

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: P437486

Luminaire Tested: **ISC-SA1D-730-U-T2-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437486
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-7)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISC-SA1D-730-U-T2-HSS
Description: IMPACT ELITE LED CYLINDER LUMINAIRE
(1) 70 CRI, 3000K, 800mA LIGHTSQUARE WITH 16 LEDS AND TYPE II OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4015 lumens
Efficiency: N/A
Efficacy: 88.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B0 - U0 - G1

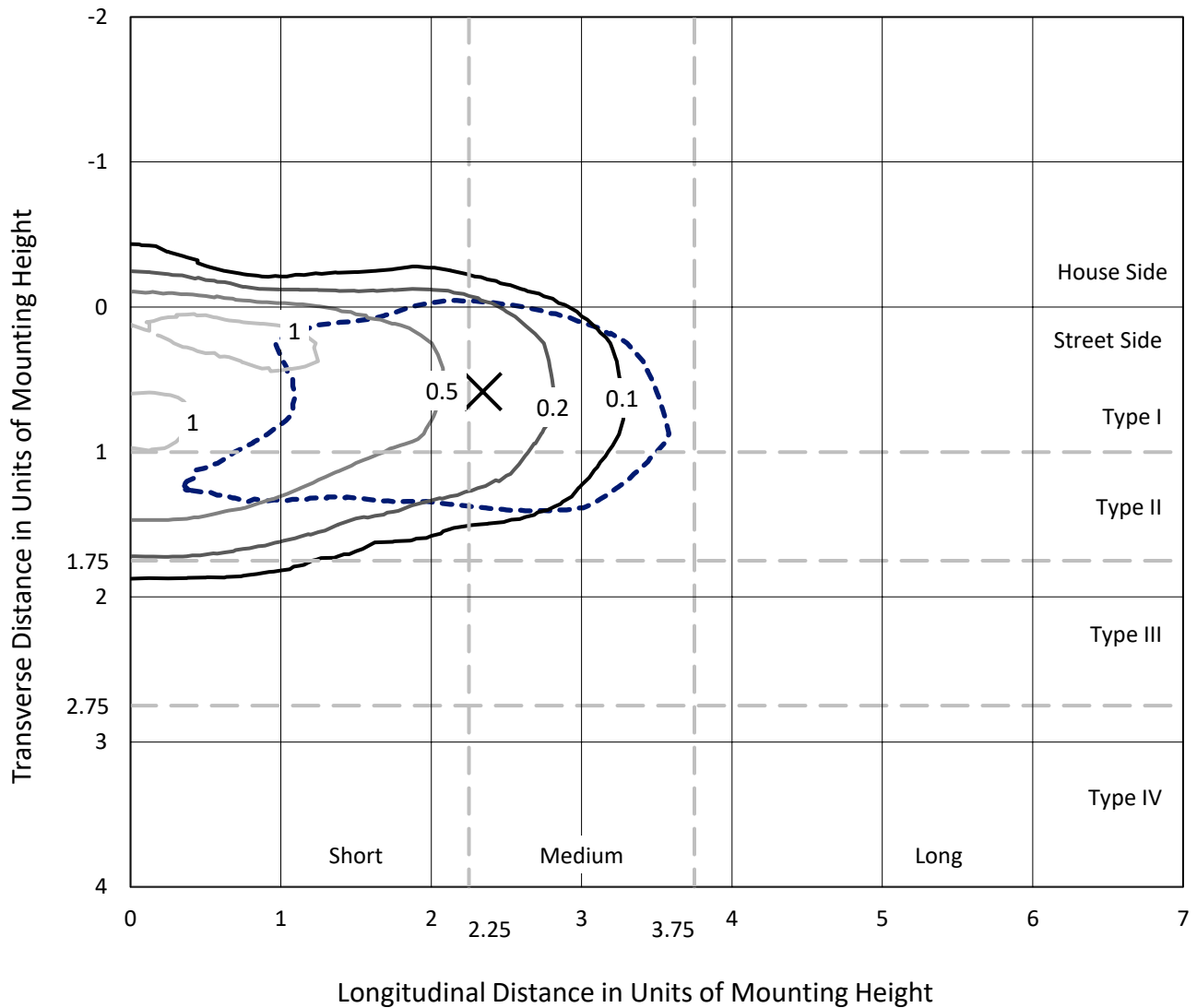
Input Watts (W): 45.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

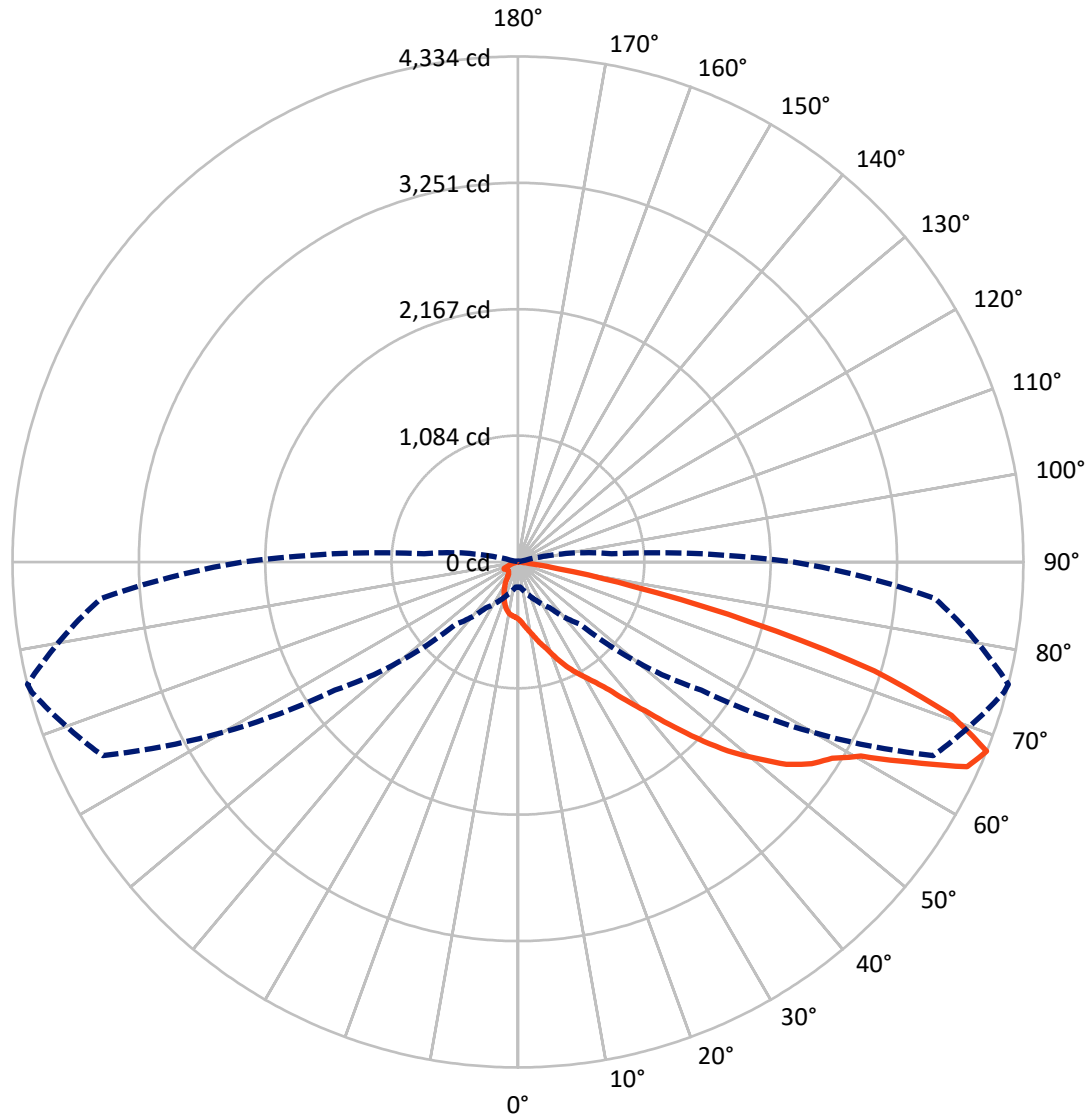
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.2 fc
 Type II - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 317.7 | 0.0 | 317.7 |
| | % Fixture | 7.9 | 0.0 | 7.9 |
| Street Side | Lumens | 3697.3 | 0.0 | 3697.3 |
| | % Fixture | 92.1 | 0.0 | 92.1 |
| Total | Lumens | 4015.0 | 0.0 | 4015.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 46.8 | 1.2 |
| 10°-20° | 130.5 | 3.2 |
| 20°-30° | 225.2 | 5.6 |
| 30°-40° | 401.1 | 10.0 |
| 40°-50° | 714.2 | 17.8 |
| 50°-60° | 1071.0 | 26.7 |
| 60°-70° | 1014.4 | 25.3 |
| 70°-80° | 395.4 | 9.8 |
| 80°-90° | 16.4 | 0.4 |
