

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: P438405

Luminaire Tested: **IST-SA1C-750-U-T4W**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438405
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-12)
Test Lab: INNOVATION CENTER
Issue Date: 12/10/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: IST-SA1C-750-U-T4W
Description: IMPACT ELITE LED TRAPEZOID LUMINAIRE
(1) 70 CRI, 5000K, 615mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4522 lumens
Efficiency: N/A
Efficacy: 132.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

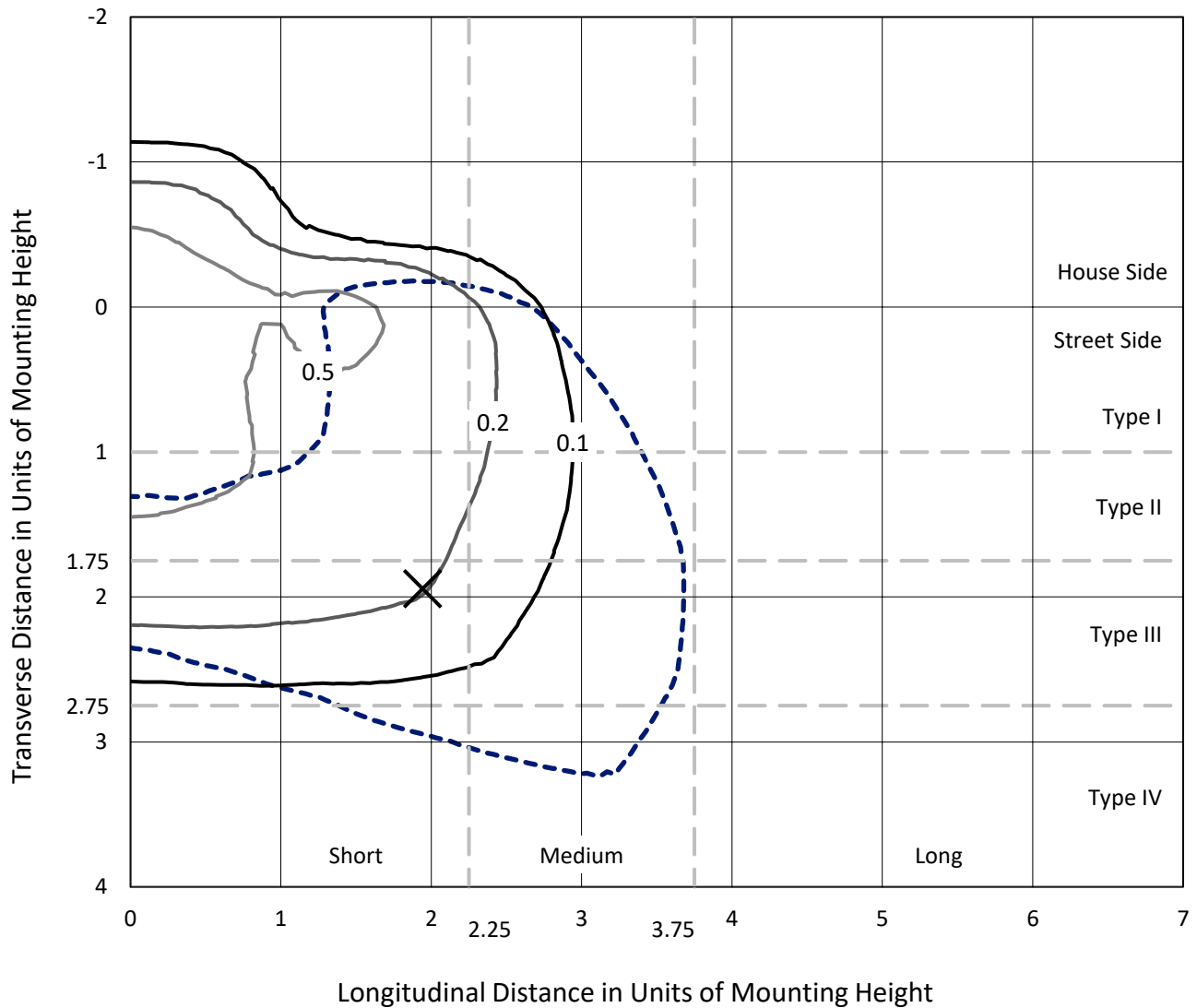
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P438405
 CATALOG NUMBER: IST-SA1C-750-U-T4W

