

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: P385814

Luminaire Tested: **GPC-SA1B-827-U-T4FT-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P385814
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-17)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GPC-SA1B-827-U-T4FT-HSS
Description: GALLEON PEDESTRIAN LUMINAIRE
(1) 80 CRI, 2700K, 800mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV FORWARD
THROW OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3186 lumens
Efficiency: N/A
Efficacy: 72.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B0 - U0 - G1

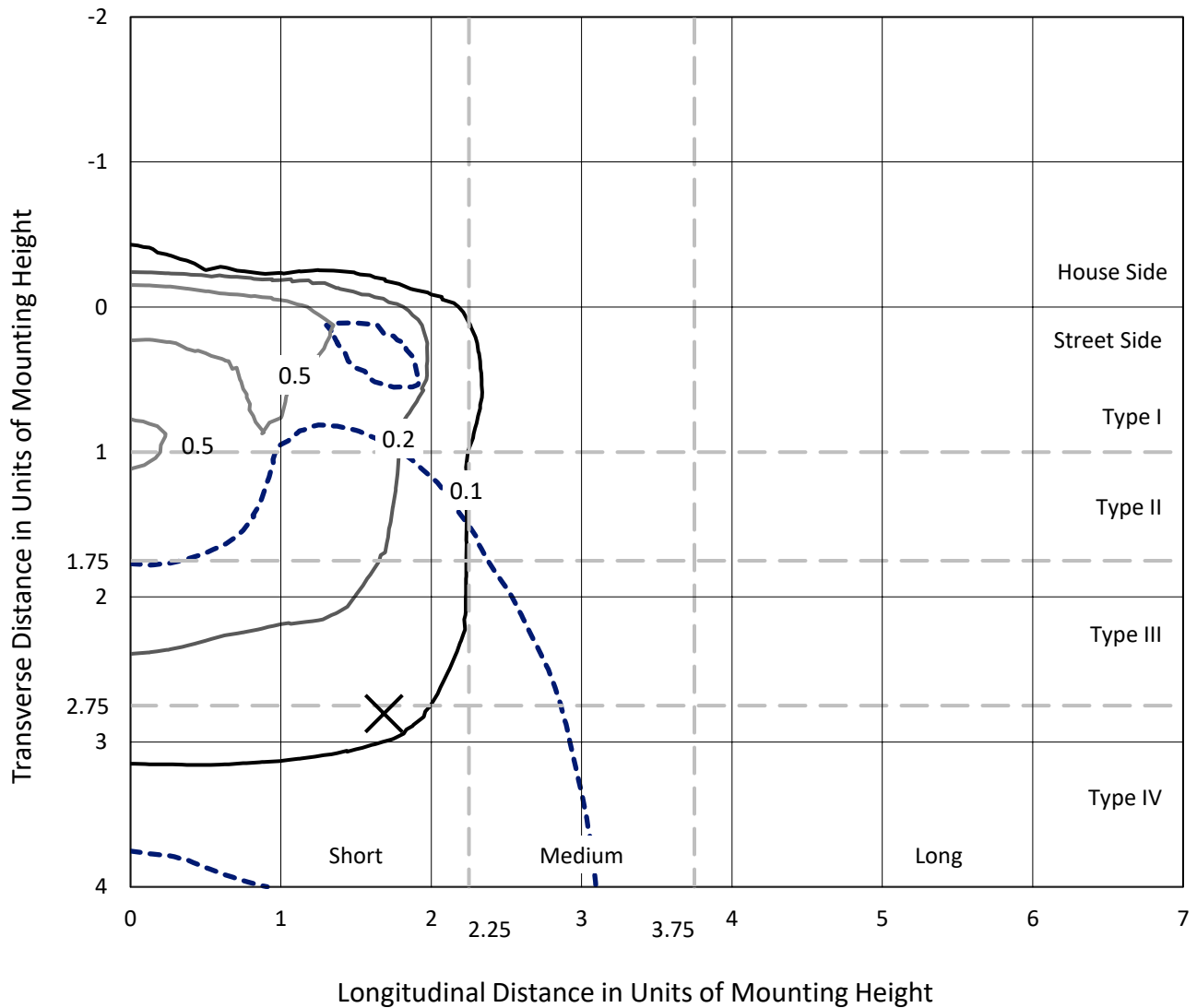
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

