

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: P438459

Luminaire Tested: **IST-SA1C-830-U-T4FT-HSS**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438459
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-11)
Test Lab: INNOVATION CENTER
Issue Date: 12/10/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: IST-SA1C-830-U-T4FT-HSS
Description: IMPACT ELITE LED TRAPEZOID LUMINAIRE
(1) 80 CRI, 3000K, 615mA 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: 2757 lumens
Efficiency: N/A
Efficacy: 80.6 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

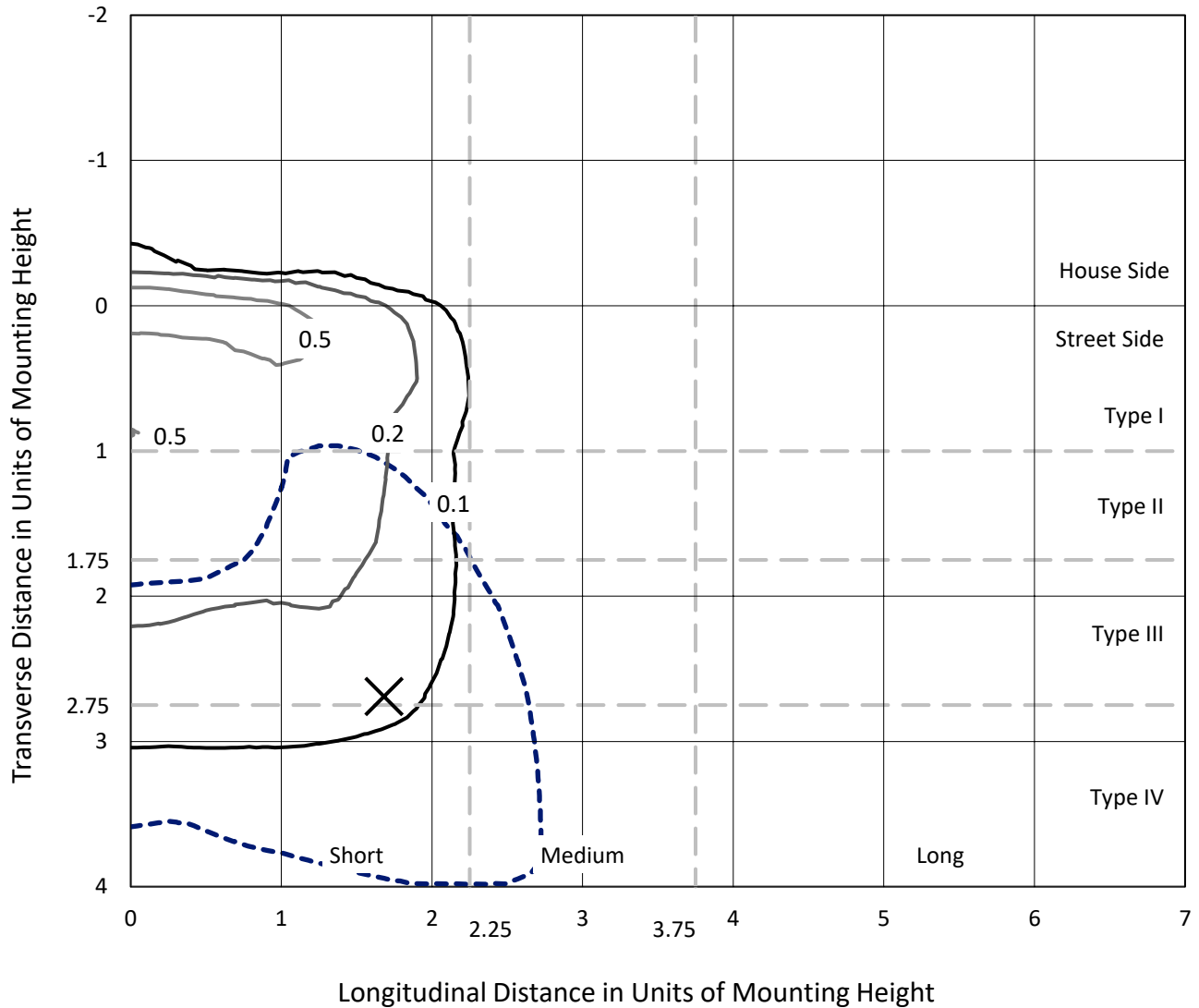
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P438459
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Iso-Footcandle Lines of Horizontal Illumination