Iso-Footcandle Lines of Horizontal Illumination

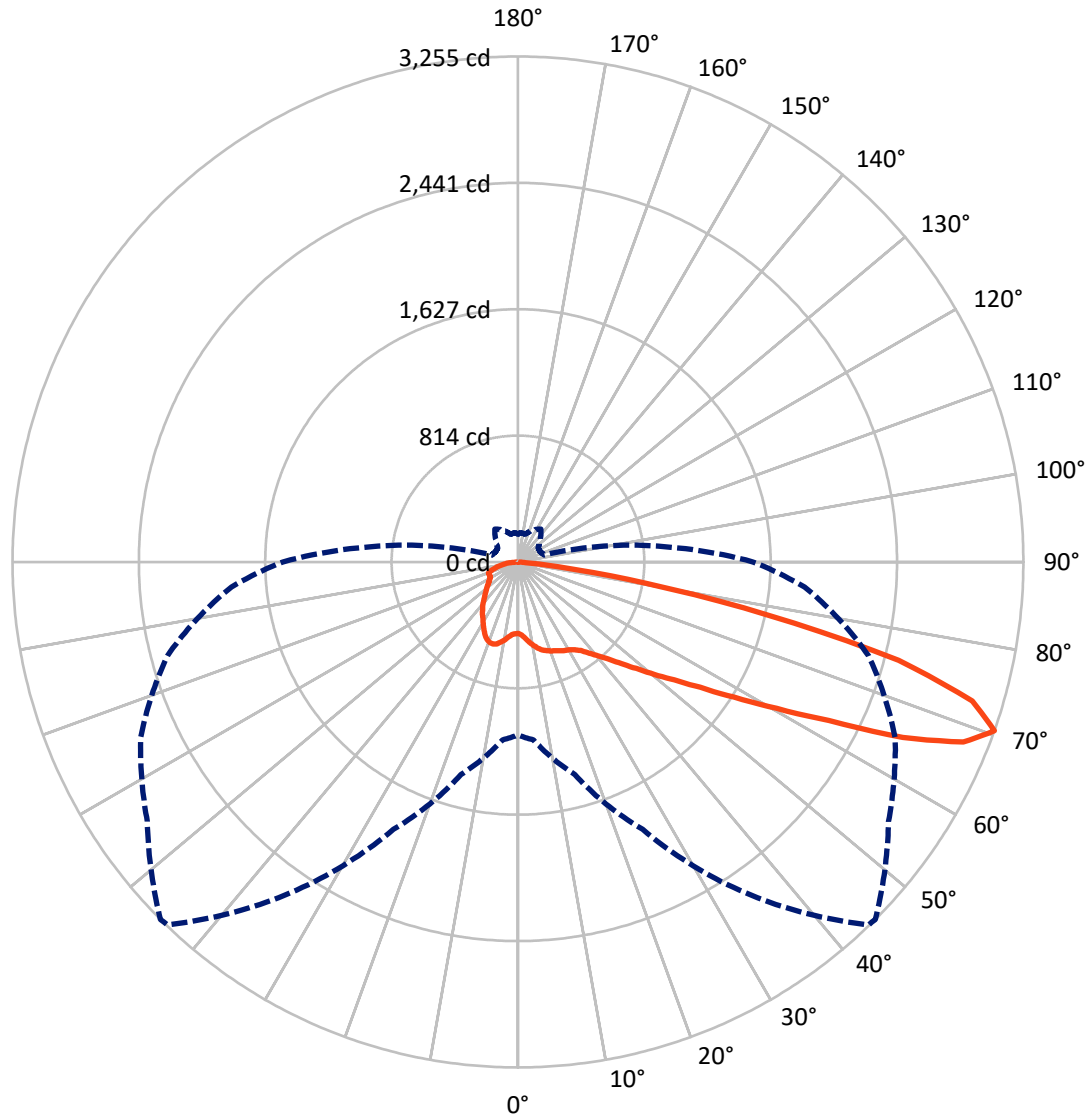
× Max cd
 - - - 1/2 Max cd



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

REPORT NUMBER: P438405
CATALOG NUMBER: IST-SA1C-750-U-T4W

Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

REPORT NUMBER: P438405
 CATALOG NUMBER: IST-SA1C-750-U-T4W

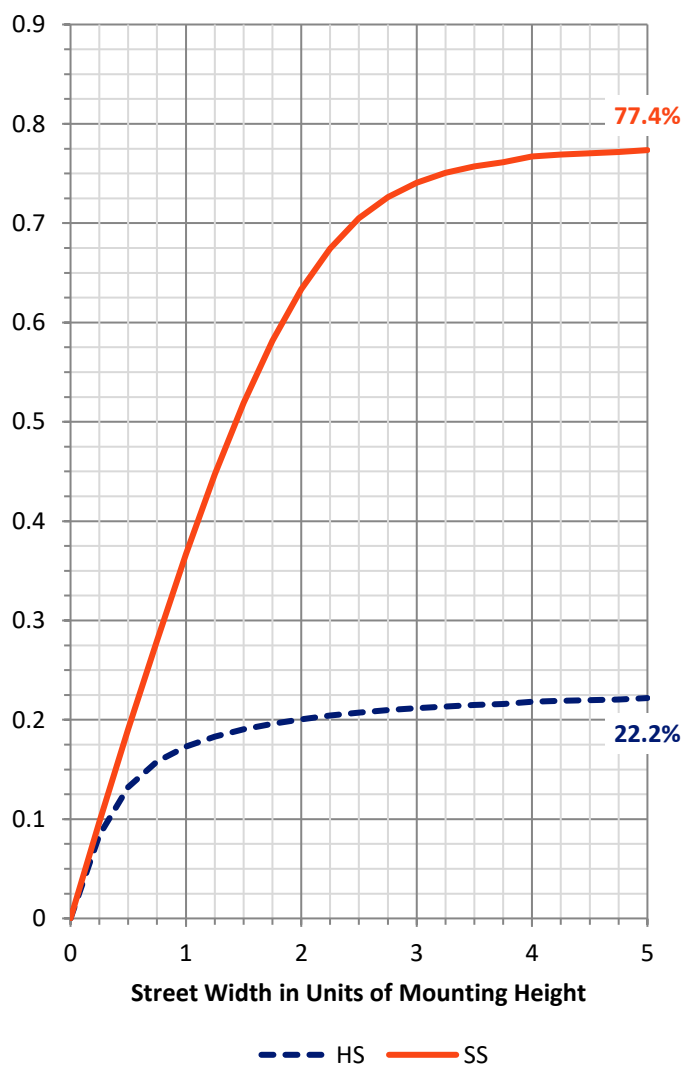
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1021.0 | 0.0 | 1021.0 |
| | % Fixture | 22.6 | 0.0 | 22.6 |
| Street Side | Lumens | 3501.0 | 0.0 | 3501.0 |
| | % Fixture | 77.4 | 0.0 | 77.4 |
| Total | Lumens | 4522.0 | 0.0 | 4522.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 47.4 | 1.0 |
| 10°-20° | 158.8 | 3.5 |
| 20°-30° | 269.0 | 5.9 |
| 30°-40° | 388.9 | 8.6 |
| 40°-50° | 560.8 | 12.4 |
| 50°-60° | 919.7 | 20.3 |
| 60°-70° | 1317.6 | 29.1 |
| 70°-80° | 783.2 | 17.3 |
| 80°-90° | 76.7 | 1.7 |
| 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° | 4522.0 | 100.0 |
| 0°-180° | 4522.0 | 100.0 |