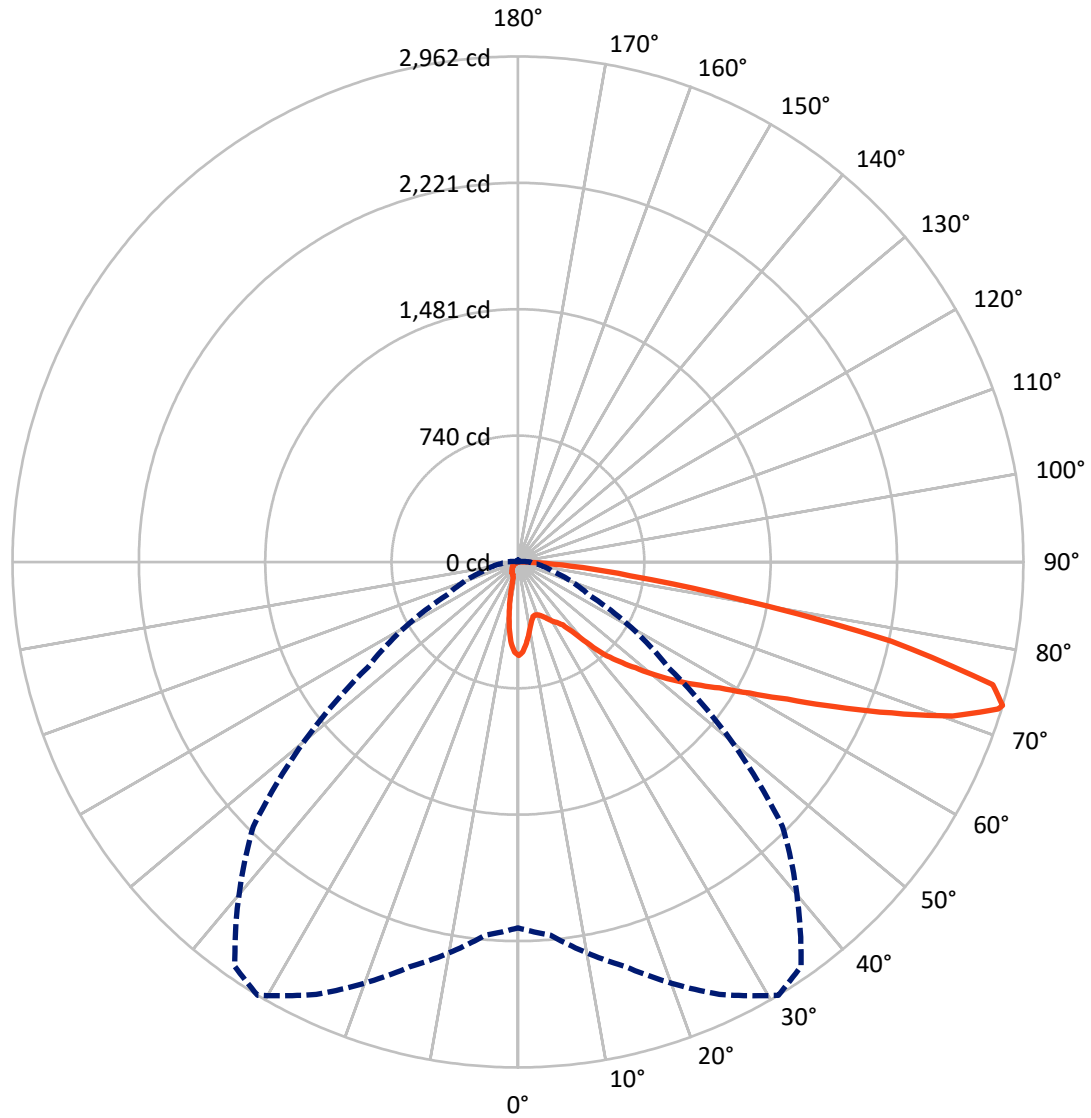
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.9 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 31-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