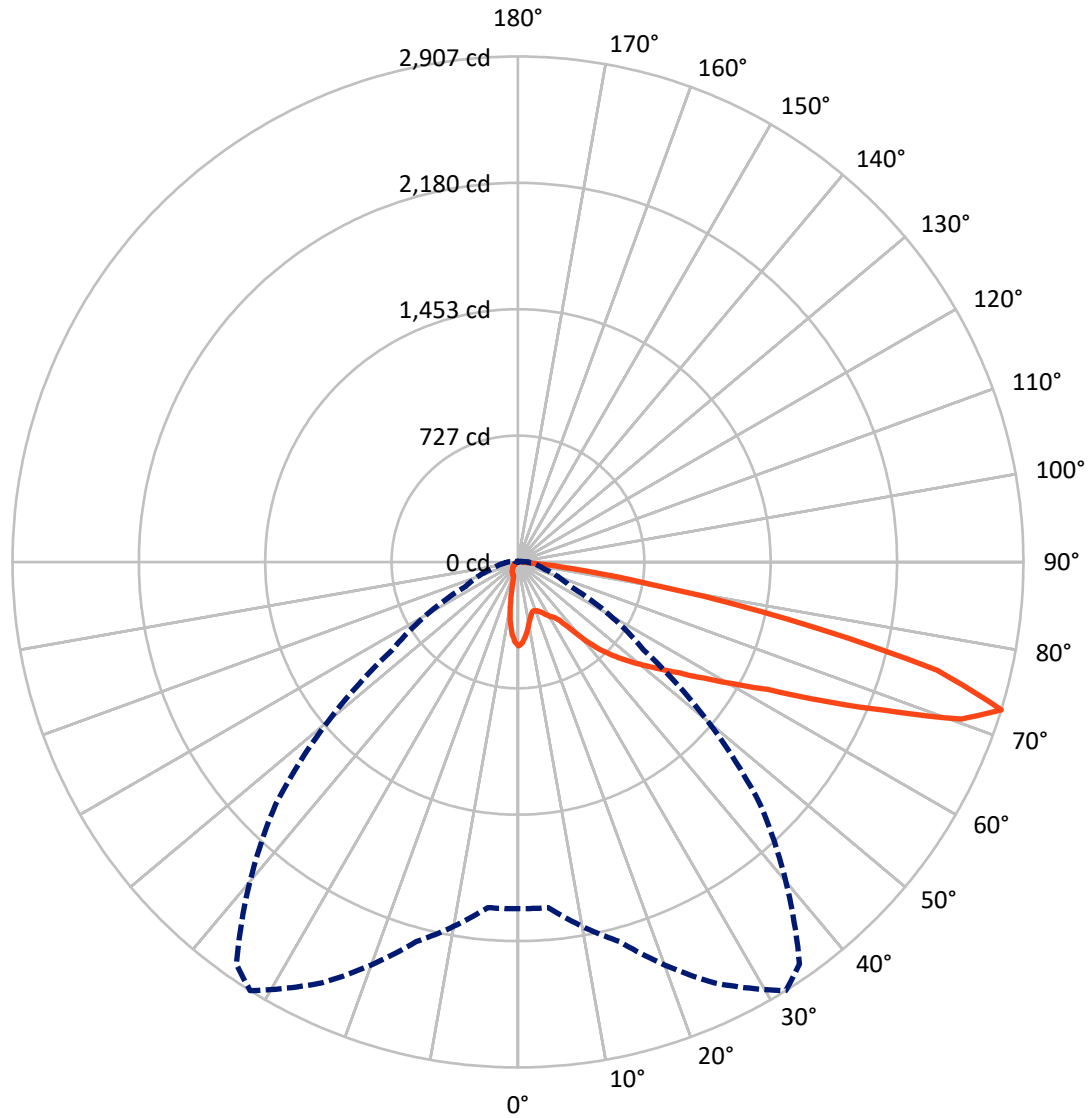
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.8 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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

