

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: P438078

Luminaire Tested: **IST-SA1A-760-U-T3**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438078
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-8)
Test Lab: INNOVATION CENTER
Issue Date: 12/10/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: IST-SA1A-760-U-T3
Description: IMPACT ELITE LED TRAPEZOID LUMINAIRE
(1) 70 CRI, 5700K, 350mA LIGHTSQUARE WITH 16 LEDS AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2731 lumens
Efficiency: N/A
Efficacy: 135.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B1 - U0 - G1

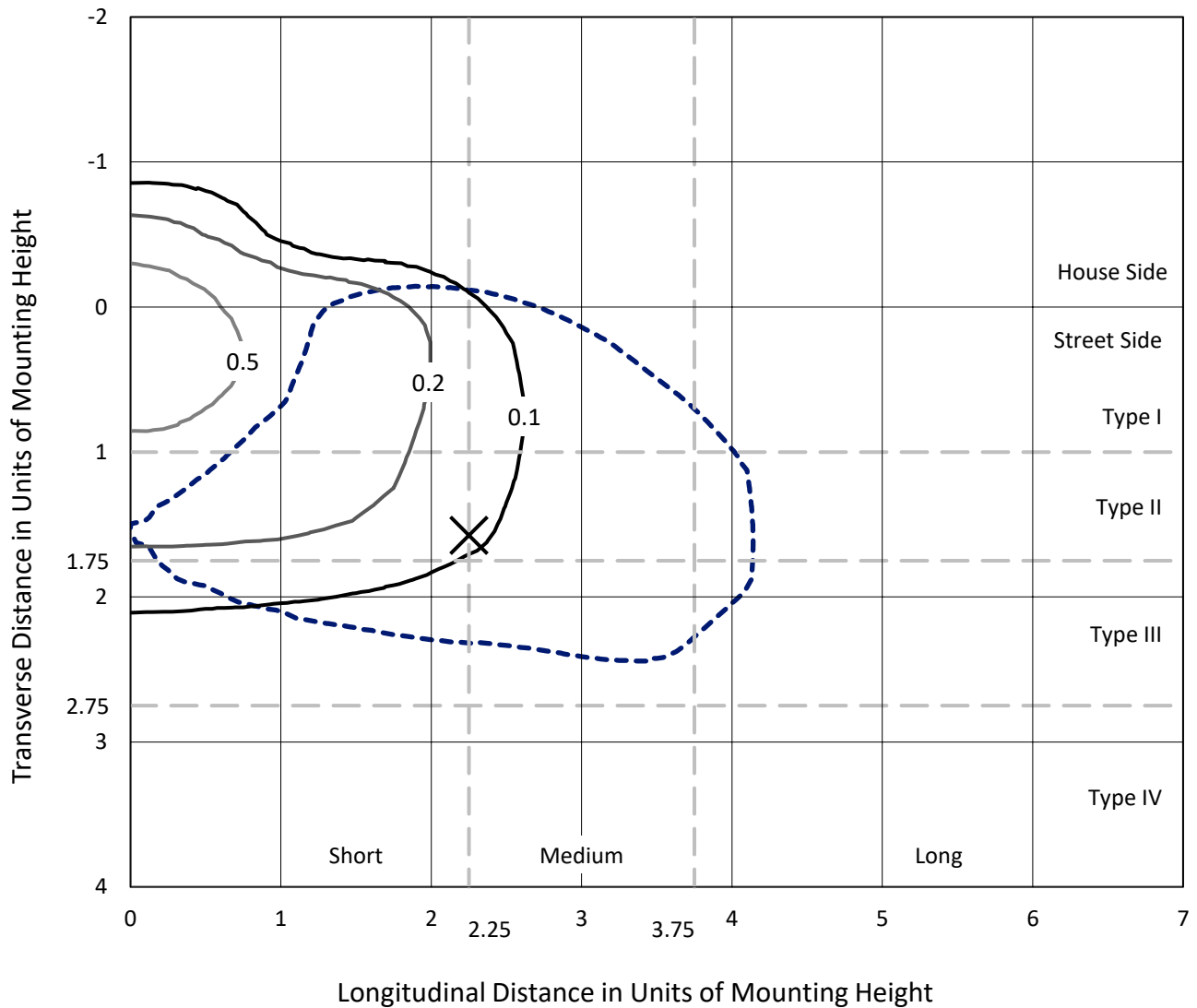
Input Watts (W): 20.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

