

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: P436977

Luminaire Tested: **ISC-SA1A-730-U-T4FT-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P436977
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-11)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISC-SA1A-730-U-T4FT-HSS
Description: IMPACT ELITE LED CYLINDER LUMINAIRE
(1) 70 CRI, 3000K, 350mA 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: 1799 lumens
Efficiency: N/A
Efficacy: 89.5 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

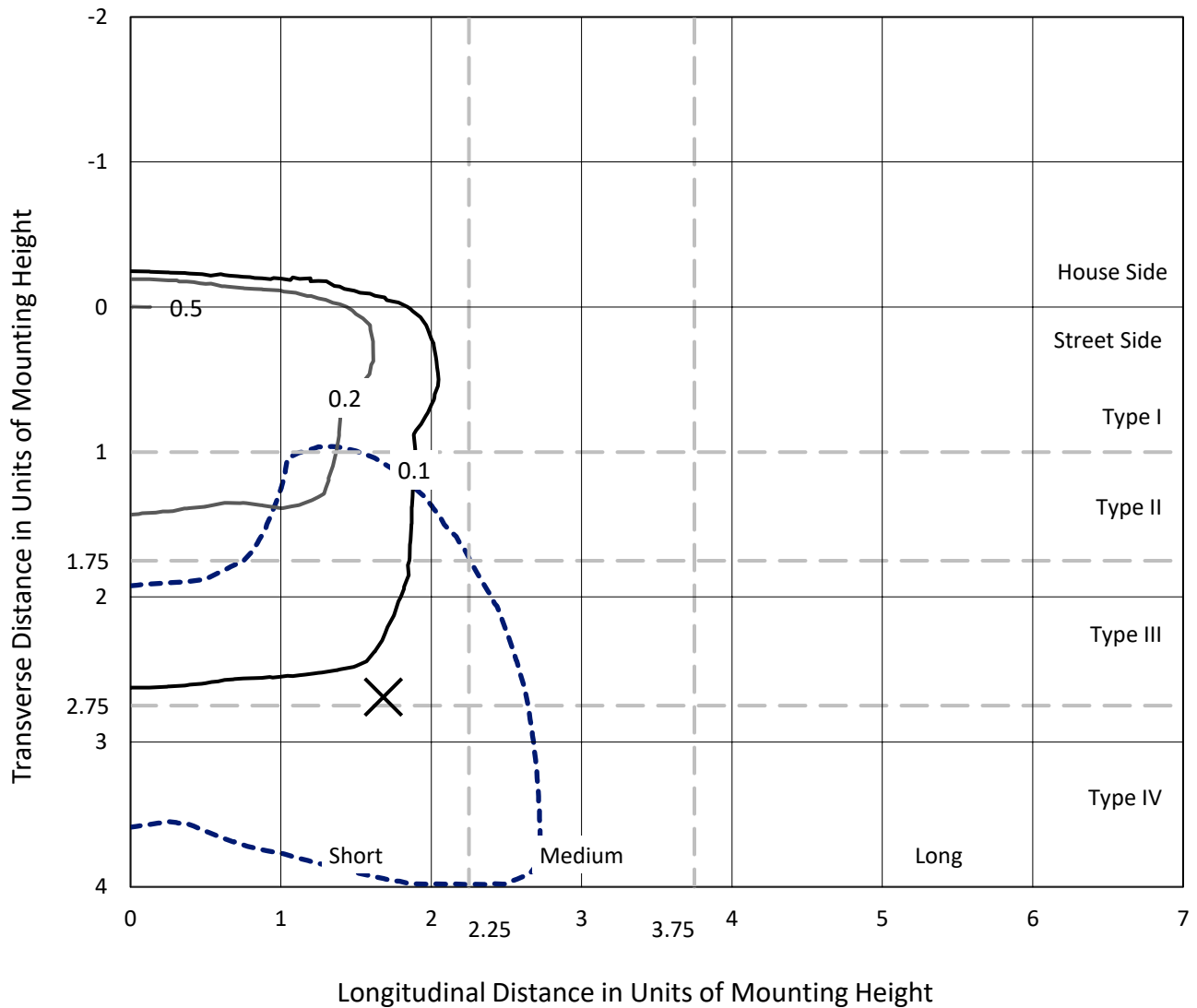
Input Watts (W): 20.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P436977
 CATALOG NUMBER: ISC-SA1A-730-U-T4FT-HSS