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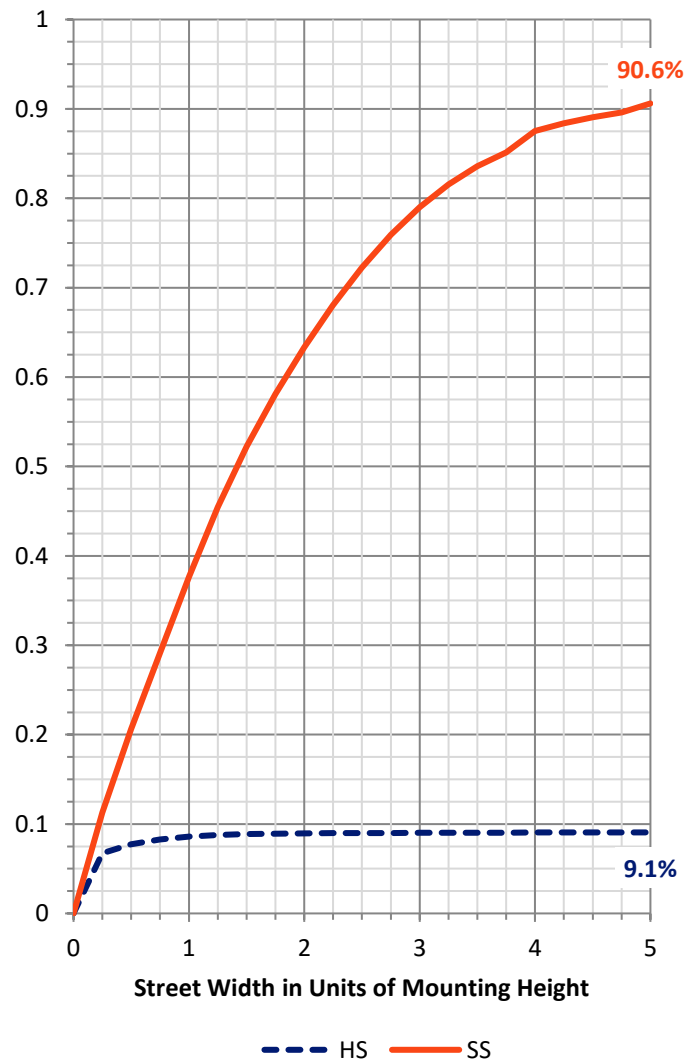
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 290.4 | 0.0 | 290.4 |
| | % Fixture | 9.1 | 0.0 | 9.1 |
| Street Side | Lumens | 2895.6 | 0.0 | 2895.6 |
| | % Fixture | 90.9 | 0.0 | 90.9 |
| Total | Lumens | 3186.0 | 0.0 | 3186.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 45.4 | 1.4 |
| 10°-20° | 98.7 | 3.1 |
| 20°-30° | 147.9 | 4.6 |
| 30°-40° | 235.2 | 7.4 |
| 40°-50° | 420.1 | 13.2 |
| 50°-60° | 651.8 | 20.5 |
| 60°-70° | 866.5 | 27.2 |
| 70°-80° | 651.8 | 20.5 |
| 80°-90° | 68.5 | 2.1 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 3186.0 | 100.0 |
| 0°-180° | 3186.0 | 100.0 |