| 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° | 4015.0 | 100.0 |
| 0°-180° | 4015.0 | 100.0 |

Coefficient of Utilization



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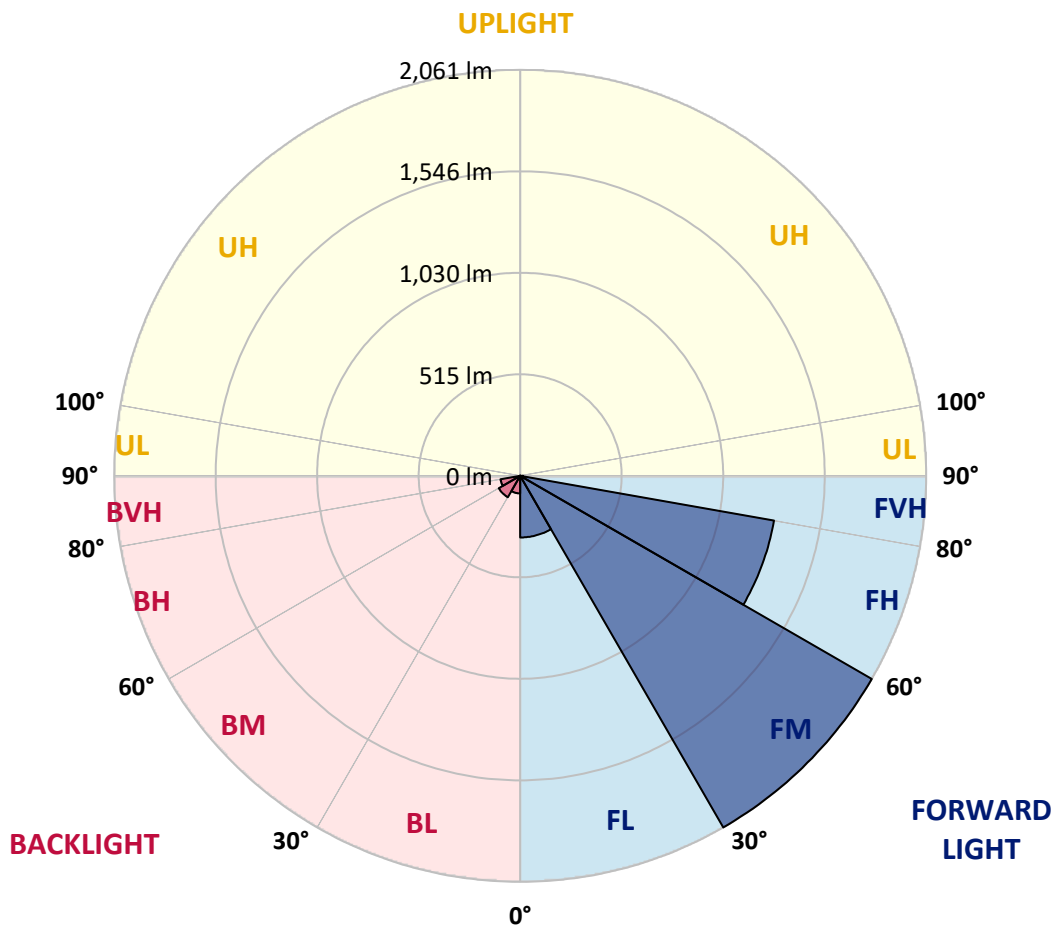
CATALOG NUMBER: ISC-SA1D-730-U-T2-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 313.0 | 7.8 | | | |
| FM (30°-60°) | 2061.0 | 51.3 | | | |
| FH (60°-80°) | 1308.4 | 32.6 | | | G1/1800 |
| FVH (80°-90°) | 14.9 | 0.4 | | | G1/100 |
| BL (0°-30°) | 89.4 | 2.2 | B0/110 | | |
| BM (30°-60°) | 125.4 | 3.1 | B0/220 | | |
| BH (60°-80°) | 101.4 | 2.5 | B0/110 | | G0/110 |
| BVH (80°-90°) | 1.5 | 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 II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 |
| 2.5° | 578.4 | 572.8 | 569.0 | 567.1 | 563.4 | 552.1 | 542.7 | 525.8 | 510.8 | 510.8 | 501.4 |
| 5° | 631.0 | 629.1 | 621.6 | 617.8 | 616.0 | 608.4 | 591.5 | 570.9 | 546.5 | 544.6 | 522.1 |
| 7.5° | 646.0 | 647.9 | 647.9 | 651.6 | 653.5 | 649.8 | 634.7 | 616.0 | 584.0 | 580.3 | 546.5 |
| 10° | 640.4 | 640.4 | 646.0 | 657.3 | 672.3 | 679.8 | 677.9 | 662.9 | 625.4 | 621.6 | 574.6 |
| 12.5° | 619.7 | 623.5 | 632.9 | 651.6 | 679.8 | 702.3 | 715.5 | 709.9 | 672.3 | 668.5 | 612.2 |
| 15° | 591.5 | 595.3 | 612.2 | 638.5 | 676.1 | 719.2 | 749.3 | 766.2 | 728.6 | 724.9 | 651.6 |