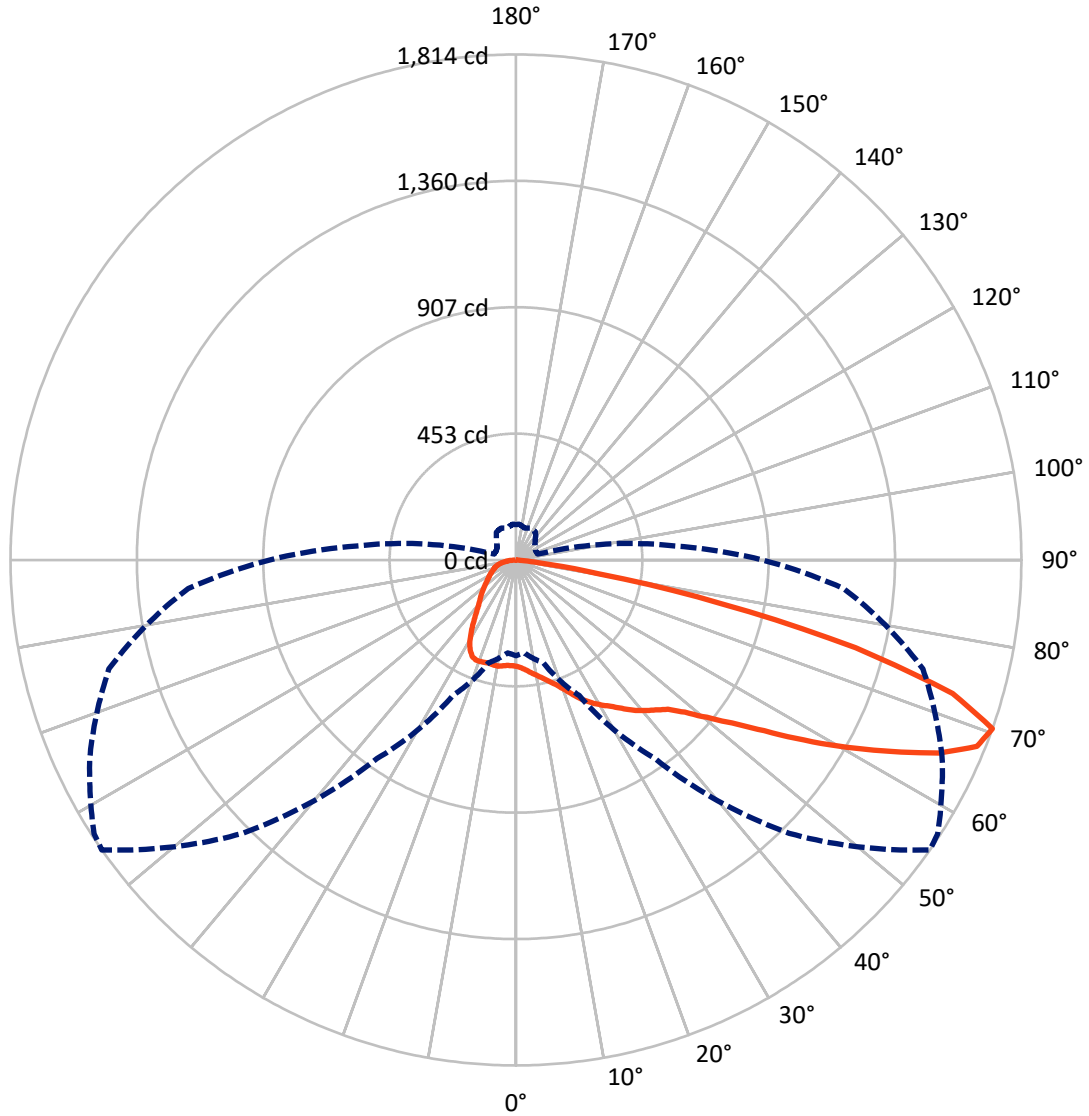
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.7 fc
 Type III - Medium - N/A

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CATALOG NUMBER: IST-SA1A-760-U-T3

Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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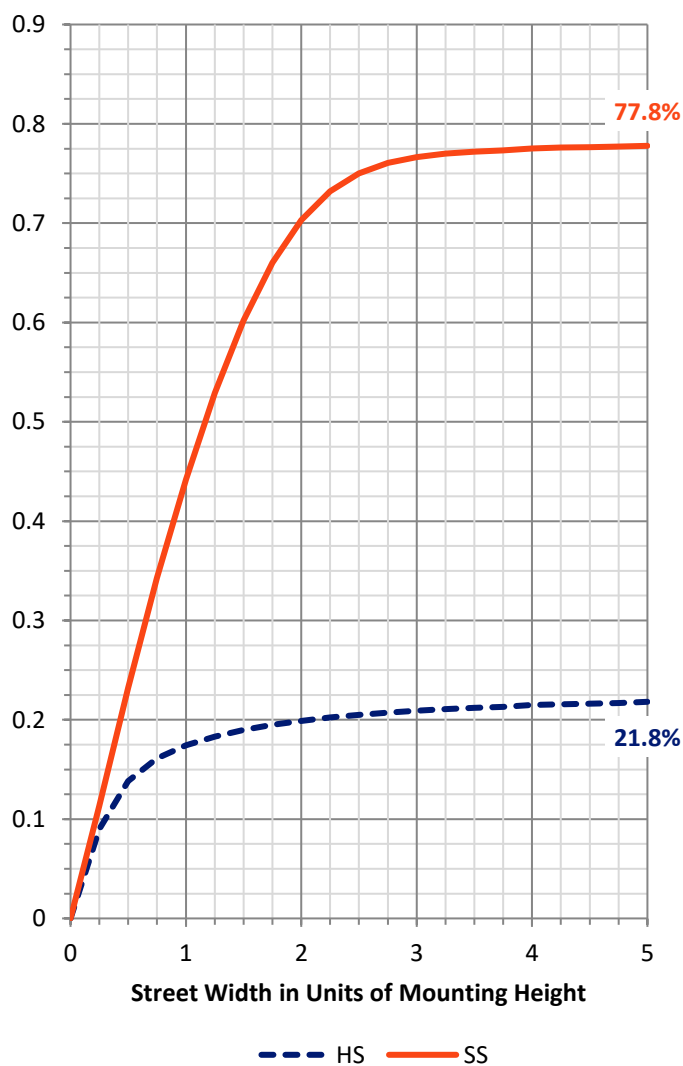
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 604.1 | 0.0 | 604.1 |
| | % Fixture | 22.1 | 0.0 | 22.1 |
| Street Side | Lumens | 2126.9 | 0.0 | 2126.9 |
| | % Fixture | 77.9 | 0.0 | 77.9 |
| Total | Lumens | 2731.0 | 0.0 | 2731.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 37.6 | 1.4 |
| 10°-20° | 119.6 | 4.4 |
| 20°-30° | 207.9 | 7.6 |
| 30°-40° | 293.1 | 10.7 |
| 40°-50° | 388.4 | 14.2 |
| 50°-60° | 565.9 | 20.7 |
| 60°-70° | 706.2 | 25.9 |
| 70°-80° | 376.1 | 13.8 |
| 80°-90° | 36.2 | 1.3 |
| 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° | 2731.0 | 100.0 |
| 0°-180° | 2731.0 | 100.0 |