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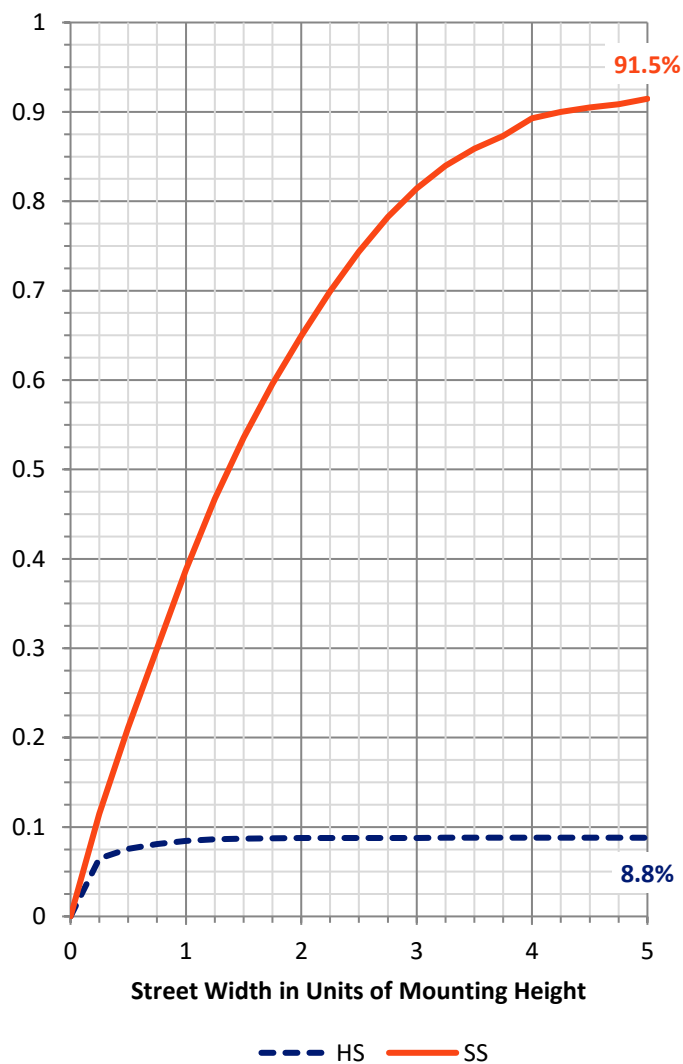
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 244.0 | 0.0 | 244.0 |
| | % Fixture | 8.9 | 0.0 | 8.9 |
| Street Side | Lumens | 2513.0 | 0.0 | 2513.0 |
| | % Fixture | 91.1 | 0.0 | 91.1 |
| Total | Lumens | 2757.0 | 0.0 | 2757.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 40.1 | 1.5 |
| 10°-20° | 87.1 | 3.2 |
| 20°-30° | 131.8 | 4.8 |
| 30°-40° | 212.5 | 7.7 |
| 40°-50° | 376.4 | 13.7 |
| 50°-60° | 576.5 | 20.9 |
| 60°-70° | 771.3 | 28.0 |
| 70°-80° | 532.5 | 19.3 |
| 80°-90° | 28.8 | 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° | 2757.0 | 100.0 |
| 0°-180° | 2757.0 | 100.0 |

