

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



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

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P317475

Luminaire Tested: **GLEON-SA1B-750-U-T2R**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P317475
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-8)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA1B-750-U-T2R
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(1) 70 CRI, 5000K, 800mA LIGHTSQUARE WITH 16 LEDS AND TYPE II ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6234 lumens
Efficiency: N/A
Efficacy: 141.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G1

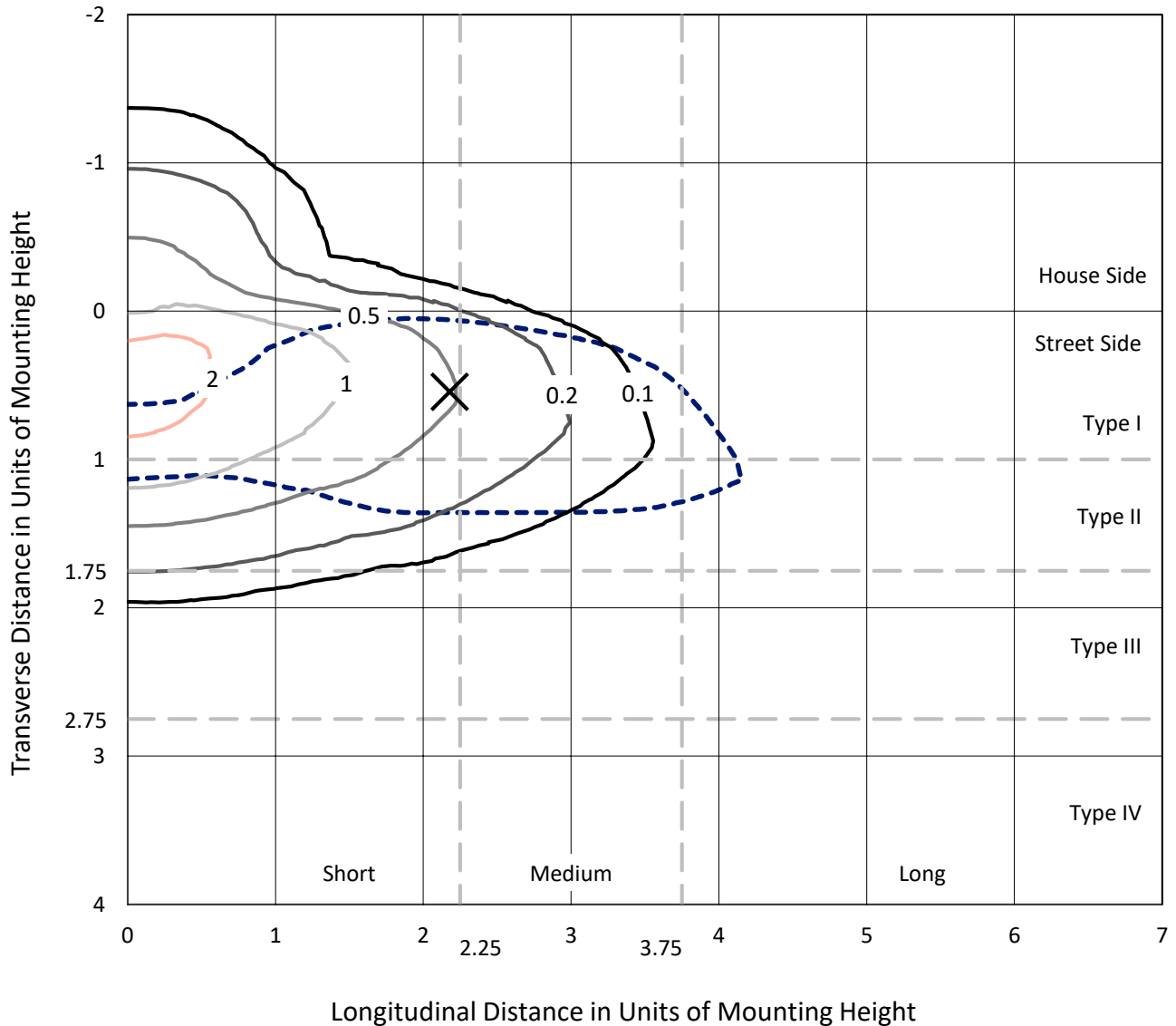
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P317475
 CATALOG NUMBER: GLEON-SA1B-750-U-T2R

