

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



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P629415

Luminaire Tested: GWS-SA1B-750-U-T2-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P629415
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-20)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1B-750-U-T2-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (16) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2177.7 lumens
Efficiency: N/A
Efficacy: 87.1 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G0

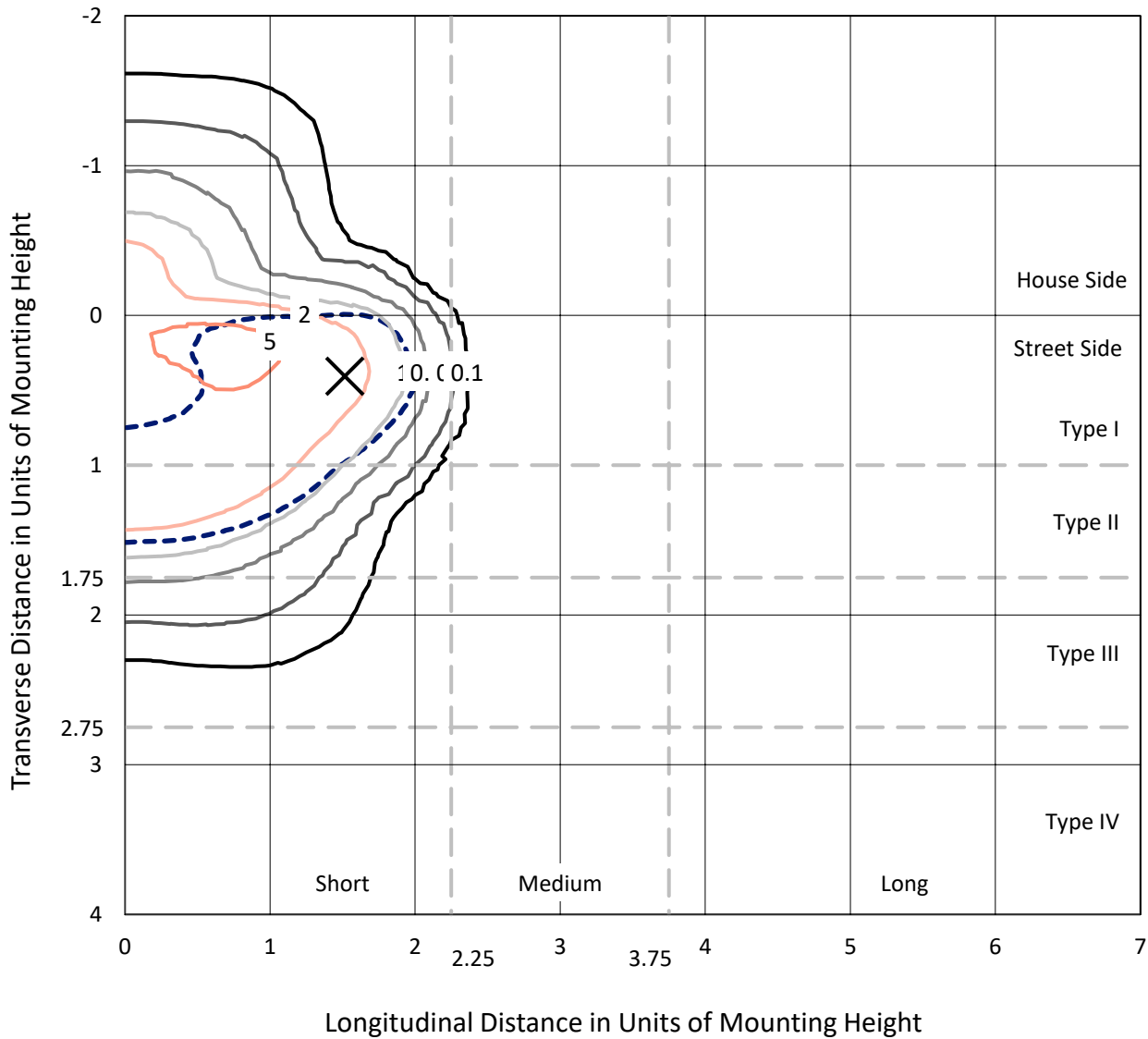
Input Watts (W): 25
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P629415
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Iso-Footcandle Lines of Horizontal Illumination