Coefficient of Utilization



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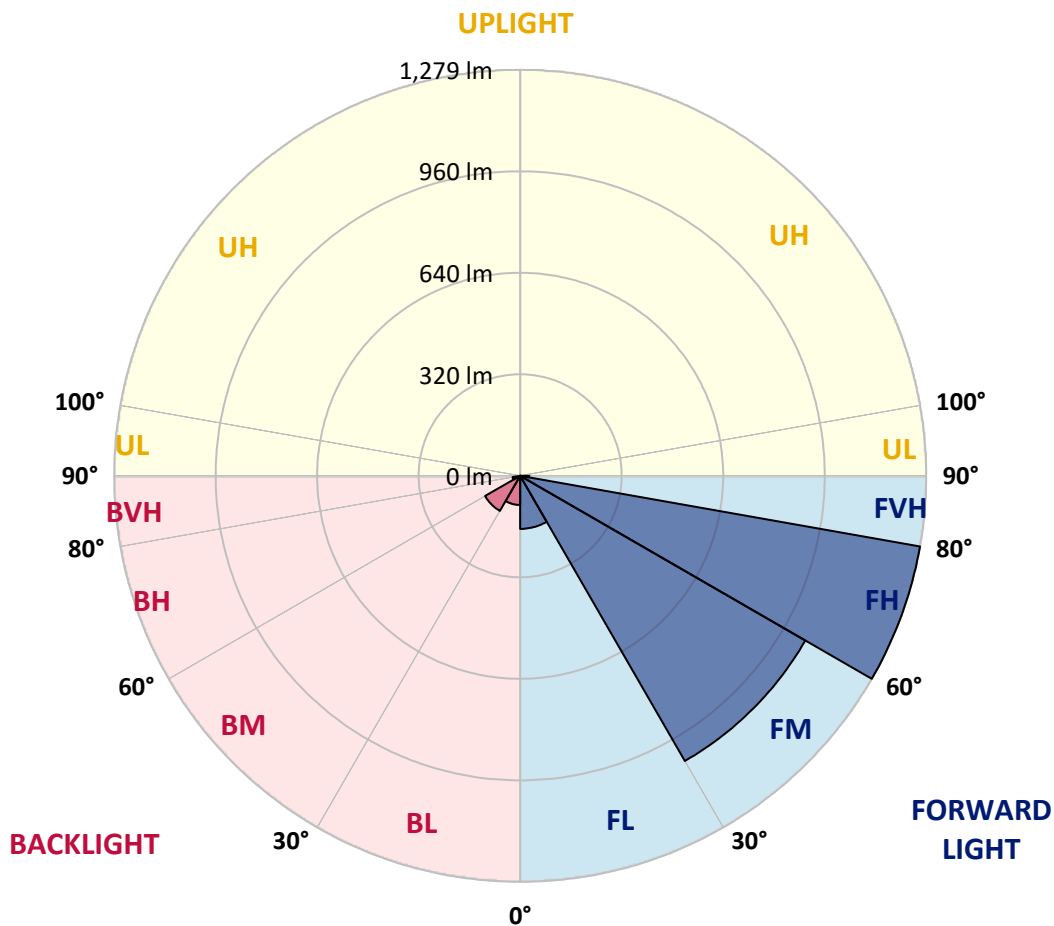
CATALOG NUMBER: IST-SA1C-830-U-T4FT-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 167.2 | 6.1 | | | |
| FM (30°-60°) | 1037.8 | 37.6 | | | |
| FH (60°-80°) | 1279.5 | 46.4 | | | G1/1800 |
| FVH (80°-90°) | 28.5 | 1.0 | | | G1/100 |
| BL (0°-30°) | 91.9 | 3.3 | B0/110 | | |
| BM (30°-60°) | 127.6 | 4.6 | B0/220 | | |
| BH (60°-80°) | 24.2 | 0.9 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.4 | 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: P438459
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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 |
| 2.5° | 464.9 | 464.9 | 466.3 | 467.7 | 467.7 | 471.9 | 477.4 | 478.8 | 483.0 | 485.8 | 487.2 |
| 5° | 416.0 | 421.6 | 421.6 | 428.6 | 434.2 | 439.8 | 453.7 | 462.1 | 476.0 | 485.8 | 488.6 |
| 7.5° | 371.3 | 372.7 | 376.9 | 385.3 | 396.5 | 400.7 | 418.8 | 442.5 | 469.1 | 485.8 | 492.8 |
| 10° | 326.7 | 328.1 | 330.9 | 343.4 | 354.6 | 364.4 | 389.5 | 418.8 | 456.5 | 485.8 | 498.4 |
| 12.5° | 294.6 | 294.6 | 297.4 | 311.3 | 323.9 | 333.7 | 361.6 | 399.3 | 443.9 | 487.2 | 506.8 |
| 15° | 283.4 | 283.4 | 282.0 | 289.0 | 300.1 | 308.5 | 340.6 | 382.5 | 432.8 | 490.0 | 515.1 |
| 17.5° | 289.0 | 289.0 | 283.4 | 284.8 | 294.6 | 300.1 | 328.1 | 370.0 | 427.2 | 495.6 | 529.1 |
| 20° | 300.1 | 300.1 | 289.0 | 289.0 | 298.8 | 302.9 | 326.7 | 363.0 | 424.4 | 505.4 | 548.6 |
| 22.5° | 312.7 | 314.1 | 298.8 | 298.8 | 308.5 | 312.7 | 335.0 | 367.2 | 428.6 | 517.9 | 568.2 |
| 25° | 333.7 | 333.7 | 314.1 | 314.1 | 322.5 | 329.5 | 350.4 | 379.7 | 434.2 | 533.3 | 598.9 |
| 27.5° | 363.0 | 361.6 | 336.4 | 329.5 | 342.0 | 347.6 | 371.3 | 395.1 | 439.8 | 551.4 | 626.8 |
| 30° | 397.9 | 390.9 | 365.8 | 351.8 | 363.0 | 367.2 | 390.9 | 416.0 | 456.5 | 578.0 | 670.1 |
| 32.5° | 435.6 | 438.4 | 397.9 | 372.7 | 378.3 | 383.9 | 414.6 | 448.1 | 484.4 | 612.9 | 728.7 |
| 35° | 509.6 | 509.6 | 467.7 | 420.2 | 410.4 | 413.2 | 446.7 | 490.0 | 519.3 | 671.5 | 795.7 |
| 37.5° | 601.7 | 604.5 | 565.4 | 515.1 | 484.4 | 471.9 | 495.6 | 540.3 | 569.6 | 745.5 | 869.7 |
| 40° | 702.2 | 698.0 | 657.5 | 611.5 | 586.3 | 571.0 | 558.4 | 611.5 | 638.0 | 825.1 | 943.7 |
| 42.5° | 786.0 | 777.6 | 723.1 | 699.4 | 684.1 | 664.5 | 639.4 | 700.8 | 725.9 | 925.6 | 1028.9 |
| 45° | 840.4 | 833.4 | 779.0 | 772.0 | 766.4 | 755.3 | 760.8 | 808.3 | 832.0 | 1041.4 | 1118.2 |
| 47.5° | 882.3 | 872.5 | 826.5 | 836.2 | 847.4 | 858.6 | 907.4 | 942.3 | 936.7 | 1147.5 | 1190.8 |