Iso-Footcandle Lines of Horizontal Illumination

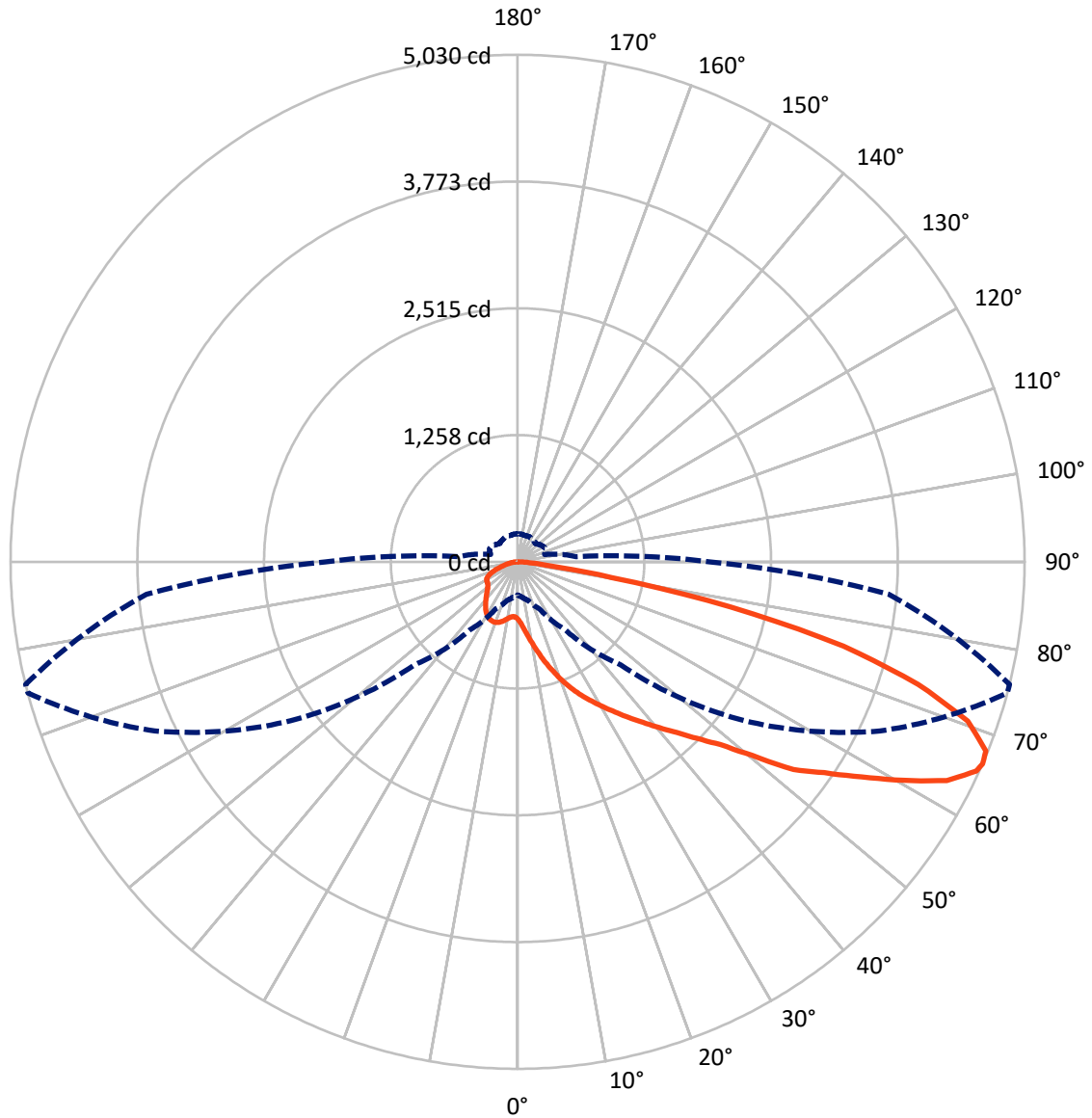
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.4 fc
 Type II - Short - N/A