Iso-Footcandle Lines of Horizontal Illumination

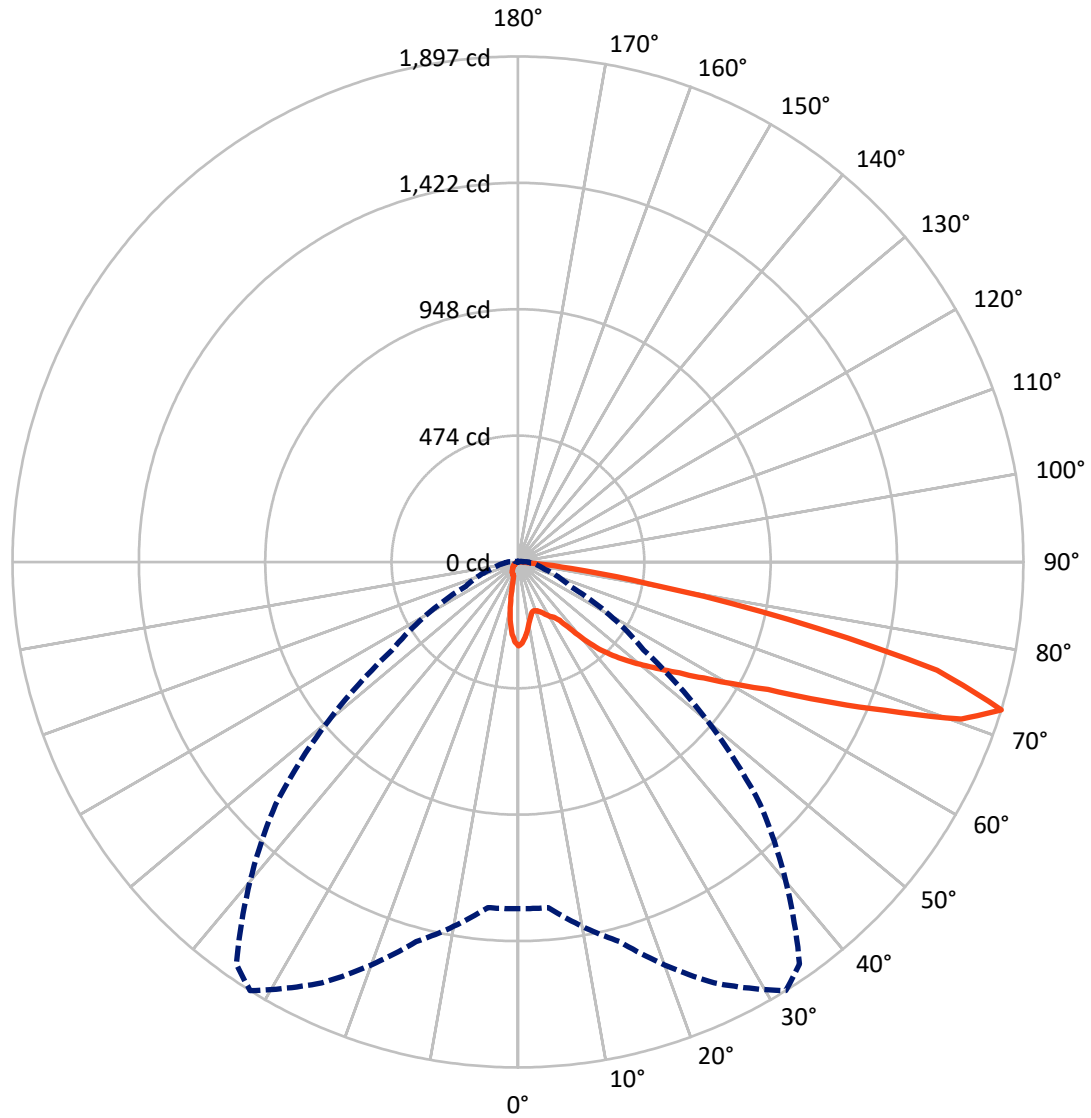
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.5 fc
 Type IV - Short - N/A

