

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: STREETWORKS

Report Number: P1380704

Luminaire Tested: **VAL-T-SB1B-730-U-T3**

Issue Date: 02/18/2026

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been  
influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
 Report Number: P1380704  
 Test Lab: INNOVATION CENTER(G3)  
 Issue Date: 02/18/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: VAL-T-SB1B-730-U-T3  
 Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 1SQUARE 40W 70CRI  
 3000K FIXTURE w/ TYPE III DISTRIBUTION OPTIC  
 Light Source: (26) 3000K CCT, 70 CRI LEDS  
 Ballast/Driver: ELECTRONIC DRIVER  
 Luminaire Equipment:

| <u>Sample No.</u> | <u>Condition</u> | <u>Description</u> |
|-------------------|------------------|--------------------|
| a                 | good             | reflector          |
| b                 | good             | lens               |
| c                 | good             | housing            |
| d                 | good             | cord               |

**Summary**

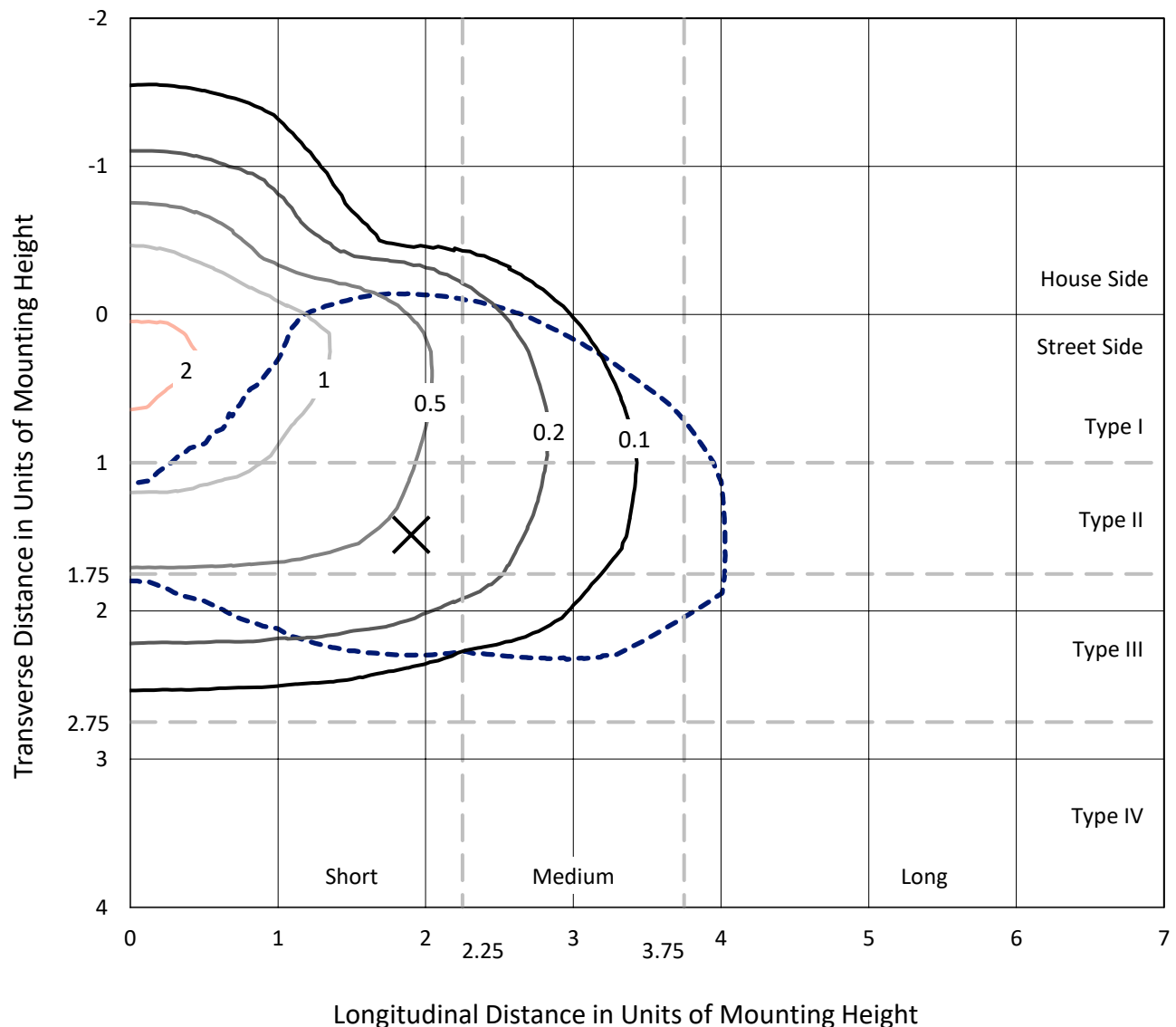
Lumens per Lamp: N/A  
 Luminaire Lumens: 5010.2 lumens  
 Efficiency: N/A  
 Efficacy: 125.3 lumens/watt  
 Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
 IES Classification: Type III - Short  
 BUG Rating: B1 - U0 - G1  
  
