

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P243448

Luminaire Tested: S123RDRP-H1165D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243448  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDRP-H1165D935-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

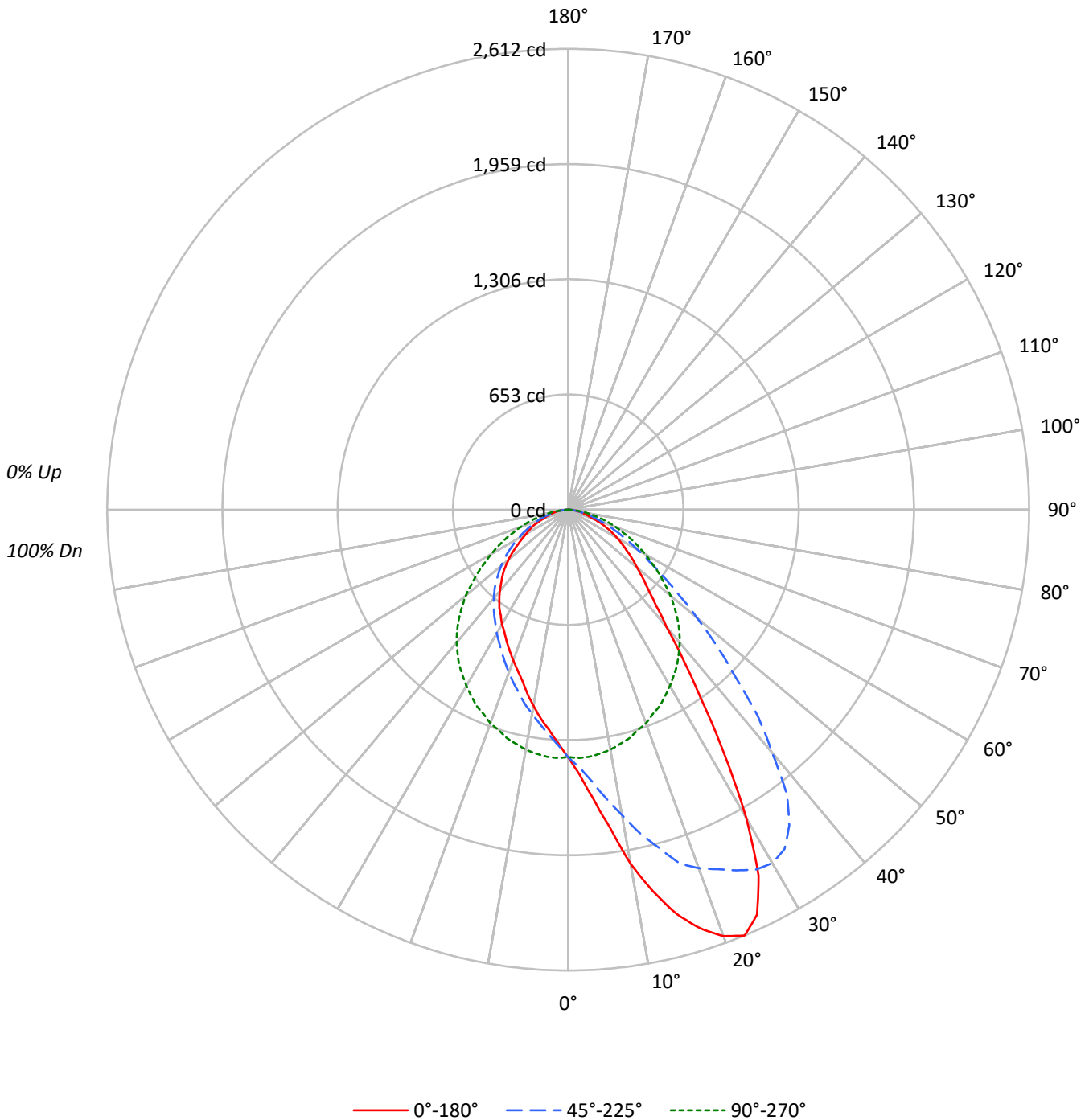
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3654.1 lumens  
Efficiency: N/A  
Efficacy: 96.9 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 37.7  
Input Voltage (V): 120  
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: 24 FT

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### Luminous Intensity Polar Plot



