

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: P437434

Luminaire Tested: **ISS-SA1C-830-U-T4FT**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437434
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-10)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: ISS-SA1C-830-U-T4FT
Description: IMPACT ELITE LED QUARTER SPHERE LUMINAIRE
(1) 80 CRI, 3000K, 615mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV FORWARD
THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3603 lumens
Efficiency: N/A
Efficacy: 105.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G1

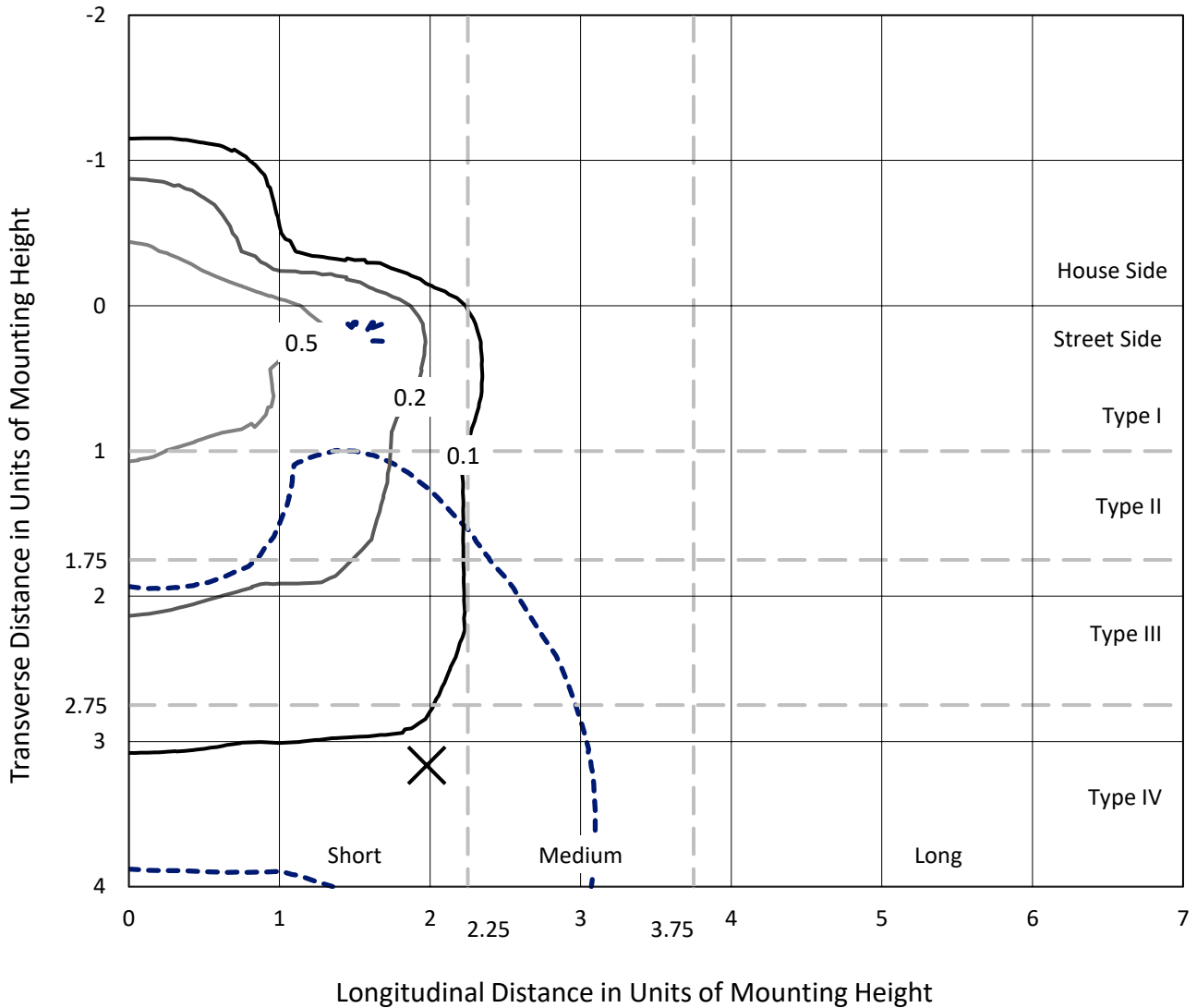
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

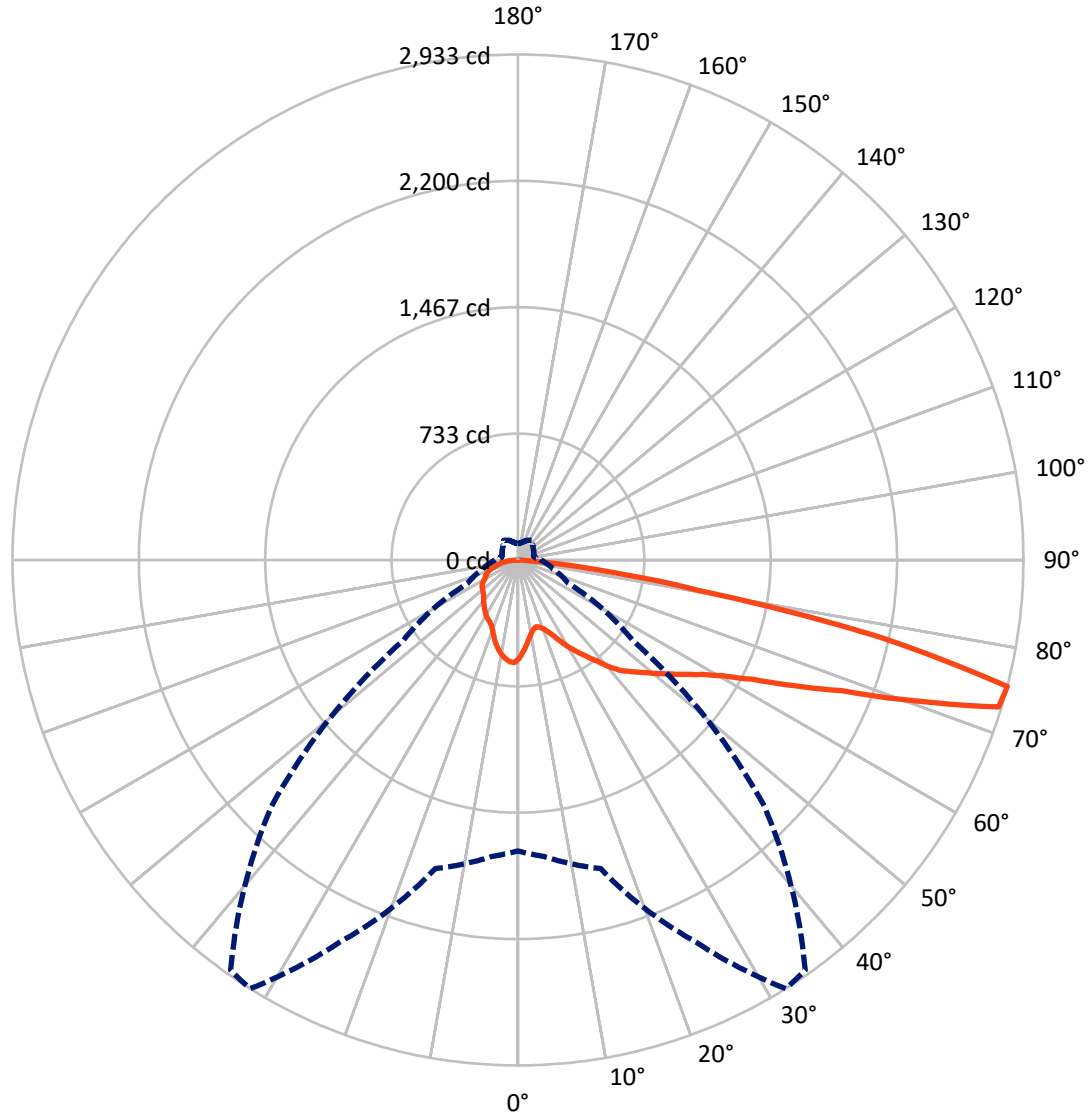
× Max cd
 - - - 1/2 Max cd



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

REPORT NUMBER: P437434
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Luminous Intensity Polar Plot



— Vertical Plane Through 32-Deg Lateral - - - Horizontal Cone Through 75-Deg Vertical

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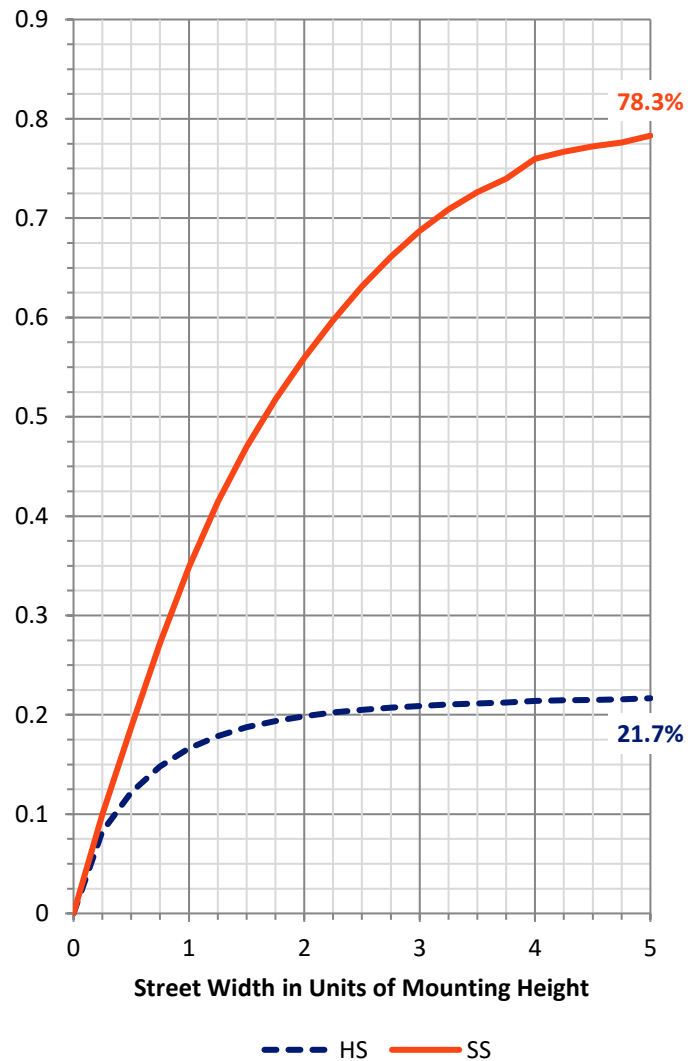
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 789.5 | 0.0 | 789.5 |
| | % Fixture | 21.9 | 0.0 | 21.9 |
| Street Side | Lumens | 2813.5 | 0.0 | 2813.5 |
| | % Fixture | 78.1 | 0.0 | 78.1 |