Coefficient of Utilization

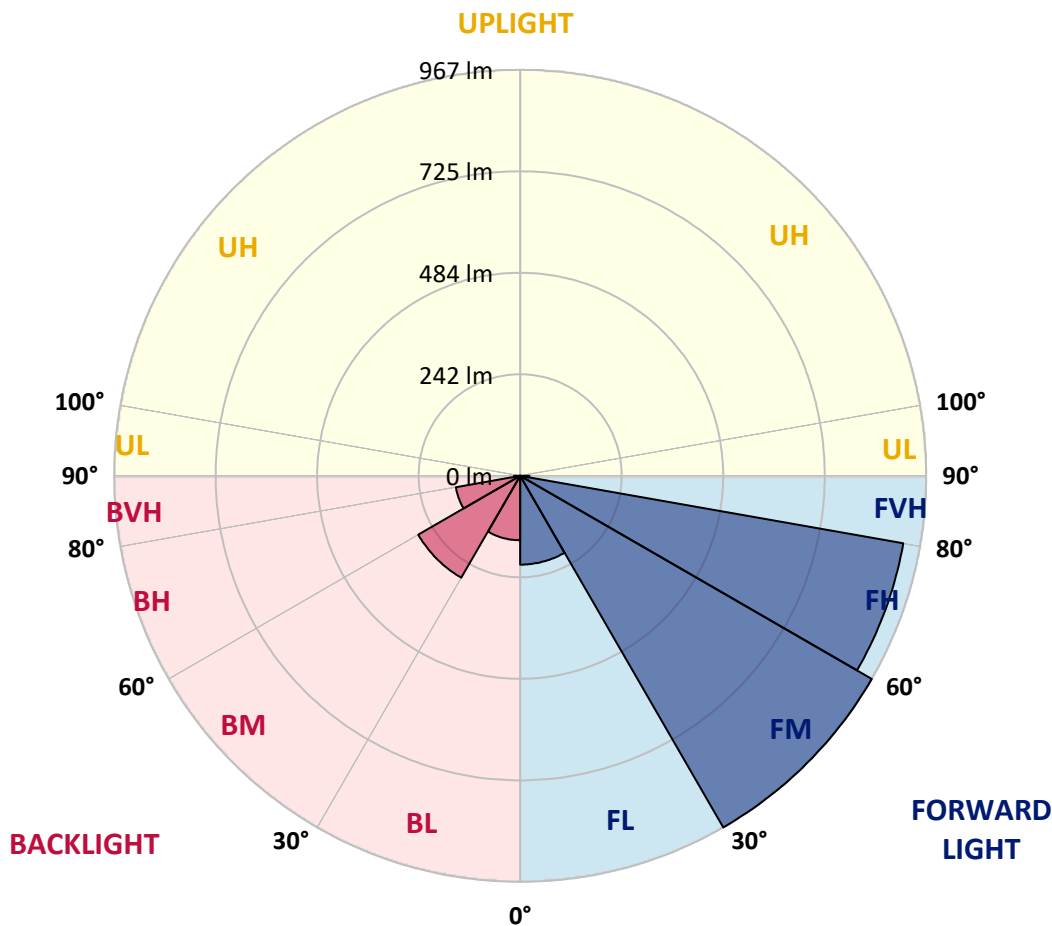


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 211.5 | 7.7 | | | |
| FM (30°-60°) | 967.1 | 35.4 | | | |
| FH (60°-80°) | 926.6 | 33.9 | | | G1/1800 |
| FVH (80°-90°) | 21.6 | 0.8 | | | G1/100 |
| BL (0°-30°) | 153.5 | 5.6 | B1/500 | | |
| BM (30°-60°) | 280.3 | 10.3 | B1/1000 | | |
| BH (60°-80°) | 155.7 | 5.7 | B1/500 | | G1/500 |
| BVH (80°-90°) | 14.6 | 0.5 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1
 Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 |
| 2.5° | 394.2 | 393.2 | 393.2 | 392.2 | 391.2 | 390.2 | 388.3 | 386.3 | 386.3 | 384.3 | 384.3 |
| 5° | 404.0 | 402.0 | 403.0 | 402.0 | 402.0 | 400.1 | 397.1 | 397.1 | 396.1 | 391.2 | 387.3 |
| 7.5° | 413.8 | 412.9 | 412.9 | 413.8 | 412.9 | 410.9 | 409.9 | 408.9 | 405.0 | 399.1 | 393.2 |
| 10° | 427.6 | 427.6 | 427.6 | 426.6 | 426.6 | 424.6 | 421.7 | 421.7 | 416.8 | 409.9 | 403.0 |
| 12.5° | 448.2 | 447.3 | 446.3 | 446.3 | 443.3 | 439.4 | 436.4 | 436.4 | 433.5 | 422.7 | 413.8 |
| 15° | 471.8 | 468.9 | 466.9 | 466.9 | 463.0 | 456.1 | 453.2 | 454.1 | 451.2 | 438.4 | 425.6 |
| 17.5° | 495.4 | 495.4 | 493.5 | 488.5 | 483.6 | 478.7 | 471.8 | 473.8 | 470.8 | 458.1 | 441.4 |
| 20° | 517.0 | 515.1 | 515.1 | 512.1 | 505.3 | 499.4 | 495.4 | 494.4 | 492.5 | 478.7 | 459.1 |
| 22.5° | 540.6 | 539.7 | 536.7 | 534.7 | 529.8 | 526.9 | 524.9 | 524.9 | 517.0 | 498.4 | 472.8 |
| 25° | 569.1 | 568.2 | 568.2 | 560.3 | 556.4 | 551.4 | 554.4 | 551.4 | 547.5 | 520.0 | 487.6 |
| 27.5° | 597.6 | 597.6 | 596.7 | 592.7 | 581.9 | 579.0 | 580.9 | 579.0 | 578.0 | 540.6 | 501.3 |
| 30° | 628.1 | 627.1 | 624.2 | 623.2 | 612.4 | 604.5 | 603.5 | 599.6 | 599.6 | 559.3 | 511.1 |
| 32.5° | 653.7 | 652.7 | 654.7 | 650.7 | 643.8 | 633.0 | 626.2 | 626.2 | 619.3 | 578.0 | 522.9 |
| 35° | 677.3 | 679.2 | 679.2 | 677.3 | 671.4 | 660.6 | 653.7 | 655.6 | 645.8 | 594.7 | 537.7 |
| 37.5° | 703.8 | 701.8 | 698.9 | 696.9 | 689.1 | 684.2 | 684.2 | 686.1 | 671.4 | 612.4 | 557.3 |