TEST NUMBER: P243448

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |     |   |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|-----|---|--|---|
| RF  | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |    |    | 20 |    |     |   |  |   |
| RC  | 80  |     |     |     |     | 70  |     |     |     |     | 50  |     |     |     |     | 30  |     |     |    |    | 10 |    |     |   |  | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 10 | 50 | 30 | 10  | 0 |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |     |   |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |    |    | 100 |   |  |   |
| 1   | 110 | 106 | 102 | 99  | 107 | 104 | 100 | 97  | 99  | 97  | 94  | 96  | 93  | 91  | 92  | 90  | 89  | 87  |    |    |    |    | 87  |   |  |   |
| 2   | 101 | 94  | 88  | 83  | 99  | 92  | 86  | 82  | 89  | 84  | 80  | 85  | 81  | 78  | 82  | 79  | 76  | 74  |    |    |    |    | 74  |   |  |   |
| 3   | 93  | 84  | 76  | 70  | 91  | 82  | 75  | 70  | 79  | 73  | 68  | 76  | 71  | 67  | 74  | 70  | 66  | 64  |    |    |    |    | 64  |   |  |   |
| 4   | 86  | 75  | 67  | 61  | 84  | 74  | 66  | 60  | 71  | 65  | 59  | 69  | 63  | 59  | 67  | 62  | 58  | 56  |    |    |    |    | 56  |   |  |   |
| 5   | 79  | 68  | 59  | 53  | 77  | 66  | 59  | 53  | 64  | 57  | 52  | 62  | 56  | 52  | 61  | 55  | 51  | 49  |    |    |    |    | 49  |   |  |   |
| 6   | 74  | 61  | 53  | 47  | 72  | 60  | 52  | 47  | 59  | 52  | 46  | 57  | 51  | 46  | 55  | 50  | 46  | 44  |    |    |    |    | 44  |   |  |   |
| 7   | 69  | 56  | 48  | 42  | 67  | 55  | 47  | 42  | 54  | 47  | 41  | 52  | 46  | 41  | 51  | 45  | 41  | 39  |    |    |    |    | 39  |   |  |   |
| 8   | 64  | 51  | 43  | 38  | 62  | 51  | 43  | 37  | 49  | 42  | 37  | 48  | 42  | 37  | 47  | 41  | 37  | 35  |    |    |    |    | 35  |   |  |   |
| 9   | 60  | 47  | 39  | 34  | 59  | 47  | 39  | 34  | 45  | 39  | 34  | 44  | 38  | 34  | 43  | 38  | 33  | 32  |    |    |    |    | 32  |   |  |   |
| 10  | 56  | 44  | 36  | 31  | 55  | 43  | 36  | 31  | 42  | 35  | 31  | 41  | 35  | 31  | 40  | 35  | 31  | 29  |    |    |    |    | 29  |   |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 45°   | 90°   | 135°  | 180°  |
|-----|-------|-------|-------|-------|-------|
| 0°  | 16999 | 16999 | 16999 | 16999 | 16999 |
| 5°  | 20040 | 18810 | 17093 | 15539 | 15222 |
| 10° | 25087 | 21628 | 16993 | 14444 | 13892 |
| 15° | 29772 | 24886 | 16823 | 13510 | 12584 |
| 20° | 33180 | 27892 | 16622 | 12677 | 11716 |
| 25° | 33868 | 30167 | 16416 | 11921 | 11030 |
| 30° | 28222 | 32367 | 16136 | 11331 | 10492 |
| 35° | 19497 | 32319 | 15913 | 10806 | 10053 |
| 40° | 13701 | 28456 | 15551 | 10367 | 9524  |
| 45° | 11003 | 22919 | 14999 | 9903  | 9010  |
| 50° | 9591  | 17939 | 14284 | 9351  | 8335  |
| 55° | 8599  | 13846 | 13219 | 8740  | 7422  |
| 60° | 7779  | 11025 | 12213 | 7927  | 6722  |
| 65° | 6809  | 9049  | 11255 | 7173  | 6287  |
| 70° | 5493  | 7361  | 10129 | 6588  | 5323  |
| 75° | 4763  | 5784  | 8819  | 5559  | 5217  |
| 80° | 4398  | 4733  | 7525  | 5326  | 5242  |