| 17.5° | 552.1 | 555.9 | 574.6 | 614.1 | 666.7 | 726.8 | 785.0 | 818.8 | 786.9 | 775.6 | 693.0 |
| 20° | 537.1 | 540.8 | 555.9 | 587.8 | 649.8 | 726.8 | 816.9 | 880.7 | 856.3 | 846.9 | 745.5 |
| 22.5° | 597.2 | 595.3 | 582.2 | 585.9 | 632.9 | 721.1 | 841.3 | 957.7 | 939.0 | 925.8 | 801.9 |
| 25° | 706.1 | 713.6 | 694.8 | 651.6 | 644.1 | 715.5 | 858.2 | 1017.8 | 1016.0 | 1002.8 | 860.1 |
| 27.5° | 831.9 | 835.7 | 815.0 | 770.0 | 708.0 | 726.8 | 877.0 | 1077.9 | 1087.3 | 1076.1 | 905.2 |
| 30° | 935.2 | 948.4 | 933.3 | 892.0 | 826.3 | 775.6 | 890.1 | 1132.4 | 1164.3 | 1149.3 | 948.4 |
| 32.5° | 1083.6 | 1089.2 | 1074.2 | 1014.1 | 946.5 | 869.5 | 914.6 | 1179.3 | 1248.8 | 1235.7 | 999.1 |
| 35° | 1239.4 | 1246.9 | 1218.8 | 1153.1 | 1070.4 | 984.0 | 972.8 | 1243.2 | 1370.9 | 1344.6 | 1076.1 |
| 37.5° | 1378.4 | 1385.9 | 1372.8 | 1292.0 | 1211.3 | 1119.2 | 1076.1 | 1329.6 | 1519.2 | 1502.3 | 1171.8 |
| 40° | 1489.2 | 1508.0 | 1504.2 | 1434.7 | 1359.6 | 1277.0 | 1224.4 | 1431.0 | 1690.1 | 1675.1 | 1293.9 |
| 42.5° | 1601.9 | 1615.0 | 1607.5 | 1556.8 | 1504.2 | 1453.5 | 1387.8 | 1571.8 | 1909.9 | 1902.3 | 1446.0 |
| 45° | 1742.7 | 1763.4 | 1754.0 | 1712.7 | 1648.8 | 1637.6 | 1575.6 | 1740.8 | 2170.9 | 2159.6 | 1630.0 |