REPORT NUMBER: P317475
CATALOG NUMBER: GLEON-SA1B-750-U-T2R

Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 66-Deg Vertical

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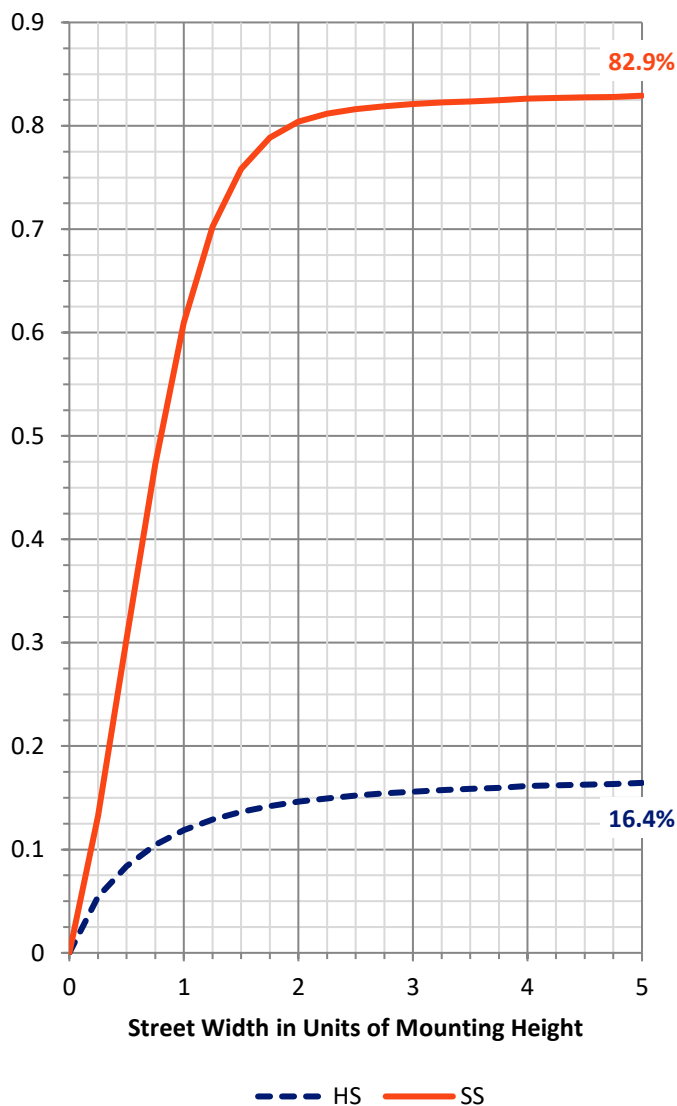
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1049.0 | 0.0 | 1049.0 |
| | % Fixture | 16.8 | 0.0 | 16.8 |
| Street Side | Lumens | 5185.0 | 0.0 | 5185.0 |
| | % Fixture | 83.2 | 0.0 | 83.2 |
| Total | Lumens | 6234.0 | 0.0 | 6234.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 68.8 | 1.1 |
| 10°-20° | 271.9 | 4.4 |
| 20°-30° | 528.3 | 8.5 |
| 30°-40° | 862.3 | 13.8 |
| 40°-50° | 1178.1 | 18.9 |
| 50°-60° | 1372.3 | 22.0 |
| 60°-70° | 1230.2 | 19.7 |
| 70°-80° | 621.7 | 10.0 |
| 80°-90° | 100.4 | 1.6 |
| 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° | 6234.0 | 100.0 |
| 0°-180° | 6234.0 | 100.0 |