| 40° | 709.7 | 714.6 | 721.5 | 713.6 | 709.7 | 708.7 | 710.7 | 705.8 | 691.0 | 639.9 | 590.8 |
| 42.5° | 721.5 | 725.4 | 738.2 | 735.3 | 732.3 | 735.3 | 735.3 | 728.4 | 721.5 | 677.3 | 636.0 |
| 45° | 751.0 | 757.9 | 767.7 | 768.7 | 767.7 | 772.6 | 763.8 | 762.8 | 761.8 | 731.3 | 696.9 |
| 47.5° | 783.4 | 791.3 | 813.9 | 811.0 | 821.8 | 831.6 | 815.9 | 814.9 | 817.8 | 803.1 | 774.6 |
| 50° | 821.8 | 829.6 | 858.1 | 869.0 | 898.4 | 916.1 | 887.6 | 874.8 | 895.5 | 894.5 | 872.9 |
| 52.5° | 866.0 | 875.8 | 895.5 | 932.8 | 983.0 | 1001.7 | 971.2 | 960.4 | 984.9 | 996.7 | 977.1 |
| 55° | 896.5 | 904.3 | 934.8 | 992.8 | 1074.4 | 1099.0 | 1081.3 | 1071.4 | 1098.0 | 1107.8 | 1087.2 |
| 57.5° | 907.3 | 909.3 | 954.5 | 1045.9 | 1158.9 | 1221.8 | 1218.9 | 1212.0 | 1201.2 | 1225.8 | 1219.9 |
| 60° | 888.6 | 899.4 | 957.4 | 1069.5 | 1234.6 | 1353.6 | 1364.4 | 1348.6 | 1334.9 | 1340.8 | 1321.1 |
| 62.5° | 864.0 | 872.9 | 933.8 | 1072.4 | 1285.7 | 1472.5 | 1512.8 | 1495.1 | 1460.7 | 1445.0 | 1398.8 |
| 65° | 777.5 | 777.5 | 837.5 | 1012.5 | 1276.9 | 1569.8 | 1669.1 | 1638.6 | 1575.7 | 1519.7 | 1395.8 |
| 67.5° | 594.7 | 591.8 | 649.7 | 831.6 | 1152.0 | 1579.6 | 1784.1 | 1768.4 | 1667.1 | 1548.2 | 1340.8 |
| 70° | 343.1 | 334.2 | 382.4 | 536.7 | 869.9 | 1387.0 | 1813.6 | 1804.7 | 1687.8 | 1511.8 | 1180.6 |
| 72.5° | 118.9 | 126.8 | 158.3 | 228.1 | 478.7 | 998.7 | 1638.6 | 1657.3 | 1589.5 | 1373.2 | 948.6 |
| 75° | 61.9 | 61.9 | 72.7 | 99.3 | 202.5 | 515.1 | 1259.2 | 1317.2 | 1331.9 | 1149.1 | 677.3 |
| 77.5° | 45.2 | 46.2 | 52.1 | 63.9 | 96.3 | 197.6 | 755.9 | 811.0 | 922.0 | 791.3 | 391.2 |
| 80° | 30.5 | 31.5 | 37.4 | 42.3 | 59.0 | 76.7 | 301.8 | 331.3 | 457.1 | 353.9 | 151.4 |
| 82.5° | 22.6 | 23.6 | 23.6 | 24.6 | 32.4 | 35.4 | 79.6 | 98.3 | 157.3 | 105.2 | 54.1 |
| 85° | 4.9 | 4.9 | 9.8 | 9.8 | 9.8 | 9.8 | 17.7 | 19.7 | 29.5 | 31.5 | 17.7 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.9 | 2.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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 CATALOG NUMBER: IST-SA1A-760-U-T3