| Total | Lumens | 3603.0 | 0.0 | 3603.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 52.1 | 1.4 |
| 10°-20° | 142.4 | 4.0 |
| 20°-30° | 235.6 | 6.5 |
| 30°-40° | 351.2 | 9.7 |
| 40°-50° | 500.0 | 13.9 |
| 50°-60° | 687.9 | 19.1 |
| 60°-70° | 866.9 | 24.1 |
| 70°-80° | 700.8 | 19.5 |
| 80°-90° | 66.2 | 1.8 |
| 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° | 3603.0 | 100.0 |
| 0°-180° | 3603.0 | 100.0 |



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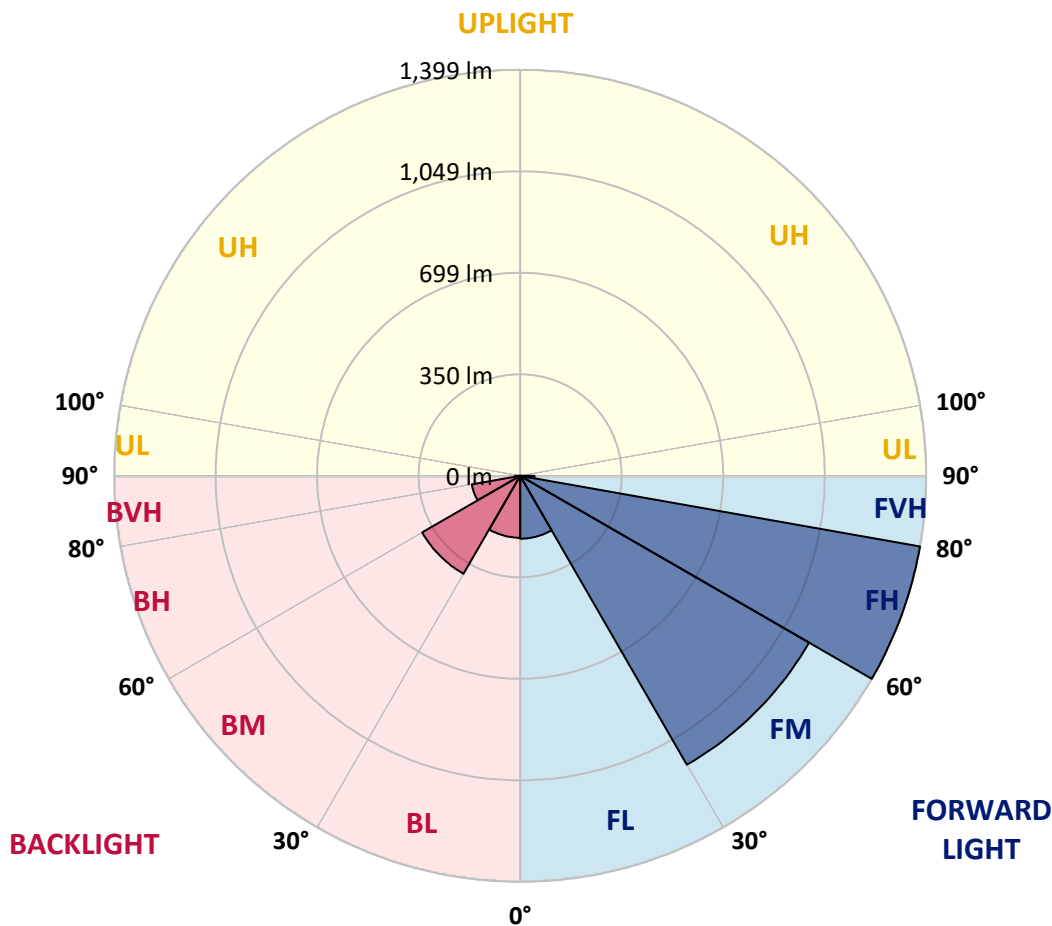
CATALOG NUMBER: ISS-SA1C-830-U-T4FT

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 216.6 | 6.0 | | | |
| FM (30°-60°) | 1149.1 | 31.9 | | | |
| FH (60°-80°) | 1398.6 | 38.8 | | | G1/1800 |
| FVH (80°-90°) | 49.2 | 1.4 | | | G1/100 |
| BL (0°-30°) | 213.4 | 5.9 | B1/500 | | |
| BM (30°-60°) | 390.0 | 10.8 | B1/1000 | | |
| BH (60°-80°) | 169.1 | 4.7 | B1/500 | | G1/500 |
| BVH (80°-90°) | 17.0 | 0.5 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 |
| 2.5° | 523.8 | 527.7 | 529.0 | 531.7 | 536.9 | 534.3 | 540.8 | 548.7 | 559.2 | 564.4 | 574.9 |
| 5° | 479.3 | 479.3 | 483.2 | 489.8 | 498.9 | 498.9 | 510.7 | 525.1 | 543.4 | 557.8 | 576.2 |
| 7.5° | 440.0 | 440.0 | 443.9 | 451.8 | 460.9 | 467.5 | 481.9 | 504.2 | 529.0 | 556.5 | 580.1 |
| 10° | 407.3 | 408.6 | 411.2 | 419.0 | 430.8 | 437.4 | 458.3 | 483.2 | 515.9 | 551.3 | 584.0 |