Coefficient of Utilization

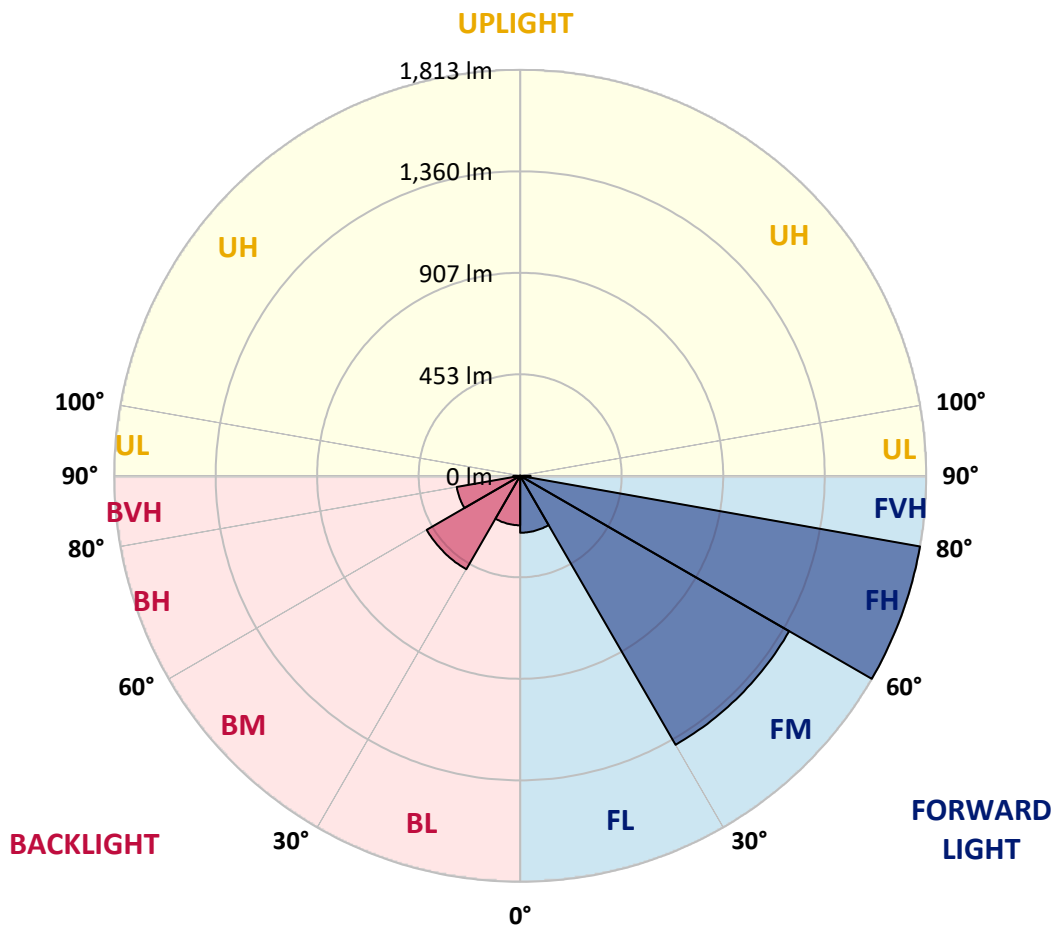


REPORT NUMBER: P438405
 CATALOG NUMBER: IST-SA1C-750-U-T4W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 254.3 | 5.6 | | | |
| FM (30°-60°) | 1387.4 | 30.7 | | | |
| FH (60°-80°) | 1813.2 | 40.1 | | | G2/5000 |
| FVH (80°-90°) | 46.2 | 1.0 | | | G1/100 |
| BL (0°-30°) | 221.0 | 4.9 | B1/500 | | |
| BM (30°-60°) | 481.9 | 10.7 | B1/1000 | | |
| BH (60°-80°) | 287.6 | 6.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 30.5 | 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-G2
 Type IV Short