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 | 381.4 |
| 2.5° | 383.4 | 382.4 | 381.4 | 380.4 | 379.4 | 378.4 | 377.5 | 378.4 | 378.4 | 380.4 | 381.4 |
| 5° | 386.3 | 383.4 | 382.4 | 380.4 | 379.4 | 379.4 | 379.4 | 380.4 | 381.4 | 382.4 | 383.4 |
| 7.5° | 391.2 | 390.2 | 387.3 | 383.4 | 382.4 | 382.4 | 380.4 | 380.4 | 380.4 | 382.4 | 382.4 |
| 10° | 400.1 | 397.1 | 393.2 | 389.3 | 386.3 | 380.4 | 375.5 | 371.6 | 373.5 | 376.5 | 376.5 |
| 12.5° | 409.9 | 405.0 | 400.1 | 393.2 | 385.3 | 375.5 | 370.6 | 371.6 | 371.6 | 374.5 | 375.5 |
| 15° | 422.7 | 418.7 | 407.9 | 396.1 | 382.4 | 374.5 | 372.5 | 370.6 | 370.6 | 372.5 | 374.5 |
| 17.5° | 436.4 | 429.6 | 415.8 | 398.1 | 384.3 | 375.5 | 371.6 | 363.7 | 359.8 | 358.8 | 360.8 |
| 20° | 449.2 | 441.4 | 422.7 | 400.1 | 386.3 | 374.5 | 360.8 | 348.0 | 338.1 | 336.2 | 334.2 |
| 22.5° | 460.0 | 450.2 | 427.6 | 404.0 | 386.3 | 364.7 | 341.1 | 322.4 | 308.7 | 304.7 | 306.7 |
| 25° | 471.8 | 457.1 | 433.5 | 407.9 | 379.4 | 345.0 | 312.6 | 290.0 | 276.2 | 270.3 | 270.3 |
| 27.5° | 481.7 | 466.9 | 439.4 | 405.0 | 361.7 | 318.5 | 281.1 | 258.5 | 247.7 | 241.8 | 240.8 |
| 30° | 490.5 | 474.8 | 451.2 | 396.1 | 336.2 | 282.1 | 249.7 | 233.9 | 227.1 | 220.2 | 221.2 |
| 32.5° | 502.3 | 488.5 | 460.0 | 377.5 | 301.8 | 248.7 | 224.1 | 216.3 | 209.4 | 204.5 | 206.4 |
| 35° | 519.0 | 511.1 | 463.0 | 353.9 | 266.4 | 225.1 | 208.4 | 199.5 | 193.6 | 186.8 | 186.8 |
| 37.5° | 542.6 | 535.7 | 453.2 | 318.5 | 234.9 | 207.4 | 195.6 | 183.8 | 174.0 | 166.1 | 164.2 |
| 40° | 571.1 | 561.3 | 436.4 | 279.2 | 210.4 | 195.6 | 184.8 | 170.1 | 156.3 | 145.5 | 143.5 |
| 42.5° | 616.3 | 587.8 | 411.9 | 238.9 | 192.7 | 185.8 | 171.0 | 152.4 | 138.6 | 130.7 | 128.8 |
| 45° | 664.5 | 618.3 | 376.5 | 204.5 | 178.9 | 174.0 | 157.3 | 138.6 | 128.8 | 122.9 | 121.9 |
| 47.5° | 725.4 | 651.7 | 343.1 | 178.9 | 163.2 | 162.2 | 142.5 | 130.7 | 122.9 | 118.9 | 118.0 |
| 50° | 806.0 | 694.0 | 309.6 | 159.2 | 149.4 | 146.5 | 135.7 | 125.8 | 119.9 | 117.0 | 116.0 |
| 52.5° | 899.4 | 743.1 | 283.1 | 144.5 | 136.6 | 134.7 | 131.7 | 123.9 | 119.9 | 117.0 | 116.0 |
| 55° | 987.9 | 794.2 | 254.6 | 130.7 | 125.8 | 127.8 | 129.8 | 123.9 | 120.9 | 118.9 | 117.0 |
| 57.5° | 1085.2 | 837.5 | 222.2 | 119.9 | 117.0 | 121.9 | 127.8 | 124.8 | 122.9 | 119.9 | 118.9 |