| 85° | 3880  | 4047  | 6064  | 4798  | 4548  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 28721 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 137.5  | 3.8       |
| 10°-20°   | 433.1  | 11.9      |
| 20°-30°   | 694.0  | 19.0      |
| 30°-40°   | 753.4  | 20.6      |
| 40°-50°   | 645.5  | 17.7      |
| 50°-60°   | 489.3  | 13.4      |
| 60°-70°   | 312.6  | 8.6       |
| 70°-80°   | 149.5  | 4.1       |
| 80°-90°   | 39.2   | 1.1       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1264.6 | 34.6      |
| 0°-40°    | 2018.0 | 55.2      |
| 0°-60°    | 3152.7 | 86.3      |
| 0°-90°    | 3654.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3654.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1402 | 1402 | 1402 | 1402 | 1402 |      |
| 5°  | 1647 | 1546 | 1405 | 1277 | 1251 | 169  |
| 15° | 2372 | 1983 | 1341 | 1077 | 1003 | 673  |
| 25° | 2532 | 2256 | 1227 | 891  | 825  | 1124 |
| 35° | 1318 | 2184 | 1075 | 730  | 679  | 846  |
| 45° | 642  | 1337 | 875  | 578  | 526  | 507  |
| 55° | 407  | 655  | 626  | 414  | 351  | 367  |
| 65° | 237  | 316  | 392  | 250  | 219  | 236  |
| 75° | 102  | 124  | 188  | 119  | 111  | 110  |
| 85° | 28   | 29   | 44   | 34   | 33   | 32   |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 10°    | 15°    | 20°    | 25°    | 30°    | 35°    | 40°    | 45°    | 50°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 |
| 2.5°  | 1502.9 | 1504.7 | 1501.7 | 1501.1 | 1500.5 | 1490.8 | 1487.8 | 1482.9 | 1466.0 | 1461.7 | 1458.7 |
| 5°    | 1647.0 | 1642.2 | 1647.6 | 1637.3 | 1625.8 | 1619.2 | 1608.3 | 1584.1 | 1562.9 | 1545.9 | 1535.0 |
| 7.5°  | 1817.8 | 1819.6 | 1814.2 | 1804.5 | 1781.5 | 1771.8 | 1742.1 | 1713.0 | 1685.2 | 1650.1 | 1624.0 |
| 10°   | 2038.2 | 2023.7 | 2026.7 | 1996.4 | 1972.2 | 1943.1 | 1902.6 | 1855.9 | 1806.9 | 1757.2 | 1720.3 |
| 12.5° | 2213.8 | 2224.1 | 2216.8 | 2202.3 | 2155.7 | 2127.2 | 2090.3 | 2022.5 | 1945.0 | 1878.3 | 1822.0 |
| 15°   | 2372.5 | 2358.5 | 2360.3 | 2325.2 | 2308.3 | 2282.2 | 2221.1 | 2153.9 | 2103.6 | 1983.1 | 1916.5 |
| 17.5° | 2488.7 | 2487.5 | 2485.7 | 2456.0 | 2435.4 | 2380.9 | 2318.6 | 2249.5 | 2186.6 | 2103.0 | 2019.4 |
| 20°   | 2572.3 | 2581.4 | 2578.9 | 2554.7 | 2518.4 | 2465.7 | 2428.2 | 2342.2 | 2238.6 | 2162.3 | 2060.0 |
| 22.5° | 2612.2 | 2612.8 | 2614.1 | 2602.6 | 2578.3 | 2544.4 | 2491.1 | 2422.1 | 2330.1 | 2205.3 | 2091.5 |
| 25°   | 2532.3 | 2535.3 | 2551.1 | 2560.8 | 2567.4 | 2552.3 | 2524.4 | 2462.1 | 2382.7 | 2255.6 | 2137.5 |
| 27.5° | 2336.1 | 2345.8 | 2363.4 | 2421.5 | 2445.1 | 2477.8 | 2489.3 | 2464.5 | 2405.8 | 2299.8 | 2165.4 |
| 30°   | 2016.4 | 2043.7 | 2060.6 | 2126.6 | 2219.3 | 2306.5 | 2347.6 | 2388.2 | 2382.7 | 2312.5 | 2176.3 |
| 32.5° | 1650.7 | 1668.2 | 1717.3 | 1788.1 | 1861.4 | 1989.2 | 2132.1 | 2230.2 | 2285.3 | 2281.6 | 2185.3 |
| 35°   | 1317.6 | 1343.1 | 1384.8 | 1438.7 | 1539.9 | 1672.5 | 1834.1 | 1988.5 | 2126.6 | 2184.1 | 2149.6 |
| 37.5° | 1069.4 | 1071.8 | 1111.1 | 1187.4 | 1250.4 | 1367.3 | 1513.2 | 1704.0 | 1885.0 | 2035.2 | 2068.5 |
| 40°   | 865.9  | 882.9  | 903.4  | 951.3  | 1025.8 | 1137.8 | 1234.7 | 1422.4 | 1610.1 | 1798.4 | 1932.8 |