Coefficient of Utilization



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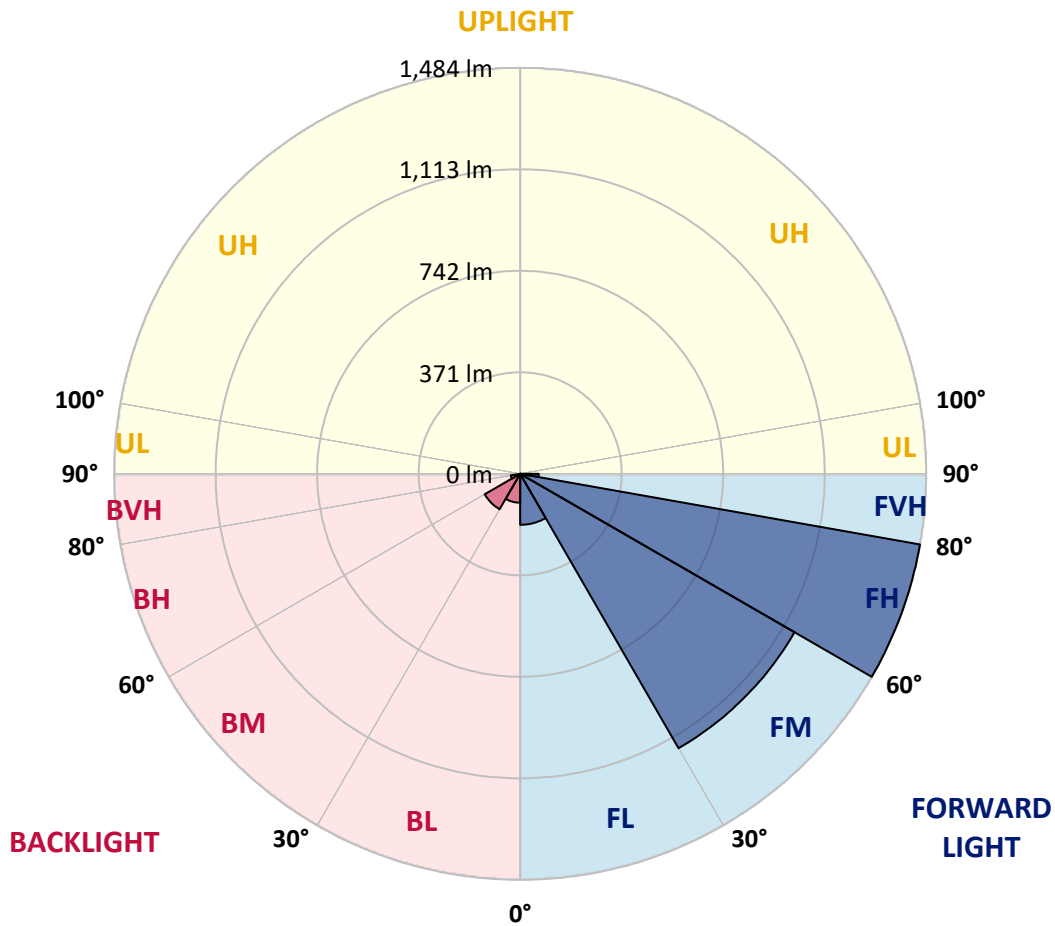
CATALOG NUMBER: GPC-SA1B-827-U-T4FT-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 186.4 | 5.9 | | | |
| FM (30°-60°) | 1157.7 | 36.3 | | | |
| FH (60°-80°) | 1483.6 | 46.6 | | | G1/1800 |
| FVH (80°-90°) | 67.9 | 2.1 | | | G1/100 |
| BL (0°-30°) | 105.6 | 3.3 | B0/110 | | |
| BM (30°-60°) | 149.5 | 4.7 | B0/220 | | |
| BH (60°-80°) | 34.7 | 1.1 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.6 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B0-U0-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 31° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 |
| 2.5° | 519.5 | 521.7 | 524.0 | 524.5 | 528.4 | 528.5 | 534.1 | 538.3 | 542.5 | 546.6 | 548.0 |
| 5° | 466.2 | 469.7 | 473.9 | 478.2 | 486.4 | 489.7 | 503.4 | 517.4 | 530.9 | 543.6 | 549.9 |
| 7.5° | 409.2 | 413.3 | 419.2 | 429.7 | 438.9 | 445.3 | 466.9 | 491.9 | 516.8 | 540.4 | 553.9 |
| 10° | 357.3 | 361.1 | 367.3 | 378.4 | 392.6 | 401.3 | 430.5 | 465.1 | 501.7 | 537.4 | 560.0 |
| 12.5° | 324.3 | 326.3 | 329.7 | 341.6 | 354.4 | 364.2 | 398.5 | 441.4 | 489.2 | 537.2 | 569.8 |
| 15° | 318.2 | 318.8 | 316.0 | 321.3 | 331.3 | 340.8 | 375.6 | 422.2 | 479.7 | 539.7 | 582.6 |
| 17.5° | 327.9 | 327.6 | 318.2 | 317.6 | 325.5 | 333.3 | 364.3 | 408.9 | 473.0 | 545.5 | 599.1 |
| 20° | 342.5 | 341.4 | 325.2 | 322.3 | 330.7 | 338.0 | 363.6 | 403.9 | 470.5 | 555.2 | 619.2 |
| 22.5° | 362.0 | 360.1 | 334.7 | 331.6 | 340.6 | 348.3 | 373.2 | 408.8 | 472.7 | 568.1 | 642.6 |
| 25° | 386.2 | 383.4 | 351.1 | 347.7 | 356.9 | 364.5 | 390.5 | 422.7 | 479.2 | 583.9 | 672.3 |
| 27.5° | 413.5 | 409.4 | 377.3 | 368.4 | 378.8 | 386.8 | 413.6 | 443.9 | 489.5 | 600.5 | 708.6 |
| 30° | 439.2 | 433.9 | 404.9 | 390.2 | 403.0 | 411.9 | 438.6 | 469.1 | 506.1 | 626.3 | 758.3 |
| 32.5° | 465.1 | 459.1 | 429.5 | 412.1 | 423.6 | 433.3 | 464.3 | 503.9 | 537.1 | 665.6 | 824.4 |
| 35° | 524.6 | 518.4 | 482.1 | 453.2 | 453.1 | 458.5 | 500.3 | 551.4 | 578.1 | 720.3 | 903.3 |
| 37.5° | 624.9 | 621.3 | 586.7 | 531.9 | 517.3 | 511.2 | 549.4 | 608.2 | 637.0 | 795.6 | 992.3 |
| 40° | 734.6 | 731.5 | 692.7 | 643.1 | 620.8 | 605.8 | 619.9 | 687.2 | 720.3 | 887.6 | 1083.2 |
| 42.5° | 858.6 | 843.8 | 774.5 | 759.7 | 739.8 | 728.4 | 715.8 | 784.7 | 822.5 | 987.7 | 1173.3 |
| 45° | 971.1 | 946.2 | 856.4 | 833.9 | 829.4 | 832.2 | 839.2 | 915.6 | 937.6 | 1106.6 | 1263.1 |
| 47.5° | 1038.2 | 1018.5 | 949.6 | 928.1 | 926.8 | 945.4 | 998.4 | 1063.6 | 1052.2 | 1210.3 | 1342.2 |
