Fixture | 39.6     | 0.1    | 39.7   |
| <b>Street Side</b> | Lumens    | 3800.6   | 17.7   | 3818.3 |
|                    | % Fixture | 60.0     | 0.3    | 60.3   |
| <b>Total</b>       | Lumens    | 6309.1   | 20.9   | 6330.1 |
|                    | % Fixture | 99.7     | 0.3    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 175.2  | 2.8       |
| 10°-20°   | 513.1  | 8.1       |
| 20°-30°   | 808.5  | 12.8      |
| 30°-40°   | 1029.0 | 16.3      |
| 40°-50°   | 1188.4 | 18.8      |
| 50°-60°   | 1163.7 | 18.4      |
| 60°-70°   | 866.7  | 13.7      |
| 70°-80°   | 469.4  | 7.4       |
| 80°-90°   | 95.2   | 1.5       |
| 90°-100°  | 12.1   | 0.2       |
| 100°-110° | 4.7    | 0.1       |
| 110°-120° | 1.4    | 0.0       |
| 120°-130° | 1.0    | 0.0       |
| 130°-140° | 0.8    | 0.0       |
| 140°-150° | 0.5    | 0.0       |
| 150°-160° | 0.3    | 0.0       |
| 160°-170° | 0.2    | 0.0       |
| 170°-180° | 0.1    | 0.0       |
| 0°-90°    | 6309.1 | 99.7      |
| 0°-180°   | 6330.1 | 100.0     |

**Coefficient of Utilization**



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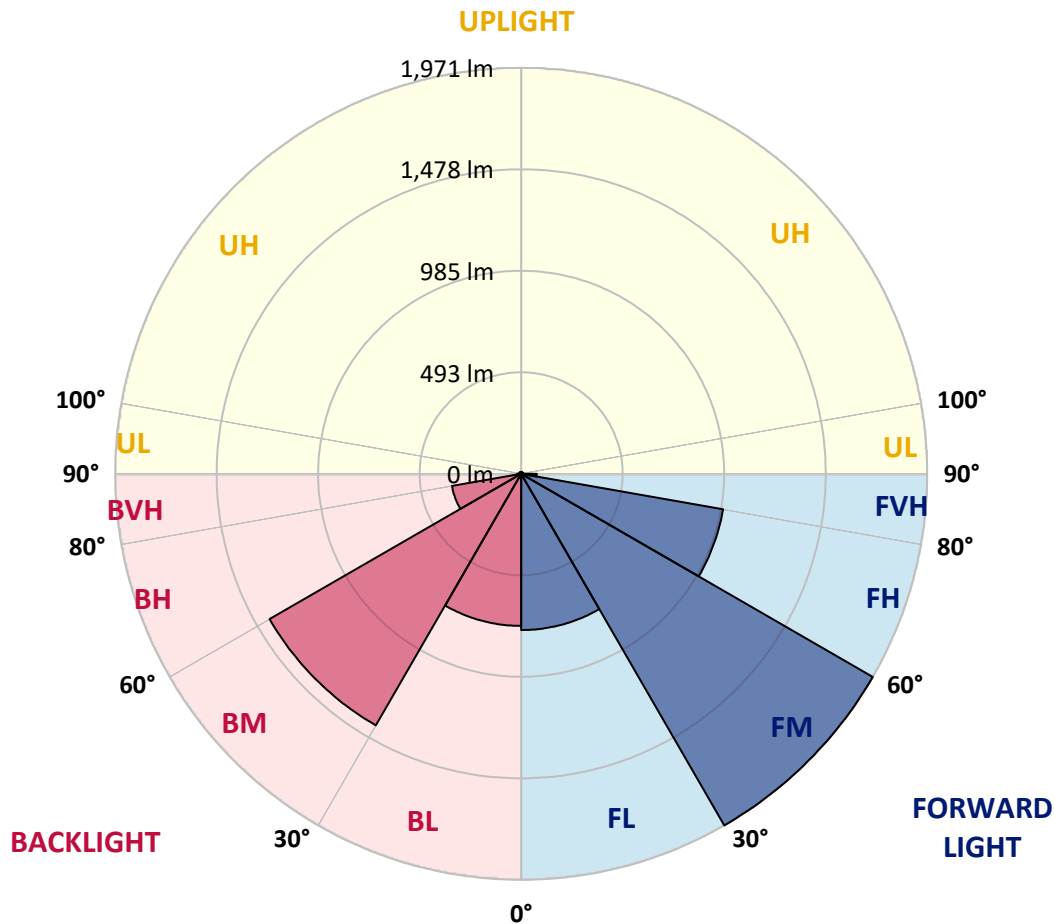
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |       |         |
|------|-------------|--------|-----------|-------------------------|-------|---------|
|      |             |        |           | B                       | U     | G       |
| FL   | (0°-30°)    | 758.5  | 12.0      |                         |       |         |
| FM   | (30°-60°)   | 1970.9 | 31.1      |                         |       |         |
| FH   | (60°-80°)   | 995.2  | 15.7      |                         |       | G1/1800 |
| FVH  | (80°-90°)   | 76.0   | 1.2       |                         |       | G1/100  |
| BL   | (0°-30°)    | 738.3  | 11.7      | B2/1000                 |       |         |
| BM   | (30°-60°)   | 1410.2 | 22.3      | B2/2500                 |       |         |
| BH   | (60°-80°)   | 340.9  | 5.4       | B1/500                  |       | G1/500  |
| BVH  | (80°-90°)   | 19.2   | 0.3       |                         |       | G1/100  |
| UL   | (90°-100°)  | 12.1   | 0.2       |                         | U2/50 |         |
| UH   | (100°-180°) | 8.9    | 0.1       |                         | U1/10 |         |