 Input Watts (W): 40  
 Input Voltage (V): 120  
 Input Current (A<sub>in</sub>): NR  
 Voltage Rise (V): NR  
 Power Factor: 0.98  
 Total Harmonic Distortion (THDi): 5.3%  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 28.75 FT

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CATALOG NUMBER: VAL-T-SB1B-730-U-T3

## Iso-Footcandle Lines of Horizontal Illumination

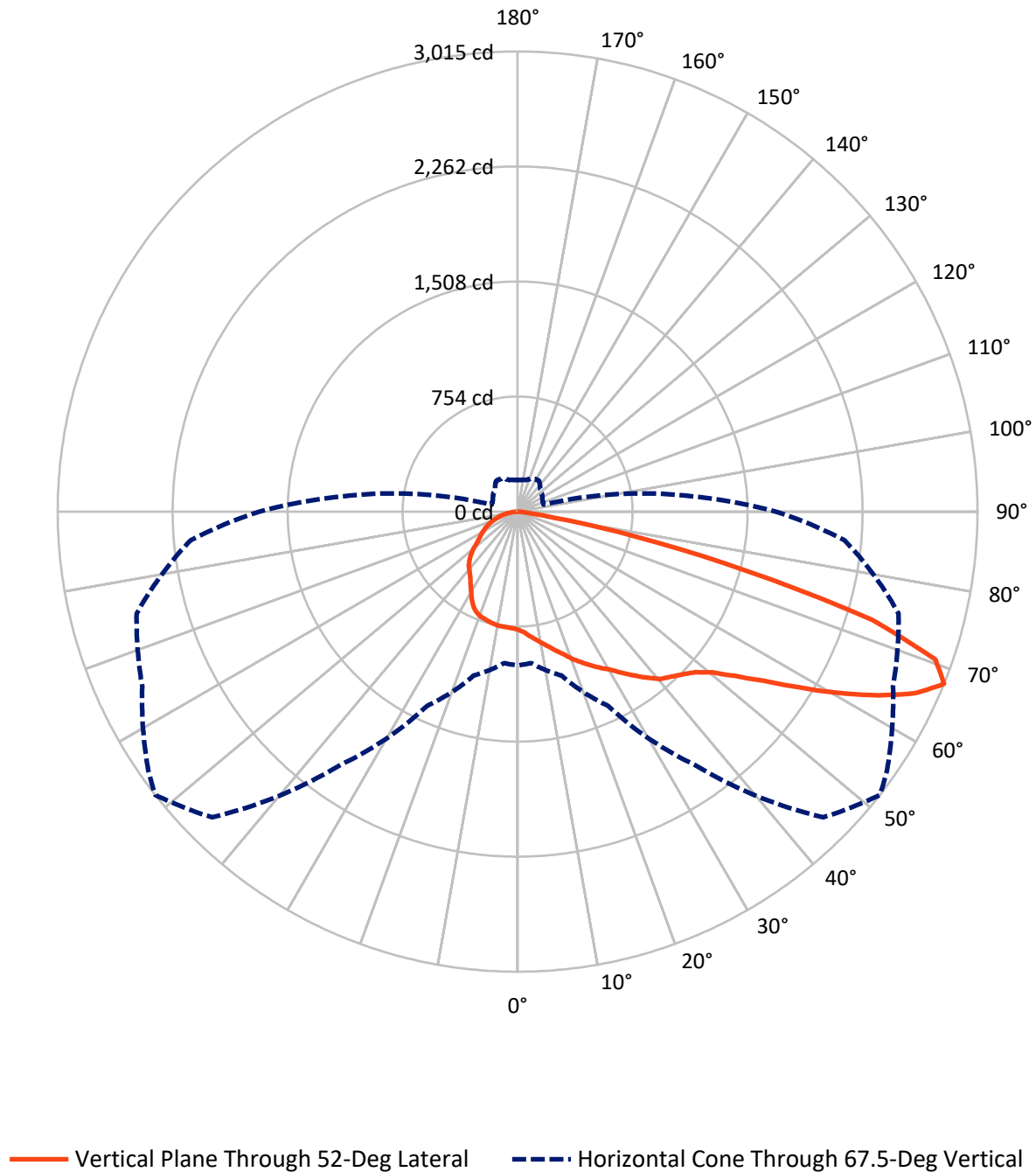
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 2.2 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: VAL-T-SB1B-730-U-T3