| 12.5° | 395.5 | 394.2 | 392.8 | 399.4 | 408.6 | 413.8 | 437.4 | 468.8 | 506.8 | 550.0 | 591.9 |
| 15° | 404.6 | 402.0 | 398.1 | 398.1 | 402.0 | 404.6 | 424.3 | 457.0 | 498.9 | 548.7 | 601.1 |
| 17.5° | 428.2 | 425.6 | 416.4 | 407.3 | 409.9 | 411.2 | 424.3 | 450.5 | 495.0 | 553.9 | 614.2 |
| 20° | 460.9 | 457.0 | 441.3 | 429.5 | 426.9 | 426.9 | 434.8 | 454.4 | 497.6 | 564.4 | 631.2 |
| 22.5° | 500.2 | 496.3 | 478.0 | 457.0 | 454.4 | 453.1 | 457.0 | 470.1 | 505.5 | 576.2 | 657.4 |
| 25° | 552.6 | 548.7 | 526.4 | 500.2 | 491.1 | 489.8 | 485.8 | 493.7 | 518.6 | 591.9 | 675.7 |
| 27.5° | 608.9 | 610.2 | 584.0 | 548.7 | 539.5 | 535.6 | 525.1 | 523.8 | 534.3 | 605.0 | 707.1 |
| 30° | 661.3 | 658.7 | 631.2 | 602.4 | 589.3 | 584.0 | 567.0 | 559.2 | 552.6 | 624.6 | 743.8 |
| 32.5° | 686.2 | 690.1 | 677.0 | 649.5 | 639.0 | 629.9 | 610.2 | 597.1 | 588.0 | 654.7 | 788.3 |
| 35° | 728.1 | 729.4 | 724.2 | 707.1 | 686.2 | 679.6 | 661.3 | 652.1 | 632.5 | 691.4 | 842.0 |
| 37.5° | 770.0 | 773.9 | 772.6 | 762.1 | 743.8 | 737.2 | 721.5 | 717.6 | 678.3 | 737.2 | 908.8 |
| 40° | 832.8 | 826.3 | 817.1 | 821.1 | 814.5 | 810.6 | 804.0 | 790.9 | 742.5 | 787.0 | 974.3 |
| 42.5° | 900.9 | 889.2 | 856.4 | 866.9 | 876.1 | 880.0 | 889.2 | 874.7 | 809.3 | 861.7 | 1028.0 |
| 45° | 955.9 | 946.8 | 903.6 | 906.2 | 924.5 | 937.6 | 980.8 | 973.0 | 895.7 | 942.8 | 1100.0 |