REPORT NUMBER: P438405
 CATALOG NUMBER: IST-SA1C-750-U-T4W

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 |
| 2.5° | 483.1 | 483.1 | 481.5 | 479.8 | 476.6 | 473.3 | 471.7 | 466.8 | 466.8 | 465.2 | 462.0 |
| 5° | 518.9 | 515.6 | 514.0 | 507.5 | 502.6 | 494.5 | 492.9 | 481.5 | 475.0 | 470.1 | 466.8 |
| 7.5° | 556.3 | 557.9 | 551.4 | 543.3 | 531.9 | 520.5 | 520.5 | 507.5 | 496.1 | 484.7 | 475.0 |
| 10° | 592.1 | 592.1 | 584.0 | 574.2 | 562.8 | 548.2 | 544.9 | 530.3 | 517.3 | 502.6 | 491.2 |
| 12.5° | 619.7 | 618.1 | 608.3 | 598.6 | 584.0 | 572.6 | 569.3 | 551.4 | 540.0 | 522.1 | 505.9 |
| 15° | 639.3 | 639.3 | 629.5 | 614.9 | 600.2 | 588.8 | 588.8 | 575.8 | 559.6 | 541.7 | 522.1 |
| 17.5° | 650.6 | 649.0 | 640.9 | 624.6 | 611.6 | 601.8 | 600.2 | 590.5 | 580.7 | 562.8 | 538.4 |
| 20° | 650.6 | 647.4 | 640.9 | 627.9 | 616.5 | 610.0 | 611.6 | 603.5 | 597.0 | 575.8 | 556.3 |
| 22.5° | 649.0 | 647.4 | 636.0 | 626.2 | 623.0 | 621.4 | 619.7 | 616.5 | 605.1 | 588.8 | 572.6 |
| 25° | 663.7 | 662.0 | 649.0 | 636.0 | 629.5 | 629.5 | 632.7 | 626.2 | 619.7 | 603.5 | 588.8 |
| 27.5° | 704.3 | 697.8 | 679.9 | 655.5 | 645.8 | 644.1 | 645.8 | 637.6 | 632.7 | 621.4 | 608.3 |
| 30° | 772.6 | 769.4 | 741.7 | 696.2 | 670.2 | 657.1 | 655.5 | 653.9 | 647.4 | 639.3 | 627.9 |
| 32.5° | 862.1 | 858.8 | 816.6 | 758.0 | 702.7 | 673.4 | 675.0 | 666.9 | 666.9 | 655.5 | 645.8 |
| 35° | 972.7 | 966.2 | 923.9 | 841.0 | 751.5 | 702.7 | 699.4 | 688.1 | 689.7 | 670.2 | 660.4 |
| 37.5° | 1070.3 | 1063.8 | 1023.1 | 925.5 | 813.3 | 749.9 | 745.0 | 717.3 | 699.4 | 675.0 | 676.7 |
| 40° | 1153.3 | 1154.9 | 1125.6 | 1028.0 | 893.0 | 801.9 | 793.8 | 740.1 | 719.0 | 697.8 | 707.6 |
| 42.5° | 1237.8 | 1242.7 | 1223.2 | 1119.1 | 974.3 | 858.8 | 855.6 | 779.1 | 761.2 | 745.0 | 767.8 |
| 45° | 1320.8 | 1330.6 | 1314.3 | 1216.7 | 1065.4 | 945.1 | 932.0 | 842.6 | 831.2 | 821.4 | 889.8 |
| 47.5° | 1394.0 | 1397.3 | 1395.6 | 1319.2 | 1166.3 | 1042.7 | 1024.8 | 925.5 | 940.2 | 966.2 | 1080.1 |
| 50° | 1485.1 | 1490.0 | 1463.9 | 1421.6 | 1302.9 | 1153.3 | 1137.0 | 1029.6 | 1089.8 | 1174.4 | 1346.8 |
| 52.5° | 1620.1 | 1626.6 | 1553.4 | 1527.4 | 1472.1 | 1286.6 | 1262.2 | 1182.5 | 1312.7 | 1439.5 | 1644.5 |
| 55° | 1698.2 | 1688.4 | 1655.9 | 1659.1 | 1628.2 | 1446.0 | 1424.9 | 1369.6 | 1555.0 | 1706.3 | 1981.2 |
| 57.5° | 1748.6 | 1743.7 | 1763.2 | 1807.2 | 1807.2 | 1651.0 | 1642.9 | 1618.5 | 1815.3 | 1997.5 | 2248.0 |