| 50° | 939.5 | 925.6 | 882.3 | 901.8 | 931.2 | 953.5 | 1065.2 | 1075.0 | 1031.7 | 1238.3 | 1256.4 |
| 52.5° | 974.4 | 957.7 | 946.5 | 978.6 | 1021.9 | 1049.8 | 1238.3 | 1200.6 | 1107.1 | 1303.9 | 1308.1 |
| 55° | 1003.8 | 1002.4 | 1021.9 | 1063.8 | 1126.6 | 1161.5 | 1380.7 | 1308.1 | 1155.9 | 1370.9 | 1336.0 |
| 57.5° | 1093.1 | 1087.5 | 1121.0 | 1154.5 | 1259.2 | 1317.9 | 1534.2 | 1386.3 | 1190.8 | 1407.2 | 1320.7 |
| 60° | 1220.1 | 1222.9 | 1224.3 | 1285.8 | 1419.8 | 1500.7 | 1655.7 | 1451.9 | 1217.3 | 1412.8 | 1276.0 |
| 62.5° | 1418.4 | 1437.9 | 1404.4 | 1451.9 | 1613.8 | 1715.7 | 1773.0 | 1499.3 | 1209.0 | 1372.3 | 1162.9 |
| 65° | 1706.0 | 1699.0 | 1651.5 | 1704.6 | 1921.0 | 1983.8 | 1894.4 | 1513.3 | 1160.1 | 1232.7 | 950.7 |
| 67.5° | 1999.1 | 2001.9 | 1979.6 | 2063.3 | 2274.1 | 2263.0 | 2031.2 | 1465.8 | 1034.5 | 931.2 | 596.1 |
| 70° | 2190.4 | 2194.6 | 2250.4 | 2476.6 | 2705.5 | 2628.7 | 2142.9 | 1298.3 | 728.7 | 443.9 | 226.2 |
| 72.5° | 1993.5 | 1994.9 | 2260.2 | 2670.6 | 2906.6 | 2822.8 | 1969.8 | 882.3 | 332.3 | 157.8 | 79.6 |
| 75° | 1262.0 | 1199.2 | 1679.4 | 2264.4 | 2489.1 | 2406.8 | 1404.4 | 411.8 | 146.6 | 79.6 | 33.5 |
| 77.5° | 439.8 | 446.7 | 684.1 | 1303.9 | 1590.1 | 1623.6 | 721.8 | 135.4 | 81.0 | 54.4 | 18.1 |
| 80° | 88.0 | 99.1 | 202.4 | 480.2 | 753.9 | 783.2 | 261.1 | 65.6 | 53.0 | 41.9 | 9.8 |
| 82.5° | 5.6 | 7.0 | 60.0 | 199.6 | 308.5 | 293.2 | 51.7 | 33.5 | 36.3 | 29.3 | 5.6 |
| 85° | 0.0 | 0.0 | 4.2 | 33.5 | 55.8 | 41.9 | 5.6 | 8.4 | 15.4 | 16.8 | 2.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 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: P438459
 CATALOG NUMBER: IST-SA1C-830-U-T4FT-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 | 483.0 |
| 2.5° | 487.2 | 487.2 | 480.2 | 477.4 | 473.3 | 467.7 | 462.1 | 459.3 | 453.7 | 455.1 | 455.1 |
| 5° | 488.6 | 485.8 | 477.4 | 464.9 | 450.9 | 437.0 | 420.2 | 409.0 | 396.5 | 399.3 | 397.9 |
| 7.5° | 491.4 | 490.0 | 470.5 | 448.1 | 423.0 | 392.3 | 363.0 | 337.8 | 315.5 | 309.9 | 305.7 |
| 10° | 497.0 | 492.8 | 464.9 | 428.6 | 378.3 | 328.1 | 277.8 | 234.5 | 216.4 | 196.8 | 192.7 |
| 12.5° | 502.6 | 495.6 | 455.1 | 400.7 | 323.9 | 249.9 | 184.3 | 145.2 | 121.5 | 114.5 | 111.7 |
| 15° | 511.0 | 499.8 | 442.5 | 361.6 | 259.7 | 168.9 | 115.9 | 94.9 | 90.7 | 89.3 | 89.3 |
| 17.5° | 522.1 | 502.6 | 430.0 | 316.9 | 191.3 | 108.9 | 85.2 | 85.2 | 86.6 | 88.0 | 88.0 |
| 20° | 538.9 | 509.6 | 411.8 | 262.5 | 128.4 | 82.4 | 81.0 | 82.4 | 83.8 | 85.2 | 85.2 |