| 47.5° | 987.4 | 979.5 | 949.4 | 962.5 | 974.3 | 992.6 | 1076.4 | 1069.9 | 976.9 | 1030.6 | 1186.4 |
| 50° | 1031.9 | 1018.8 | 990.0 | 1013.6 | 1034.5 | 1048.9 | 1169.4 | 1166.8 | 1046.3 | 1120.9 | 1284.6 |
| 52.5° | 1056.8 | 1043.7 | 1041.1 | 1073.8 | 1098.7 | 1118.3 | 1268.9 | 1261.0 | 1114.4 | 1211.3 | 1377.6 |
| 55° | 1090.8 | 1093.4 | 1110.5 | 1135.3 | 1170.7 | 1203.4 | 1365.8 | 1326.5 | 1177.2 | 1300.3 | 1469.3 |
| 57.5° | 1165.5 | 1162.8 | 1195.6 | 1207.4 | 1253.2 | 1295.1 | 1481.0 | 1395.9 | 1229.6 | 1364.5 | 1512.5 |
| 60° | 1265.0 | 1270.2 | 1282.0 | 1312.1 | 1361.9 | 1426.0 | 1592.4 | 1467.9 | 1263.7 | 1410.3 | 1504.6 |
| 62.5° | 1453.5 | 1423.4 | 1418.2 | 1426.0 | 1524.3 | 1598.9 | 1701.0 | 1532.1 | 1278.1 | 1411.6 | 1422.1 |
| 65° | 1644.7 | 1632.9 | 1592.4 | 1612.0 | 1754.7 | 1822.8 | 1841.2 | 1574.0 | 1249.3 | 1330.5 | 1238.8 |
| 67.5° | 1842.5 | 1841.2 | 1797.9 | 1854.3 | 2025.8 | 2105.7 | 1997.0 | 1566.2 | 1155.0 | 1140.6 | 952.0 |
| 70° | 2045.4 | 2054.6 | 2054.6 | 2214.4 | 2448.8 | 2469.7 | 2171.2 | 1491.5 | 967.7 | 808.0 | 556.5 |
| 72.5° | 2134.5 | 2139.7 | 2186.9 | 2541.7 | 2916.3 | 2922.8 | 2270.7 | 1266.3 | 660.0 | 430.8 | 280.2 |
| 75° | 1687.9 | 1727.2 | 1854.3 | 2447.5 | 2933.3 | 2907.1 | 2023.2 | 810.6 | 322.1 | 214.8 | 155.8 |