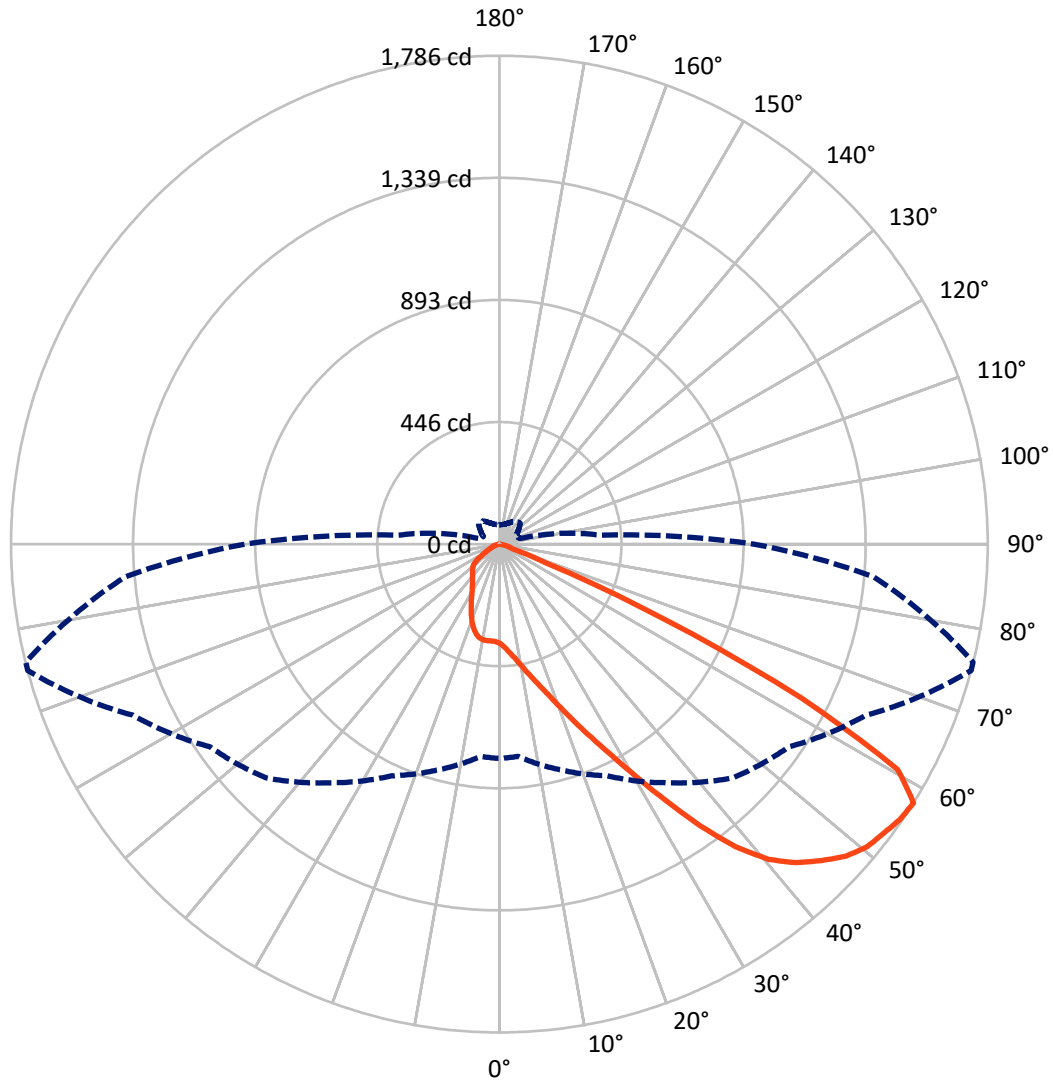
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6.8 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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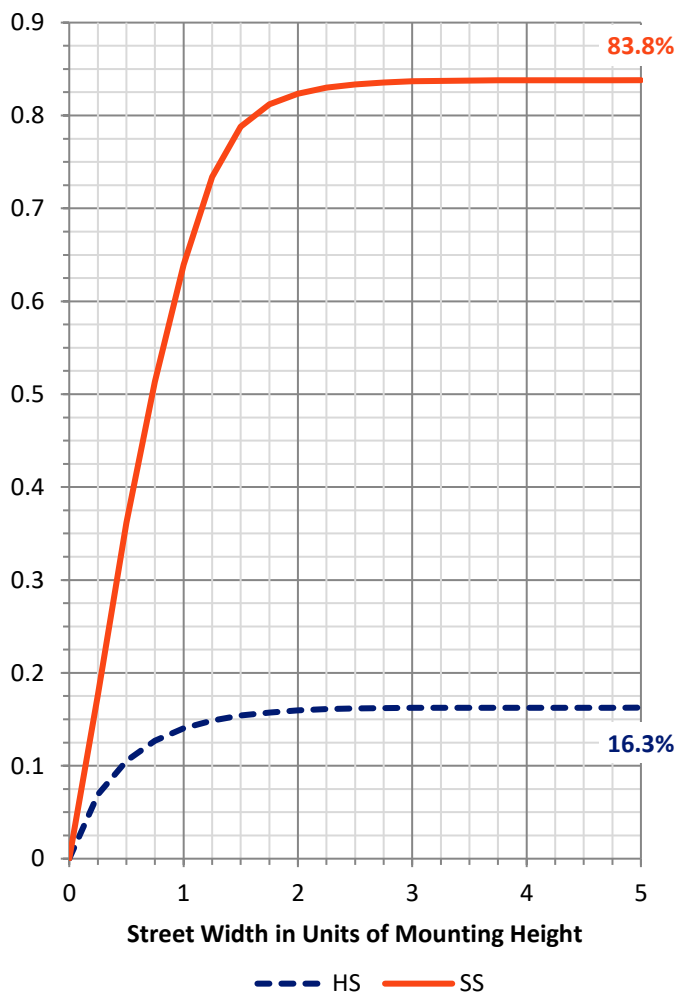
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 355.7 | 0.0 | 355.7 |
| | % Fixture | 16.3 | 0.0 | 16.3 |
| Street Side | Lumens | 1822.0 | 0.0 | 1822.0 |
| | % Fixture | 83.7 | 0.0 | 83.7 |
| Total | Lumens | 2177.7 | 0.0 | 2177.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 37.0 | 1.7 |
| 10°-20° | 120.1 | 5.5 |
| 20°-30° | 219.9 | 10.1 |
| 30°-40° | 364.8 | 16.8 |
| 40°-50° | 557.1 | 25.6 |
| 50°-60° | 626.0 | 28.7 |
| 60°-70° | 230.9 | 10.6 |
| 70°-80° | 22.1 | 1.0 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 2177.7 | 100.0 |
| 0°-180° | 2177.7 | 100.0 |