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1185.3   | 0.0    | 1185.3 |
|                    | % Fixture | 23.7     | 0.0    | 23.7   |
| <b>Street Side</b> | Lumens    | 3824.9   | 0.0    | 3824.9 |
|                    | % Fixture | 76.3     | 0.0    | 76.3   |
| <b>Total</b>       | Lumens    | 5010.2   | 0.0    | 5010.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 76.0   | 1.5       |
| 10°-20°   | 239.8  | 4.8       |
| 20°-30°   | 410.0  | 8.2       |
| 30°-40°   | 594.7  | 11.9      |
| 40°-50°   | 772.6  | 15.4      |
| 50°-60°   | 1046.8 | 20.9      |
| 60°-70°   | 1221.1 | 24.4      |
| 70°-80°   | 602.0  | 12.0      |
| 80°-90°   | 47.3   | 0.9       |
| 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°-90°    | 5010.2 | 100.0     |
| 0°-180°   | 5010.2 | 100.0     |

**Coefficient of Utilization**



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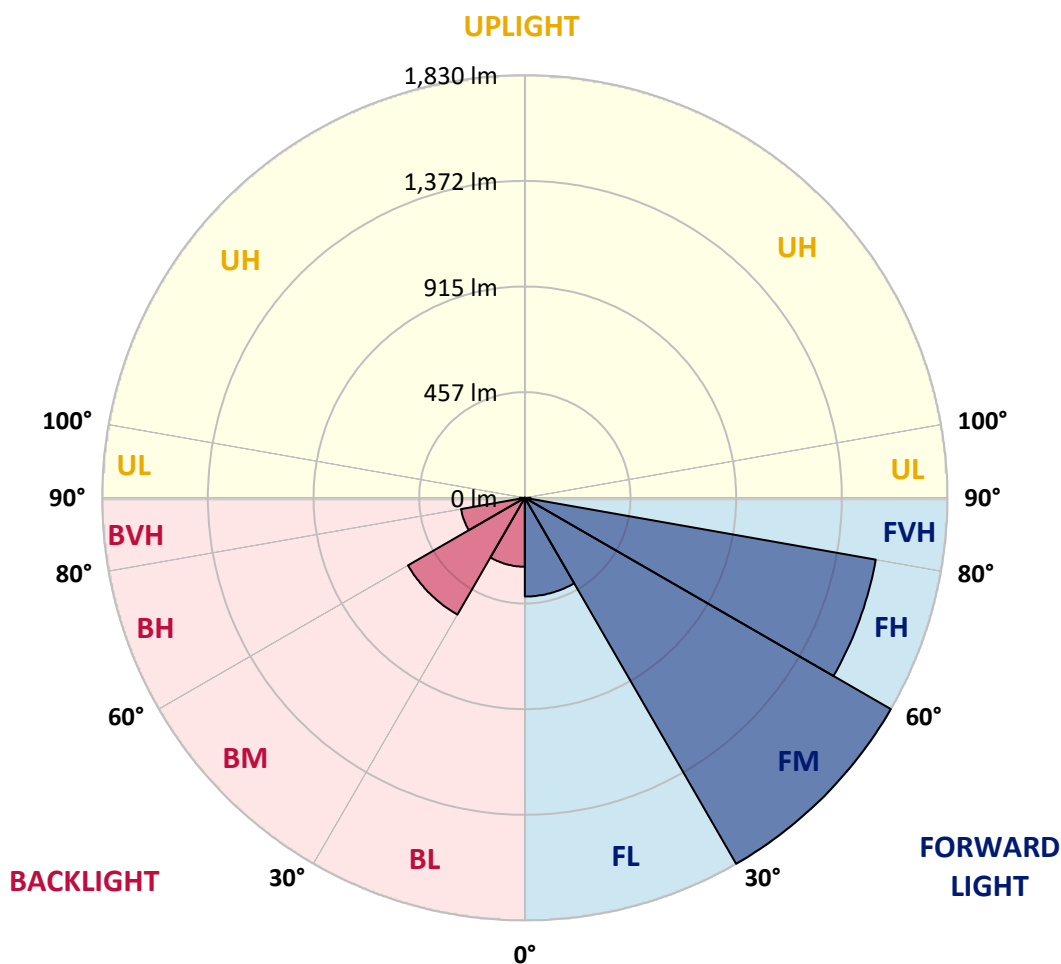
CATALOG NUMBER: VAL-T-SB1B-730-U-T3