REPORT NUMBER: P436977
CATALOG NUMBER: ISC-SA1A-730-U-T4FT-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 32-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

REPORT NUMBER: P436977
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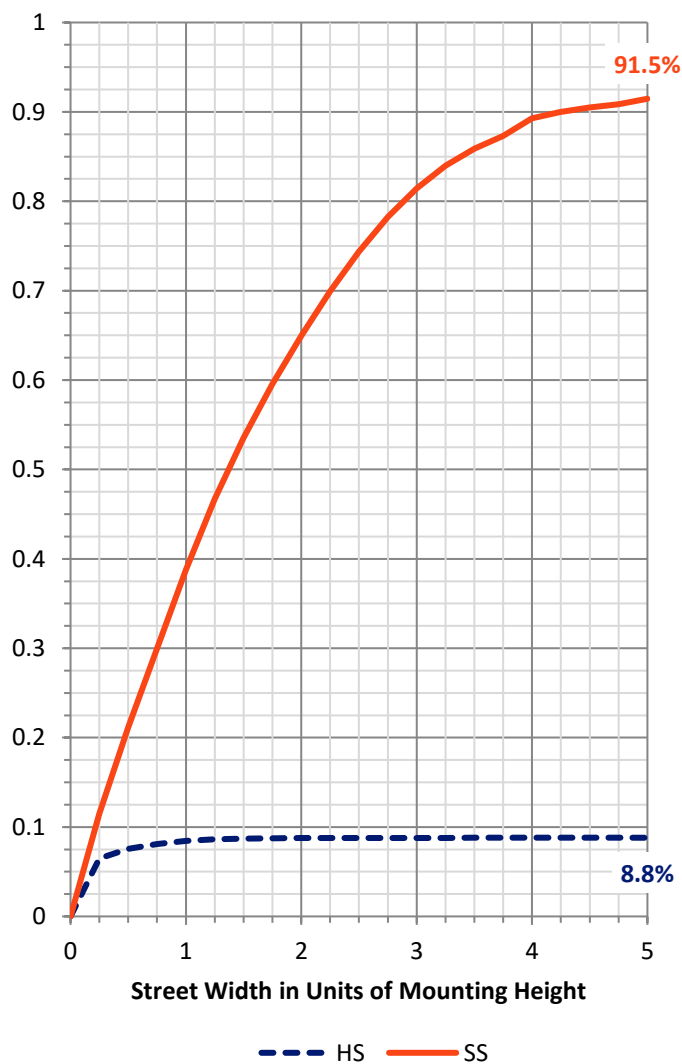
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 159.2 | 0.0 | 159.2 |
| | % Fixture | 8.9 | 0.0 | 8.9 |
| Street Side | Lumens | 1639.8 | 0.0 | 1639.8 |
| | % Fixture | 91.1 | 0.0 | 91.1 |
| Total | Lumens | 1799.0 | 0.0 | 1799.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 26.2 | 1.5 |
| 10°-20° | 56.8 | 3.2 |
| 20°-30° | 86.0 | 4.8 |
| 30°-40° | 138.7 | 7.7 |
| 40°-50° | 245.6 | 13.7 |
| 50°-60° | 376.2 | 20.9 |
| 60°-70° | 503.3 | 28.0 |
| 70°-80° | 347.4 | 19.3 |
| 80°-90° | 18.8 | 1.0 |
| 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° | 1799.0 | 100.0 |
| 0°-180° | 1799.0 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P436977