| 22.5° | 557.0 | 520.7 | 390.9 | 205.2 | 90.7 | 76.8 | 76.8 | 78.2 | 79.6 | 81.0 | 81.0 |
| 25° | 578.0 | 529.1 | 363.0 | 146.6 | 75.4 | 72.6 | 72.6 | 74.0 | 75.4 | 76.8 | 76.8 |
| 27.5° | 600.3 | 538.9 | 325.3 | 100.5 | 68.4 | 68.4 | 69.8 | 71.2 | 72.6 | 72.6 | 74.0 |
| 30° | 633.8 | 554.2 | 286.2 | 74.0 | 62.8 | 62.8 | 65.6 | 68.4 | 69.8 | 69.8 | 71.2 |
| 32.5° | 677.1 | 566.8 | 233.1 | 62.8 | 58.6 | 57.2 | 60.0 | 64.2 | 67.0 | 68.4 | 68.4 |
| 35° | 724.5 | 584.9 | 174.5 | 57.2 | 54.4 | 53.0 | 54.4 | 58.6 | 64.2 | 67.0 | 67.0 |
| 37.5° | 773.4 | 601.7 | 129.8 | 54.4 | 50.3 | 48.9 | 50.3 | 53.0 | 58.6 | 64.2 | 65.6 |
| 40° | 822.3 | 604.5 | 93.5 | 50.3 | 47.5 | 46.1 | 46.1 | 48.9 | 54.4 | 60.0 | 61.4 |
| 42.5° | 872.5 | 615.7 | 71.2 | 47.5 | 43.3 | 43.3 | 43.3 | 44.7 | 48.9 | 53.0 | 54.4 |
| 45° | 929.8 | 622.6 | 57.2 | 43.3 | 40.5 | 40.5 | 40.5 | 40.5 | 43.3 | 44.7 | 44.7 |
| 47.5° | 978.6 | 612.9 | 46.1 | 39.1 | 37.7 | 37.7 | 37.7 | 36.3 | 36.3 | 34.9 | 34.9 |
| 50° | 1013.5 | 590.5 | 37.7 | 34.9 | 34.9 | 36.3 | 33.5 | 30.7 | 30.7 | 27.9 | 27.9 |
| 52.5° | 1034.5 | 557.0 | 32.1 | 30.7 | 33.5 | 33.5 | 29.3 | 27.9 | 25.1 | 22.3 | 20.9 |
| 55° | 1033.1 | 501.2 | 27.9 | 26.5 | 29.3 | 29.3 | 25.1 | 22.3 | 19.5 | 16.8 | 16.8 |
| 57.5° | 992.6 | 439.8 | 25.1 | 22.3 | 25.1 | 23.7 | 20.9 | 16.8 | 14.0 | 11.2 | 11.2 |
| 60° | 929.8 | 374.1 | 22.3 | 18.1 | 19.5 | 18.1 | 16.8 | 12.6 | 9.8 | 7.0 | 7.0 |
| 62.5° | 844.6 | 312.7 | 18.1 | 15.4 | 14.0 | 14.0 | 12.6 | 9.8 | 5.6 | 4.2 | 4.2 |
| 65° | 682.7 | 231.7 | 14.0 | 11.2 | 9.8 | 11.2 | 8.4 | 5.6 | 2.8 | 1.4 | 1.4 |
| 67.5° | 421.6 | 132.6 | 11.2 | 8.4 | 7.0 | 8.4 | 5.6 | 4.2 | 1.4 | 0.0 | 0.0 |
| 70° | 166.1 | 57.2 | 8.4 | 5.6 | 5.6 | 5.6 | 4.2 | 2.8 | 0.0 | 0.0 | 0.0 |
| 72.5° | 57.2 | 25.1 | 7.0 | 4.2 | 4.2 | 2.8 | 2.8 | 1.4 | 0.0 | 0.0 | 0.0 |
| 75° | 25.1 | 15.4 | 5.6 | 4.2 | 2.8 | 2.8 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 |
| 77.5° | 14.0 | 9.8 | 4.2 | 2.8 | 2.8 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 |
| 80° | 8.4 | 5.6 | 2.8 | 2.8 | 2.8 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 |
| 82.5° | 5.6 | 2.8 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 |
| 85° | 2.8 | 1.4 | 0.0 | 1.4 | 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 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2408-195-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/07/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **GALN-SB1A-830-U-5WQ**
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