| 50° | 1101.9 | 1084.2 | 1026.9 | 1032.2 | 1038.0 | 1063.3 | 1179.1 | 1215.7 | 1156.8 | 1304.3 | 1414.7 |
| 52.5° | 1153.5 | 1126.4 | 1096.5 | 1126.2 | 1154.6 | 1195.3 | 1365.6 | 1352.3 | 1231.0 | 1379.1 | 1476.7 |
| 55° | 1183.3 | 1171.0 | 1185.5 | 1215.4 | 1268.7 | 1334.8 | 1541.6 | 1466.0 | 1285.3 | 1447.4 | 1518.0 |
| 57.5° | 1292.4 | 1268.3 | 1297.1 | 1323.0 | 1392.5 | 1485.0 | 1692.3 | 1550.6 | 1324.4 | 1489.7 | 1527.5 |
| 60° | 1424.5 | 1405.0 | 1422.0 | 1465.0 | 1558.9 | 1667.5 | 1833.3 | 1619.7 | 1344.8 | 1516.8 | 1502.9 |
| 62.5° | 1634.7 | 1608.9 | 1598.3 | 1646.5 | 1770.9 | 1889.6 | 1940.2 | 1667.5 | 1340.3 | 1504.8 | 1418.4 |
| 65° | 1916.2 | 1889.6 | 1842.2 | 1885.8 | 2044.1 | 2127.8 | 2059.8 | 1677.7 | 1309.1 | 1407.7 | 1204.8 |
| 67.5° | 2204.6 | 2185.3 | 2144.8 | 2218.4 | 2361.2 | 2388.1 | 2186.2 | 1653.0 | 1208.7 | 1141.4 | 851.2 |
| 70° | 2395.2 | 2386.9 | 2413.2 | 2576.0 | 2703.4 | 2695.6 | 2302.2 | 1520.7 | 942.1 | 701.9 | 421.1 |
| 72.5° | 2257.8 | 2297.4 | 2492.0 | 2787.1 | 2942.7 | 2879.1 | 2242.7 | 1167.7 | 538.5 | 270.0 | 121.8 |
| 73° | 2144.0 | 2194.7 | 2456.6 | 2795.0 | 2961.5 | 2891.9 | 2192.6 | 1071.8 | 459.0 | 213.1 | 92.3 |
| 75° | 1491.5 | 1553.7 | 2033.8 | 2603.1 | 2873.3 | 2755.3 | 1827.7 | 656.0 | 212.7 | 94.5 | 37.3 |
| 77.5° | 724.2 | 770.2 | 1119.9 | 1880.8 | 2234.6 | 2152.7 | 1137.8 | 244.5 | 96.0 | 59.1 | 17.1 |
| 80° | 270.3 | 300.6 | 486.1 | 957.2 | 1291.4 | 1325.2 | 500.5 | 92.5 | 63.9 | 47.6 | 8.7 |
| 82.5° | 70.8 | 78.9 | 179.3 | 426.9 | 661.8 | 692.7 | 157.8 | 46.6 | 46.8 | 39.1 | 5.3 |
| 85° | 22.6 | 25.9 | 56.0 | 191.6 | 311.8 | 273.8 | 41.2 | 22.6 | 34.0 | 29.2 | 3.0 |
| 87.5° | 2.8 | 3.6 | 17.8 | 45.1 | 68.8 | 38.2 | 6.4 | 6.7 | 14.5 | 16.2 | 1.7 |
| 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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 CATALOG NUMBER: GPC-SA1B-827-U-T4FT-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 | 548.2 |
| 2.5° | 549.4 | 548.6 | 548.8 | 544.7 | 542.1 | 536.8 | 531.3 | 528.8 | 526.2 | 525.1 | 526.2 |
| 5° | 552.2 | 550.8 | 546.8 | 534.3 | 521.0 | 503.9 | 487.8 | 475.7 | 460.4 | 456.2 | 460.5 |
| 7.5° | 556.6 | 553.8 | 541.9 | 516.5 | 487.0 | 454.3 | 417.5 | 390.7 | 368.7 | 354.5 | 359.7 |
| 10° | 563.0 | 557.7 | 533.8 | 490.6 | 437.9 | 379.9 | 327.7 | 287.0 | 258.2 | 246.3 | 245.9 |
| 12.5° | 573.7 | 563.7 | 523.8 | 457.0 | 377.9 | 300.6 | 232.1 | 188.0 | 164.6 | 149.5 | 149.2 |
| 15° | 585.6 | 570.9 | 511.2 | 416.6 | 308.1 | 215.3 | 149.5 | 116.0 | 100.9 | 96.0 | 95.4 |
| 17.5° | 600.1 | 579.2 | 494.8 | 366.8 | 234.9 | 142.7 | 97.6 | 87.9 | 87.3 | 86.8 | 86.8 |