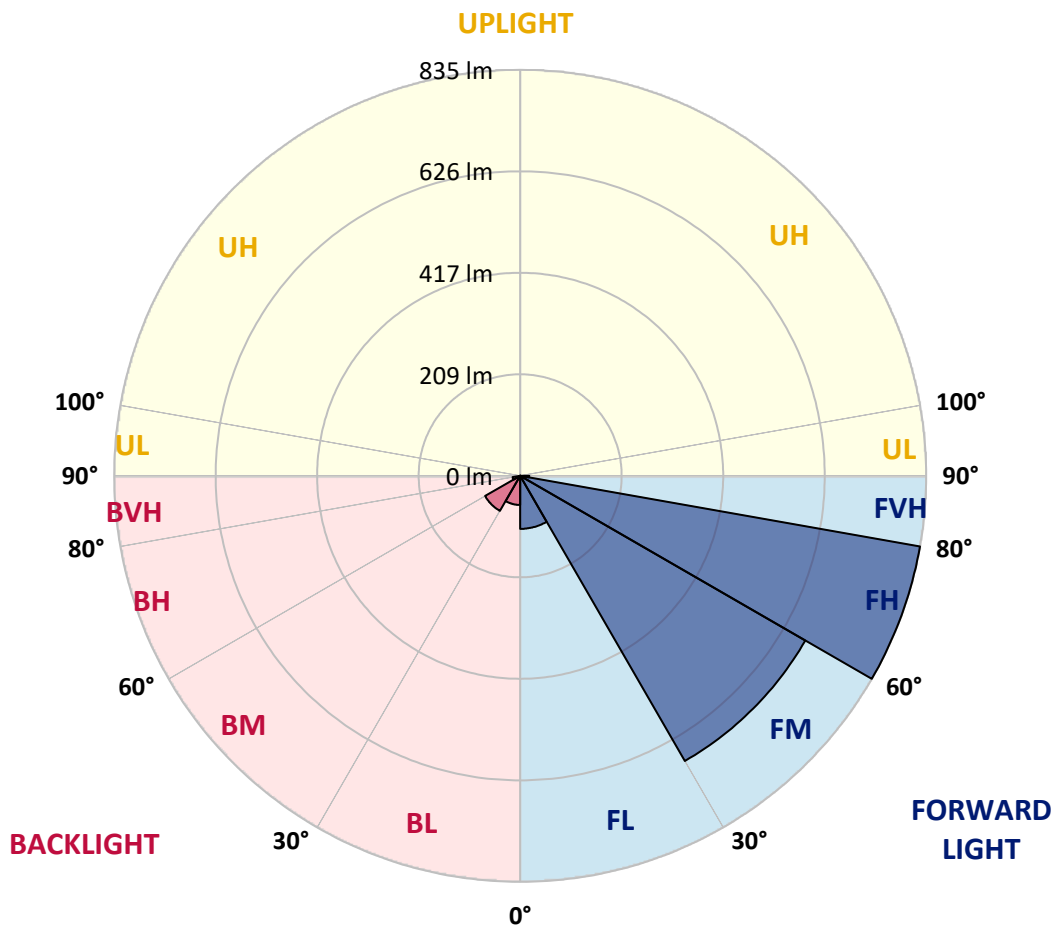
CATALOG NUMBER: ISC-SA1A-730-U-T4FT-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 109.1 | 6.1 | | | |
| FM (30°-60°) | 677.2 | 37.6 | | | |
| FH (60°-80°) | 834.9 | 46.4 | | | G1/1800 |
| FVH (80°-90°) | 18.6 | 1.0 | | | G1/100 |
| BL (0°-30°) | 59.9 | 3.3 | B0/110 | | |
| BM (30°-60°) | 83.2 | 4.6 | B0/220 | | |
| BH (60°-80°) | 15.8 | 0.9 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.2 | 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