| 77.5° | 662.6 | 677.0 | 935.0 | 1558.3 | 2137.1 | 2163.3 | 1309.5 | 323.4 | 163.7 | 136.2 | 112.6 |
| 80° | 187.3 | 196.4 | 331.3 | 619.4 | 1055.5 | 1166.8 | 521.2 | 140.1 | 110.0 | 99.5 | 81.2 |
| 82.5° | 66.8 | 76.0 | 123.1 | 237.0 | 450.5 | 475.3 | 141.4 | 69.4 | 70.7 | 64.2 | 49.8 |
| 85° | 9.2 | 7.9 | 17.0 | 43.2 | 99.5 | 83.8 | 23.6 | 18.3 | 28.8 | 30.1 | 21.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 1.3 | 1.3 | 1.3 | 0.0 | 0.0 | 0.0 | 1.3 | 1.3 |
| 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: P437434
 CATALOG NUMBER: ISS-SA1C-830-U-T4FT

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 | 573.6 |
| 2.5° | 577.5 | 580.1 | 585.3 | 588.0 | 590.6 | 595.8 | 594.5 | 597.1 | 597.1 | 595.8 | 598.4 |
| 5° | 582.7 | 589.3 | 595.8 | 598.4 | 599.8 | 599.8 | 593.2 | 589.3 | 588.0 | 586.7 | 588.0 |
| 7.5° | 588.0 | 597.1 | 603.7 | 602.4 | 597.1 | 588.0 | 580.1 | 573.6 | 567.0 | 564.4 | 567.0 |
| 10° | 597.1 | 606.3 | 610.2 | 601.1 | 586.7 | 572.3 | 560.5 | 551.3 | 540.8 | 539.5 | 540.8 |
| 12.5° | 605.0 | 616.8 | 616.8 | 595.8 | 576.2 | 556.5 | 538.2 | 523.8 | 510.7 | 506.8 | 506.8 |
| 15° | 618.1 | 627.3 | 618.1 | 589.3 | 561.8 | 536.9 | 510.7 | 492.4 | 476.7 | 470.1 | 471.4 |
| 17.5° | 632.5 | 639.0 | 615.5 | 578.8 | 546.1 | 513.3 | 479.3 | 454.4 | 442.6 | 436.1 | 437.4 |