| 20° | 618.3 | 589.0 | 473.8 | 309.9 | 166.7 | 95.3 | 82.9 | 83.6 | 83.9 | 83.3 | 83.4 |
| 22.5° | 639.5 | 599.0 | 448.7 | 248.8 | 112.7 | 79.7 | 79.4 | 80.1 | 80.4 | 80.1 | 80.3 |
| 25° | 664.2 | 610.5 | 418.1 | 184.7 | 81.4 | 75.6 | 76.4 | 77.5 | 78.3 | 78.3 | 78.3 |
| 27.5° | 694.7 | 624.6 | 381.3 | 128.9 | 70.3 | 71.4 | 73.6 | 75.6 | 76.7 | 77.0 | 77.0 |
| 30° | 734.5 | 642.0 | 337.2 | 88.4 | 63.9 | 65.8 | 69.8 | 73.7 | 75.8 | 76.1 | 76.2 |
| 32.5° | 784.7 | 661.7 | 286.1 | 65.3 | 58.5 | 59.9 | 64.2 | 70.8 | 74.7 | 75.3 | 75.3 |
| 35° | 842.2 | 684.4 | 231.0 | 56.9 | 54.6 | 55.0 | 58.5 | 65.9 | 72.8 | 74.5 | 74.7 |
| 37.5° | 905.2 | 706.9 | 175.7 | 53.2 | 51.3 | 51.3 | 53.8 | 60.2 | 68.3 | 73.6 | 74.2 |
| 40° | 964.0 | 720.4 | 123.2 | 50.2 | 48.3 | 48.3 | 50.5 | 55.2 | 62.8 | 70.8 | 72.5 |
| 42.5° | 1018.2 | 725.1 | 85.7 | 47.4 | 45.5 | 46.0 | 47.9 | 51.6 | 57.4 | 65.3 | 66.9 |
| 45° | 1074.0 | 724.3 | 62.5 | 44.1 | 42.7 | 44.1 | 45.5 | 48.3 | 52.5 | 57.1 | 57.4 |
| 47.5° | 1116.1 | 717.8 | 49.6 | 41.0 | 40.1 | 41.9 | 43.2 | 45.1 | 47.4 | 47.1 | 47.1 |
| 50° | 1155.6 | 701.9 | 39.9 | 36.8 | 37.4 | 39.6 | 40.2 | 40.8 | 41.0 | 38.0 | 37.7 |
| 52.5° | 1185.5 | 677.1 | 32.0 | 32.3 | 34.8 | 36.9 | 36.3 | 35.4 | 33.8 | 30.2 | 29.6 |
| 55° | 1195.5 | 629.4 | 25.1 | 26.7 | 30.9 | 33.7 | 31.3 | 29.3 | 26.3 | 23.4 | 22.8 |
| 57.5° | 1177.4 | 567.8 | 20.4 | 20.7 | 26.0 | 28.4 | 25.7 | 23.4 | 20.1 | 17.6 | 17.1 |
| 60° | 1139.0 | 499.4 | 16.8 | 15.6 | 20.1 | 22.1 | 20.4 | 18.1 | 15.1 | 13.3 | 13.1 |
| 62.5° | 1063.0 | 426.4 | 13.9 | 12.2 | 15.3 | 17.0 | 15.9 | 14.2 | 11.7 | 10.4 | 10.3 |
| 65° | 903.0 | 341.1 | 11.2 | 9.8 | 11.8 | 13.3 | 12.3 | 11.1 | 9.2 | 8.3 | 8.1 |
| 67.5° | 630.3 | 230.6 | 9.2 | 8.1 | 9.4 | 10.4 | 9.7 | 9.0 | 7.3 | 7.2 | 7.3 |
| 70° | 304.0 | 111.2 | 7.6 | 6.5 | 7.3 | 8.1 | 7.8 | 7.3 | 7.0 | 8.1 | 9.4 |
| 72.5° | 87.2 | 37.3 | 6.1 | 5.5 | 5.9 | 6.4 | 6.7 | 6.5 | 7.6 | 9.8 | 11.4 |
| 73° | 67.0 | 30.1 | 5.8 | 5.1 | 5.6 | 6.2 | 6.5 | 6.4 | 7.8 | 10.0 | 11.4 |
| 75° | 28.7 | 14.5 | 4.4 | 4.2 | 4.7 | 5.5 | 5.8 | 5.8 | 7.8 | 10.1 | 10.9 |
| 77.5° | 12.9 | 7.8 | 2.8 | 3.3 | 4.1 | 4.4 | 4.8 | 4.8 | 6.2 | 7.8 | 7.8 |
| 80° | 7.3 | 4.2 | 2.2 | 2.5 | 3.0 | 3.0 | 3.0 | 2.7 | 2.8 | 3.1 | 3.4 |
| 82.5° | 4.7 | 2.8 | 1.7 | 2.0 | 1.9 | 1.6 | 1.2 | 1.2 | 1.1 | 1.2 | 1.6 |
| 85° | 2.7 | 1.6 | 1.6 | 1.2 | 0.8 | 0.6 | 0.8 | 0.6 | 0.2 | 0.0 | 0.2 |
| 87.5° | 1.6 | 0.9 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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



Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/03/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Invue
 Catalog Number: **EMM2-HTN-SA1A-827-U-5WQ**
 Description: Epic Modern Light Square 40W 5WQ Optic

Spectral Parameters

CCT (K): 2764
 CIE u': 0.2591
 CIE v': 0.5290
 Duv: 0.0020
 CIE x: 0.4581
 CIE y: 0.4156
 CIE z: 0.1263
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 583
 Purity: 62.2537
 Rf: 84.7
 Rg: 94.6

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 80.9 | | |
| R1: | 78.8 | R9: | -1.5 |
| R2: | 89.9 | R10: | 77.9 |
| R3: | 96.2 | R11: | 78.9 |
| R4: | 79.1 | R12: | 71.6 |
| R5: | 79.1 | R13: | 81.2 |
| R6: | 88.8 | R14: | 98.5 |
| R7: | 81.3 | R15: | 69.9 |
| R8: | 54.3 | | |



Test Conditions

Stabilization Time: 81M
 Operation Time: 2H 21M
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-157-9

| 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 2700K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: 4337.9

| 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 | 0 | 0.0 | 490 | 18018 | 2.6 | 620 | 87426 | 22.8 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 3.9 | 625 | 83013 | 18.2 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 5.8 | 630 | 78077 | 14.1 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 8.5 | 635 | 72080 | 10.7 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 11.5 | 640 | 66249 | 7.9 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 15.2 | 645 | 59973 | 5.7 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 18.7 | 650 | 53972 | 3.9 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 21.9 | 655 | 48369 | 2.7 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 24.9 | 660 | 42641 | 1.8 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 27.6 | 665 | 37602 | 1.1 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.0 | 540 | 46032 | 30.0 | 670 | 32798 | 0.7 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.0 | 545 | 48553 | 32.5 | 675 | 28558 | 0.5 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 0.0 | 550 | 51408 | 34.9 | 680 | 24782 | 0.3 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 0.0 | 555 | 54711 | 37.4 | 685 | 21386 | 0.2 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 0.0 | 560 | 58847 | 40.0 | 690 | 18413 | 0.1 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 0.1 | 565 | 63386 | 42.4 | 695 | 15721 | 0.1 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 0.2 | 570 | 68196 | 44.3 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 0.6 | 575 | 73613 | 46.0 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 0.9 | 580 | 79207 | 47.1 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 0.9 | 585 | 84248 | 47.0 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 0.9 | 590 | 88397 | 45.7 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 1.0 | 595 | 91428 | 43.4 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 0.9 | 600 | 93452 | 40.3 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 1.0 | 605 | 93959 | 36.4 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 1.3 | 610 | 93079 | 32.0 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 1.8 | 615 | 90707 | 27.3 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

REPORT NUMBER: SP1-2407-157-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: 5286.7

S/P: 1.22

| 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 | 0 | 0.0 | 490 | 18018 | 75.9 | 620 | 87426 | 0.4 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 93.2 | 625 | 83013 | 0.2 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 107.8 | 630 | 78077 | 0.1 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 118.7 | 635 | 72080 | 0.1 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 122.2 | 640 | 66249 | 0.1 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 120.8 | 645 | 59973 | 0.0 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 113.9 | 650 | 53972 | 0.0 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 104.1 | 655 | 48369 | 0.0 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 92.4 | 660 | 42641 | 0.0 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 80.5 | 665 | 37602 | 0.0 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.1 | 540 | 46032 | 68.2 | 670 | 32798 | 0.0 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.3 | 545 | 48553 | 57.1 | 675 | 28558 | 0.0 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 1.1 | 550 | 51408 | 46.7 | 680 | 24782 | 0.0 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 2.5 | 555 | 54711 | 37.4 | 685 | 21386 | 0.0 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 5.9 | 560 | 58847 | 29.4 | 690 | 18413 | 0.0 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 12.5 | 565 | 63386 | 22.5 | 695 | 15721 | 0.0 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 26.3 | 570 | 68196 | 16.9 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 55.2 | 575 | 73613 | 12.4 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 85.4 | 580 | 79207 | 9.0 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 75.1 | 585 | 84248 | 6.3 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 63.2 | 590 | 88397 | 4.4 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 63.2 | 595 | 91428 | 3.0 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 54.2 | 600 | 93452 | 2.0 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 48.8 | 605 | 93959 | 1.3 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 54.2 | 610 | 93079 | 0.9 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 63.3 | 615 | 90707 | 0.5 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