Coefficient of Utilization

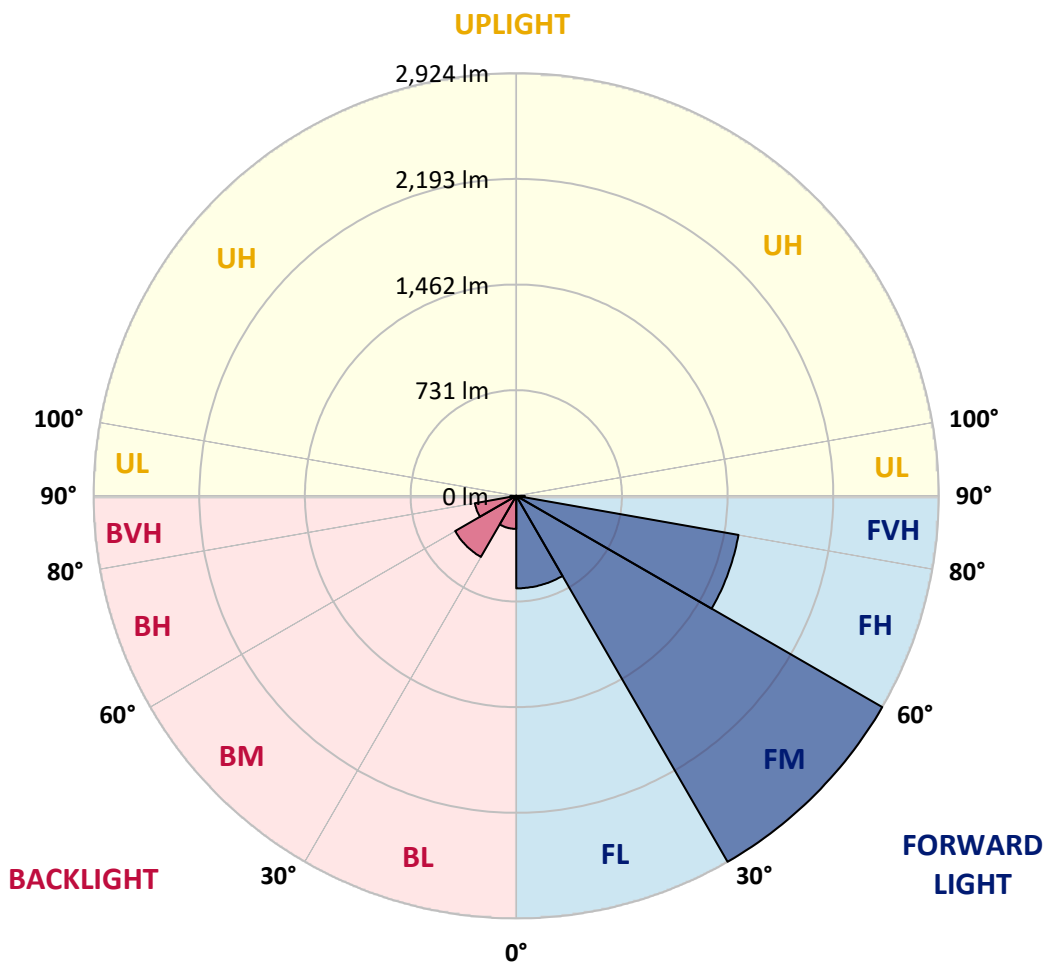


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 640.2 | 10.3 | | | |
| FM (30°-60°) | 2924.2 | 46.9 | | | |
| FH (60°-80°) | 1561.3 | 25.0 | | | G1/1800 |
| FVH (80°-90°) | 59.3 | 1.0 | | | G1/100 |
| BL (0°-30°) | 228.8 | 3.7 | B1/500 | | |
| BM (30°-60°) | 488.5 | 7.8 | B1/1000 | | |
| BH (60°-80°) | 290.6 | 4.7 | B1/500 | | G1/500 |
| BVH (80°-90°) | 41.1 | 0.7 | | | 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 II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 |
| 2.5° | 755.8 | 744.3 | 743.3 | 726.6 | 722.7 | 690.8 | 667.3 | 642.7 | 614.8 | 609.3 | 587.3 |
| 5° | 970.8 | 969.7 | 955.1 | 927.8 | 906.4 | 851.8 | 797.9 | 740.7 | 678.1 | 667.9 | 618.4 |
| 7.5° | 1164.2 | 1162.5 | 1151.3 | 1121.9 | 1091.0 | 1023.9 | 946.9 | 859.2 | 757.7 | 742.6 | 660.5 |
| 10° | 1311.1 | 1310.5 | 1306.6 | 1285.1 | 1258.8 | 1194.5 | 1109.4 | 989.8 | 850.1 | 829.6 | 713.2 |
| 12.5° | 1424.5 | 1425.8 | 1428.3 | 1420.7 | 1408.2 | 1353.4 | 1266.2 | 1128.2 | 948.8 | 928.5 | 771.8 |
| 15° | 1501.4 | 1505.2 | 1518.3 | 1529.1 | 1535.6 | 1502.0 | 1417.5 | 1269.8 | 1059.2 | 1034.9 | 836.8 |
| 17.5° | 1540.1 | 1544.3 | 1567.0 | 1599.6 | 1629.6 | 1626.2 | 1559.1 | 1404.8 | 1165.3 | 1141.8 | 906.7 |
| 20° | 1573.5 | 1576.7 | 1602.1 | 1641.2 | 1694.4 | 1717.9 | 1680.2 | 1534.8 | 1281.5 | 1253.5 | 980.7 |
| 22.5° | 1670.5 | 1674.5 | 1682.1 | 1704.3 | 1751.3 | 1794.5 | 1776.3 | 1657.8 | 1387.9 | 1361.9 | 1051.0 |