Coefficient of Utilization

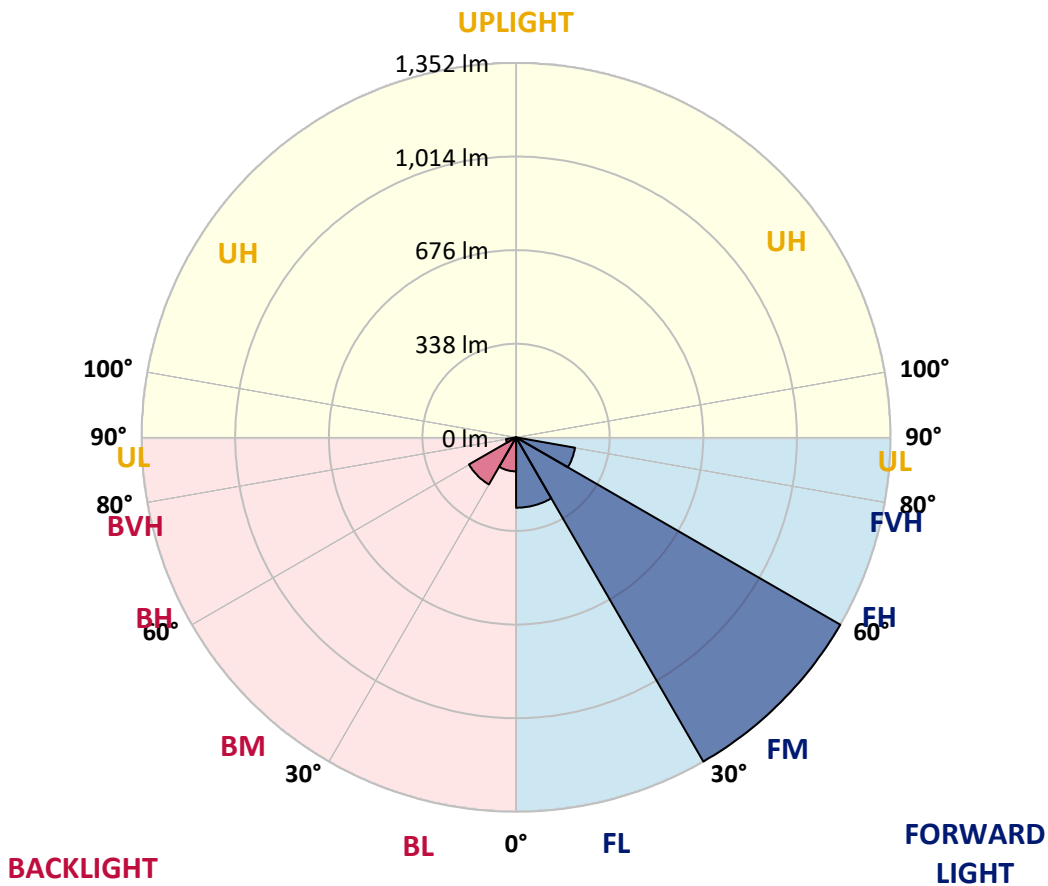


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 254.1 | 11.7 | | | |
| FM (30°-60°) | 1351.8 | 62.1 | | | |
| FH (60°-80°) | 216.0 | 9.9 | | | G0/660 |
| FVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| BL (0°-30°) | 122.7 | 5.6 | B1/500 | | |
| BM (30°-60°) | 196.0 | 9.0 | B0/220 | | |
| BH (60°-80°) | 36.9 | 1.7 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G0
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 |
| 2.5° | 405.8 | 410.0 | 408.7 | 406.0 | 404.5 | 399.0 | 395.5 | 385.5 | 378.5 | 377.7 | 371.1 |
| 5° | 457.0 | 456.2 | 455.2 | 452.0 | 449.4 | 440.7 | 430.5 | 413.7 | 398.7 | 396.9 | 382.9 |
| 7.5° | 485.2 | 485.7 | 486.2 | 485.7 | 483.8 | 477.3 | 466.0 | 446.3 | 423.4 | 421.8 | 399.7 |
| 10° | 496.7 | 497.8 | 500.4 | 505.4 | 509.9 | 509.3 | 502.8 | 482.5 | 454.4 | 451.8 | 422.1 |
| 12.5° | 502.2 | 503.6 | 507.8 | 517.2 | 529.3 | 538.8 | 539.8 | 521.7 | 490.7 | 486.5 | 448.6 |
| 15° | 509.9 | 511.2 | 516.4 | 528.8 | 546.4 | 565.1 | 577.1 | 565.6 | 530.9 | 526.4 | 477.8 |
| 17.5° | 513.3 | 515.1 | 522.7 | 539.0 | 561.9 | 590.5 | 617.9 | 616.8 | 578.5 | 575.0 | 511.7 |
| 20° | 519.8 | 521.2 | 528.0 | 545.6 | 573.2 | 614.5 | 660.5 | 677.0 | 636.5 | 631.5 | 552.7 |
| 22.5° | 540.6 | 541.1 | 544.3 | 555.3 | 581.1 | 631.8 | 703.8 | 747.2 | 705.1 | 698.6 | 598.7 |
| 25° | 574.5 | 574.3 | 575.6 | 577.4 | 596.3 | 649.4 | 745.6 | 826.3 | 783.7 | 776.6 | 650.7 |
| 27.5° | 617.6 | 617.6 | 620.8 | 615.5 | 623.1 | 671.2 | 786.9 | 917.2 | 875.2 | 865.2 | 707.8 |
| 30° | 668.3 | 668.1 | 675.4 | 667.0 | 669.4 | 705.7 | 831.3 | 1016.3 | 985.6 | 973.2 | 773.5 |
| 32.5° | 737.2 | 735.6 | 744.0 | 732.5 | 724.6 | 757.7 | 885.4 | 1119.9 | 1117.8 | 1098.8 | 856.0 |
| 35° | 824.2 | 821.6 | 824.2 | 812.9 | 798.7 | 830.5 | 956.4 | 1223.1 | 1264.4 | 1244.4 | 954.3 |