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 427.4  | 8.5       |                         |      |         |
| FM   | (30°-60°)   | 1829.9 | 36.5      |                         |      |         |
| FH   | (60°-80°)   | 1542.8 | 30.8      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 24.8   | 0.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 298.4  | 6.0       | B1/500                  |      |         |
| BM   | (30°-60°)   | 584.2  | 11.7      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 280.3  | 5.6       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 22.5   | 0.4       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**

Type III Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 52°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 775.3  | 775.3  | 775.3  | 775.3  | 775.3  | 775.3  | 775.3  | 775.3  | 775.3  | 775.3  | 775.3  |
| 2.5°  | 798.8  | 797.6  | 796.5  | 792.1  | 792.1  | 793.2  | 791.0  | 792.1  | 791.0  | 785.4  | 780.9  |
| 5°    | 843.4  | 833.3  | 831.1  | 828.9  | 831.1  | 824.4  | 818.8  | 815.5  | 803.2  | 799.9  | 786.5  |
| 7.5°  | 862.4  | 863.5  | 862.4  | 857.9  | 854.5  | 854.5  | 845.6  | 841.2  | 833.3  | 820.0  | 797.6  |
| 10°   | 889.1  | 888.0  | 884.7  | 886.9  | 893.6  | 882.4  | 875.7  | 872.4  | 859.0  | 840.0  | 818.8  |
| 12.5° | 937.1  | 929.3  | 927.1  | 923.7  | 922.6  | 915.9  | 908.1  | 909.2  | 893.6  | 864.6  | 842.3  |
| 15°   | 978.4  | 969.4  | 979.5  | 972.8  | 963.9  | 953.8  | 946.0  | 939.3  | 921.5  | 894.7  | 866.8  |
| 17.5° | 1017.4 | 1013.0 | 1017.4 | 1017.4 | 1016.3 | 999.6  | 984.0  | 978.4  | 957.2  | 927.1  | 890.2  |
| 20°   | 1047.5 | 1047.5 | 1055.3 | 1055.3 | 1052.0 | 1042.0 | 1031.9 | 1025.2 | 995.1  | 956.1  | 913.7  |
| 22.5° | 1086.6 | 1068.7 | 1085.5 | 1086.6 | 1087.7 | 1079.9 | 1073.2 | 1064.3 | 1033.0 | 986.2  | 932.6  |
| 25°   | 1123.4 | 1108.9 | 1118.9 | 1112.2 | 1116.7 | 1120.1 | 1116.7 | 1113.4 | 1078.8 | 1025.2 | 960.5  |
| 27.5° | 1181.4 | 1166.9 | 1173.6 | 1158.0 | 1158.0 | 1154.6 | 1160.2 | 1164.7 | 1126.7 | 1063.2 | 985.1  |
| 30°   | 1268.4 | 1251.7 | 1246.1 | 1227.2 | 1208.2 | 1200.4 | 1202.6 | 1210.4 | 1184.8 | 1100.0 | 1009.6 |
| 32.5° | 1343.2 | 1334.2 | 1329.8 | 1314.2 | 1290.7 | 1255.0 | 1260.6 | 1260.6 | 1233.8 | 1126.7 | 1021.9 |
| 35°   | 1404.5 | 1402.3 | 1403.4 | 1382.2 | 1377.8 | 1319.7 | 1319.7 | 1317.5 | 1268.4 | 1162.4 | 1054.2 |
| 37.5° | 1444.7 | 1432.4 | 1438.0 | 1445.8 | 1431.3 | 1392.3 | 1382.2 | 1376.6 | 1316.4 | 1200.4 | 1096.6 |
