

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: P1387188

Luminaire Tested: **VAL-T-SB2B-722-U-T3R**

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: P1387188  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 02/18/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VAL-T-SB2B-722-U-T3R  
Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 25 SQUARE 74W 70CRI  
2200K FIXTURE w/ TYPE III ROADWAY DISTRIBUTION OPTIC  
Light Source: (52) 2200K 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               |

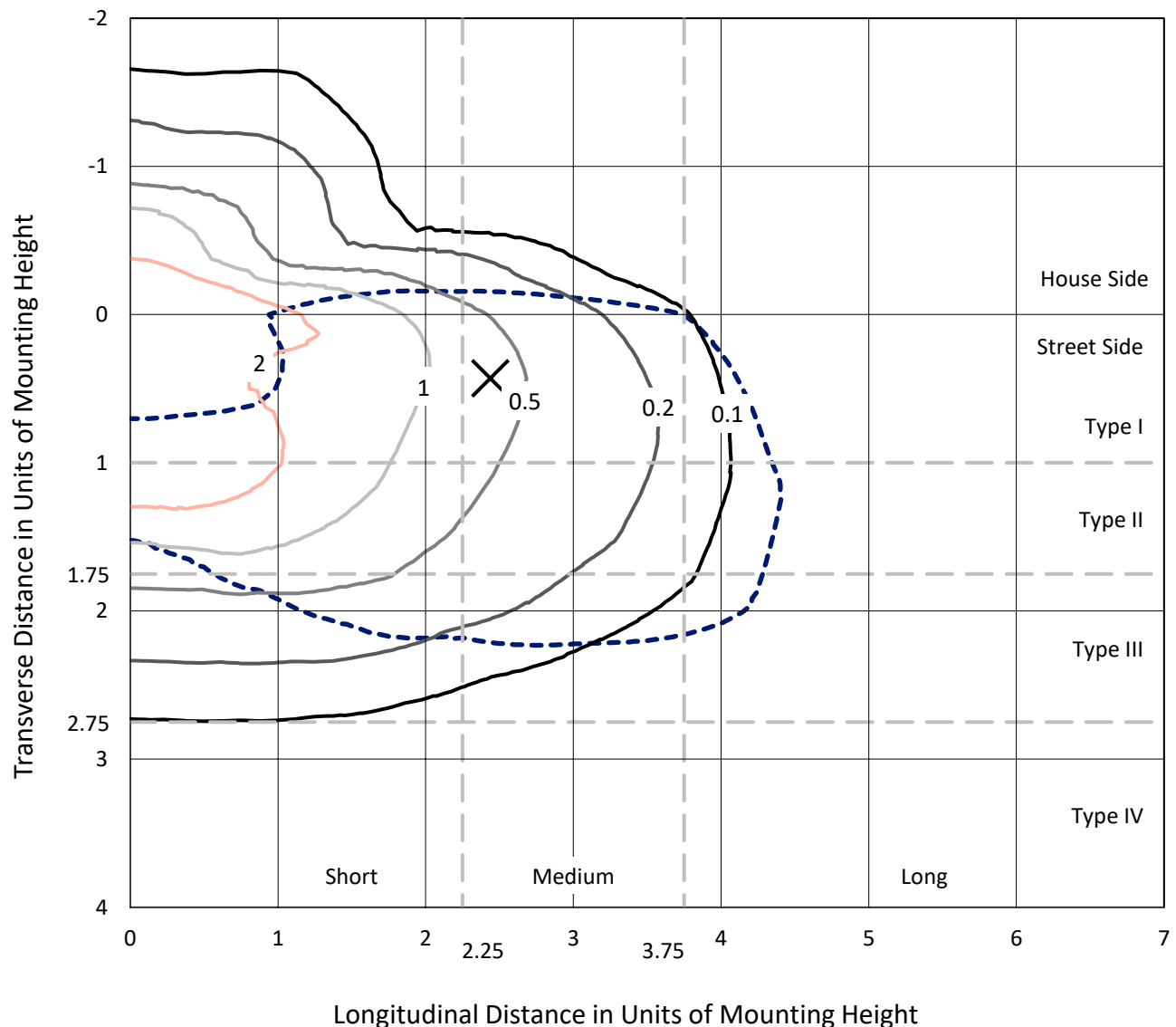
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8614 lumens  
Efficiency: N/A  
Efficacy: 116.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 74  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.98  
Total Harmonic Distortion (THDi): 13.6%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