| 60° | 1145.2 | 868.0 | 178.9 | 110.1 | 110.1 | 117.0 | 124.8 | 122.9 | 118.9 | 118.9 | 118.9 |
| 62.5° | 1171.7 | 863.1 | 141.5 | 100.3 | 102.2 | 111.1 | 119.9 | 118.0 | 115.0 | 119.9 | 119.9 |
| 65° | 1137.3 | 807.0 | 115.0 | 91.4 | 94.4 | 103.2 | 115.0 | 115.0 | 115.0 | 122.9 | 122.9 |
| 67.5° | 1047.9 | 722.5 | 94.4 | 83.6 | 86.5 | 97.3 | 115.0 | 121.9 | 120.9 | 129.8 | 129.8 |
| 70° | 884.7 | 573.1 | 81.6 | 77.7 | 81.6 | 97.3 | 121.9 | 125.8 | 118.9 | 128.8 | 126.8 |
| 72.5° | 674.3 | 400.1 | 72.7 | 71.8 | 76.7 | 94.4 | 122.9 | 120.9 | 112.1 | 115.0 | 112.1 |
| 75° | 443.3 | 242.8 | 63.9 | 65.9 | 67.8 | 83.6 | 117.0 | 113.0 | 102.2 | 100.3 | 98.3 |
| 77.5° | 243.8 | 121.9 | 56.0 | 59.0 | 59.0 | 70.8 | 106.2 | 97.3 | 88.5 | 83.6 | 81.6 |
| 80° | 97.3 | 61.9 | 49.1 | 52.1 | 48.2 | 57.0 | 79.6 | 75.7 | 67.8 | 63.9 | 61.9 |
| 82.5° | 44.2 | 34.4 | 41.3 | 43.3 | 36.4 | 42.3 | 59.0 | 57.0 | 51.1 | 44.2 | 42.3 |
| 85° | 16.7 | 19.7 | 31.5 | 29.5 | 25.6 | 24.6 | 33.4 | 30.5 | 24.6 | 19.7 | 19.7 |
| 87.5° | 2.0 | 3.9 | 7.9 | 10.8 | 5.9 | 3.9 | 2.0 | 1.0 | 1.0 | 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 |

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



Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-9-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-760-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): | 5474 | CRI (Ra): | 71.7 | R9: | -27.1 |
| CIE u': | 0.2052 | R1: | 70.6 | R10: | 40.8 |
| CIE v': | 0.4804 | R2: | 74.6 | R11: | 74.6 |
| Duv: | 0.0025 | R3: | 78.3 | R12: | 50.4 |
| CIE x: | 0.3330 | R4: | 73.8 | R13: | 70.0 |
| CIE y: | 0.3466 | R5: | 72.4 | R14: | 87.8 |
| CIE z: | 0.3204 | R6: | 67.5 | | |
| Peak Wavelength (nm): | 442 | R7: | 77.5 | | |
| Dominant Wavelength (nm): | 554 | R8: | 58.9 | | |
| Purity: | 4.1 | | | | |
| Rf: | 72.1 | | | | |
| Rg: | 97.2 | | | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

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| 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 5700K 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5527.6 M/P: 0.74

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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Summary

$R_f = 72.1$
 $R_g = 97.2$
 CIE $R_a = 71.7$
 $R_g = -27.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)