**BUG Rating: B2-U2-G1**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 |
| 2.5°   | 1846.0 | 1848.4 | 1847.2 | 1847.2 | 1844.8 | 1846.0 | 1844.8 | 1844.8 | 1843.7 | 1842.5 | 1842.5 |
| 4°     | 1847.2 | 1849.6 | 1847.2 | 1847.2 | 1846.0 | 1846.0 | 1844.8 | 1842.5 | 1843.7 | 1840.1 | 1838.9 |
| 5°     | 1848.4 | 1849.6 | 1848.4 | 1848.4 | 1846.0 | 1844.8 | 1842.5 | 1842.5 | 1841.3 | 1838.9 | 1838.9 |
| 7.5°   | 1846.0 | 1847.2 | 1847.2 | 1846.0 | 1843.7 | 1841.3 | 1840.1 | 1838.9 | 1837.7 | 1834.1 | 1834.1 |
| 10°    | 1841.3 | 1843.7 | 1841.3 | 1841.3 | 1840.1 | 1837.7 | 1834.1 | 1832.9 | 1829.4 | 1827.0 | 1825.8 |
| 12.5°  | 1836.5 | 1837.7 | 1836.5 | 1836.5 | 1834.1 | 1830.6 | 1829.4 | 1827.0 | 1822.2 | 1818.7 | 1818.7 |
| 15°    | 1829.4 | 1831.8 | 1830.6 | 1829.4 | 1828.2 | 1824.6 | 1821.0 | 1817.5 | 1813.9 | 1810.3 | 1810.3 |
| 17.5°  | 1821.0 | 1822.2 | 1823.4 | 1822.2 | 1819.9 | 1817.5 | 1813.9 | 1809.1 | 1805.6 | 1802.0 | 1800.8 |
| 20°    | 1811.5 | 1813.9 | 1813.9 | 1813.9 | 1811.5 | 1809.1 | 1804.4 | 1799.6 | 1797.2 | 1792.5 | 1791.3 |
| 22.5°  | 1802.0 | 1804.4 | 1803.2 | 1804.4 | 1803.2 | 1799.6 | 1794.9 | 1790.1 | 1785.3 | 1781.8 | 1779.4 |
| 25°    | 1792.5 | 1792.5 | 1792.5 | 1792.5 | 1792.5 | 1787.7 | 1783.0 | 1777.0 | 1772.2 | 1766.3 | 1766.3 |
| 27.5°  | 1780.6 | 1780.6 | 1781.8 | 1781.8 | 1780.6 | 1777.0 | 1771.1 | 1763.9 | 1756.8 | 1750.8 | 1748.4 |
| 30°    | 1769.9 | 1768.7 | 1771.1 | 1773.4 | 1772.2 | 1768.7 | 1761.5 | 1753.2 | 1742.5 | 1734.2 | 1727.0 |
| 32.5°  | 1756.8 | 1760.3 | 1762.7 | 1767.5 | 1768.7 | 1763.9 | 1755.6 | 1744.9 | 1734.2 | 1718.7 | 1705.6 |
| 35°    | 1752.0 | 1752.0 | 1758.0 | 1765.1 | 1767.5 | 1765.1 | 1753.2 | 1741.3 | 1725.8 | 1703.2 | 1687.7 |
| 37.5°  | 1747.2 | 1748.4 | 1758.0 | 1768.7 | 1772.2 | 1772.2 | 1759.2 | 1743.7 | 1722.3 | 1690.1 | 1671.1 |
| 40°    | 1744.9 | 1747.2 | 1759.2 | 1774.6 | 1784.1 | 1783.0 | 1767.5 | 1748.4 | 1722.3 | 1680.6 | 1656.8 |
| 42.5°  | 1742.5 | 1747.2 | 1760.3 | 1781.8 | 1796.0 | 1794.9 | 1778.2 | 1753.2 | 1719.9 | 1668.7 | 1641.3 |
| 45°    | 1738.9 | 1742.5 | 1760.3 | 1787.7 | 1806.8 | 1810.3 | 1791.3 | 1759.2 | 1719.9 | 1658.0 | 1622.3 |
| 47.5°  | 1728.2 | 1729.4 | 1753.2 | 1785.3 | 1813.9 | 1818.7 | 1799.6 | 1761.5 | 1715.1 | 1640.1 | 1598.5 |
| 50°    | 1699.6 | 1703.2 | 1730.6 | 1773.4 | 1806.8 | 1813.9 | 1797.2 | 1755.6 | 1703.2 | 1610.4 | 1560.4 |
| 52.5°  | 1662.7 | 1662.7 | 1696.1 | 1743.7 | 1784.1 | 1796.0 | 1780.6 | 1734.2 | 1673.5 | 1566.3 | 1509.2 |
| 55°    | 1608.0 | 1616.3 | 1650.8 | 1700.8 | 1744.9 | 1761.5 | 1740.1 | 1694.9 | 1624.7 | 1510.4 | 1447.3 |
| 57.5°  | 1546.1 | 1548.5 | 1584.2 | 1643.7 | 1688.9 | 1699.6 | 1681.8 | 1628.2 | 1560.4 | 1443.7 | 1368.8 |
| 60°    | 1456.8 | 1461.6 | 1506.8 | 1559.2 | 1608.0 | 1622.3 | 1599.7 | 1546.1 | 1474.7 | 1358.0 | 1281.9 |
| 62.5°  | 1358.0 | 1365.2 | 1405.7 | 1459.2 | 1505.6 | 1528.2 | 1500.9 | 1444.9 | 1374.7 | 1255.7 | 1189.0 |
| 65°    | 1239.0 | 1241.4 | 1285.4 | 1346.1 | 1392.6 | 1400.9 | 1377.1 | 1322.3 | 1252.1 | 1137.9 | 1078.3 |
| 67.5°  | 1102.1 | 1114.0 | 1156.9 | 1202.1 | 1242.6 | 1252.1 | 1235.5 | 1172.4 | 1116.4 | 1015.3 | 956.9  |
| 70°    | 970.0  | 964.1  | 999.8  | 1045.0 | 1081.9 | 1090.2 | 1071.2 | 1012.9 | 960.5  | 865.3  | 820.1  |
| 72.5°  | 810.5  | 805.8  | 843.9  | 878.4  | 914.1  | 909.3  | 890.3  | 843.9  | 798.6  | 717.7  | 676.0  |
| 75°    | 649.9  | 645.1  | 674.9  | 704.6  | 722.5  | 724.8  | 711.8  | 677.2  | 628.4  | 565.4  | 533.2  |
| 77.5°  | 492.8  | 497.5  | 510.6  | 535.6  | 552.3  | 559.4  | 536.8  | 502.3  | 471.3  | 422.5  | 398.7  |
| 80°    | 351.1  | 352.3  | 357.1  | 374.9  | 386.8  | 386.8  | 376.1  | 348.7  | 314.2  | 279.7  | 267.8  |
| 82.5°  | 221.4  | 226.1  | 226.1  | 244.0  | 244.0  | 234.5  | 229.7  | 211.9  | 194.0  | 166.6  | 150.0  |
| 85°    | 121.4  | 119.0  | 126.2  | 127.4  | 126.2  | 119.0  | 111.9  | 101.2  | 89.3   | 70.2   | 63.1   |
| 87.5°  | 53.6   | 52.4   | 52.4   | 52.4   | 51.2   | 46.4   | 39.3   | 30.9   | 21.4   | 13.1   | 9.5    |
| 90°    | 41.7   | 41.7   | 40.5   | 38.1   | 34.5   | 30.9   | 25.0   | 19.0   | 11.9   | 4.8    | 2.4    |
| 92.5°  | 38.1   | 38.1   | 36.9   | 35.7   | 32.1   | 28.6   | 22.6   | 16.7   | 10.7   | 4.8    | 2.4    |
| 95°    | 33.3   | 32.1   | 32.1   | 29.8   | 27.4   | 23.8   | 20.2   | 14.3   | 9.5    | 3.6    | 2.4    |
| 97.5°  | 27.4   | 26.2   | 26.2   | 25.0   | 22.6   | 19.0   | 16.7   | 11.9   | 8.3    | 3.6    | 2.4    |
| 100°   | 20.2   | 21.4   | 20.2   | 19.0   | 17.9   | 15.5   | 13.1   | 9.5    | 6.0    | 2.4    | 2.4    |
| 102.5° | 15.5   | 15.5   | 14.3   | 14.3   | 13.1   | 11.9   | 9.5    | 7.1    | 4.8    | 2.4    | 1.2    |
| 105°   | 10.7   | 10.7   | 10.7   | 9.5    | 9.5    | 8.3    | 7.1    | 4.8    | 3.6    | 2.4    | 1.2    |
| 107.5° | 6.0    | 6.0    | 6.0    | 6.0    | 6.0    | 6.0    | 4.8    | 3.6    | 2.4    | 1.2    | 1.2    |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 5°  | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 110°   | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 2.4 | 2.4 | 1.2 | 1.2 | 1.2 |
| 112.5° | 1.2 | 1.2 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 1.2 | 1.2 | 1.2 | 1.2 |
| 115°   | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 117.5° | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 120°   | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 122.5° | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 125°   | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 127.5° | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 130°   | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 135°   | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 140°   | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 145°   | 1.2 | 1.2 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 147.5° | 1.2 | 1.2 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 150°   | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 155°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 160°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 165°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 170°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 175°   | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 180°   | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |



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**CANDELA DISTRIBUTION (continued):**

|        | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 | 1843.7 |
| 2.5°   | 1841.3 | 1837.7 | 1840.1 | 1838.9 | 1840.1 | 1837.7 | 1837.7 | 1837.7 | 1838.9 | 1836.5 |
| 4°     | 1840.1 | 1837.7 | 1837.7 | 1837.7 | 1837.7 | 1835.3 | 1835.3 | 1835.3 | 1834.1 | 1835.3 |
| 5°     | 1837.7 | 1836.5 | 1835.3 | 1834.1 | 1835.3 | 1832.9 | 1831.8 | 1831.8 | 1831.8 | 1832.9 |
| 7.5°   | 1832.9 | 1829.4 | 1829.4 | 1825.8 | 1827.0 | 1825.8 | 1824.6 | 1825.8 | 1824.6 | 1824.6 |
| 10°    | 1824.6 | 1822.2 | 1821.0 | 1818.7 | 1818.7 | 1816.3 | 1815.1 | 1815.1 | 1815.1 | 1813.9 |
| 12.5°  | 1816.3 | 1813.9 | 1812.7 | 1810.3 | 1809.1 | 1806.8 | 1805.6 | 1806.8 | 1804.4 | 1804.4 |
| 15°    | 1806.8 | 1804.4 | 1803.2 | 1803.2 | 1800.8 | 1798.4 | 1797.2 | 1794.9 | 1794.9 | 1794.9 |
| 17.5°  | 1798.4 | 1796.0 | 1797.2 | 1794.9 | 1793.7 | 1791.3 | 1791.3 | 1786.5 | 1786.5 | 1785.3 |
| 20°    | 1790.1 | 1787.7 | 1787.7 | 1786.5 | 1786.5 | 1784.1 | 1780.6 | 1778.2 | 1777.0 | 1777.0 |
| 22.5°  | 1779.4 | 1775.8 | 1769.9 | 1761.5 | 1756.8 | 1753.2 | 1752.0 | 1748.4 | 1747.2 | 1744.9 |
| 25°    | 1762.7 | 1753.2 | 1740.1 | 1725.8 | 1711.5 | 1704.4 | 1702.0 | 1697.3 | 1697.3 | 1697.3 |
| 27.5°  | 1742.5 | 1724.6 | 1706.8 | 1685.4 | 1663.9 | 1649.7 | 1640.1 | 1635.4 | 1633.0 | 1633.0 |
| 30°    | 1716.3 | 1693.7 | 1668.7 | 1641.3 | 1617.5 | 1591.3 | 1574.7 | 1565.1 | 1560.4 | 1561.6 |
| 32.5°  | 1692.5 | 1663.9 | 1635.4 | 1600.9 | 1568.7 | 1537.8 | 1509.2 | 1494.9 | 1489.0 | 1486.6 |
| 35°    | 1668.7 | 1636.6 | 1602.0 | 1565.1 | 1523.5 | 1478.3 | 1440.2 | 1418.7 | 1406.8 | 1408.0 |
| 37.5°  | 1650.8 | 1612.8 | 1574.7 | 1529.4 | 1481.8 | 1427.1 | 1378.3 | 1343.8 | 1329.5 | 1331.9 |
| 40°    | 1631.8 | 1588.9 | 1547.3 | 1494.9 | 1439.0 | 1373.5 | 1310.4 | 1264.0 | 1247.4 | 1243.8 |
| 42.5°  | 1613.9 | 1564.0 | 1516.3 | 1460.4 | 1390.2 | 1316.4 | 1239.0 | 1184.3 | 1159.3 | 1155.7 |
| 45°    | 1591.3 | 1535.4 | 1484.2 | 1419.9 | 1342.6 | 1250.9 | 1160.5 | 1089.1 | 1062.9 | 1052.2 |
| 47.5°  | 1561.6 | 1499.7 | 1442.6 | 1368.8 | 1284.3 | 1180.7 | 1067.6 | 979.6  | 946.2  | 937.9  |
| 50°    | 1517.5 | 1446.1 | 1387.8 | 1304.5 | 1202.1 | 1087.9 | 961.7  | 853.4  | 809.4  | 803.4  |
| 52.5°  | 1459.2 | 1386.6 | 1321.1 | 1225.9 | 1101.0 | 966.5  | 823.6  | 711.8  | 660.6  | 657.0  |
| 55°    | 1389.0 | 1310.4 | 1239.0 | 1131.9 | 985.5  | 829.6  | 680.8  | 539.2  | 489.2  | 483.2  |
| 57.5°  | 1306.9 | 1225.9 | 1148.6 | 1016.5 | 847.4  | 673.7  | 501.1  | 365.4  | 317.8  | 305.9  |
| 60°    | 1216.4 | 1133.1 | 1046.2 | 885.5  | 661.8  | 477.3  | 303.5  | 194.0  | 158.3  | 146.4  |
| 62.5°  | 1128.3 | 1037.9 | 946.2  | 729.6  | 453.5  | 272.6  | 138.1  | 55.9   | 35.7   | 34.5   |
| 65°    | 1024.8 | 939.1  | 845.1  | 588.0  | 286.8  | 122.6  | 40.5   | 1.2    | 0.0    | 0.0    |
| 67.5°  | 904.6  | 832.0  | 748.7  | 526.1  | 253.5  | 107.1  | 34.5   | 1.2    | 0.0    | 0.0    |
| 70°    | 776.0  | 718.9  | 645.1  | 452.3  | 217.8  | 90.5   | 29.8   | 0.0    | 0.0    | 0.0    |
| 72.5°  | 640.3  | 591.5  | 536.8  | 376.1  | 180.9  | 75.0   | 23.8   | 0.0    | 0.0    | 0.0    |
| 75°    | 502.3  | 471.3  | 422.5  | 297.6  | 140.4  | 57.1   | 17.9   | 0.0    | 0.0    | 0.0    |
| 77.5°  | 372.5  | 347.5  | 311.8  | 219.0  | 105.9  | 41.7   | 13.1   | 0.0    | 0.0    | 0.0    |
| 80°    | 251.1  | 232.1  | 211.9  | 148.8  | 71.4   | 27.4   | 8.3    | 0.0    | 0.0    | 0.0    |
| 82.5°  | 146.4  | 132.1  | 119.0  | 84.5   | 39.3   | 15.5   | 3.6    | 0.0    | 0.0    | 0.0    |
| 85°    | 59.5   | 54.8   | 52.4   | 35.7   | 15.5   | 4.8    | 1.2    | 0.0    | 0.0    | 0.0    |
| 87.5°  | 7.1    | 6.0    | 6.0    | 3.6    | 1.2    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°    | 1.2    | 1.2    | 1.2    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 92.5°  | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 95°    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 0.0    | 0.0    | 0.0    | 0.0    |
| 97.5°  | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 0.0    |
| 100°   | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 102.5° | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 105°   | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 107.5° | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |

REPORT NUMBER: P436838

CATALOG NUMBER: TT-D4-740-U-5CQ-PM-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-----|------|------|------|------|------|------|------|------|------|
| 110°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 112.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 115°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 117.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 120°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 122.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 125°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 127.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 130°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 132.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 135°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |
| 137.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  |
| 140°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  |
| 142.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  |
| 145°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  |
| 147.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 1.2  |
| 150°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 152.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 155°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 157.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 160°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 162.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 165°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 167.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 170°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 172.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 175°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 177.5° | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 180°   | 1.2 | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  |

LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

McGRAW-EDISON

Report Number: SP1-2006-844-6

Luminaire Tested: TT-D2-740-U-RW

Test Date: 06/30/2020

Data applicable to product families TT-x-740 and TTN-x-740

### Test Information

Test Method: LM-79-08  
 Report Number: SP1-2006-844-6  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry:  $4\pi$   
 Issue Date: 06/30/2020  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **TT-D2-740-U-RW**  
 Description: MCGRAW EDISON

### RECTANGULAR DISTRIBUTION

### Spectral Parameters

|                           |        |           |      |      |       |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K):                  | 3623   | CRI (Ra): | 72.6 |      |       |
| CIE u':                   | 0.2297 | R1:       | 69.4 | R9:  | -22.4 |
| CIE v':                   | 0.5166 | R2:       | 78.4 | R10: | 49.0  |
| Duv:                      | 0.0060 | R3:       | 86.1 | R11: | 67.4  |
| CIE x:                    | 0.4044 | R4:       | 72.3 | R12: | 39.3  |
| CIE y:                    | 0.4042 | R5:       | 68.2 | R13: | 70.5  |
| CIE z:                    | 0.1914 | R6:       | 69.2 | R14: | 91.9  |
| Peak Wavelength (nm):     | 588    | R7:       | 83.0 |      |       |
| Dominant Wavelength (nm): | 578    | R8:       | 54.2 |      |       |
| Purity:                   | 42.8   |           |      |      |       |
| Rf:                       | 76.2   |           |      |      |       |
| Rg:                       | 94.3   |           |      |      |       |



### Test Conditions

Stabilization Time: 207M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.9/42%  
 Sphere Temperature (°C): 25.8

REPORT NUMBER: SP1-2006-844-6

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 7/29/2020        | 1/29/2021            |
| Power Meter                    | IN0071                | 12/3/2019        | 12/3/2020            |
| AC Power Source                | IN0063                | 12/3/2019        | 12/3/2020            |
| DC Power Source                | IN0208                | 12/3/2019        | 12/3/2020            |
| Sphere Thermometer             | IN0085                | 12/3/2019        | 12/3/2020            |
| Room Thermometer               | IN0046                | 12/3/2019        | 12/3/2020            |