| 40°   | 1435.8 | 1426.8 | 1448.0 | 1462.5 | 1451.4 | 1443.6 | 1442.5 | 1431.3 | 1364.4 | 1248.3 | 1159.1 |
| 42.5° | 1434.7 | 1426.8 | 1452.5 | 1468.1 | 1462.5 | 1474.8 | 1478.2 | 1486.0 | 1425.7 | 1324.2 | 1248.3 |
| 45°   | 1439.1 | 1435.8 | 1478.2 | 1498.2 | 1484.9 | 1501.6 | 1520.6 | 1527.2 | 1503.8 | 1416.8 | 1359.9 |
| 47.5° | 1475.9 | 1471.5 | 1520.6 | 1544.0 | 1555.1 | 1584.1 | 1571.9 | 1583.0 | 1596.4 | 1548.4 | 1488.2 |
| 50°   | 1511.6 | 1516.1 | 1581.9 | 1604.2 | 1658.9 | 1699.0 | 1656.7 | 1674.5 | 1719.1 | 1701.3 | 1660.0 |
| 52.5° | 1568.5 | 1569.6 | 1634.3 | 1690.1 | 1795.0 | 1832.9 | 1791.6 | 1793.9 | 1854.1 | 1887.6 | 1832.9 |
| 55°   | 1583.0 | 1595.3 | 1682.3 | 1798.3 | 1948.9 | 1975.7 | 1956.7 | 1948.9 | 2020.3 | 2066.1 | 2006.9 |
| 57.5° | 1581.9 | 1575.2 | 1683.4 | 1844.1 | 2066.1 | 2160.9 | 2172.1 | 2150.9 | 2211.1 | 2230.1 | 2197.7 |
| 60°   | 1540.6 | 1554.0 | 1672.3 | 1876.4 | 2175.4 | 2386.3 | 2413.0 | 2385.1 | 2414.1 | 2419.7 | 2329.4 |
| 62.5° | 1414.6 | 1419.0 | 1580.8 | 1877.5 | 2261.3 | 2573.7 | 2652.9 | 2621.6 | 2594.9 | 2525.7 | 2358.4 |
| 65°   | 1209.3 | 1201.5 | 1356.6 | 1722.5 | 2276.9 | 2754.4 | 2868.2 | 2868.2 | 2694.2 | 2561.4 | 2297.0 |
| 67.5° | 1008.5 | 996.2  | 1112.2 | 1404.5 | 2027.0 | 2833.6 | 3015.4 | 2956.3 | 2715.4 | 2585.9 | 2150.9 |
| 70°   | 486.4  | 521.0  | 698.4  | 994.0  | 1549.6 | 2392.9 | 2906.1 | 2928.4 | 2698.6 | 2509.0 | 1867.5 |
| 72.5° | 174.0  | 166.2  | 251.0  | 426.2  | 857.9  | 1561.8 | 2433.1 | 2629.4 | 2581.5 | 2288.1 | 1529.5 |
| 75°   | 80.3   | 81.4   | 104.9  | 148.4  | 277.8  | 761.9  | 1547.3 | 1810.6 | 2211.1 | 1902.1 | 1144.6 |
| 77.5° | 62.5   | 62.5   | 71.4   | 84.8   | 114.9  | 246.5  | 791.0  | 1016.3 | 1429.1 | 1178.1 | 545.5  |
| 80°   | 45.7   | 46.9   | 48.0   | 55.8   | 70.3   | 92.6   | 235.4  | 352.5  | 521.0  | 378.2  | 177.4  |
| 82.5° | 32.4   | 32.4   | 31.2   | 31.2   | 37.9   | 41.3   | 63.6   | 89.2   | 152.8  | 103.8  | 46.9   |
| 85°   | 13.4   | 15.6   | 13.4   | 13.4   | 13.4   | 16.7   | 20.1   | 23.4   | 33.5   | 29.0   | 20.1   |
| 87.5° | 2.2    | 2.2    | 2.2    | 3.3    | 4.5    | 5.6    | 6.7    | 7.8    | 8.9    | 8.9    | 8.9    |
| 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):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 775.3  | 775.3  | 775.3 | 775.3 | 775.3 | 775.3 | 775.3 | 775.3 | 775.3 | 775.3 | 775.3 |
| 2.5°  | 778.7  | 778.7  | 775.3 | 769.8 | 767.5 | 764.2 | 763.1 | 761.9 | 759.7 | 764.2 | 761.9 |