REPORT NUMBER: P436977

CATALOG NUMBER: ISC-SA1A-730-U-T4FT-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|
| 0° | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 |
| 2.5° | 303.3 | 303.3 | 304.3 | 305.2 | 305.2 | 307.9 | 311.5 | 312.5 | 315.2 | 317.0 | 317.9 |
| 5° | 271.5 | 275.1 | 275.1 | 279.7 | 283.3 | 286.9 | 296.1 | 301.5 | 310.6 | 317.0 | 318.8 |
| 7.5° | 242.3 | 243.2 | 246.0 | 251.4 | 258.7 | 261.4 | 273.3 | 288.8 | 306.1 | 317.0 | 321.6 |
| 10° | 213.2 | 214.1 | 215.9 | 224.1 | 231.4 | 237.8 | 254.2 | 273.3 | 297.9 | 317.0 | 325.2 |
| 12.5° | 192.2 | 192.2 | 194.0 | 203.1 | 211.3 | 217.7 | 235.9 | 260.5 | 289.7 | 317.9 | 330.7 |
| 15° | 184.9 | 184.9 | 184.0 | 188.6 | 195.9 | 201.3 | 222.3 | 249.6 | 282.4 | 319.7 | 336.1 |
| 17.5° | 188.6 | 188.6 | 184.9 | 185.8 | 192.2 | 195.9 | 214.1 | 241.4 | 278.7 | 323.4 | 345.2 |
| 20° | 195.9 | 195.9 | 188.6 | 188.6 | 194.9 | 197.7 | 213.2 | 236.8 | 276.9 | 329.8 | 358.0 |
| 22.5° | 204.1 | 205.0 | 194.9 | 194.9 | 201.3 | 204.1 | 218.6 | 239.6 | 279.7 | 338.0 | 370.8 |
| 25° | 217.7 | 217.7 | 205.0 | 205.0 | 210.4 | 215.0 | 228.6 | 247.8 | 283.3 | 348.0 | 390.8 |
| 27.5° | 236.8 | 235.9 | 219.5 | 215.0 | 223.2 | 226.8 | 242.3 | 257.8 | 286.9 | 359.8 | 409.0 |
| 30° | 259.6 | 255.1 | 238.7 | 229.6 | 236.8 | 239.6 | 255.1 | 271.5 | 297.9 | 377.1 | 437.3 |
| 32.5° | 284.2 | 286.0 | 259.6 | 243.2 | 246.9 | 250.5 | 270.6 | 292.4 | 316.1 | 399.9 | 475.5 |
| 35° | 332.5 | 332.5 | 305.2 | 274.2 | 267.8 | 269.6 | 291.5 | 319.7 | 338.9 | 438.2 | 519.2 |
| 37.5° | 392.6 | 394.4 | 368.9 | 336.1 | 316.1 | 307.9 | 323.4 | 352.5 | 371.7 | 486.4 | 567.5 |
| 40° | 458.2 | 455.5 | 429.1 | 399.0 | 382.6 | 372.6 | 364.4 | 399.0 | 416.3 | 538.4 | 615.8 |
| 42.5° | 512.9 | 507.4 | 471.9 | 456.4 | 446.4 | 433.6 | 417.2 | 457.3 | 473.7 | 604.0 | 671.4 |