REPORT NUMBER: P1387188  
 CATALOG NUMBER: VAL-T-SB2B-722-U-T3R

## Iso-Footcandle Lines of Horizontal Illumination

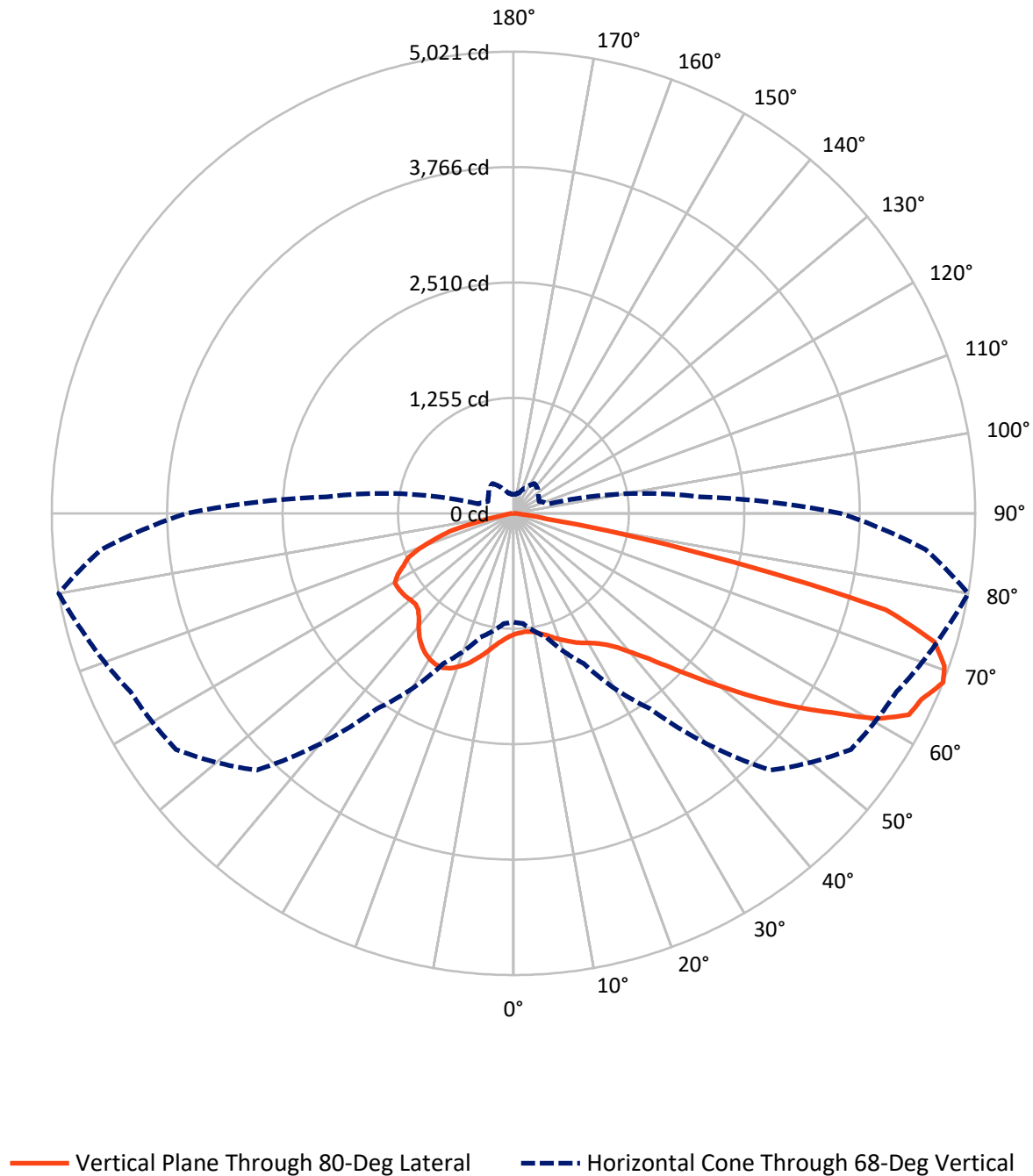
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.7 fc  
 Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: VAL-T-SB2B-722-U-T3R

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1924.9   | 0.0    | 1924.9 |
|                    | % Fixture | 22.3     | 0.0    | 22.3   |
| <b>Street Side</b> | Lumens    | 6689.1   | 0.0    | 6689.1 |
|                    | % Fixture | 77.7     | 0.0    | 77.7   |
| <b>Total</b>       | Lumens    | 8614.0   | 0.0    | 8614.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 127.4  | 1.5       |
| 10°-20°   | 363.7  | 4.2       |
| 20°-30°   | 599.6  | 7.0       |
| 30°-40°   | 920.6  | 10.7      |
| 40°-50°   | 1421.4 | 16.5      |
| 50°-60°   | 1963.3 | 22.8      |
| 60°-70°   | 2012.2 | 23.4      |
| 70°-80°   | 1139.7 | 13.2      |
| 80°-90°   | 66.1   | 0.8       |
| 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°    | 8614.0 | 100.0     |
| 0°-180°   | 8614.0 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P1387188