| 42.5° | 737.5  | 737.5  | 760.5  | 790.8  | 840.5  | 907.7  | 1023.3 | 1193.5 | 1362.4 | 1593.7 | 1745.1 |
| 45°   | 641.9  | 647.9  | 658.2  | 677.6  | 712.7  | 764.8  | 854.4  | 970.1  | 1142.6 | 1337.0 | 1564.7 |
| 47.5° | 572.8  | 572.2  | 581.3  | 592.8  | 620.1  | 659.4  | 712.1  | 806.0  | 933.7  | 1143.2 | 1344.3 |
| 50°   | 508.6  | 511.1  | 517.7  | 527.4  | 545.6  | 573.4  | 606.7  | 677.6  | 785.4  | 951.3  | 1162.0 |
| 52.5° | 459.0  | 458.4  | 463.8  | 469.9  | 483.8  | 499.6  | 529.2  | 581.9  | 656.4  | 788.4  | 963.4  |
| 55°   | 406.9  | 409.3  | 416.0  | 419.6  | 431.1  | 441.4  | 466.3  | 495.9  | 555.9  | 655.2  | 814.4  |
| 57.5° | 362.1  | 365.1  | 368.8  | 372.4  | 380.3  | 390.6  | 411.2  | 429.3  | 472.9  | 544.4  | 671.5  |
| 60°   | 320.9  | 319.7  | 324.0  | 330.0  | 334.3  | 343.3  | 354.8  | 373.6  | 403.9  | 454.8  | 548.0  |
| 62.5° | 279.8  | 280.4  | 281.0  | 284.6  | 292.5  | 300.3  | 310.6  | 324.6  | 342.7  | 380.3  | 446.3  |
| 65°   | 237.4  | 238.0  | 239.2  | 242.8  | 250.7  | 255.5  | 266.4  | 278.5  | 293.1  | 315.5  | 361.5  |
| 67.5° | 199.8  | 202.2  | 202.2  | 205.3  | 208.3  | 213.1  | 221.0  | 230.1  | 242.2  | 258.6  | 288.2  |
| 70°   | 155.0  | 154.4  | 157.4  | 163.5  | 166.5  | 175.0  | 180.4  | 186.5  | 197.4  | 207.7  | 233.1  |
| 72.5° | 124.7  | 124.7  | 124.7  | 127.2  | 127.8  | 129.6  | 133.2  | 145.9  | 154.4  | 164.7  | 178.6  |
| 75°   | 101.7  | 102.3  | 102.3  | 102.9  | 103.5  | 105.4  | 106.6  | 110.2  | 112.6  | 123.5  | 132.0  |
| 77.5° | 81.1   | 81.7   | 81.7   | 82.4   | 83.0   | 83.6   | 86.0   | 86.0   | 87.8   | 90.2   | 93.9   |
| 80°   | 63.0   | 62.4   | 62.4   | 63.0   | 63.0   | 64.8   | 64.8   | 66.0   | 66.6   | 67.8   | 69.6   |
| 82.5° | 44.8   | 44.2   | 44.8   | 44.2   | 44.8   | 45.4   | 46.6   | 46.0   | 47.2   | 48.4   | 49.0   |
| 85°   | 27.9   | 28.5   | 28.5   | 29.7   | 29.1   | 28.5   | 29.1   | 29.1   | 29.1   | 29.1   | 30.3   |
| 87.5° | 12.1   | 13.3   | 13.3   | 12.7   | 13.3   | 13.3   | 12.1   | 13.3   | 13.3   | 13.3   | 13.9   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|       | 55°    | 60°    | 65°    | 70°    | 75°    | 80°    | 85°    | 90°    | 95°    | 100°   | 105°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 |
| 2.5°  | 1456.9 | 1454.5 | 1445.4 | 1436.9 | 1424.2 | 1418.7 | 1411.5 | 1408.5 | 1398.8 | 1385.4 | 1379.4 |
| 5°    | 1524.7 | 1506.5 | 1489.0 | 1467.8 | 1450.2 | 1429.6 | 1418.1 | 1404.8 | 1384.2 | 1365.5 | 1352.1 |
| 7.5°  | 1596.8 | 1570.1 | 1537.4 | 1502.3 | 1470.8 | 1441.2 | 1415.7 | 1394.5 | 1367.9 | 1341.8 | 1321.3 |
| 10°   | 1676.1 | 1630.7 | 1578.0 | 1533.2 | 1487.8 | 1444.8 | 1412.7 | 1380.6 | 1346.1 | 1313.4 | 1288.6 |
| 12.5° | 1761.5 | 1697.3 | 1633.7 | 1566.5 | 1498.7 | 1449.0 | 1401.2 | 1360.0 | 1321.3 | 1286.7 | 1257.1 |
| 15°   | 1849.9 | 1762.1 | 1680.9 | 1605.3 | 1510.8 | 1444.2 | 1391.5 | 1340.6 | 1292.2 | 1249.8 | 1220.7 |
| 17.5° | 1912.9 | 1812.3 | 1710.0 | 1602.8 | 1521.7 | 1439.3 | 1373.9 | 1309.8 | 1264.9 | 1221.3 | 1182.0 |