| 25° | 1857.5 | 1862.4 | 1845.9 | 1827.1 | 1836.0 | 1866.0 | 1869.4 | 1769.9 | 1495.9 | 1466.4 | 1126.5 |
| 27.5° | 2082.9 | 2089.9 | 2061.8 | 2013.3 | 1971.0 | 1959.3 | 1955.3 | 1861.8 | 1598.9 | 1564.8 | 1201.3 |
| 30° | 2303.7 | 2315.7 | 2279.1 | 2216.3 | 2138.6 | 2084.0 | 2043.6 | 1951.7 | 1700.5 | 1667.9 | 1271.7 |
| 32.5° | 2519.3 | 2514.5 | 2461.3 | 2400.0 | 2309.0 | 2240.6 | 2142.8 | 2048.2 | 1814.8 | 1777.3 | 1341.8 |
| 35° | 2667.1 | 2668.7 | 2619.4 | 2546.6 | 2459.9 | 2407.4 | 2275.7 | 2152.4 | 1931.4 | 1896.9 | 1421.4 |
| 37.5° | 2792.8 | 2784.9 | 2729.1 | 2661.1 | 2586.4 | 2564.0 | 2431.3 | 2267.1 | 2057.8 | 2020.1 | 1506.0 |
| 40° | 2834.7 | 2825.6 | 2789.0 | 2740.1 | 2680.2 | 2678.3 | 2602.9 | 2397.0 | 2200.6 | 2163.4 | 1601.5 |
| 42.5° | 2809.3 | 2797.6 | 2782.6 | 2769.3 | 2750.9 | 2759.3 | 2764.2 | 2549.4 | 2357.6 | 2315.9 | 1711.9 |
| 45° | 2715.5 | 2698.0 | 2708.5 | 2737.5 | 2777.5 | 2825.4 | 2909.8 | 2718.1 | 2533.5 | 2498.6 | 1841.7 |
| 47.5° | 2571.4 | 2555.5 | 2588.5 | 2650.5 | 2759.3 | 2880.4 | 3047.6 | 2904.3 | 2743.5 | 2708.7 | 2026.4 |
| 50° | 2368.6 | 2373.3 | 2420.5 | 2533.3 | 2697.7 | 2905.8 | 3217.3 | 3150.9 | 3048.6 | 3016.3 | 2278.5 |
| 52.5° | 2036.0 | 2036.8 | 2169.7 | 2354.9 | 2588.5 | 2892.7 | 3311.5 | 3466.0 | 3465.4 | 3426.2 | 2518.5 |
| 55° | 1727.0 | 1745.8 | 1851.0 | 2097.1 | 2411.6 | 2840.2 | 3377.3 | 3619.2 | 3739.0 | 3693.1 | 2742.2 |