| 20° | 649.5 | 650.8 | 615.5 | 565.7 | 522.5 | 479.3 | 442.6 | 424.3 | 416.4 | 412.5 | 413.8 |
| 22.5° | 671.8 | 666.5 | 611.5 | 548.7 | 492.4 | 445.2 | 411.2 | 405.9 | 405.9 | 405.9 | 409.9 |
| 25° | 695.3 | 680.9 | 605.0 | 526.4 | 453.1 | 404.6 | 391.5 | 398.1 | 403.3 | 403.3 | 405.9 |
| 27.5° | 718.9 | 695.3 | 591.9 | 493.7 | 407.3 | 375.8 | 381.1 | 391.5 | 396.8 | 396.8 | 399.4 |
| 30° | 747.7 | 712.4 | 576.2 | 449.2 | 364.0 | 356.2 | 369.3 | 382.4 | 390.2 | 390.2 | 392.8 |
| 32.5° | 784.4 | 726.8 | 552.6 | 403.3 | 335.2 | 339.2 | 353.6 | 368.0 | 377.1 | 379.8 | 381.1 |
| 35° | 825.0 | 746.4 | 519.9 | 352.3 | 315.6 | 326.1 | 337.9 | 350.9 | 358.8 | 361.4 | 361.4 |
| 37.5° | 866.9 | 766.1 | 476.7 | 309.0 | 298.6 | 313.0 | 324.8 | 331.3 | 336.5 | 336.5 | 336.5 |
| 40° | 908.8 | 776.5 | 420.3 | 275.0 | 281.5 | 302.5 | 313.0 | 310.4 | 309.0 | 305.1 | 306.4 |
| 42.5° | 952.0 | 784.4 | 360.1 | 250.1 | 264.5 | 290.7 | 298.6 | 292.0 | 281.5 | 275.0 | 276.3 |
| 45° | 999.1 | 796.2 | 310.4 | 231.8 | 247.5 | 280.2 | 288.1 | 275.0 | 261.9 | 251.4 | 248.8 |
| 47.5° | 1052.8 | 815.8 | 265.8 | 214.8 | 237.0 | 273.7 | 281.5 | 263.2 | 246.2 | 231.8 | 229.2 |
| 50° | 1126.2 | 845.9 | 231.8 | 203.0 | 230.5 | 269.8 | 276.3 | 252.7 | 233.1 | 214.8 | 213.4 |
| 52.5° | 1200.8 | 868.2 | 208.2 | 192.5 | 222.6 | 261.9 | 269.8 | 244.9 | 221.3 | 201.7 | 199.0 |