| 20°   | 1971.0 | 1857.1 | 1735.4 | 1635.5 | 1522.3 | 1421.8 | 1350.3 | 1288.6 | 1226.2 | 1179.6 | 1146.3 |
| 22.5° | 1995.8 | 1892.9 | 1770.0 | 1631.3 | 1518.1 | 1415.1 | 1323.1 | 1253.4 | 1197.7 | 1146.9 | 1103.3 |
| 25°   | 2000.7 | 1885.6 | 1759.7 | 1625.8 | 1501.7 | 1390.3 | 1297.0 | 1227.4 | 1154.7 | 1102.1 | 1068.1 |
| 27.5° | 2021.9 | 1864.4 | 1740.9 | 1607.7 | 1481.7 | 1365.5 | 1267.4 | 1189.9 | 1122.0 | 1065.7 | 1022.1 |
| 30°   | 2027.3 | 1855.3 | 1700.9 | 1573.8 | 1444.2 | 1330.3 | 1231.0 | 1152.9 | 1079.0 | 1021.5 | 982.2  |
| 32.5° | 2029.7 | 1843.2 | 1659.1 | 1519.9 | 1396.3 | 1289.2 | 1198.3 | 1113.6 | 1043.3 | 982.8  | 942.2  |
| 35°   | 2021.2 | 1826.3 | 1608.9 | 1458.7 | 1340.0 | 1234.7 | 1150.5 | 1075.4 | 997.3  | 940.4  | 897.4  |
| 37.5° | 1987.9 | 1799.6 | 1580.4 | 1387.3 | 1274.0 | 1174.7 | 1103.3 | 1029.4 | 957.3  | 895.6  | 851.4  |
| 40°   | 1925.0 | 1760.9 | 1527.1 | 1327.3 | 1198.9 | 1109.9 | 1043.3 | 982.8  | 910.1  | 850.8  | 807.2  |
| 42.5° | 1824.5 | 1708.2 | 1478.1 | 1259.5 | 1124.5 | 1040.3 | 984.6  | 932.5  | 867.1  | 810.8  | 763.0  |
| 45°   | 1675.5 | 1634.3 | 1412.7 | 1190.5 | 1043.3 | 964.0  | 915.6  | 875.0  | 815.6  | 764.2  | 720.0  |
| 47.5° | 1514.4 | 1523.5 | 1346.7 | 1120.2 | 969.4  | 893.8  | 851.4  | 815.6  | 770.8  | 715.7  | 675.2  |
| 50°   | 1328.5 | 1378.2 | 1254.0 | 1049.4 | 895.6  | 821.1  | 779.3  | 757.5  | 715.7  | 669.7  | 631.6  |
| 52.5° | 1158.4 | 1237.1 | 1160.2 | 971.9  | 822.9  | 749.6  | 710.9  | 689.1  | 661.2  | 623.1  | 584.3  |
| 55°   | 982.2  | 1082.1 | 1026.4 | 888.3  | 749.0  | 675.2  | 642.5  | 625.5  | 602.5  | 572.8  | 537.7  |
| 57.5° | 836.2  | 942.8  | 907.7  | 800.5  | 677.0  | 610.4  | 581.3  | 561.9  | 548.0  | 520.8  | 492.3  |
| 60°   | 693.3  | 792.0  | 778.1  | 699.4  | 605.5  | 541.9  | 519.5  | 503.8  | 492.3  | 472.3  | 444.5  |
| 62.5° | 559.5  | 655.2  | 663.7  | 601.9  | 535.9  | 478.4  | 457.8  | 446.9  | 437.8  | 422.1  | 396.6  |
| 65°   | 443.9  | 528.0  | 545.6  | 498.3  | 462.6  | 419.0  | 399.0  | 392.4  | 385.7  | 367.6  | 348.2  |
| 67.5° | 347.6  | 413.6  | 436.6  | 409.9  | 384.5  | 359.1  | 343.3  | 334.3  | 329.4  | 318.5  | 305.2  |
| 70°   | 265.8  | 322.7  | 342.1  | 330.6  | 313.7  | 304.0  | 291.9  | 285.8  | 281.0  | 267.0  | 259.8  |
| 72.5° | 199.2  | 238.0  | 262.2  | 258.6  | 254.9  | 248.3  | 241.0  | 239.2  | 231.9  | 222.8  | 216.2  |
| 75°   | 145.9  | 168.3  | 190.1  | 198.0  | 196.8  | 199.2  | 191.3  | 188.3  | 184.1  | 177.4  | 172.0  |
| 77.5° | 104.8  | 118.1  | 133.2  | 142.9  | 147.7  | 148.4  | 148.4  | 146.5  | 143.5  | 138.7  | 134.4  |
| 80°   | 72.7   | 75.7   | 89.6   | 98.7   | 103.5  | 107.2  | 107.2  | 107.8  | 104.8  | 102.9  | 99.9   |
| 82.5° | 50.3   | 52.1   | 55.1   | 62.4   | 68.4   | 72.7   | 73.3   | 72.7   | 71.5   | 70.8   | 66.6   |
| 85°   | 31.5   | 30.9   | 30.9   | 32.7   | 37.5   | 41.8   | 42.4   | 43.6   | 43.0   | 42.4   | 38.1   |
| 87.5° | 13.3   | 13.3   | 13.9   | 13.3   | 15.1   | 15.7   | 17.0   | 20.0   | 19.4   | 16.3   | 15.1   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