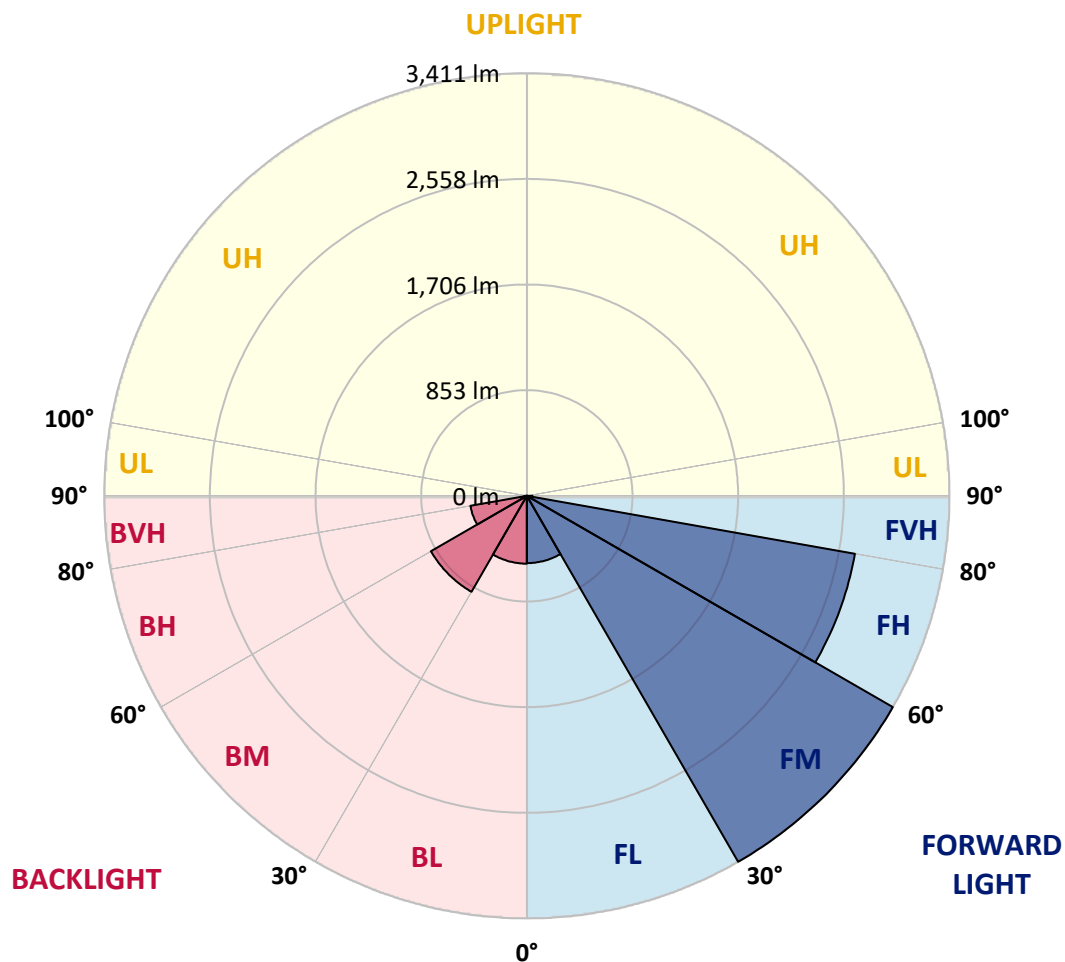
CATALOG NUMBER: VAL-T-SB2B-722-U-T3R

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 543.1  | 6.3       |                         |      |         |
| FM   | (30°-60°)   | 3411.2 | 39.6      |                         |      |         |
| FH   | (60°-80°)   | 2689.3 | 31.2      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 45.6   | 0.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 547.6  | 6.4       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 894.2  | 10.4      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 462.6  | 5.4       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 20.5   | 0.2       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type III Medium