| 47.5° | 1951.2 | 1970.0 | 1954.9 | 1898.6 | 1825.3 | 1804.7 | 1752.1 | 1932.4 | 2426.3 | 2420.7 | 1812.2 |
| 50° | 2063.8 | 2082.6 | 2122.1 | 2131.5 | 2082.6 | 1971.8 | 1909.9 | 2114.6 | 2655.4 | 2646.0 | 1986.9 |
| 52.5° | 2024.4 | 2041.3 | 2137.1 | 2227.2 | 2334.3 | 2240.4 | 2101.4 | 2311.7 | 2865.7 | 2882.6 | 2157.7 |
| 55° | 1855.4 | 1877.9 | 2015.0 | 2159.6 | 2418.8 | 2544.6 | 2385.0 | 2535.2 | 3031.0 | 3055.4 | 2270.4 |
| 57.5° | 1513.6 | 1539.9 | 1716.4 | 1939.9 | 2289.2 | 2621.6 | 2736.1 | 2843.2 | 3143.7 | 3175.6 | 2415.0 |
| 60° | 907.0 | 948.4 | 1130.5 | 1427.2 | 1911.7 | 2439.4 | 2985.9 | 3286.4 | 3363.4 | 3378.4 | 2723.0 |
| 62.5° | 503.3 | 493.9 | 640.4 | 884.5 | 1318.3 | 1981.2 | 2948.4 | 3825.3 | 3778.4 | 3778.4 | 3248.8 |
| 65° | 302.3 | 311.7 | 386.9 | 525.8 | 766.2 | 1307.0 | 2629.1 | 4157.7 | 4219.7 | 4232.9 | 3675.1 |
| 67.5° | 214.1 | 216.0 | 270.4 | 360.6 | 478.9 | 753.1 | 1917.4 | 3928.6 | 4315.5 | 4334.3 | 3590.6 |
| 70° | 139.0 | 140.8 | 193.4 | 257.3 | 341.8 | 415.0 | 1171.8 | 3237.6 | 3953.0 | 3943.7 | 3175.6 |
| 72.5° | 84.5 | 88.3 | 122.1 | 189.7 | 262.9 | 234.7 | 631.0 | 2339.9 | 3132.4 | 3196.2 | 2492.0 |
| 75° | 52.6 | 56.3 | 73.2 | 131.5 | 184.0 | 159.6 | 277.9 | 1562.4 | 2020.7 | 2069.5 | 1609.4 |
| 77.5° | 30.0 | 33.8 | 46.9 | 75.1 | 131.5 | 110.8 | 131.5 | 820.7 | 978.4 | 1010.3 | 646.0 |