| 37.5° | 910.7 | 919.1 | 922.0 | 902.5 | 890.9 | 922.7 | 1041.8 | 1315.7 | 1404.5 | 1383.7 | 1056.5 |
| 40° | 1012.6 | 1010.0 | 1020.0 | 998.2 | 990.8 | 1026.0 | 1125.4 | 1384.5 | 1515.4 | 1495.7 | 1147.4 |
| 42.5° | 1087.8 | 1092.5 | 1104.9 | 1092.8 | 1087.0 | 1120.1 | 1195.5 | 1424.7 | 1592.4 | 1572.9 | 1212.4 |
| 45° | 1177.9 | 1181.4 | 1186.1 | 1176.1 | 1170.1 | 1202.6 | 1246.3 | 1442.3 | 1651.0 | 1630.0 | 1256.0 |
| 47.5° | 1275.4 | 1278.1 | 1278.1 | 1257.6 | 1238.1 | 1251.5 | 1280.2 | 1452.3 | 1704.9 | 1684.6 | 1288.3 |
| 50° | 1345.3 | 1346.7 | 1358.2 | 1343.8 | 1301.5 | 1280.7 | 1295.7 | 1462.0 | 1740.6 | 1721.7 | 1298.8 |
| 52.5° | 1283.3 | 1281.7 | 1319.9 | 1349.8 | 1361.1 | 1319.9 | 1322.5 | 1476.2 | 1758.0 | 1741.7 | 1307.2 |
| 55° | 1080.7 | 1078.1 | 1131.7 | 1204.5 | 1304.1 | 1356.9 | 1354.8 | 1484.6 | 1777.2 | 1767.2 | 1337.7 |
| 57.5° | 783.5 | 779.0 | 853.6 | 934.6 | 1065.2 | 1208.4 | 1292.5 | 1479.9 | 1785.6 | 1784.8 | 1373.2 |
| 60° | 471.0 | 467.3 | 537.7 | 622.9 | 723.8 | 867.8 | 1007.4 | 1325.6 | 1673.1 | 1674.7 | 1281.0 |
| 62.5° | 289.9 | 293.3 | 356.9 | 400.3 | 437.8 | 481.2 | 561.9 | 891.7 | 1239.4 | 1249.7 | 900.1 |
| 65° | 195.0 | 197.6 | 256.5 | 311.2 | 311.2 | 254.4 | 218.4 | 426.3 | 661.2 | 643.9 | 425.8 |
| 67.5° | 130.9 | 133.8 | 180.3 | 244.2 | 253.4 | 177.4 | 88.6 | 127.2 | 184.2 | 178.7 | 105.4 |
| 70° | 77.0 | 80.2 | 120.1 | 167.4 | 184.5 | 123.5 | 59.1 | 53.9 | 52.3 | 50.7 | 41.0 |
| 72.5° | 34.4 | 35.7 | 61.2 | 85.2 | 77.8 | 52.0 | 41.8 | 43.1 | 40.7 | 39.9 | 33.4 |
| 75° | 10.5 | 11.0 | 15.8 | 18.4 | 18.7 | 18.7 | 25.2 | 33.9 | 32.1 | 32.3 | 25.8 |
| 77.5° | 2.6 | 2.6 | 4.2 | 3.9 | 2.1 | 1.8 | 4.7 | 7.6 | 7.9 | 7.1 | 5.3 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 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 |