REPORT NUMBER: P1387188

CATALOG NUMBER: VAL-T-SB2B-722-U-T3R

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 80°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 |
| 2.5°  | 1223.5 | 1219.5 | 1217.5 | 1221.5 | 1227.5 | 1239.6 | 1253.7 | 1263.7 | 1287.8 | 1301.9 | 1313.9 |
| 5°    | 1159.2 | 1157.2 | 1157.2 | 1167.3 | 1177.3 | 1191.4 | 1211.5 | 1229.5 | 1265.7 | 1293.8 | 1313.9 |
| 7.5°  | 1082.9 | 1080.9 | 1080.9 | 1103.0 | 1123.1 | 1155.2 | 1187.4 | 1217.5 | 1261.7 | 1297.9 | 1330.0 |
| 10°   | 1002.5 | 1002.5 | 1006.5 | 1034.7 | 1068.8 | 1115.0 | 1169.3 | 1215.5 | 1271.7 | 1313.9 | 1358.1 |
| 12.5° | 968.4  | 966.4  | 968.4  | 994.5  | 1028.6 | 1090.9 | 1153.2 | 1223.5 | 1291.8 | 1346.1 | 1398.3 |
| 15°   | 976.4  | 972.4  | 968.4  | 990.5  | 1016.6 | 1078.9 | 1153.2 | 1239.6 | 1326.0 | 1378.2 | 1450.5 |
| 17.5° | 1018.6 | 1016.6 | 1004.5 | 1010.6 | 1028.6 | 1084.9 | 1163.2 | 1263.7 | 1360.1 | 1422.4 | 1500.8 |
| 20°   | 1101.0 | 1094.9 | 1076.9 | 1066.8 | 1068.8 | 1105.0 | 1181.3 | 1295.8 | 1392.3 | 1466.6 | 1555.0 |
| 22.5° | 1237.6 | 1233.6 | 1203.4 | 1163.2 | 1137.1 | 1147.2 | 1213.5 | 1332.0 | 1436.5 | 1506.8 | 1617.3 |
| 25°   | 1418.4 | 1408.4 | 1362.1 | 1297.9 | 1237.6 | 1215.5 | 1253.7 | 1380.2 | 1478.7 | 1555.0 | 1675.6 |
| 27.5° | 1611.3 | 1613.3 | 1571.1 | 1474.7 | 1370.2 | 1295.8 | 1305.9 | 1428.4 | 1526.9 | 1595.2 | 1725.8 |
| 30°   | 1836.3 | 1826.2 | 1780.0 | 1679.6 | 1526.9 | 1402.3 | 1360.1 | 1474.7 | 1571.1 | 1635.4 | 1786.1 |
| 32.5° | 2133.6 | 2135.6 | 2053.3 | 1898.6 | 1707.7 | 1532.9 | 1430.5 | 1522.9 | 1621.3 | 1687.6 | 1860.4 |
| 35°   | 2493.3 | 2485.2 | 2386.8 | 2199.9 | 1940.8 | 1683.6 | 1520.9 | 1585.2 | 1681.6 | 1755.9 | 1946.8 |
| 37.5° | 2814.7 | 2792.6 | 2734.3 | 2555.5 | 2234.1 | 1888.5 | 1643.4 | 1667.5 | 1776.0 | 1854.4 | 2075.4 |
| 40°   | 3102.0 | 3092.0 | 3081.9 | 2945.3 | 2569.6 | 2143.7 | 1804.1 | 1794.1 | 1892.5 | 1995.0 | 2234.1 |
| 42.5° | 3339.1 | 3337.1 | 3341.1 | 3310.9 | 2979.4 | 2463.1 | 2029.2 | 1958.8 | 2057.3 | 2161.8 | 2420.9 |
| 45°   | 3511.8 | 3507.8 | 3550.0 | 3612.3 | 3379.2 | 2844.8 | 2294.4 | 2163.8 | 2266.2 | 2384.8 | 2658.0 |
| 47.5° | 3696.7 | 3698.7 | 3757.0 | 3861.4 | 3769.0 | 3224.6 | 2595.7 | 2418.9 | 2511.3 | 2662.0 | 2941.3 |
| 50°   | 3769.0 | 3769.0 | 3907.6 | 4056.3 | 4082.4 | 3628.4 | 2955.3 | 2722.3 | 2816.7 | 2977.4 | 3226.6 |
| 52.5° | 3612.3 | 3642.4 | 3885.5 | 4164.8 | 4287.3 | 4002.1 | 3335.0 | 3051.8 | 3132.1 | 3339.1 | 3509.8 |
| 55°   | 2736.3 | 2842.8 | 3716.8 | 4112.6 | 4363.7 | 4295.4 | 3712.8 | 3417.4 | 3505.8 | 3710.7 | 3801.2 |
| 57.5° | 2362.7 | 2390.8 | 2915.2 | 3929.7 | 4267.3 | 4454.1 | 4062.3 | 3807.2 | 3887.5 | 4088.4 | 4104.5 |
| 60°   | 2077.4 | 2115.5 | 2437.0 | 3620.3 | 4076.4 | 4438.0 | 4353.6 | 4166.8 | 4279.3 | 4534.5 | 4411.9 |
| 62.5° | 1683.6 | 1723.8 | 1995.0 | 2893.1 | 3825.3 | 4325.5 | 4580.7 | 4506.3 | 4612.8 | 4825.8 | 4538.5 |
| 65°   | 1482.7 | 1496.8 | 1691.6 | 2218.0 | 3363.2 | 4229.1 | 4697.2 | 4651.0 | 4697.2 | 4876.0 | 4474.2 |
| 67.5° | 1235.6 | 1263.7 | 1452.6 | 1882.5 | 2716.3 | 4024.2 | 4524.4 | 4590.7 | 4819.7 | 4996.5 | 4522.4 |
| 68°   | 1183.3 | 1203.4 | 1396.3 | 1800.1 | 2595.7 | 3949.8 | 4478.2 | 4594.7 | 4868.0 | 5020.7 | 4496.3 |
| 70°   | 966.4  | 994.5  | 1165.3 | 1508.8 | 2175.8 | 3162.3 | 4297.4 | 4673.1 | 4902.1 | 4970.4 | 4353.6 |
| 72.5° | 478.2  | 528.4  | 803.6  | 1064.8 | 1571.1 | 2286.3 | 3767.0 | 4572.6 | 4831.8 | 4789.6 | 4052.3 |
| 75°   | 168.8  | 180.8  | 375.7  | 576.6  | 761.4  | 1480.7 | 2664.0 | 4168.8 | 4430.0 | 4182.9 | 3397.3 |
| 77.5° | 120.5  | 130.6  | 213.0  | 291.3  | 313.4  | 743.4  | 1707.7 | 2756.4 | 2619.8 | 2029.2 | 1547.0 |
| 80°   | 94.4   | 102.5  | 158.7  | 162.7  | 156.7  | 261.2  | 582.6  | 835.8  | 588.7  | 369.7  | 267.2  |
| 82.5° | 58.3   | 70.3   | 118.5  | 98.4   | 72.3   | 82.4   | 136.6  | 225.0  | 160.7  | 102.5  | 82.4   |
| 85°   | 22.1   | 28.1   | 54.2   | 38.2   | 24.1   | 32.1   | 46.2   | 60.3   | 46.2   | 34.2   | 30.1   |
| 87.5° | 2.0    | 2.0    | 4.0    | 4.0    | 6.0    | 8.0    | 12.1   | 16.1   | 18.1   | 18.1   | 18.1   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P1387188