| 60° | 1829.9 | 1839.7 | 1885.2 | 1973.1 | 2020.2 | 1919.4 | 1914.5 | 1919.4 | 2108.1 | 2200.8 | 2438.3 |
| 62.5° | 1880.4 | 1901.5 | 2017.0 | 2168.3 | 2267.5 | 2278.9 | 2248.0 | 2244.7 | 2335.8 | 2370.0 | 2563.5 |
| 65° | 1790.9 | 1825.0 | 2013.7 | 2259.3 | 2563.5 | 2747.3 | 2724.6 | 2527.7 | 2524.5 | 2522.9 | 2539.1 |
| 67.5° | 1555.0 | 1581.1 | 1854.3 | 2218.7 | 2722.9 | 3106.8 | 3093.8 | 2779.9 | 2703.4 | 2535.9 | 2311.4 |
| 70° | 1114.2 | 1150.0 | 1416.8 | 1899.9 | 2620.5 | 3250.0 | 3254.8 | 2913.2 | 2680.6 | 2337.4 | 1852.7 |
| 72.5° | 689.7 | 691.3 | 863.7 | 1353.3 | 2218.7 | 3040.1 | 3059.6 | 2781.5 | 2412.3 | 1947.0 | 1309.4 |
| 75° | 213.1 | 231.0 | 366.0 | 709.2 | 1501.4 | 2472.4 | 2532.6 | 2311.4 | 1930.8 | 1346.8 | 717.3 |
| 77.5° | 105.7 | 109.0 | 131.8 | 260.3 | 722.2 | 1600.6 | 1646.1 | 1543.6 | 1220.0 | 652.3 | 300.9 |
| 80° | 60.2 | 63.4 | 81.3 | 115.5 | 276.5 | 795.4 | 832.8 | 813.3 | 494.5 | 235.9 | 128.5 |
| 82.5° | 29.3 | 30.9 | 40.7 | 58.6 | 117.1 | 237.5 | 266.8 | 292.8 | 188.7 | 125.2 | 69.9 |
| 85° | 8.1 | 8.1 | 11.4 | 19.5 | 30.9 | 48.8 | 48.8 | 53.7 | 66.7 | 63.4 | 34.2 |
| 87.5° | 0.0 | 0.0 | 0.0 | 1.6 | 1.6 | 1.6 | 3.3 | 1.6 | 3.3 | 4.9 | 4.9 |
| 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: P438405
 CATALOG NUMBER: IST-SA1C-750-U-T4W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 | 460.3 |
| 2.5° | 462.0 | 462.0 | 458.7 | 460.3 | 460.3 | 462.0 | 462.0 | 463.6 | 465.2 | 466.8 | 466.8 |
| 5° | 465.2 | 463.6 | 462.0 | 463.6 | 465.2 | 468.5 | 473.3 | 478.2 | 481.5 | 486.4 | 484.7 |
| 7.5° | 475.0 | 470.1 | 471.7 | 471.7 | 478.2 | 484.7 | 494.5 | 501.0 | 507.5 | 510.8 | 510.8 |
| 10° | 486.4 | 483.1 | 481.5 | 488.0 | 494.5 | 507.5 | 515.6 | 525.4 | 530.3 | 538.4 | 535.2 |
| 12.5° | 502.6 | 494.5 | 496.1 | 504.2 | 517.3 | 527.0 | 533.5 | 541.7 | 546.5 | 553.0 | 551.4 |
| 15° | 515.6 | 510.8 | 512.4 | 525.4 | 538.4 | 544.9 | 548.2 | 551.4 | 553.0 | 557.9 | 559.6 |
| 17.5° | 531.9 | 530.3 | 531.9 | 543.3 | 551.4 | 553.0 | 551.4 | 548.2 | 546.5 | 551.4 | 549.8 |
| 20° | 549.8 | 548.2 | 549.8 | 557.9 | 554.7 | 548.2 | 541.7 | 536.8 | 531.9 | 535.2 | 536.8 |
| 22.5° | 564.4 | 566.1 | 567.7 | 564.4 | 551.4 | 535.2 | 523.8 | 515.6 | 512.4 | 515.6 | 518.9 |
| 25° | 582.3 | 584.0 | 585.6 | 569.3 | 538.4 | 512.4 | 496.1 | 491.2 | 492.9 | 497.7 | 499.4 |