TEST NUMBER: P243448

CATALOG NUMBER: S123RDRP-H1165D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

|       | 110°   | 115°   | 120°   | 125°   | 130°   | 135°   | 140°   | 145°   | 150°   | 155°   | 160°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 | 1402.4 |
| 2.5°  | 1375.8 | 1367.9 | 1360.6 | 1352.7 | 1343.1 | 1334.0 | 1332.8 | 1331.6 | 1334.6 | 1328.5 | 1326.1 |
| 5°    | 1341.8 | 1326.7 | 1315.2 | 1300.7 | 1290.4 | 1277.1 | 1269.8 | 1268.0 | 1267.4 | 1263.7 | 1258.9 |
| 7.5°  | 1304.9 | 1288.6 | 1272.2 | 1255.9 | 1238.9 | 1225.0 | 1217.1 | 1212.9 | 1209.2 | 1203.2 | 1198.3 |
| 10°   | 1270.4 | 1249.8 | 1232.2 | 1209.8 | 1191.7 | 1173.5 | 1166.2 | 1160.2 | 1156.6 | 1148.1 | 1141.4 |
| 12.5° | 1231.6 | 1205.6 | 1186.2 | 1162.0 | 1145.7 | 1129.9 | 1118.4 | 1106.9 | 1098.4 | 1085.7 | 1080.3 |
| 15°   | 1197.7 | 1170.5 | 1137.8 | 1123.3 | 1100.2 | 1076.6 | 1063.9 | 1063.9 | 1046.3 | 1036.1 | 1029.4 |
| 17.5° | 1152.3 | 1128.7 | 1105.7 | 1076.0 | 1043.3 | 1029.4 | 1014.9 | 1002.1 | 990.0  | 987.0  | 974.9  |
| 20°   | 1112.4 | 1084.5 | 1060.9 | 1028.8 | 999.1  | 982.8  | 965.8  | 951.9  | 942.8  | 934.3  | 927.7  |
| 22.5° | 1073.0 | 1045.1 | 1008.8 | 977.3  | 957.3  | 935.5  | 917.4  | 905.3  | 897.4  | 884.7  | 878.6  |
| 25°   | 1031.8 | 998.5  | 965.8  | 934.9  | 910.1  | 891.3  | 872.6  | 865.9  | 852.0  | 845.3  | 836.8  |
| 27.5° | 990.6  | 950.7  | 919.8  | 893.2  | 865.3  | 847.1  | 834.4  | 822.3  | 810.2  | 806.6  | 801.7  |
| 30°   | 944.6  | 907.7  | 878.0  | 852.0  | 825.3  | 809.6  | 794.5  | 783.6  | 773.3  | 765.4  | 759.9  |
| 32.5° | 898.6  | 867.7  | 839.3  | 809.0  | 784.8  | 767.8  | 755.1  | 745.4  | 740.6  | 727.2  | 722.4  |
| 35°   | 856.2  | 824.7  | 794.5  | 766.0  | 746.6  | 730.3  | 718.8  | 709.7  | 699.4  | 690.9  | 686.1  |
| 37.5° | 812.6  | 784.2  | 753.3  | 729.1  | 707.3  | 693.9  | 681.2  | 669.1  | 661.2  | 656.4  | 650.3  |
| 40°   | 770.2  | 740.0  | 716.3  | 689.7  | 670.3  | 655.2  | 641.9  | 632.8  | 623.1  | 618.8  | 611.0  |
| 42.5° | 730.3  | 701.2  | 674.0  | 649.7  | 632.2  | 617.6  | 604.9  | 594.6  | 586.8  | 578.9  | 574.6  |
| 45°   | 684.2  | 658.8  | 634.0  | 609.8  | 593.4  | 577.7  | 563.7  | 554.7  | 543.8  | 537.1  | 534.7  |
| 47.5° | 645.5  | 618.8  | 592.2  | 569.8  | 552.8  | 535.9  | 524.4  | 513.5  | 504.4  | 497.7  | 494.1  |
| 50°   | 599.5  | 574.6  | 552.8  | 530.4  | 514.1  | 495.9  | 482.0  | 471.7  | 461.4  | 456.6  | 450.5  |
| 52.5° | 560.1  | 535.9  | 509.2  | 489.3  | 470.5  | 454.8  | 442.0  | 433.6  | 424.5  | 417.2  | 413.0  |
| 55°   | 511.1  | 487.4  | 466.3  | 445.1  | 426.3  | 413.6  | 403.3  | 388.7  | 380.9  | 373.6  | 362.1  |
| 57.5° | 468.1  | 445.7  | 423.3  | 402.7  | 385.1  | 370.0  | 357.3  | 347.6  | 337.3  | 331.8  | 324.0  |
| 60°   | 422.7  | 399.0  | 378.5  | 362.7  | 343.3  | 327.0  | 318.5  | 307.0  | 298.5  | 290.0  | 287.6  |
| 62.5° | 377.8  | 356.0  | 335.5  | 319.1  | 301.6  | 288.8  | 277.9  | 272.5  | 264.0  | 257.3  | 254.9  |
| 65°   | 331.2  | 313.1  | 293.7  | 275.5  | 264.6  | 250.1  | 244.0  | 234.9  | 230.1  | 227.1  | 226.5  |
| 67.5° | 285.2  | 268.9  | 251.3  | 237.4  | 227.1  | 217.4  | 210.1  | 206.5  | 201.6  | 198.0  | 195.0  |
| 70°   | 243.4  | 227.7  | 212.5  | 201.0  | 193.2  | 185.9  | 181.1  | 174.4  | 169.5  | 164.7  | 158.0  |
| 72.5° | 202.2  | 189.5  | 176.8  | 167.7  | 159.9  | 155.6  | 149.0  | 138.7  | 133.8  | 132.6  | 132.0  |
| 75°   | 164.1  | 150.2  | 141.1  | 136.2  | 129.0  | 118.7  | 114.4  | 113.2  | 112.6  | 111.4  | 111.4  |
| 77.5° | 126.6  | 118.1  | 112.0  | 101.7  | 98.1   | 97.5   | 94.5   | 93.9   | 92.6   | 93.3   | 93.3   |
| 80°   | 92.0   | 87.2   | 79.9   | 76.9   | 75.7   | 76.3   | 75.1   | 75.7   | 74.5   | 75.1   | 73.9   |
| 82.5° | 61.2   | 56.9   | 58.1   | 56.3   | 56.3   | 57.5   | 56.9   | 55.1   | 55.1   | 54.5   | 54.5   |
| 85°   | 36.3   | 35.7   | 36.9   | 36.9   | 36.3   | 34.5   | 35.7   | 35.1   | 33.3   | 33.9   | 33.9   |
| 87.5° | 15.7   | 15.7   | 15.7   | 15.1   | 15.7   | 15.1   | 15.1   | 15.1   | 13.3   | 13.3   | 13.3   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