CATALOG NUMBER: VAL-T-SB2B-722-U-T3R

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 | 1315.9 |
| 2.5°  | 1322.0 | 1328.0 | 1354.1 | 1368.2 | 1394.3 | 1414.4 | 1426.4 | 1432.5 | 1438.5 | 1442.5 | 1440.5 |
| 5°    | 1336.0 | 1354.1 | 1404.3 | 1442.5 | 1472.6 | 1492.7 | 1502.8 | 1510.8 | 1512.8 | 1516.8 | 1514.8 |
| 7.5°  | 1362.1 | 1390.3 | 1466.6 | 1510.8 | 1536.9 | 1545.0 | 1536.9 | 1532.9 | 1526.9 | 1520.9 | 1520.9 |
| 10°   | 1404.3 | 1448.5 | 1538.9 | 1571.1 | 1573.1 | 1561.0 | 1534.9 | 1504.8 | 1482.7 | 1474.7 | 1470.6 |
| 12.5° | 1458.6 | 1520.9 | 1613.3 | 1621.3 | 1595.2 | 1538.9 | 1464.6 | 1402.3 | 1362.1 | 1332.0 | 1330.0 |
| 15°   | 1524.9 | 1597.2 | 1677.6 | 1653.5 | 1579.1 | 1460.6 | 1338.0 | 1249.6 | 1203.4 | 1177.3 | 1165.3 |
| 17.5° | 1593.2 | 1685.6 | 1735.8 | 1669.5 | 1512.8 | 1320.0 | 1173.3 | 1103.0 | 1060.8 | 1046.7 | 1036.7 |
| 20°   | 1669.5 | 1757.9 | 1776.0 | 1645.4 | 1392.3 | 1163.2 | 1030.7 | 986.5  | 986.5  | 982.4  | 978.4  |
| 22.5° | 1747.9 | 1832.3 | 1798.1 | 1579.1 | 1233.6 | 1008.6 | 928.2  | 944.3  | 972.4  | 980.4  | 980.4  |
| 25°   | 1820.2 | 1896.6 | 1798.1 | 1460.6 | 1044.7 | 882.0  | 888.0  | 926.2  | 962.3  | 982.4  | 982.4  |
| 27.5° | 1890.5 | 1936.7 | 1762.0 | 1293.8 | 873.9  | 817.7  | 853.9  | 900.1  | 958.3  | 988.5  | 990.5  |
| 30°   | 1960.8 | 1966.9 | 1697.7 | 1080.9 | 751.4  | 771.5  | 813.7  | 873.9  | 938.2  | 976.4  | 980.4  |
| 32.5° | 2035.2 | 1995.0 | 1607.3 | 869.9  | 695.1  | 727.3  | 777.5  | 825.7  | 876.0  | 904.1  | 906.1  |
| 35°   | 2119.6 | 2021.1 | 1490.7 | 707.2  | 659.0  | 697.1  | 735.3  | 751.4  | 765.5  | 781.5  | 791.6  |
| 37.5° | 2212.0 | 2055.3 | 1338.0 | 624.8  | 624.8  | 669.0  | 691.1  | 659.0  | 655.0  | 652.9  | 646.9  |
| 40°   | 2314.4 | 2091.4 | 1147.2 | 582.6  | 598.7  | 638.9  | 620.8  | 582.6  | 554.5  | 524.4  | 526.4  |
| 42.5° | 2443.0 | 2137.6 | 930.2  | 562.5  | 580.6  | 614.8  | 564.5  | 518.3  | 442.0  | 421.9  | 425.9  |
| 45°   | 2589.7 | 2195.9 | 757.4  | 544.5  | 566.6  | 592.7  | 526.4  | 438.0  | 389.8  | 409.8  | 423.9  |
| 47.5° | 2744.4 | 2272.3 | 632.9  | 530.4  | 560.5  | 566.6  | 502.3  | 401.8  | 369.7  | 413.9  | 431.9  |
| 50°   | 2927.2 | 2342.6 | 574.6  | 516.3  | 558.5  | 558.5  | 460.1  | 395.8  | 353.6  | 391.8  | 409.8  |
| 52.5° | 3112.0 | 2410.9 | 544.5  | 500.3  | 552.5  | 556.5  | 450.0  | 387.7  | 331.5  | 343.6  | 351.6  |
| 55°   | 3292.9 | 2449.1 | 528.4  | 478.2  | 546.5  | 546.5  | 454.0  | 373.7  | 309.4  | 309.4  | 313.4  |
| 57.5° | 3475.7 | 2475.2 | 514.3  | 452.0  | 526.4  | 516.3  | 454.0  | 363.6  | 301.4  | 293.3  | 297.3  |
| 60°   | 3678.6 | 2491.2 | 500.3  | 421.9  | 498.2  | 480.2  | 452.0  | 355.6  | 291.3  | 279.3  | 281.3  |
| 62.5° | 3710.7 | 2378.7 | 474.1  | 389.8  | 460.1  | 450.0  | 444.0  | 345.6  | 275.2  | 251.1  | 251.1  |
| 65°   | 3596.2 | 2210.0 | 442.0  | 349.6  | 409.8  | 419.9  | 427.9  | 333.5  | 259.2  | 231.0  | 233.1  |
| 67.5° | 3584.2 | 2083.4 | 407.8  | 313.4  | 343.6  | 381.7  | 407.8  | 313.4  | 235.1  | 211.0  | 208.9  |
| 68°   | 3556.0 | 2037.2 | 397.8  | 305.4  | 331.5  | 373.7  | 395.8  | 305.4  | 231.0  | 206.9  | 206.9  |
| 70°   | 3375.2 | 1836.3 | 337.5  | 269.2  | 293.3  | 305.4  | 347.6  | 271.2  | 206.9  | 186.8  | 188.9  |
| 72.5° | 3023.6 | 1496.8 | 259.2  | 219.0  | 235.1  | 235.1  | 301.4  | 251.1  | 188.9  | 170.8  | 170.8  |
| 75°   | 2521.4 | 1183.3 | 196.9  | 172.8  | 164.7  | 190.9  | 245.1  | 227.0  | 166.8  | 152.7  | 146.7  |
| 77.5° | 1145.2 | 510.3  | 128.6  | 120.5  | 122.6  | 148.7  | 194.9  | 194.9  | 158.7  | 124.6  | 110.5  |
| 80°   | 253.1  | 158.7  | 78.4   | 72.3   | 72.3   | 94.4   | 136.6  | 140.6  | 114.5  | 86.4   | 74.3   |
| 82.5° | 84.4   | 64.3   | 48.2   | 44.2   | 42.2   | 50.2   | 84.4   | 92.4   | 68.3   | 50.2   | 50.2   |
| 85°   | 32.1   | 30.1   | 26.1   | 24.1   | 20.1   | 20.1   | 26.1   | 42.2   | 36.2   | 24.1   | 24.1   |
| 87.5° | 16.1   | 16.1   | 14.1   | 10.0   | 8.0    | 6.0    | 4.0    | 4.0    | 4.0    | 6.0    | 4.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-2