| 45° | 548.4 | 543.8 | 508.3 | 503.8 | 500.1 | 492.8 | 496.5 | 527.4 | 542.9 | 679.6 | 729.7 |
| 47.5° | 575.7 | 569.3 | 539.3 | 545.7 | 552.9 | 560.2 | 592.1 | 614.9 | 611.2 | 748.8 | 777.0 |
| 50° | 613.1 | 604.0 | 575.7 | 588.5 | 607.6 | 622.2 | 695.1 | 701.4 | 673.2 | 808.0 | 819.9 |
| 52.5° | 635.8 | 624.9 | 617.6 | 638.6 | 666.8 | 685.0 | 808.0 | 783.4 | 722.4 | 850.8 | 853.6 |
| 55° | 655.0 | 654.1 | 666.8 | 694.1 | 735.1 | 757.9 | 900.9 | 853.6 | 754.3 | 894.5 | 871.8 |
| 57.5° | 713.3 | 709.6 | 731.5 | 753.4 | 821.7 | 859.9 | 1001.1 | 904.6 | 777.0 | 918.2 | 861.8 |
| 60° | 796.2 | 798.0 | 798.9 | 839.0 | 926.4 | 979.3 | 1080.4 | 947.4 | 794.3 | 921.9 | 832.6 |
| 62.5° | 925.5 | 938.3 | 916.4 | 947.4 | 1053.1 | 1119.6 | 1156.9 | 978.4 | 788.9 | 895.5 | 758.8 |
| 65° | 1113.2 | 1108.6 | 1077.6 | 1112.3 | 1253.5 | 1294.5 | 1236.2 | 987.5 | 757.0 | 804.4 | 620.4 |
| 67.5° | 1304.5 | 1306.3 | 1291.7 | 1346.4 | 1483.9 | 1476.6 | 1325.4 | 956.5 | 675.0 | 607.6 | 389.0 |
| 70° | 1429.3 | 1432.0 | 1468.4 | 1616.0 | 1765.4 | 1715.3 | 1398.3 | 847.2 | 475.5 | 289.7 | 147.6 |
| 72.5° | 1300.8 | 1301.7 | 1474.8 | 1742.6 | 1896.6 | 1841.9 | 1285.3 | 575.7 | 216.8 | 102.9 | 51.9 |
| 75° | 823.5 | 782.5 | 1095.9 | 1477.6 | 1624.2 | 1570.5 | 916.4 | 268.7 | 95.6 | 51.9 | 21.9 |
| 77.5° | 286.9 | 291.5 | 446.4 | 850.8 | 1037.6 | 1059.4 | 471.0 | 88.4 | 52.8 | 35.5 | 11.8 |
| 80° | 57.4 | 64.7 | 132.1 | 313.4 | 491.9 | 511.0 | 170.3 | 42.8 | 34.6 | 27.3 | 6.4 |
| 82.5° | 3.6 | 4.6 | 39.2 | 130.3 | 201.3 | 191.3 | 33.7 | 21.9 | 23.7 | 19.1 | 3.6 |
| 85° | 0.0 | 0.0 | 2.7 | 21.9 | 36.4 | 27.3 | 3.6 | 5.5 | 10.0 | 10.9 | 1.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 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 |