TEST NUMBER: P243448

CATALOG NUMBER: S123RDRP-H1165D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

|       | 165°   | 170°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|
| 0°    | 1402.4 | 1402.4 | 1402.4 | 1402.4 |
| 2.5°  | 1327.3 | 1326.1 | 1324.3 | 1322.5 |
| 5°    | 1258.9 | 1253.4 | 1252.8 | 1251.0 |
| 7.5°  | 1194.7 | 1192.3 | 1188.0 | 1192.9 |
| 10°   | 1136.0 | 1137.8 | 1133.5 | 1128.7 |
| 12.5° | 1074.8 | 1071.2 | 1064.5 | 1068.1 |
| 15°   | 1020.9 | 1014.9 | 1011.2 | 1002.8 |
| 17.5° | 964.6  | 959.8  | 959.8  | 954.3  |
| 20°   | 915.6  | 910.7  | 911.9  | 908.3  |
| 22.5° | 874.4  | 870.7  | 865.3  | 865.9  |
| 25°   | 835.6  | 830.2  | 824.1  | 824.7  |
| 27.5° | 792.6  | 787.8  | 786.6  | 782.3  |
| 30°   | 754.5  | 750.2  | 749.6  | 749.6  |
| 32.5° | 717.5  | 715.7  | 712.7  | 710.9  |
| 35°   | 685.5  | 683.0  | 678.2  | 679.4  |
| 37.5° | 645.5  | 643.1  | 642.5  | 641.9  |
| 40°   | 607.9  | 606.1  | 601.3  | 601.9  |
| 42.5° | 570.4  | 567.4  | 564.4  | 563.1  |
| 45°   | 529.8  | 529.2  | 524.4  | 525.6  |
| 47.5° | 491.1  | 489.9  | 487.4  | 484.4  |
| 50°   | 448.1  | 447.5  | 445.7  | 442.0  |
| 52.5° | 406.3  | 404.5  | 400.9  | 397.2  |
| 55°   | 359.1  | 353.6  | 354.2  | 351.2  |
| 57.5° | 320.3  | 317.9  | 313.1  | 311.2  |
| 60°   | 282.8  | 280.4  | 279.8  | 277.3  |
| 62.5° | 251.3  | 248.9  | 247.1  | 247.1  |
| 65°   | 222.8  | 219.8  | 219.2  | 219.2  |
| 67.5° | 191.3  | 188.3  | 187.7  | 186.5  |
| 70°   | 152.0  | 151.4  | 150.2  | 150.2  |
| 72.5° | 130.8  | 130.2  | 130.8  | 128.4  |
| 75°   | 111.4  | 110.8  | 110.8  | 111.4  |
| 77.5° | 92.6   | 92.6   | 92.0   | 92.0   |
| 80°   | 73.3   | 73.9   | 73.3   | 75.1   |
| 82.5° | 55.1   | 53.9   | 54.5   | 53.3   |
| 85°   | 33.9   | 33.9   | 32.7   | 32.7   |
| 87.5° | 13.3   | 13.3   | 13.3   | 13.3   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    |