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-722-U-5WQ

Data in this report applies to families of products including GSS-SB1A-722-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-2  
 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-722-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 2200K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2160     | CRI (Ra): | 71.9 |      |       |
| CIE u':                   | 0.2927   | R1:       | 68.7 | R9:  | -17.8 |
| CIE v':                   | 0.5388   | R2:       | 82.6 | R10: | 60.5  |
| Duv:                      | 0.0015   | R3:       | 95.5 | R11: | 60.2  |
| CIE x:                    | 0.5130   | R4:       | 66.4 | R12: | 48.2  |
| CIE y:                    | 0.4197   | R5:       | 65.4 | R13: | 70.7  |
| CIE z:                    | 0.0674   | R6:       | 75.9 | R14: | 96.8  |
| Peak Wavelength (nm):     | 609      | R7:       | 77.2 | R15: | 61.8  |
| Dominant Wavelength (nm): | 587      | R8:       | 43.5 |      |       |
| Purity:                   | 79.96089 |           |      |      |       |
| Rf:                       | 70.6     |           |      |      |       |
| Rg:                       | 97.6     |           |      |      |       |



### Test Conditions

Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-2

| 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           |

REPORT NUMBER: SP1-2407-184-2

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 2200K 7-step quadrangle

REPORT NUMBER: SP1-2407-184-2

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 27                          | NR               | 620       | 966                         | NR               | 750       | 46                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 42                          | NR               | 625       | 930                         | NR               | 755       | 39                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 67                          | NR               | 630       | 888                         | NR               | 760       | 34                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 101                         | NR               | 635       | 835                         | NR               | 765       | 30                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 139                         | NR               | 640       | 778                         | NR               | 770       | 26                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 183                         | NR               | 645       | 717                         | NR               | 775       | 22                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 656                         | NR               | 780       | 19                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 262                         | NR               | 655       | 595                         | NR               | 785       | 17                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 299                         | NR               | 660       | 536                         | NR               | 790       | 15                          | NR               | 920       | 1                           | NR               |
| 405       | 3                           | NR               | 535       | 332                         | NR               | 665       | 480                         | NR               | 795       | 13                          | NR               | 925       | 1                           | NR               |
| 410       | 7                           | NR               | 540       | 365                         | NR               | 670       | 425                         | NR               | 800       | 11                          | NR               | 930       | 1                           | NR               |
| 415       | 17                          | NR               | 545       | 400                         | NR               | 675       | 376                         | NR               | 805       | 10                          | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 437                         | NR               | 680       | 332                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 67                          | NR               | 555       | 479                         | NR               | 685       | 291                         | NR               | 815       | 8                           | NR               | 945       | 0                           | NR               |
| 430       | 105                         | NR               | 560       | 525                         | NR               | 690       | 255                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 141                         | NR               | 565       | 579                         | NR               | 695       | 221                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 169                         | NR               | 570       | 639                         | NR               | 700       | 192                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 173                         | NR               | 575       | 703                         | NR               | 705       | 167                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 136                         | NR               | 580       | 769                         | NR               | 710       | 144                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 80                          | NR               | 585       | 832                         | NR               | 715       | 125                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 45                          | NR               | 590       | 890                         | NR               | 720       | 109                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 32                          | NR               | 595       | 937                         | NR               | 725       | 94                          | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 972                         | NR               | 730       | 81                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 18                          | NR               | 605       | 992                         | NR               | 735       | 70                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 18                          | NR               | 610       | 998                         | NR               | 740       | 61                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 20                          | NR               | 615       | 990                         | NR               | 745       | 53                          | NR               | 875       | 2                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-2