| 57.5° | 1425.2 | 1436.2 | 1535.9 | 1783.0 | 2159.1 | 2700.3 | 3444.8 | 3803.1 | 4054.3 | 4025.3 | 3020.3 |
| 60° | 1081.9 | 1098.8 | 1201.9 | 1430.2 | 1836.2 | 2452.0 | 3451.2 | 3995.1 | 4431.3 | 4402.1 | 3330.8 |
| 62.5° | 702.2 | 731.4 | 827.9 | 1041.9 | 1445.5 | 2095.0 | 3303.9 | 4120.6 | 4788.5 | 4778.1 | 3606.3 |
| 65° | 403.6 | 425.6 | 492.7 | 657.8 | 997.2 | 1646.8 | 2953.6 | 4072.3 | 5008.4 | 5002.5 | 3709.4 |
| 66° | 329.7 | 343.5 | 394.9 | 514.1 | 822.8 | 1446.1 | 2750.0 | 3970.5 | 5030.2 | 5030.4 | 3697.5 |
| 67.5° | 263.7 | 269.8 | 292.9 | 368.0 | 607.2 | 1146.2 | 2386.2 | 3746.0 | 5003.1 | 5010.5 | 3621.1 |
| 70° | 218.2 | 221.4 | 228.6 | 246.8 | 331.4 | 691.2 | 1693.7 | 3162.5 | 4731.2 | 4736.9 | 3322.9 |
| 72.5° | 195.8 | 197.7 | 200.4 | 203.0 | 233.9 | 386.2 | 1034.5 | 2529.9 | 4148.1 | 4155.5 | 2868.5 |
| 75° | 177.4 | 178.4 | 178.0 | 178.2 | 196.2 | 246.1 | 534.6 | 1888.9 | 3354.0 | 3339.2 | 2197.4 |
| 77.5° | 155.8 | 156.8 | 154.7 | 155.1 | 173.5 | 189.2 | 266.0 | 1322.3 | 2263.5 | 2158.9 | 1238.1 |
| 80° | 131.6 | 132.5 | 131.6 | 133.1 | 151.1 | 142.9 | 154.7 | 743.9 | 1000.8 | 946.7 | 440.2 |
| 82.5° | 99.5 | 103.1 | 105.6 | 111.5 | 124.4 | 101.6 | 103.5 | 289.7 | 304.8 | 290.2 | 135.0 |
| 85° | 43.6 | 53.1 | 79.6 | 85.3 | 93.5 | 61.0 | 67.9 | 118.1 | 124.0 | 120.2 | 49.1 |
| 87.5° | 11.4 | 12.5 | 39.4 | 49.5 | 51.9 | 27.5 | 35.3 | 53.8 | 56.7 | 53.8 | 16.3 |
| 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: P317475
 CATALOG NUMBER: GLEON-SA1B-750-U-T2R