| 27.5° | 605.1 | 610.0 | 605.1 | 567.7 | 520.5 | 483.1 | 470.1 | 468.5 | 470.1 | 475.0 | 479.8 |
| 30° | 629.5 | 636.0 | 619.7 | 559.6 | 496.1 | 453.8 | 442.4 | 442.4 | 447.3 | 450.6 | 455.4 |
| 32.5° | 650.6 | 663.7 | 632.7 | 544.9 | 462.0 | 426.2 | 418.0 | 414.8 | 414.8 | 418.0 | 419.7 |
| 35° | 676.7 | 692.9 | 640.9 | 518.9 | 429.4 | 403.4 | 396.9 | 387.1 | 379.0 | 380.6 | 379.0 |
| 37.5° | 702.7 | 727.1 | 637.6 | 478.2 | 393.6 | 377.4 | 370.9 | 356.2 | 343.2 | 335.1 | 338.3 |
| 40° | 751.5 | 780.8 | 631.1 | 426.2 | 361.1 | 354.6 | 343.2 | 326.9 | 310.7 | 296.0 | 294.4 |
| 42.5° | 837.7 | 839.3 | 616.5 | 379.0 | 330.2 | 326.9 | 317.2 | 302.5 | 283.0 | 263.5 | 263.5 |
| 45° | 953.2 | 923.9 | 597.0 | 335.1 | 300.9 | 304.2 | 296.0 | 281.4 | 258.6 | 240.7 | 240.7 |
| 47.5° | 1127.2 | 1024.8 | 559.6 | 296.0 | 276.5 | 283.0 | 278.1 | 263.5 | 239.1 | 222.8 | 222.8 |
| 50° | 1371.2 | 1189.0 | 522.1 | 268.4 | 258.6 | 265.1 | 263.5 | 245.6 | 222.8 | 209.8 | 209.8 |
| 52.5° | 1654.3 | 1403.8 | 496.1 | 247.2 | 237.5 | 248.9 | 248.9 | 232.6 | 211.5 | 201.7 | 200.1 |
| 55° | 1945.4 | 1605.5 | 470.1 | 229.4 | 222.8 | 232.6 | 237.5 | 222.8 | 203.3 | 195.2 | 193.6 |
| 57.5° | 2152.0 | 1706.3 | 434.3 | 214.7 | 206.6 | 219.6 | 226.1 | 216.3 | 198.4 | 190.3 | 188.7 |
| 60° | 2256.1 | 1716.1 | 364.4 | 200.1 | 191.9 | 208.2 | 219.6 | 211.5 | 198.4 | 195.2 | 195.2 |
| 62.5° | 2280.5 | 1675.4 | 291.2 | 187.1 | 182.2 | 201.7 | 221.2 | 218.0 | 208.2 | 211.5 | 213.1 |
| 65° | 2176.4 | 1540.4 | 237.5 | 177.3 | 175.7 | 200.1 | 231.0 | 229.4 | 209.8 | 218.0 | 219.6 |
| 67.5° | 1927.5 | 1306.2 | 201.7 | 167.5 | 165.9 | 203.3 | 248.9 | 229.4 | 198.4 | 206.6 | 203.3 |
| 70° | 1514.4 | 1034.5 | 174.0 | 157.8 | 157.8 | 201.7 | 258.6 | 226.1 | 185.4 | 188.7 | 178.9 |
| 72.5° | 995.5 | 678.3 | 154.5 | 148.0 | 143.1 | 183.8 | 252.1 | 219.6 | 178.9 | 169.2 | 157.8 |
| 75° | 504.2 | 336.7 | 138.3 | 139.9 | 125.2 | 156.2 | 244.0 | 218.0 | 177.3 | 161.0 | 156.2 |
| 77.5° | 208.2 | 157.8 | 123.6 | 126.9 | 105.7 | 133.4 | 229.4 | 201.7 | 159.4 | 143.1 | 138.3 |
| 80° | 109.0 | 97.6 | 104.1 | 105.7 | 86.2 | 105.7 | 182.2 | 174.0 | 143.1 | 131.8 | 125.2 |
| 82.5° | 63.4 | 61.8 | 79.7 | 81.3 | 60.2 | 86.2 | 161.0 | 151.3 | 120.4 | 107.4 | 104.1 |
| 85° | 29.3 | 34.2 | 53.7 | 48.8 | 37.4 | 56.9 | 97.6 | 74.8 | 53.7 | 47.2 | 45.5 |
| 87.5° | 3.3 | 4.9 | 11.4 | 11.4 | 8.1 | 4.9 | 1.6 | 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 |