### Scotopic Flux vs. Wavelength


**Scotopic Lumens: NR**
**S/P: 0.8**

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 27                       | NR            | 620    | 966                      | NR            | 750    | 46                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 42                       | NR            | 625    | 930                      | NR            | 755    | 39                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 67                       | NR            | 630    | 888                      | NR            | 760    | 34                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 101                      | NR            | 635    | 835                      | NR            | 765    | 30                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 139                      | NR            | 640    | 778                      | NR            | 770    | 26                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 183                      | NR            | 645    | 717                      | NR            | 775    | 22                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 224                      | NR            | 650    | 656                      | NR            | 780    | 19                       | NR            | 910    | 1                        | NR            |
| 395    | 0                        | NR            | 525    | 262                      | NR            | 655    | 595                      | NR            | 785    | 17                       | NR            | 915    | 1                        | NR            |
| 400    | 1                        | NR            | 530    | 299                      | NR            | 660    | 536                      | NR            | 790    | 15                       | NR            | 920    | 1                        | NR            |
| 405    | 3                        | NR            | 535    | 332                      | NR            | 665    | 480                      | NR            | 795    | 13                       | NR            | 925    | 1                        | NR            |
| 410    | 7                        | NR            | 540    | 365                      | NR            | 670    | 425                      | NR            | 800    | 11                       | NR            | 930    | 1                        | NR            |
| 415    | 17                       | NR            | 545    | 400                      | NR            | 675    | 376                      | NR            | 805    | 10                       | NR            | 935    | 0                        | NR            |
| 420    | 36                       | NR            | 550    | 437                      | NR            | 680    | 332                      | NR            | 810    | 8                        | NR            | 940    | 0                        | NR            |
| 425    | 67                       | NR            | 555    | 479                      | NR            | 685    | 291                      | NR            | 815    | 8                        | NR            | 945    | 0                        | NR            |
| 430    | 105                      | NR            | 560    | 525                      | NR            | 690    | 255                      | NR            | 820    | 7                        | NR            | 950    | 0                        | NR            |
| 435    | 141                      | NR            | 565    | 579                      | NR            | 695    | 221                      | NR            | 825    | 6                        | NR            | 955    | 0                        | NR            |
| 440    | 169                      | NR            | 570    | 639                      | NR            | 700    | 192                      | NR            | 830    | 5                        | NR            | 960    | 0                        | NR            |
| 445    | 173                      | NR            | 575    | 703                      | NR            | 705    | 167                      | NR            | 835    | 4                        | NR            | 965    | 0                        | NR            |
| 450    | 136                      | NR            | 580    | 769                      | NR            | 710    | 144                      | NR            | 840    | 4                        | NR            | 970    | 0                        | NR            |
| 455    | 80                       | NR            | 585    | 832                      | NR            | 715    | 125                      | NR            | 845    | 3                        | NR            | 975    | 0                        | NR            |
| 460    | 45                       | NR            | 590    | 890                      | NR            | 720    | 109                      | NR            | 850    | 3                        | NR            | 980    | 0                        | NR            |
| 465    | 32                       | NR            | 595    | 937                      | NR            | 725    | 94                       | NR            | 855    | 3                        | NR            | 985    | 0                        | NR            |
| 470    | 23                       | NR            | 600    | 972                      | NR            | 730    | 81                       | NR            | 860    | 2                        | NR            | 990    | 0                        | NR            |
| 475    | 18                       | NR            | 605    | 992                      | NR            | 735    | 70                       | NR            | 865    | 2                        | NR            | 995    | 0                        | NR            |
| 480    | 18                       | NR            | 610    | 998                      | NR            | 740    | 61                       | NR            | 870    | 2                        | NR            | 1000   | 0                        | NR            |
| 485    | 20                       | NR            | 615    | 990                      | NR            | 745    | 53                       | NR            | 875    | 2                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-2