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 | 569.3 |
| 2.5° | 575.7 | 565.3 | 546.7 | 530.2 | 517.7 | 509.2 | 500.7 | 496.5 | 494.0 | 491.4 | 491.8 |
| 5° | 594.1 | 573.1 | 541.2 | 518.5 | 505.8 | 497.8 | 493.5 | 491.8 | 490.8 | 488.2 | 488.2 |
| 7.5° | 621.8 | 592.2 | 548.1 | 524.9 | 514.9 | 508.8 | 506.2 | 505.4 | 504.1 | 501.2 | 501.6 |
| 10° | 656.7 | 615.2 | 562.7 | 540.1 | 531.0 | 524.2 | 520.6 | 519.4 | 517.0 | 513.6 | 514.1 |
| 12.5° | 697.8 | 643.8 | 582.0 | 558.3 | 547.3 | 538.2 | 532.3 | 528.7 | 524.6 | 520.2 | 520.4 |
| 15° | 742.6 | 674.9 | 602.7 | 574.6 | 559.6 | 546.9 | 537.3 | 531.2 | 524.9 | 519.4 | 519.1 |
| 17.5° | 788.1 | 705.0 | 618.6 | 583.5 | 563.2 | 546.4 | 533.5 | 524.0 | 516.2 | 509.4 | 508.8 |
| 20° | 837.2 | 732.1 | 627.5 | 582.6 | 556.4 | 536.5 | 519.4 | 507.5 | 498.8 | 492.1 | 491.0 |
| 22.5° | 887.2 | 757.5 | 629.0 | 574.0 | 541.4 | 517.0 | 499.0 | 485.9 | 477.0 | 470.0 | 467.5 |
| 25° | 932.9 | 777.1 | 622.8 | 557.2 | 520.4 | 494.2 | 476.6 | 463.3 | 456.1 | 447.8 | 445.3 |
| 27.5° | 974.6 | 790.9 | 610.6 | 535.9 | 496.9 | 471.1 | 454.6 | 443.2 | 435.3 | 429.0 | 426.9 |
| 30° | 1012.1 | 798.3 | 590.5 | 510.5 | 472.8 | 449.3 | 435.3 | 427.5 | 420.7 | 412.7 | 411.2 |
| 32.5° | 1047.6 | 798.3 | 564.6 | 482.7 | 448.9 | 430.0 | 421.8 | 416.9 | 409.3 | 401.5 | 399.4 |
| 35° | 1083.2 | 793.4 | 534.2 | 453.8 | 426.9 | 416.3 | 415.9 | 410.2 | 398.5 | 387.9 | 385.2 |
| 37.5° | 1120.6 | 783.5 | 499.9 | 426.7 | 408.9 | 410.2 | 413.8 | 401.1 | 384.5 | 369.5 | 365.5 |
| 40° | 1162.9 | 769.7 | 464.3 | 403.2 | 393.9 | 407.4 | 408.0 | 387.9 | 355.8 | 342.0 | 338.4 |
| 42.5° | 1212.7 | 756.0 | 431.3 | 382.4 | 382.0 | 399.1 | 397.2 | 359.6 | 340.3 | 333.3 | 331.4 |
| 45° | 1278.1 | 748.1 | 400.0 | 362.7 | 372.7 | 385.8 | 378.8 | 343.9 | 335.9 | 331.8 | 330.2 |
| 47.5° | 1381.1 | 752.2 | 371.2 | 347.1 | 363.4 | 372.5 | 344.5 | 337.6 | 331.8 | 327.0 | 325.3 |
| 50° | 1510.2 | 749.8 | 347.9 | 336.3 | 352.8 | 358.5 | 329.1 | 329.3 | 326.3 | 320.8 | 318.3 |
| 52.5° | 1607.4 | 731.6 | 332.9 | 330.2 | 343.5 | 333.8 | 319.4 | 321.3 | 319.8 | 311.7 | 309.0 |
| 55° | 1701.1 | 716.0 | 325.3 | 327.8 | 336.7 | 302.9 | 307.9 | 312.6 | 311.1 | 303.3 | 302.0 |
| 57.5° | 1817.8 | 713.0 | 320.6 | 328.5 | 331.0 | 287.4 | 296.9 | 303.1 | 302.0 | 298.6 | 298.0 |