REPORT NUMBER: SP1-2407-157-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: 9797

M/P: 2.26

| 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 | 0 | 0.0 | 490 | 18018 | 27.7 | 620 | 87426 | 1.1 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 36.0 | 625 | 83013 | 0.7 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 44.2 | 630 | 78077 | 0.4 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 51.8 | 635 | 72080 | 0.3 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 57.0 | 640 | 66249 | 0.2 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 60.5 | 645 | 59973 | 0.1 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 61.4 | 650 | 53972 | 0.1 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 60.6 | 655 | 48369 | 0.0 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 58.2 | 660 | 42641 | 0.0 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 55.0 | 665 | 37602 | 0.0 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.0 | 540 | 46032 | 50.9 | 670 | 32798 | 0.0 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.1 | 545 | 48553 | 46.6 | 675 | 28558 | 0.0 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 0.3 | 550 | 51408 | 42.0 | 680 | 24782 | 0.0 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 0.8 | 555 | 54711 | 37.4 | 685 | 21386 | 0.0 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 1.9 | 560 | 58847 | 32.9 | 690 | 18413 | 0.0 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 4.1 | 565 | 63386 | 28.4 | 695 | 15721 | 0.0 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 8.7 | 570 | 68196 | 24.1 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 18.5 | 575 | 73613 | 20.0 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 28.3 | 580 | 79207 | 16.3 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 24.7 | 585 | 84248 | 12.9 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 20.4 | 590 | 88397 | 9.8 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 20.1 | 595 | 91428 | 7.3 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 17.2 | 600 | 93452 | 5.3 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 15.7 | 605 | 93959 | 3.7 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 18.0 | 610 | 93079 | 2.5 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 21.9 | 615 | 90707 | 1.7 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

Summary

$R_f = 84.7$
 $R_g = 94.6$
 CIE $R_a = 80.9$
 $R_9 = -1.5$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 84 | CES51 = 95 | CES76 = 81 |
| CES02 = 63 | CES27 = 95 | CES52 = 94 | CES77 = 84 |
| CES03 = 31 | CES28 = 94 | CES53 = 89 | CES78 = 81 |
| CES04 = 71 | CES29 = 87 | CES54 = 91 | CES79 = 89 |
| CES05 = 50 | CES30 = 94 | CES55 = 90 | CES80 = 89 |
| CES06 = 52 | CES31 = 89 | CES56 = 86 | CES81 = 69 |
| CES07 = 43 | CES32 = 82 | CES57 = 85 | CES82 = 96 |
| CES08 = 41 | CES33 = 91 | CES58 = 86 | CES83 = 93 |
| CES09 = 29 | CES34 = 92 | CES59 = 91 | CES84 = 92 |
| CES10 = 77 | CES35 = 96 | CES60 = 94 | CES85 = 76 |
| CES11 = 60 | CES36 = 90 | CES61 = 89 | CES86 = 65 |
| CES12 = 66 | CES37 = 96 | CES62 = 94 | CES87 = 84 |
| CES13 = 44 | CES38 = 98 | CES63 = 87 | CES88 = 86 |
| CES14 = 74 | CES39 = 98 | CES64 = 82 | CES89 = 73 |
| CES15 = 72 | CES40 = 95 | CES65 = 78 | CES90 = 88 |
| CES16 = 48 | CES41 = 96 | CES66 = 81 | CES91 = 82 |
| CES17 = 50 | CES42 = 97 | CES67 = 80 | CES92 = 64 |
| CES18 = 57 | CES43 = 91 | CES68 = 83 | CES93 = 78 |
| CES19 = 73 | CES44 = 99 | CES69 = 88 | CES94 = 59 |
| CES20 = 67 | CES45 = 93 | CES70 = 80 | CES95 = 74 |
| CES21 = 87 | CES46 = 89 | CES71 = 79 | CES96 = 83 |
| CES22 = 79 | CES47 = 92 | CES72 = 92 | CES97 = 88 |
| CES23 = 92 | CES48 = 83 | CES73 = 75 | CES98 = 83 |
| CES24 = 91 | CES49 = 90 | CES74 = 91 | CES99 = 74 |
| CES25 = 72 | CES50 = 94 | CES75 = 81 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)