REPORT NUMBER: SP1-2006-844-6

### Photopic Flux vs. Wavelength



#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1254             | 0.0              | 490       | 9219             | 1.3              | 620       | 54761            | 14.3             | 750       | 2901             | 0.0              | 880       | 1835             | 0.0              |
| 365       | 1158             | 0.0              | 495       | 12322            | 2.2              | 625       | 51064            | 11.3             | 755       | 2733             | 0.0              | 885       | 1690             | 0.0              |
| 370       | 1131             | 0.0              | 500       | 17160            | 3.8              | 630       | 47879            | 8.7              | 760       | 2503             | 0.0              | 890       | 1819             | 0.0              |
| 375       | 1414             | 0.0              | 505       | 23071            | 6.5              | 635       | 44248            | 6.6              | 765       | 2289             | 0.0              | 895       | 1314             | 0.0              |
| 380       | 1275             | 0.0              | 510       | 29162            | 10.0             | 640       | 41034            | 4.9              | 770       | 2078             | 0.0              | 900       | 1547             | 0.0              |
| 385       | 1122             | 0.0              | 515       | 34992            | 14.5             | 645       | 37515            | 3.6              | 775       | 1927             | 0.0              | 905       | 1281             | 0.0              |
| 390       | 1074             | 0.0              | 520       | 40102            | 19.4             | 650       | 33900            | 2.5              | 780       | 1724             | 0.0              | 910       | 1345             | 0.0              |
| 395       | 1058             | 0.0              | 525       | 44194            | 23.7             | 655       | 30384            | 1.7              | 785       | 1617             | 0.0              | 915       | 1561             | 0.0              |
| 400       | 885              | 0.0              | 530       | 48014            | 28.3             | 660       | 26883            | 1.1              | 790       | 1709             | 0.0              | 920       | 1368             | 0.0              |
| 405       | 912              | 0.0              | 535       | 51019            | 31.6             | 665       | 23703            | 0.8              | 795       | 1561             | 0.0              | 925       | 1730             | 0.0              |
| 410       | 1108             | 0.0              | 540       | 53190            | 34.7             | 670       | 20603            | 0.5              | 800       | 1525             | 0.0              | 930       | 1629             | 0.0              |
| 415       | 1763             | 0.0              | 545       | 55452            | 36.9             | 675       | 18039            | 0.3              | 805       | 1332             | 0.0              | 935       | 1796             | 0.0              |
| 420       | 3421             | 0.0              | 550       | 57280            | 38.9             | 680       | 15849            | 0.2              | 810       | 1269             | 0.0              | 940       | 1595             | 0.0              |
| 425       | 6610             | 0.0              | 555       | 59041            | 40.3             | 685       | 13806            | 0.1              | 815       | 1261             | 0.0              | 945       | 1410             | 0.0              |
| 430       | 12444            | 0.1              | 560       | 60976            | 41.4             | 690       | 12093            | 0.1              | 820       | 1551             | 0.0              | 950       | 1937             | 0.0              |
| 435       | 21116            | 0.2              | 565       | 62904            | 41.8             | 695       | 10566            | 0.0              | 825       | 1708             | 0.0              | 955       | 2186             | 0.0              |
| 440       | 33463            | 0.5              | 570       | 64555            | 42.0             | 700       | 9300             | 0.0              | 830       | 1592             | 0.0              | 960       | 1583             | 0.0              |
| 445       | 49089            | 1.0              | 575       | 65785            | 40.9             | 705       | 8110             | 0.0              | 835       | 1642             | 0.0              | 965       | 1953             | 0.0              |
| 450       | 57374            | 1.5              | 580       | 66948            | 39.8             | 710       | 7052             | 0.0              | 840       | 1514             | 0.0              | 970       | 1519             | 0.0              |
| 455       | 42663            | 1.4              | 585       | 67963            | 37.8             | 715       | 6233             | 0.0              | 845       | 1376             | 0.0              | 975       | 1168             | 0.0              |
| 460       | 25334            | 1.0              | 590       | 68001            | 35.2             | 720       | 5362             | 0.0              | 850       | 1592             | 0.0              | 980       | 1593             | 0.0              |
| 465       | 17751            | 0.9              | 595       | 67308            | 31.9             | 725       | 4563             | 0.0              | 855       | 1667             | 0.0              | 985       | 1722             | 0.0              |
| 470       | 12447            | 0.8              | 600       | 66343            | 28.6             | 730       | 3976             | 0.0              | 860       | 1662             | 0.0              | 990       | 1648             | 0.0              |
| 475       | 8641             | 0.7              | 605       | 64393            | 24.9             | 735       | 3424             | 0.0              | 865       | 1916             | 0.0              | 995       | 2495             | 0.0              |
| 480       | 7423             | 0.7              | 610       | 61634            | 21.2             | 740       | 3222             | 0.0              | 870       | 1655             | 0.0              | 1000      | 2643             | 0.0              |
| 485       | 7759             | 0.9              | 615       | 58349            | 17.6             | 745       | 3060             | 0.0              | 875       | 2036             | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2006-844-6