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CATALOG NUMBER: GWS-SA1B-750-U-T2-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 | 363.2 |
| 2.5° | 368.2 | 361.4 | 356.9 | 350.6 | 346.1 | 341.4 | 337.2 | 333.8 | 331.9 | 331.4 | 331.7 |
| 5° | 376.6 | 365.8 | 355.3 | 343.2 | 334.8 | 326.9 | 320.6 | 315.6 | 313.3 | 312.5 | 312.5 |
| 7.5° | 389.5 | 374.5 | 355.9 | 336.9 | 322.7 | 310.4 | 303.0 | 297.5 | 295.4 | 294.9 | 293.3 |
| 10° | 406.3 | 385.8 | 355.1 | 325.6 | 305.7 | 292.8 | 287.5 | 285.9 | 286.7 | 287.0 | 286.7 |
| 12.5° | 426.5 | 397.6 | 350.1 | 309.1 | 287.5 | 279.6 | 280.2 | 284.4 | 289.1 | 291.5 | 292.0 |
| 15° | 448.1 | 408.4 | 338.8 | 289.4 | 272.0 | 271.8 | 279.4 | 289.1 | 298.3 | 302.2 | 303.3 |
| 17.5° | 472.3 | 417.1 | 321.4 | 268.3 | 258.6 | 266.2 | 279.9 | 294.9 | 307.2 | 313.8 | 315.1 |
| 20° | 498.8 | 424.2 | 299.3 | 248.6 | 246.8 | 260.4 | 279.4 | 297.8 | 313.0 | 320.4 | 321.7 |
| 22.5° | 526.4 | 429.2 | 273.9 | 230.5 | 236.0 | 253.9 | 274.4 | 292.3 | 306.7 | 315.1 | 316.2 |
| 25° | 558.0 | 429.7 | 247.8 | 215.2 | 226.0 | 244.9 | 262.3 | 277.0 | 289.1 | 296.5 | 297.2 |
| 27.5° | 585.6 | 423.4 | 224.7 | 202.9 | 216.8 | 233.9 | 245.5 | 253.6 | 262.0 | 266.2 | 266.5 |
| 30° | 617.4 | 412.4 | 202.9 | 192.9 | 207.4 | 220.2 | 226.0 | 227.9 | 228.6 | 229.4 | 228.4 |
| 32.5° | 655.2 | 399.0 | 186.6 | 183.2 | 196.6 | 205.3 | 206.8 | 203.2 | 198.7 | 192.4 | 190.8 |
| 35° | 701.7 | 386.9 | 173.2 | 173.7 | 184.8 | 190.0 | 188.7 | 180.8 | 172.1 | 164.5 | 163.2 |
| 37.5° | 752.2 | 376.6 | 162.9 | 164.5 | 171.9 | 175.6 | 171.6 | 162.9 | 159.0 | 152.4 | 152.7 |
| 40° | 796.9 | 368.2 | 153.7 | 155.3 | 158.7 | 162.2 | 155.8 | 150.1 | 157.4 | 156.9 | 157.4 |
| 42.5° | 828.7 | 361.1 | 145.9 | 145.1 | 147.4 | 149.8 | 145.1 | 142.2 | 154.5 | 151.1 | 153.0 |
| 45° | 847.3 | 354.5 | 139.3 | 134.6 | 138.2 | 142.4 | 139.3 | 135.6 | 139.8 | 124.0 | 122.7 |
| 47.5° | 859.9 | 350.9 | 133.5 | 124.3 | 130.9 | 138.2 | 131.7 | 122.7 | 116.7 | 103.0 | 102.0 |
| 50° | 861.2 | 349.0 | 126.7 | 113.8 | 122.2 | 130.1 | 122.5 | 110.1 | 101.4 | 95.4 | 94.6 |
| 52.5° | 868.1 | 352.7 | 117.2 | 100.4 | 109.6 | 122.2 | 117.0 | 104.6 | 92.8 | 87.5 | 86.5 |
| 55° | 898.6 | 368.2 | 101.4 | 82.0 | 95.4 | 116.2 | 112.5 | 93.3 | 82.0 | 78.8 | 78.1 |
| 57.5° | 930.1 | 371.4 | 79.9 | 64.9 | 83.0 | 107.5 | 102.8 | 85.9 | 74.9 | 71.2 | 70.4 |
| 60° | 850.5 | 305.9 | 59.9 | 53.6 | 73.3 | 99.3 | 95.1 | 81.5 | 68.6 | 64.1 | 63.3 |
| 62.5° | 558.7 | 165.3 | 47.6 | 45.5 | 61.8 | 84.1 | 86.7 | 73.6 | 61.2 | 56.5 | 56.2 |
| 65° | 257.6 | 76.7 | 36.5 | 36.0 | 48.4 | 67.0 | 74.6 | 64.4 | 51.8 | 47.6 | 47.6 |
| 67.5° | 70.2 | 38.1 | 28.6 | 26.5 | 32.9 | 44.9 | 54.4 | 48.1 | 36.8 | 31.8 | 31.5 |
| 70° | 35.0 | 30.7 | 25.8 | 22.9 | 23.7 | 27.9 | 32.1 | 26.8 | 18.7 | 15.2 | 15.0 |
| 72.5° | 28.6 | 25.2 | 21.8 | 19.4 | 17.9 | 17.1 | 16.6 | 13.4 | 8.7 | 6.6 | 6.3 |
| 75° | 21.3 | 18.1 | 15.5 | 12.6 | 10.8 | 10.0 | 8.9 | 6.6 | 3.7 | 2.1 | 1.8 |
| 77.5° | 4.7 | 4.5 | 4.2 | 3.2 | 2.9 | 2.4 | 1.8 | 1.3 | 0.5 | 0.0 | 0.0 |
| 80° | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 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 |

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 (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

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)