REPORT NUMBER: P436977
 CATALOG NUMBER: ISC-SA1A-730-U-T4FT-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 | 315.2 |
| 2.5° | 317.9 | 317.9 | 313.4 | 311.5 | 308.8 | 305.2 | 301.5 | 299.7 | 296.1 | 297.0 | 297.0 |
| 5° | 318.8 | 317.0 | 311.5 | 303.3 | 294.2 | 285.1 | 274.2 | 266.9 | 258.7 | 260.5 | 259.6 |
| 7.5° | 320.7 | 319.7 | 307.0 | 292.4 | 276.0 | 256.0 | 236.8 | 220.4 | 205.9 | 202.2 | 199.5 |
| 10° | 324.3 | 321.6 | 303.3 | 279.7 | 246.9 | 214.1 | 181.3 | 153.0 | 141.2 | 128.4 | 125.7 |
| 12.5° | 327.9 | 323.4 | 297.0 | 261.4 | 211.3 | 163.1 | 120.2 | 94.7 | 79.3 | 74.7 | 72.9 |
| 15° | 333.4 | 326.1 | 288.8 | 235.9 | 169.4 | 110.2 | 75.6 | 61.9 | 59.2 | 58.3 | 58.3 |
| 17.5° | 340.7 | 327.9 | 280.6 | 206.8 | 124.8 | 71.1 | 55.6 | 55.6 | 56.5 | 57.4 | 57.4 |
| 20° | 351.6 | 332.5 | 268.7 | 171.3 | 83.8 | 53.7 | 52.8 | 53.7 | 54.7 | 55.6 | 55.6 |
| 22.5° | 363.5 | 339.8 | 255.1 | 133.9 | 59.2 | 50.1 | 50.1 | 51.0 | 51.9 | 52.8 | 52.8 |
| 25° | 377.1 | 345.2 | 236.8 | 95.6 | 49.2 | 47.4 | 47.4 | 48.3 | 49.2 | 50.1 | 50.1 |
| 27.5° | 391.7 | 351.6 | 212.3 | 65.6 | 44.6 | 44.6 | 45.5 | 46.5 | 47.4 | 47.4 | 48.3 |
| 30° | 413.6 | 361.6 | 186.7 | 48.3 | 41.0 | 41.0 | 42.8 | 44.6 | 45.5 | 45.5 | 46.5 |
| 32.5° | 441.8 | 369.8 | 152.1 | 41.0 | 38.3 | 37.3 | 39.2 | 41.9 | 43.7 | 44.6 | 44.6 |
| 35° | 472.8 | 381.7 | 113.9 | 37.3 | 35.5 | 34.6 | 35.5 | 38.3 | 41.9 | 43.7 | 43.7 |
| 37.5° | 504.7 | 392.6 | 84.7 | 35.5 | 32.8 | 31.9 | 32.8 | 34.6 | 38.3 | 41.9 | 42.8 |
| 40° | 536.5 | 394.4 | 61.0 | 32.8 | 31.0 | 30.1 | 30.1 | 31.9 | 35.5 | 39.2 | 40.1 |
| 42.5° | 569.3 | 401.7 | 46.5 | 31.0 | 28.2 | 28.2 | 28.2 | 29.2 | 31.9 | 34.6 | 35.5 |
| 45° | 606.7 | 406.3 | 37.3 | 28.2 | 26.4 | 26.4 | 26.4 | 26.4 | 28.2 | 29.2 | 29.2 |
| 47.5° | 638.6 | 399.9 | 30.1 | 25.5 | 24.6 | 24.6 | 24.6 | 23.7 | 23.7 | 22.8 | 22.8 |
| 50° | 661.3 | 385.3 | 24.6 | 22.8 | 22.8 | 23.7 | 21.9 | 20.0 | 20.0 | 18.2 | 18.2 |
| 52.5° | 675.0 | 363.5 | 21.0 | 20.0 | 21.9 | 21.9 | 19.1 | 18.2 | 16.4 | 14.6 | 13.7 |
| 55° | 674.1 | 327.0 | 18.2 | 17.3 | 19.1 | 19.1 | 16.4 | 14.6 | 12.8 | 10.9 | 10.9 |
| 57.5° | 647.7 | 286.9 | 16.4 | 14.6 | 16.4 | 15.5 | 13.7 | 10.9 | 9.1 | 7.3 | 7.3 |
| 60° | 606.7 | 244.1 | 14.6 | 11.8 | 12.8 | 11.8 | 10.9 | 8.2 | 6.4 | 4.6 | 4.6 |
| 62.5° | 551.1 | 204.1 | 11.8 | 10.0 | 9.1 | 9.1 | 8.2 | 6.4 | 3.6 | 2.7 | 2.7 |
| 65° | 445.5 | 151.2 | 9.1 | 7.3 | 6.4 | 7.3 | 5.5 | 3.6 | 1.8 | 0.9 | 0.9 |
| 67.5° | 275.1 | 86.5 | 7.3 | 5.5 | 4.6 | 5.5 | 3.6 | 2.7 | 0.9 | 0.0 | 0.0 |
| 70° | 108.4 | 37.3 | 5.5 | 3.6 | 3.6 | 3.6 | 2.7 | 1.8 | 0.0 | 0.0 | 0.0 |
| 72.5° | 37.3 | 16.4 | 4.6 | 2.7 | 2.7 | 1.8 | 1.8 | 0.9 | 0.0 | 0.0 | 0.0 |
| 75° | 16.4 | 10.0 | 3.6 | 2.7 | 1.8 | 1.8 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 |
| 77.5° | 9.1 | 6.4 | 2.7 | 1.8 | 1.8 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 |
| 80° | 5.5 | 3.6 | 1.8 | 1.8 | 1.8 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 |
| 82.5° | 3.6 | 1.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 |
| 85° | 1.8 | 0.9 | 0.0 | 0.9 | 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



Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-2-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-730-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-2-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. (1) 70 CRI, 3000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 2993 | CRI (Ra): | 71.8 | R9: | -38.3 |
| CIE u': | 0.2508 | R1: | 67.5 | R10: | 62.5 |
| CIE v': | 0.5215 | R2: | 82.9 | R11: | 63.7 |
| Duv: | 0.0000 | R3: | 94.7 | R12: | 57.8 |
| CIE x: | 0.4374 | R4: | 67.7 | R13: | 70.4 |
| CIE y: | 0.4043 | R5: | 67.9 | R14: | 97.3 |
| CIE z: | 0.1583 | R6: | 77.6 | | |
| Peak Wavelength (nm): | 593 | R7: | 76.0 | | |
| Dominant Wavelength (nm): | 582 | R8: | 40.5 | | |
| Purity: | 53 | | | | |
| Rf: | 75.7 | | | | |
| Rg: | 93.9 | | | | |



Test Conditions

Stabilization Time: 53M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-2-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: SP1-1908-441-2-R4

CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-2-R4

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (μ W/nm) | Lumens (ϕ /nm) | λ (nm) | Power (μ W/nm) | Lumens (ϕ /nm) | λ (nm) | Power (μ W/nm) | Lumens (ϕ /nm) | λ (nm) | Power (μ W/nm) | Lumens (ϕ /nm) | λ (nm) | Power (μ W/nm) | Lumens (ϕ /nm) |
|-------------------|------------------------|-------------------------|-------------------|------------------------|-------------------------|-------------------|------------------------|-------------------------|-------------------|------------------------|-------------------------|-------------------|------------------------|-------------------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

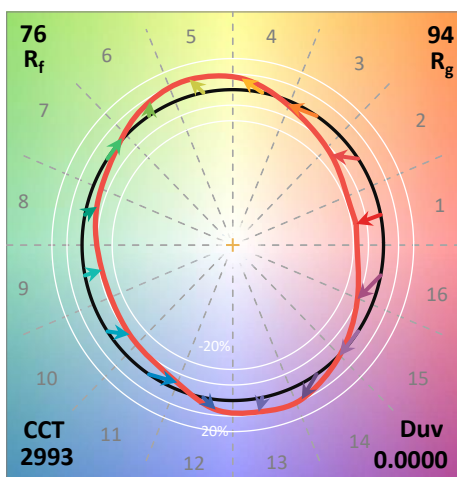
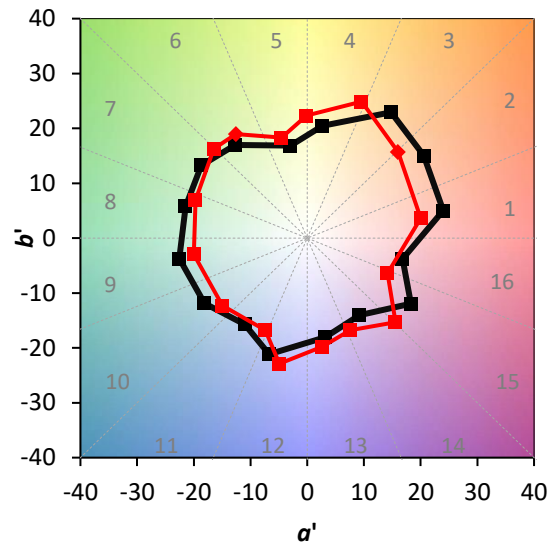
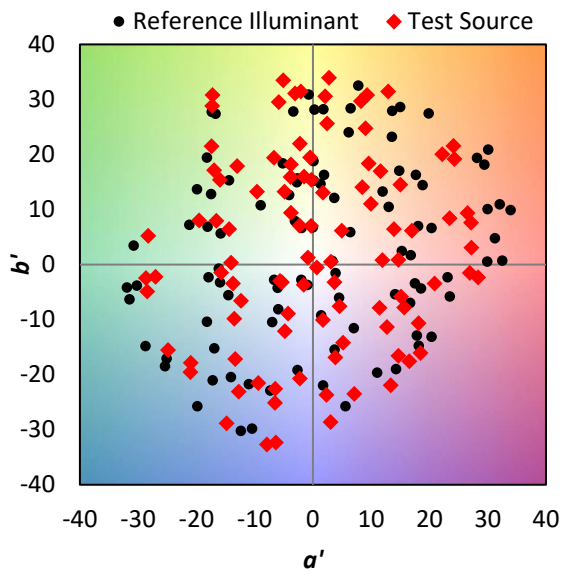
TM-30-18

Summary

$R_f = 75.7$
 $R_g = 93.9$
 CIE $R_a = 71.8$
 $R_9 = -38.3$



Color Vector Graphics



REPORT NUMBER: SP1-1908-441-2-R4

TM-30-18

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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 | |



REPORT NUMBER: SP1-1908-441-2-R4

TM-30-18

Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-1908-441-2-R4

TM-30-18

Measure Comparisons



(END OF REPORT)