| 80° | 11.3 | 13.1 | 24.4 | 37.6 | 80.8 | 67.6 | 60.1 | 277.9 | 311.7 | 349.3 | 197.2 |
| 82.5° | 1.9 | 3.8 | 11.3 | 22.5 | 31.9 | 31.9 | 26.3 | 84.5 | 86.4 | 92.0 | 52.6 |
| 85° | 0.0 | 0.0 | 3.8 | 5.6 | 5.6 | 5.6 | 9.4 | 16.9 | 26.3 | 26.3 | 15.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 3.8 | 3.8 | 3.8 | 3.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 | 488.3 |
| 2.5° | 492.0 | 488.3 | 473.2 | 458.2 | 446.9 | 437.6 | 422.5 | 422.5 | 416.9 | 411.3 | 413.1 |
| 5° | 505.2 | 493.9 | 465.7 | 437.6 | 411.3 | 386.9 | 366.2 | 356.8 | 343.7 | 339.9 | 338.0 |
| 7.5° | 522.1 | 501.4 | 454.5 | 409.4 | 366.2 | 334.3 | 308.0 | 291.1 | 276.1 | 272.3 | 274.2 |
| 10° | 542.7 | 512.7 | 441.3 | 371.8 | 319.2 | 279.8 | 249.8 | 236.6 | 219.7 | 214.1 | 208.5 |
| 12.5° | 572.8 | 525.8 | 420.7 | 330.5 | 272.3 | 232.9 | 189.7 | 157.7 | 146.5 | 142.7 | 142.7 |
| 15° | 597.2 | 533.3 | 394.4 | 291.1 | 232.9 | 170.9 | 135.2 | 129.6 | 127.7 | 127.7 | 127.7 |
| 17.5° | 625.4 | 539.0 | 362.4 | 253.5 | 180.3 | 125.8 | 118.3 | 118.3 | 116.4 | 116.4 | 114.6 |
| 20° | 655.4 | 540.8 | 328.6 | 219.7 | 127.7 | 112.7 | 107.0 | 105.2 | 101.4 | 99.5 | 99.5 |
| 22.5° | 689.2 | 539.0 | 291.1 | 180.3 | 112.7 | 103.3 | 93.9 | 90.1 | 86.4 | 82.6 | 82.6 |