| 5°    | 783.1  | 778.7  | 774.2 | 765.3 | 764.2 | 758.6 | 753.0 | 751.9 | 748.6 | 751.9 | 751.9 |
| 7.5°  | 793.2  | 786.5  | 776.5 | 767.5 | 759.7 | 758.6 | 748.6 | 739.6 | 739.6 | 740.8 | 739.6 |
| 10°   | 811.0  | 803.2  | 793.2 | 776.5 | 761.9 | 748.6 | 731.8 | 720.7 | 721.8 | 721.8 | 719.6 |
| 12.5° | 834.5  | 823.3  | 805.5 | 780.9 | 758.6 | 737.4 | 717.3 | 714.0 | 712.9 | 715.1 | 708.4 |
| 15°   | 852.3  | 842.3  | 813.3 | 785.4 | 750.8 | 729.6 | 708.4 | 700.6 | 701.7 | 699.5 | 693.9 |
| 17.5° | 874.6  | 859.0  | 823.3 | 782.0 | 741.9 | 721.8 | 697.2 | 680.5 | 671.6 | 672.7 | 671.6 |
| 20°   | 895.8  | 873.5  | 831.1 | 782.0 | 739.6 | 703.9 | 672.7 | 650.4 | 631.4 | 628.1 | 627.0 |
| 22.5° | 911.4  | 889.1  | 840.0 | 783.1 | 726.3 | 683.9 | 638.1 | 609.1 | 581.2 | 576.8 | 575.6 |
| 25°   | 933.8  | 904.7  | 850.1 | 775.3 | 708.4 | 650.4 | 593.5 | 561.1 | 536.6 | 532.1 | 532.1 |
| 27.5° | 952.7  | 921.5  | 863.5 | 767.5 | 679.4 | 604.7 | 551.1 | 518.8 | 503.1 | 495.3 | 495.3 |
| 30°   | 972.8  | 938.2  | 874.6 | 744.1 | 640.3 | 558.9 | 517.6 | 496.4 | 478.6 | 470.8 | 467.4 |
| 32.5° | 995.1  | 966.1  | 876.9 | 720.7 | 601.3 | 528.8 | 494.2 | 476.4 | 457.4 | 446.2 | 445.1 |
| 35°   | 1023.0 | 1001.8 | 869.0 | 686.1 | 562.3 | 505.4 | 471.9 | 451.8 | 432.8 | 421.7 | 423.9 |
| 37.5° | 1067.6 | 1043.1 | 845.6 | 637.0 | 529.9 | 490.9 | 454.0 | 425.0 | 402.7 | 384.9 | 386.0 |
| 40°   | 1133.4 | 1093.3 | 811.0 | 577.9 | 506.5 | 474.1 | 432.8 | 399.4 | 367.0 | 340.3 | 340.3 |
| 42.5° | 1208.2 | 1137.9 | 768.6 | 523.2 | 488.6 | 452.9 | 410.5 | 368.1 | 322.4 | 294.5 | 293.4 |
| 45°   | 1291.9 | 1176.9 | 719.6 | 478.6 | 459.6 | 427.3 | 381.5 | 321.3 | 291.2 | 276.7 | 275.6 |
| 47.5° | 1403.4 | 1219.3 | 661.5 | 439.5 | 426.2 | 401.6 | 338.0 | 294.5 | 276.7 | 265.5 | 264.4 |
| 50°   | 1508.3 | 1265.1 | 613.6 | 401.6 | 390.5 | 371.5 | 307.9 | 283.4 | 268.9 | 259.9 | 257.7 |
| 52.5° | 1629.9 | 1311.9 | 560.0 | 364.8 | 350.3 | 324.6 | 301.2 | 277.8 | 264.4 | 257.7 | 255.5 |
| 55°   | 1750.4 | 1377.8 | 500.9 | 331.3 | 314.6 | 303.4 | 294.5 | 274.4 | 261.0 | 256.6 | 253.2 |
| 57.5° | 1887.6 | 1441.3 | 428.4 | 295.6 | 288.9 | 287.8 | 293.4 | 273.3 | 262.2 | 254.4 | 249.9 |
| 60°   | 1959.0 | 1469.2 | 352.5 | 263.3 | 264.4 | 271.1 | 288.9 | 273.3 | 255.5 | 242.1 | 236.5 |
| 62.5° | 1934.4 | 1412.3 | 278.9 | 230.9 | 241.0 | 253.2 | 281.1 | 263.3 | 241.0 | 230.9 | 224.2 |
| 65°   | 1836.3 | 1315.3 | 217.5 | 203.0 | 219.8 | 230.9 | 262.2 | 248.8 | 226.5 | 216.4 | 215.3 |
| 67.5° | 1694.6 | 1146.8 | 176.3 | 178.5 | 195.2 | 209.7 | 245.4 | 239.9 | 214.2 | 207.5 | 207.5 |