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 |

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

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

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

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 | | | |

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

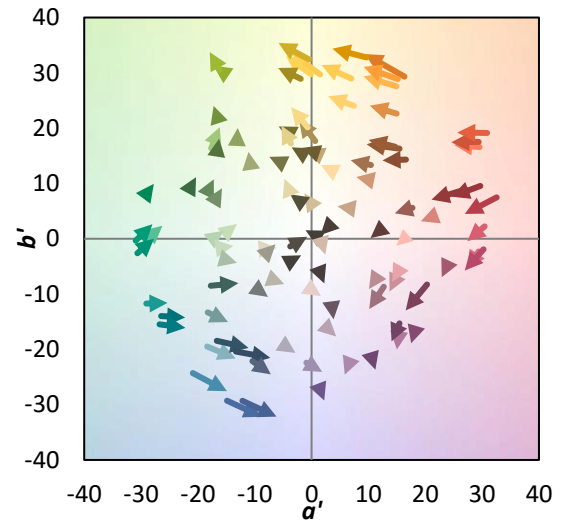
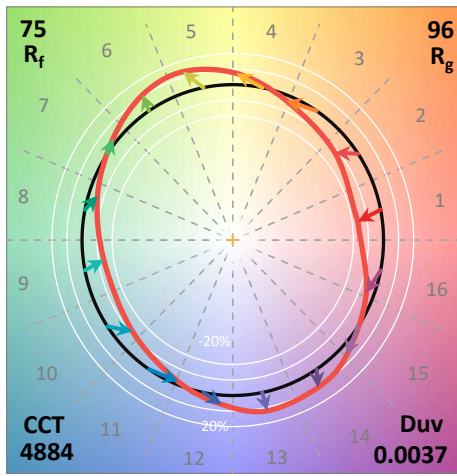
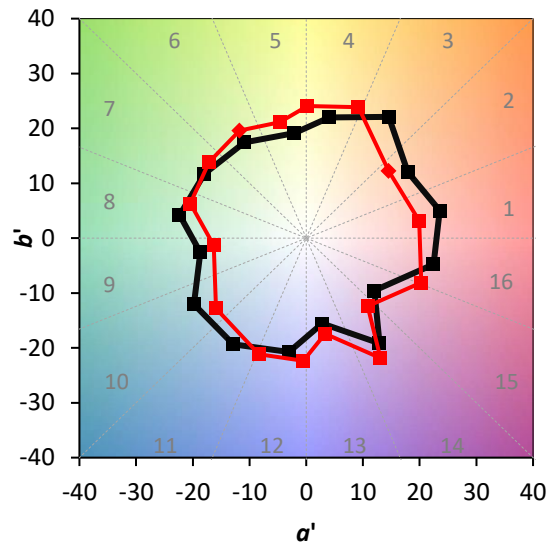
TM-30-18

Summary

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



Color Vector Graphics



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

TM-30-18

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 | |



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

TM-30-18

Color Rendition by Hue-Angle Bin



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

TM-30-18

Measure Comparisons



(END OF REPORT)