Spectral Parameters

CCT (K): 3050
 CIE u': 0.2476
 CIE v': 0.5251
 Duv: 0.0034
 CIE x: 0.4383
 CIE y: 0.4131
 CIE z: 0.1487
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 581
 Purity: 55.55201
 Rf: 81.5
 Rg: 99.2

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 81.0 | | |
| R1: | 79.6 | R9: | 7.1 |
| R2: | 85.6 | R10: | 67.0 |
| R3: | 92.0 | R11: | 82.7 |
| R4: | 82.6 | R12: | 63.2 |
| R5: | 78.9 | R13: | 80.3 |
| R6: | 81.7 | R14: | 95.0 |
| R7: | 85.2 | R15: | 71.7 |
| R8: | 62.0 | | |



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.32

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 81.5$
 $R_g = 99.2$
 $CIE R_a = 81.0$
 $R_9 = 7.1$



Color Vector Graphics

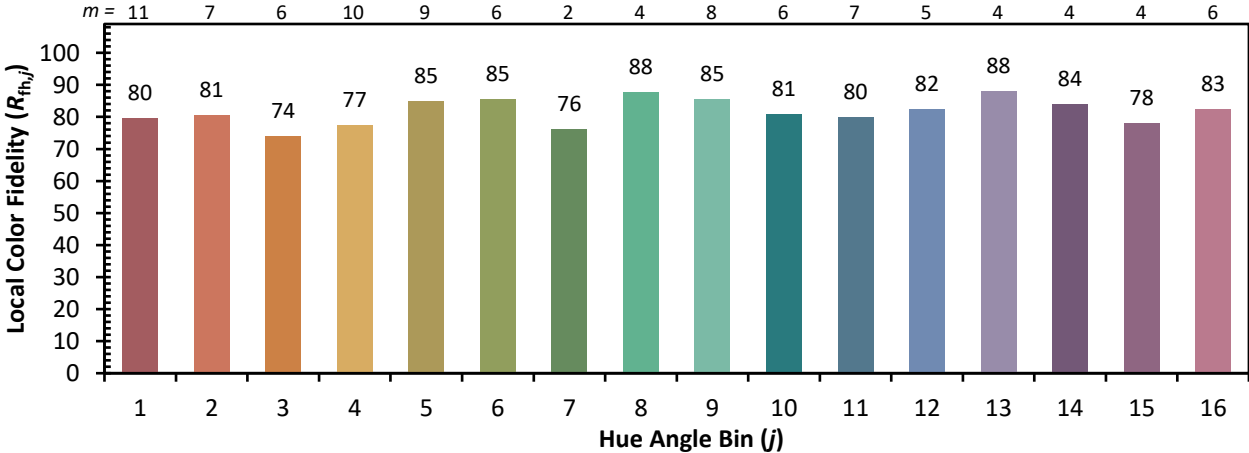


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)