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.21

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 27                          | NR               | 620       | 966                         | NR               | 750       | 46                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 42                          | NR               | 625       | 930                         | NR               | 755       | 39                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 67                          | NR               | 630       | 888                         | NR               | 760       | 34                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 101                         | NR               | 635       | 835                         | NR               | 765       | 30                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 139                         | NR               | 640       | 778                         | NR               | 770       | 26                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 183                         | NR               | 645       | 717                         | NR               | 775       | 22                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 656                         | NR               | 780       | 19                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 262                         | NR               | 655       | 595                         | NR               | 785       | 17                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 299                         | NR               | 660       | 536                         | NR               | 790       | 15                          | NR               | 920       | 1                           | NR               |
| 405       | 3                           | NR               | 535       | 332                         | NR               | 665       | 480                         | NR               | 795       | 13                          | NR               | 925       | 1                           | NR               |
| 410       | 7                           | NR               | 540       | 365                         | NR               | 670       | 425                         | NR               | 800       | 11                          | NR               | 930       | 1                           | NR               |
| 415       | 17                          | NR               | 545       | 400                         | NR               | 675       | 376                         | NR               | 805       | 10                          | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 437                         | NR               | 680       | 332                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 67                          | NR               | 555       | 479                         | NR               | 685       | 291                         | NR               | 815       | 8                           | NR               | 945       | 0                           | NR               |
| 430       | 105                         | NR               | 560       | 525                         | NR               | 690       | 255                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 141                         | NR               | 565       | 579                         | NR               | 695       | 221                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 169                         | NR               | 570       | 639                         | NR               | 700       | 192                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 173                         | NR               | 575       | 703                         | NR               | 705       | 167                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 136                         | NR               | 580       | 769                         | NR               | 710       | 144                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 80                          | NR               | 585       | 832                         | NR               | 715       | 125                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 45                          | NR               | 590       | 890                         | NR               | 720       | 109                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 32                          | NR               | 595       | 937                         | NR               | 725       | 94                          | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 972                         | NR               | 730       | 81                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 18                          | NR               | 605       | 992                         | NR               | 735       | 70                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 18                          | NR               | 610       | 998                         | NR               | 740       | 61                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 20                          | NR               | 615       | 990                         | NR               | 745       | 53                          | NR               | 875       | 2                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-2

TM-30-18

### Summary

$R_f = 70.6$   
 $R_g = 97.6$   
 $CIE R_a = 71.9$   
 $R_g = -17.8$



### Color Vector Graphics



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

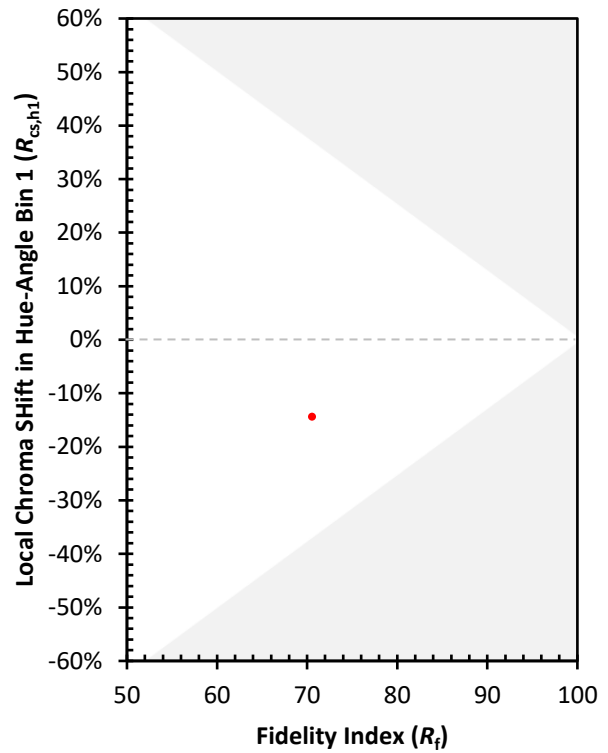
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 60 | CES51 = 74 | CES76 = 58 |
| CES02 = 65 | CES27 = 77 | CES52 = 77 | CES77 = 82 |
| CES03 = 32 | CES28 = 85 | CES53 = 65 | CES78 = 65 |
| CES04 = 72 | CES29 = 50 | CES54 = 77 | CES79 = 86 |
| CES05 = 52 | CES30 = 49 | CES55 = 74 | CES80 = 85 |
| CES06 = 53 | CES31 = 55 | CES56 = 64 | CES81 = 61 |
| CES07 = 44 | CES32 = 55 | CES57 = 60 | CES82 = 93 |
| CES08 = 43 | CES33 = 55 | CES58 = 64 | CES83 = 83 |
| CES09 = 29 | CES34 = 75 | CES59 = 84 | CES84 = 93 |
| CES10 = 79 | CES35 = 88 | CES60 = 89 | CES85 = 81 |
| CES11 = 62 | CES36 = 78 | CES61 = 84 | CES86 = 55 |
| CES12 = 68 | CES37 = 82 | CES62 = 68 | CES87 = 79 |
| CES13 = 45 | CES38 = 54 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 86 | CES65 = 66 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 89 |
| CES17 = 51 | CES42 = 83 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 68 | CES68 = 71 | CES93 = 78 |
| CES19 = 74 | CES44 = 98 | CES69 = 81 | CES94 = 52 |
| CES20 = 68 | CES45 = 76 | CES70 = 65 | CES95 = 76 |
| CES21 = 89 | CES46 = 68 | CES71 = 64 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 88 | CES97 = 76 |
| CES23 = 92 | CES48 = 47 | CES73 = 59 | CES98 = 71 |
| CES24 = 92 | CES49 = 65 | CES74 = 85 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)