TEST NUMBER: P243448

CATALOG NUMBER: S123RDRP-H1165D935-X4F0-XX-UDD-A-W

**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 18.23            | 19.73 | 18.60 | 20.05 | 20.36 | 20.93          | 22.43 | 21.30 | 22.75 | 23.06 |
|                 | 3H   | 19.42            | 20.76 | 19.80 | 21.09 | 21.45 | 22.36          | 23.70 | 22.73 | 24.03 | 24.39 |
|                 | 4H   | 19.77            | 21.03 | 20.17 | 21.38 | 21.76 | 22.86          | 24.12 | 23.26 | 24.47 | 24.85 |
|                 | 6H   | 20.05            | 21.21 | 20.46 | 21.58 | 21.97 | 23.21          | 24.37 | 23.62 | 24.74 | 25.13 |
|                 | 8H   | 20.14            | 21.24 | 20.56 | 21.63 | 22.03 | 23.31          | 24.41 | 23.73 | 24.80 | 25.20 |
|                 | 12H  | 20.20            | 21.26 | 20.63 | 21.64 | 22.07 | 23.37          | 24.42 | 23.80 | 24.81 | 25.24 |
| 4H              | 2H   | 19.18            | 20.44 | 19.58 | 20.79 | 21.17 | 21.21          | 22.47 | 21.61 | 22.82 | 23.20 |
|                 | 3H   | 20.45            | 21.49 | 20.86 | 21.89 | 22.30 | 22.93          | 23.97 | 23.34 | 24.37 | 24.77 |
|                 | 4H   | 20.86            | 21.80 | 21.29 | 22.21 | 22.65 | 23.54          | 24.48 | 23.97 | 24.90 | 25.34 |
|                 | 6H   | 21.20            | 22.02 | 21.66 | 22.46 | 22.92 | 24.00          | 24.81 | 24.46 | 25.26 | 25.72 |
|                 | 8H   | 21.32            | 22.08 | 21.78 | 22.52 | 22.99 | 24.14          | 24.90 | 24.60 | 25.34 | 25.81 |
|                 | 12H  | 21.41            | 22.09 | 21.89 | 22.57 | 23.04 | 24.23          | 24.91 | 24.71 | 25.39 | 25.86 |
| 8H              | 4H   | 21.22            | 21.98 | 21.68 | 22.42 | 22.89 | 23.60          | 24.36 | 24.07 | 24.81 | 25.27 |
|                 | 6H   | 21.64            | 22.27 | 22.14 | 22.76 | 23.24 | 24.13          | 24.76 | 24.63 | 25.25 | 25.73 |
|                 | 8H   | 21.80            | 22.37 | 22.32 | 22.88 | 23.36 | 24.32          | 24.88 | 24.83 | 25.39 | 25.88 |
|                 | 12H  | 21.95            | 22.45 | 22.46 | 22.94 | 23.50 | 24.47          | 24.97 | 24.98 | 25.46 | 26.03 |
| 12H             | 4H   | 21.25            | 21.93 | 21.73 | 22.41 | 22.88 | 23.59          | 24.27 | 24.07 | 24.75 | 25.22 |
|                 | 6H   | 21.68            | 22.25 | 22.20 | 22.76 | 23.25 | 24.12          | 24.68 | 24.63 | 25.20 | 25.68 |
|                 | 8H   | 21.89            | 22.39 | 22.40 | 22.89 | 23.45 | 24.35          | 24.85 | 24.86 | 25.34 | 25.91 |