### Scotopic Flux vs. Wavelength



Scotopic Lumens: 1941.7

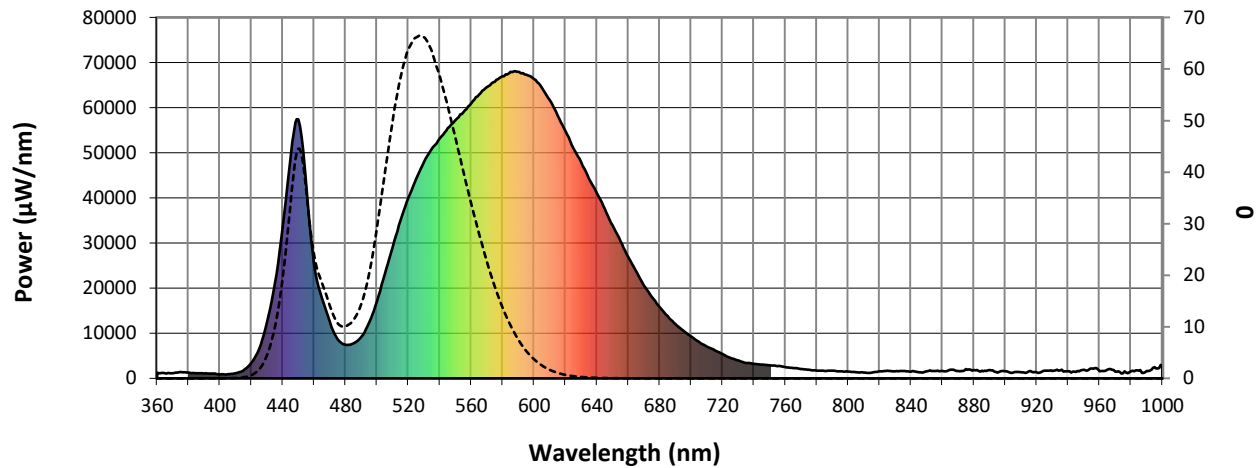
S/P: 0.51

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1254             | 0.0              | 490       | 9219             | 14.2             | 620       | 54761            | 0.7              | 750       | 2901             | 0.0              | 880       | 1835             | 0.0              |
| 365       | 1158             | 0.0              | 495       | 12322            | 19.9             | 625       | 51064            | 0.4              | 755       | 2733             | 0.0              | 885       | 1690             | 0.0              |
| 370       | 1131             | 0.0              | 500       | 17160            | 28.7             | 630       | 47879            | 0.3              | 760       | 2503             | 0.0              | 890       | 1819             | 0.0              |
| 375       | 1414             | 0.0              | 505       | 23071            | 39.2             | 635       | 44248            | 0.2              | 765       | 2289             | 0.0              | 895       | 1314             | 0.0              |
| 380       | 1275             | 0.0              | 510       | 29162            | 49.4             | 640       | 41034            | 0.1              | 770       | 2078             | 0.0              | 900       | 1547             | 0.0              |
| 385       | 1122             | 0.0              | 515       | 34992            | 58.0             | 645       | 37515            | 0.1              | 775       | 1927             | 0.0              | 905       | 1281             | 0.0              |
| 390       | 1074             | 0.0              | 520       | 40102            | 63.7             | 650       | 33900            | 0.0              | 780       | 1724             | 0.0              | 910       | 1345             | 0.0              |
| 395       | 1058             | 0.0              | 525       | 44194            | 66.1             | 655       | 30384            | 0.0              | 785       | 1617             | 0.0              | 915       | 1561             | 0.0              |
| 400       | 885              | 0.0              | 530       | 48014            | 66.2             | 660       | 26883            | 0.0              | 790       | 1709             | 0.0              | 920       | 1368             | 0.0              |
| 405       | 912              | 0.0              | 535       | 51019            | 63.6             | 665       | 23703            | 0.0              | 795       | 1561             | 0.0              | 925       | 1730             | 0.0              |
| 410       | 1108             | 0.1              | 540       | 53190            | 58.8             | 670       | 20603            | 0.0              | 800       | 1525             | 0.0              | 930       | 1629             | 0.0              |
| 415       | 1763             | 0.2              | 545       | 55452            | 53.2             | 675       | 18039            | 0.0              | 805       | 1332             | 0.0              | 935       | 1796             | 0.0              |
| 420       | 3421             | 0.6              | 550       | 57280            | 46.8             | 680       | 15849            | 0.0              | 810       | 1269             | 0.0              | 940       | 1595             | 0.0              |
| 425       | 6610             | 1.6              | 555       | 59041            | 40.3             | 685       | 13806            | 0.0              | 815       | 1261             | 0.0              | 945       | 1410             | 0.0              |
| 430       | 12444            | 4.2              | 560       | 60976            | 34.1             | 690       | 12093            | 0.0              | 820       | 1551             | 0.0              | 950       | 1937             | 0.0              |
| 435       | 21116            | 9.4              | 565       | 62904            | 28.2             | 695       | 10566            | 0.0              | 825       | 1708             | 0.0              | 955       | 2186             | 0.0              |
| 440       | 33463            | 18.7             | 570       | 64555            | 22.8             | 700       | 9300             | 0.0              | 830       | 1592             | 0.0              | 960       | 1583             | 0.0              |
| 445       | 49089            | 32.9             | 575       | 65785            | 17.9             | 705       | 8110             | 0.0              | 835       | 1642             | 0.0              | 965       | 1953             | 0.0              |
| 450       | 57374            | 44.5             | 580       | 66948            | 13.8             | 710       | 7052             | 0.0              | 840       | 1514             | 0.0              | 970       | 1519             | 0.0              |
| 455       | 42663            | 37.3             | 585       | 67963            | 10.4             | 715       | 6233             | 0.0              | 845       | 1376             | 0.0              | 975       | 1168             | 0.0              |
| 460       | 25334            | 24.5             | 590       | 68001            | 7.6              | 720       | 5362             | 0.0              | 850       | 1592             | 0.0              | 980       | 1593             | 0.0              |
| 465       | 17751            | 18.7             | 595       | 67308            | 5.4              | 725       | 4563             | 0.0              | 855       | 1667             | 0.0              | 985       | 1722             | 0.0              |
| 470       | 12447            | 14.3             | 600       | 66343            | 3.7              | 730       | 3976             | 0.0              | 860       | 1662             | 0.0              | 990       | 1648             | 0.0              |
| 475       | 8641             | 10.8             | 605       | 64393            | 2.5              | 735       | 3424             | 0.0              | 865       | 1916             | 0.0              | 995       | 2495             | 0.0              |
| 480       | 7423             | 10.0             | 610       | 61634            | 1.7              | 740       | 3222             | 0.0              | 870       | 1655             | 0.0              | 1000      | 2643             | 0.0              |
| 485       | 7759             | 11.2             | 615       | 58349            | 1.1              | 745       | 3060             | 0.0              | 875       | 2036             | 0.0              |           |                  |                  |