| 60° | 1960.6 | 713.9 | 316.4 | 329.5 | 324.7 | 276.0 | 286.6 | 294.4 | 295.0 | 294.4 | 294.0 |
| 62.5° | 2039.1 | 690.8 | 305.8 | 326.6 | 313.4 | 266.0 | 275.8 | 287.2 | 287.4 | 288.7 | 288.5 |
| 65° | 1972.5 | 621.8 | 286.1 | 316.2 | 294.6 | 257.8 | 266.5 | 278.9 | 275.8 | 281.5 | 281.5 |
| 66° | 1907.7 | 582.0 | 276.4 | 309.4 | 286.6 | 254.6 | 263.5 | 274.7 | 270.7 | 278.5 | 278.5 |
| 67.5° | 1775.4 | 514.9 | 258.8 | 295.0 | 275.1 | 250.2 | 260.1 | 267.7 | 262.2 | 273.9 | 273.0 |
| 70° | 1533.7 | 398.3 | 223.5 | 262.4 | 256.3 | 243.6 | 255.4 | 253.8 | 245.7 | 263.5 | 260.1 |
| 72.5° | 1293.1 | 302.6 | 179.5 | 219.7 | 227.7 | 235.3 | 248.9 | 236.0 | 225.8 | 238.3 | 230.9 |
| 75° | 1003.4 | 227.5 | 141.8 | 170.8 | 192.4 | 222.4 | 241.1 | 215.4 | 200.8 | 199.6 | 195.6 |
| 77.5° | 542.4 | 156.2 | 112.4 | 130.4 | 152.8 | 206.3 | 235.8 | 193.4 | 171.4 | 166.3 | 163.2 |
| 80° | 214.8 | 101.6 | 81.7 | 98.8 | 106.9 | 183.1 | 223.1 | 167.8 | 141.4 | 136.3 | 131.4 |
| 82.5° | 88.7 | 60.1 | 52.7 | 66.2 | 69.6 | 156.6 | 200.2 | 137.6 | 109.2 | 151.1 | 160.4 |
| 85° | 38.1 | 33.0 | 31.3 | 34.3 | 39.4 | 109.8 | 159.4 | 105.0 | 117.9 | 105.2 | 83.6 |
| 87.5° | 11.4 | 14.0 | 13.3 | 13.1 | 14.4 | 26.2 | 84.9 | 58.4 | 86.6 | 32.8 | 24.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW-EDISON
 Catalog Number: **SA1C-750-U-5WQ**
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 4884 | CRI (Ra): | 73.5 | R9: | -28.4 |
| CIE u': | 0.2101 | R1: | 70.5 | R10: | 48.6 |
| CIE v': | 0.4904 | R2: | 77.7 | R11: | 73.2 |
| Duv: | 0.0037 | R3: | 84.6 | R12: | 50.7 |
| CIE x: | 0.3493 | R4: | 74.7 | R13: | 71.2 |
| CIE y: | 0.3624 | R5: | 71.9 | R14: | 91.4 |
| CIE z: | 0.2884 | R6: | 70.7 | | |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |
| Rf: | 74.9 | | | | |
| Rg: | 96.3 | | | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-4-R4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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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 5000K 4-step quadrangle

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Photopic Flux vs. Wavelength



#####

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9 M/P: 0.71

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

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TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)