| 55° | 1255.8 | 865.6 | 187.3 | 182.0 | 212.1 | 251.4 | 263.2 | 235.7 | 205.6 | 187.3 | 184.6 |
| 57.5° | 1279.4 | 811.9 | 170.2 | 172.9 | 200.4 | 238.3 | 252.7 | 221.3 | 193.8 | 178.1 | 176.8 |
| 60° | 1238.8 | 725.5 | 158.4 | 162.4 | 187.3 | 221.3 | 233.1 | 210.8 | 185.9 | 171.5 | 170.2 |
| 62.5° | 1168.1 | 628.6 | 149.3 | 154.5 | 174.2 | 205.6 | 221.3 | 197.7 | 175.5 | 165.0 | 163.7 |
| 65° | 1000.5 | 522.5 | 140.1 | 145.4 | 162.4 | 189.9 | 210.8 | 189.9 | 167.6 | 157.1 | 155.8 |
| 67.5° | 755.6 | 375.8 | 130.9 | 136.2 | 151.9 | 178.1 | 201.7 | 179.4 | 155.8 | 148.0 | 148.0 |
| 70° | 450.5 | 230.5 | 119.2 | 127.0 | 138.8 | 163.7 | 187.3 | 165.0 | 141.4 | 138.8 | 136.2 |
| 72.5° | 220.0 | 146.7 | 108.7 | 115.2 | 124.4 | 145.4 | 166.3 | 146.7 | 123.1 | 116.5 | 115.2 |
| 75° | 132.3 | 106.1 | 94.3 | 102.1 | 108.7 | 121.8 | 140.1 | 125.7 | 107.4 | 96.9 | 95.6 |
| 77.5° | 95.6 | 79.9 | 79.9 | 87.7 | 87.7 | 100.8 | 120.5 | 107.4 | 90.4 | 83.8 | 82.5 |
| 80° | 68.1 | 60.2 | 65.5 | 70.7 | 68.1 | 85.1 | 102.1 | 90.4 | 73.3 | 68.1 | 66.8 |
| 82.5° | 44.5 | 41.9 | 49.8 | 48.5 | 48.5 | 65.5 | 83.8 | 68.1 | 53.7 | 44.5 | 41.9 |
| 85° | 18.3 | 21.0 | 28.8 | 27.5 | 27.5 | 36.7 | 43.2 | 35.4 | 24.9 | 19.6 | 19.6 |
| 87.5° | 0.0 | 1.3 | 3.9 | 2.6 | 2.6 | 3.9 | 1.3 | 1.3 | 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)