REPORT NUMBER: SP1-2006-844-6

### Melanopic Flux vs. Wavelength



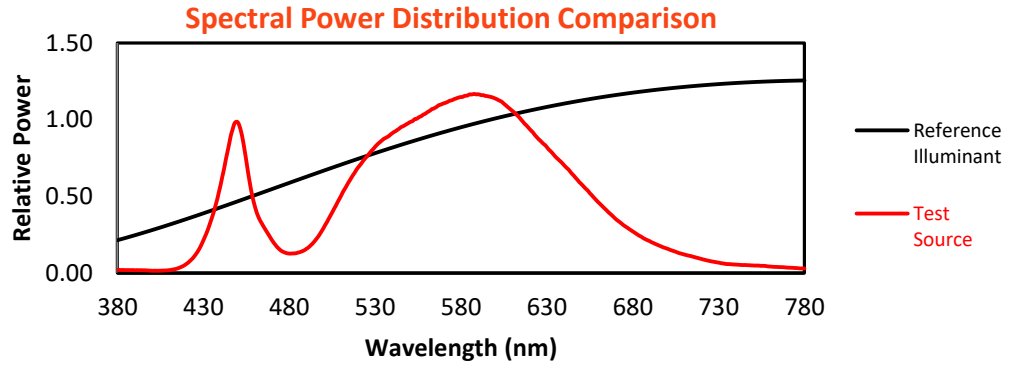
**Melanopic Lumens: 5289.9**

**S/P: 1.39**

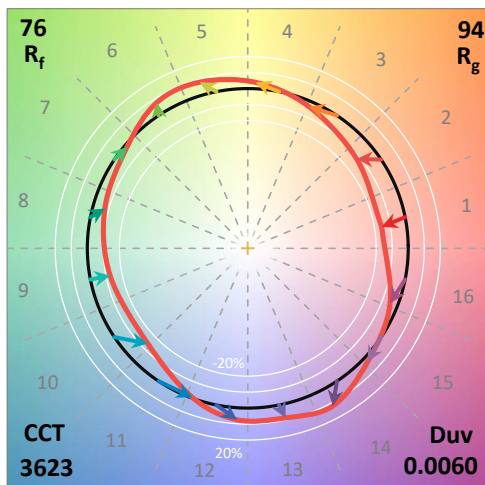
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1254             | 0.0              | 490       | 9219             | 7.7              | 620       | 54761            | 0.0              | 750       | 2901             | 0.0              | 880       | 1835             | 0.0              |
| 365       | 1158             | 0.0              | 495       | 12322            | 10.2             | 625       | 51064            | 0.0              | 755       | 2733             | 0.0              | 885       | 1690             | 0.0              |
| 370       | 1131             | 0.0              | 500       | 17160            | 13.8             | 630       | 47879            | 0.0              | 760       | 2503             | 0.0              | 890       | 1819             | 0.0              |
| 375       | 1414             | 0.0              | 505       | 23071            | 17.7             | 635       | 44248            | 0.0              | 765       | 2289             | 0.0              | 895       | 1314             | 0.0              |
| 380       | 1275             | 0.0              | 510       | 29162            | 20.9             | 640       | 41034            | 0.0              | 770       | 2078             | 0.0              | 900       | 1547             | 0.0              |
| 385       | 1122             | 0.0              | 515       | 34992            | 22.9             | 645       | 37515            | 0.0              | 775       | 1927             | 0.0              | 905       | 1281             | 0.0              |
| 390       | 1074             | 0.0              | 520       | 40102            | 23.3             | 650       | 33900            | 0.0              | 780       | 1724             | 0.0              | 910       | 1345             | 0.0              |
| 395       | 1058             | 0.0              | 525       | 44194            | 22.4             | 655       | 30384            | 0.0              | 785       | 1617             | 0.0              | 915       | 1561             | 0.0              |
| 400       | 885              | 0.0              | 530       | 48014            | 20.7             | 660       | 26883            | 0.0              | 790       | 1709             | 0.0              | 920       | 1368             | 0.0              |
| 405       | 912              | 0.0              | 535       | 51019            | 18.4             | 665       | 23703            | 0.0              | 795       | 1561             | 0.0              | 925       | 1730             | 0.0              |
| 410       | 1108             | 0.0              | 540       | 53190            | 15.6             | 670       | 20603            | 0.0              | 800       | 1525             | 0.0              | 930       | 1629             | 0.0              |
| 415       | 1763             | 0.1              | 545       | 55452            | 12.9             | 675       | 18039            | 0.0              | 805       | 1332             | 0.0              | 935       | 1796             | 0.0              |
| 420       | 3421             | 0.4              | 550       | 57280            | 10.3             | 680       | 15849            | 0.0              | 810       | 1269             | 0.0              | 940       | 1595             | 0.0              |
| 425       | 6610             | 1.0              | 555       | 59041            | 8.0              | 685       | 13806            | 0.0              | 815       | 1261             | 0.0              | 945       | 1410             | 0.0              |
| 430       | 12444            | 2.6              | 560       | 60976            | 6.0              | 690       | 12093            | 0.0              | 820       | 1551             | 0.0              | 950       | 1937             | 0.0              |
| 435       | 21116            | 5.6              | 565       | 62904            | 4.4              | 695       | 10566            | 0.0              | 825       | 1708             | 0.0              | 955       | 2186             | 0.0              |
| 440       | 33463            | 11.2             | 570       | 64555            | 3.2              | 700       | 9300             | 0.0              | 830       | 1592             | 0.0              | 960       | 1583             | 0.0              |
| 445       | 49089            | 19.4             | 575       | 65785            | 2.2              | 705       | 8110             | 0.0              | 835       | 1642             | 0.0              | 965       | 1953             | 0.0              |
| 450       | 57374            | 26.4             | 580       | 66948            | 1.5              | 710       | 7052             | 0.0              | 840       | 1514             | 0.0              | 970       | 1519             | 0.0              |
| 455       | 42663            | 22.4             | 585       | 67963            | 1.0              | 715       | 6233             | 0.0              | 845       | 1376             | 0.0              | 975       | 1168             | 0.0              |
| 460       | 25334            | 14.9             | 590       | 68001            | 0.7              | 720       | 5362             | 0.0              | 850       | 1592             | 0.0              | 980       | 1593             | 0.0              |
| 465       | 17751            | 11.6             | 595       | 67308            | 0.4              | 725       | 4563             | 0.0              | 855       | 1667             | 0.0              | 985       | 1722             | 0.0              |
| 470       | 12447            | 8.9              | 600       | 66343            | 0.3              | 730       | 3976             | 0.0              | 860       | 1662             | 0.0              | 990       | 1648             | 0.0              |
| 475       | 8641             | 6.6              | 605       | 64393            | 0.2              | 735       | 3424             | 0.0              | 865       | 1916             | 0.0              | 995       | 2495             | 0.0              |
| 480       | 7423             | 6.0              | 610       | 61634            | 0.1              | 740       | 3222             | 0.0              | 870       | 1655             | 0.0              | 1000      | 2643             | 0.0              |
| 485       | 7759             | 6.4              | 615       | 58349            | 0.1              | 745       | 3060             | 0.0              | 875       | 2036             | 0.0              |           |                  |                  |