| 70°   | 1424.6 | 921.5  | 145.0 | 156.2 | 170.7 | 186.3 | 233.2 | 225.3 | 198.6 | 195.2 | 195.2 |
| 72.5° | 1113.4 | 650.4  | 123.8 | 137.2 | 141.7 | 164.0 | 216.4 | 208.6 | 193.0 | 200.8 | 201.9 |
| 75°   | 785.4  | 396.0  | 106.0 | 116.0 | 120.5 | 135.0 | 200.8 | 204.2 | 189.7 | 215.3 | 219.8 |
| 77.5° | 357.0  | 174.0  | 82.6  | 91.5  | 97.1  | 114.9 | 172.9 | 189.7 | 164.0 | 164.0 | 155.1 |
| 80°   | 124.9  | 73.6   | 65.8  | 65.8  | 70.3  | 89.2  | 143.9 | 156.2 | 131.6 | 116.0 | 111.6 |
| 82.5° | 45.7   | 40.2   | 49.1  | 49.1  | 44.6  | 54.7  | 95.9  | 103.8 | 94.8  | 82.6  | 81.4  |
| 85°   | 17.8   | 19.0   | 30.1  | 30.1  | 22.3  | 26.8  | 53.5  | 55.8  | 53.5  | 46.9  | 46.9  |
| 87.5° | 7.8    | 7.8    | 8.9   | 8.9   | 7.8   | 6.7   | 10.0  | 10.0  | 6.7   | 4.5   | 2.2   |
| 90°   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-730-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 3000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2985     | CRI (Ra): | 70.8 |      |       |
| CIE u':                   | 0.2504   | R1:       | 66.3 | R9:  | -43.2 |
| CIE v':                   | 0.5243   | R2:       | 80.6 | R10: | 57.6  |
| Duv:                      | 0.0019   | R3:       | 94.5 | R11: | 64.8  |
| CIE x:                    | 0.4408   | R4:       | 68.2 | R12: | 53.5  |
| CIE y:                    | 0.4101   | R5:       | 66.5 | R13: | 68.7  |
| CIE z:                    | 0.1491   | R6:       | 74.7 | R14: | 97.0  |
| Peak Wavelength (nm):     | 595      | R7:       | 76.2 | R15: | 56.4  |
| Dominant Wavelength (nm): | 582      | R8:       | 39.6 |      |       |
| Purity:                   | 55.41818 |           |      |      |       |
| Rf:                       | 73.8     |           |      |      |       |
| Rg:                       | 94.4     |           |      |      |       |



### Test Conditions

Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.2

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| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

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**CIE 1931 Chromaticity Diagram**



**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.19

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.13

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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TM-30-18

### Summary

$R_f = 73.8$   
 $R_g = 94.4$   
 $CIE R_a = 70.8$   
 $R_g = -43.2$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)