### Summary

$R_f = 76.2$   
 $R_g = 94.3$   
 CIE  $R_a = 72.6$   
 $R_g = -22.4$



### Color Vector Graphics

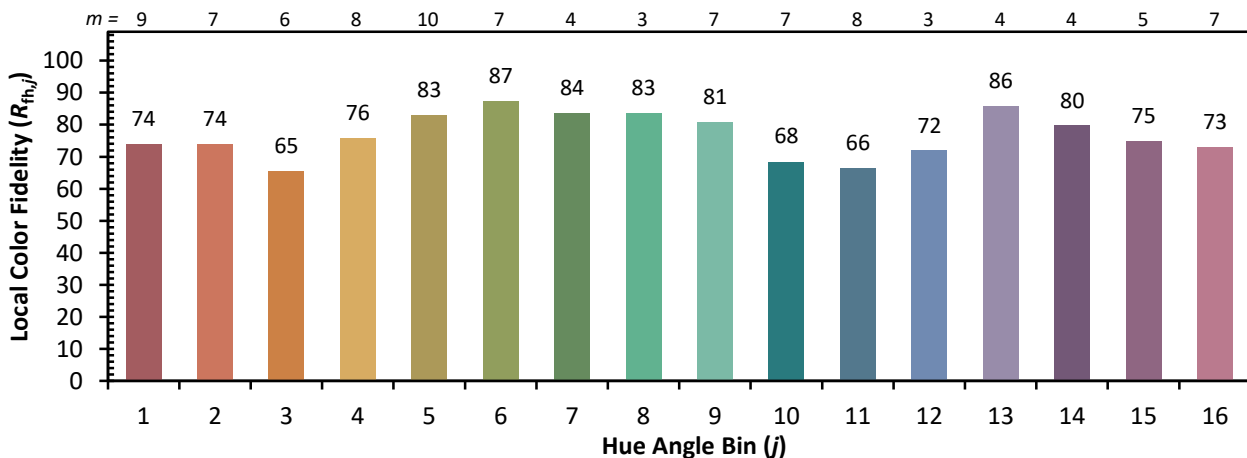
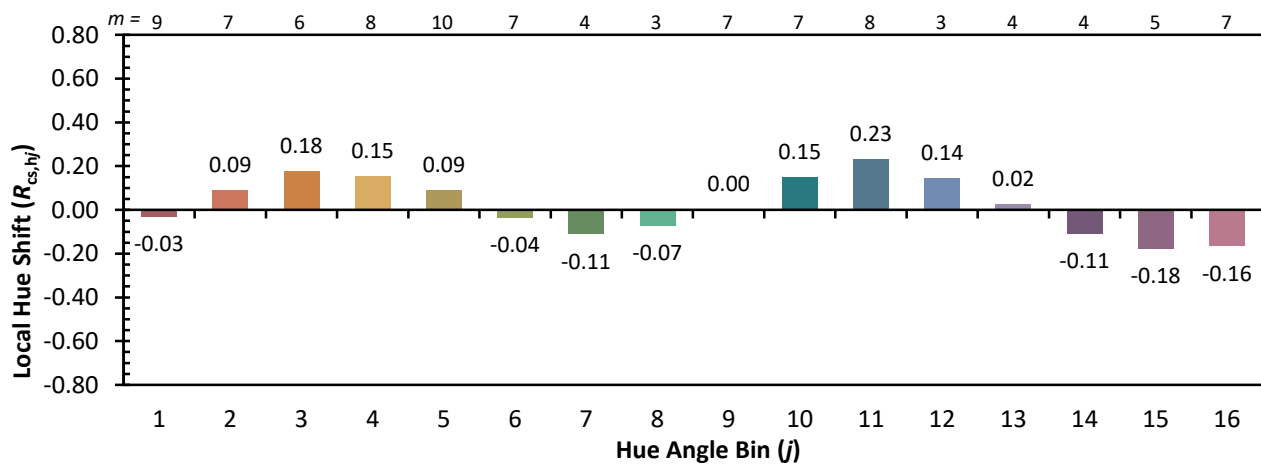


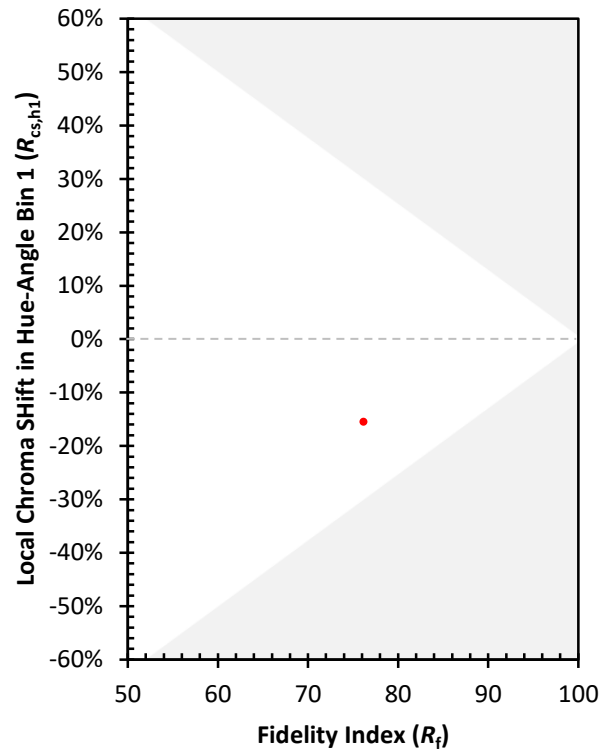
Individual Sample Fidelity Index ( $R_{f,i}$ )

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 66 | CES51 = 88 | CES76 = 55 |
| CES02 = 61 | CES27 = 89 | CES52 = 88 | CES77 = 73 |
| CES03 = 31 | CES28 = 83 | CES53 = 78 | CES78 = 59 |
| CES04 = 70 | CES29 = 69 | CES54 = 85 | CES79 = 84 |
| CES05 = 48 | CES30 = 83 | CES55 = 84 | CES80 = 81 |
| CES06 = 51 | CES31 = 73 | CES56 = 74 | CES81 = 79 |
| CES07 = 40 | CES32 = 65 | CES57 = 73 | CES82 = 92 |
| CES08 = 39 | CES33 = 79 | CES58 = 74 | CES83 = 90 |
| CES09 = 29 | CES34 = 74 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 85 | CES60 = 90 | CES85 = 79 |
| CES11 = 57 | CES36 = 92 | CES61 = 84 | CES86 = 73 |
| CES12 = 63 | CES37 = 80 | CES62 = 87 | CES87 = 78 |
| CES13 = 42 | CES38 = 92 | CES63 = 73 | CES88 = 81 |
| CES14 = 74 | CES39 = 97 | CES64 = 68 | CES89 = 72 |
| CES15 = 71 | CES40 = 92 | CES65 = 65 | CES90 = 80 |
| CES16 = 47 | CES41 = 93 | CES66 = 61 | CES91 = 78 |
| CES17 = 49 | CES42 = 82 | CES67 = 58 | CES92 = 63 |
| CES18 = 56 | CES43 = 80 | CES68 = 68 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 76 | CES94 = 57 |
| CES20 = 65 | CES45 = 86 | CES70 = 60 | CES95 = 69 |
| CES21 = 86 | CES46 = 83 | CES71 = 54 | CES96 = 78 |
| CES22 = 78 | CES47 = 86 | CES72 = 85 | CES97 = 85 |
| CES23 = 92 | CES48 = 77 | CES73 = 52 | CES98 = 77 |
| CES24 = 91 | CES49 = 81 | CES74 = 95 | CES99 = 67 |
| CES25 = 72 | CES50 = 88 | CES75 = 56 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**


(END OF REPORT)