| 25° | 717.4 | 535.2 | 257.3 | 129.6 | 103.3 | 90.1 | 80.8 | 75.1 | 71.4 | 69.5 | 67.6 |
| 27.5° | 741.8 | 514.6 | 223.5 | 110.8 | 93.9 | 80.8 | 69.5 | 63.8 | 60.1 | 58.2 | 58.2 |
| 30° | 743.7 | 480.8 | 195.3 | 103.3 | 86.4 | 71.4 | 60.1 | 56.3 | 54.5 | 52.6 | 52.6 |
| 32.5° | 754.9 | 446.9 | 165.3 | 97.7 | 77.0 | 63.8 | 54.5 | 50.7 | 46.9 | 46.9 | 46.9 |
| 35° | 777.5 | 416.9 | 127.7 | 88.3 | 69.5 | 56.3 | 48.8 | 45.1 | 43.2 | 41.3 | 41.3 |
| 37.5° | 813.1 | 396.2 | 105.2 | 80.8 | 63.8 | 50.7 | 45.1 | 41.3 | 39.4 | 37.6 | 37.6 |
| 40° | 860.1 | 385.0 | 95.8 | 73.2 | 56.3 | 46.9 | 41.3 | 37.6 | 33.8 | 31.9 | 31.9 |
| 42.5° | 940.8 | 385.0 | 88.3 | 65.7 | 50.7 | 43.2 | 37.6 | 33.8 | 30.0 | 28.2 | 28.2 |
| 45° | 1034.7 | 400.0 | 82.6 | 58.2 | 45.1 | 39.4 | 33.8 | 28.2 | 24.4 | 22.5 | 22.5 |
| 47.5° | 1138.0 | 428.2 | 77.0 | 52.6 | 41.3 | 35.7 | 30.0 | 22.5 | 18.8 | 16.9 | 16.9 |
| 50° | 1258.2 | 469.5 | 73.2 | 46.9 | 37.6 | 31.9 | 24.4 | 16.9 | 15.0 | 13.1 | 13.1 |
| 52.5° | 1359.6 | 510.8 | 67.6 | 43.2 | 33.8 | 28.2 | 18.8 | 15.0 | 11.3 | 11.3 | 11.3 |
| 55° | 1455.4 | 555.9 | 63.8 | 39.4 | 31.9 | 22.5 | 15.0 | 11.3 | 9.4 | 9.4 | 9.4 |
| 57.5° | 1583.1 | 612.2 | 58.2 | 35.7 | 26.3 | 16.9 | 13.1 | 9.4 | 7.5 | 7.5 | 7.5 |
| 60° | 1844.1 | 738.0 | 50.7 | 31.9 | 22.5 | 15.0 | 11.3 | 9.4 | 7.5 | 5.6 | 5.6 |
| 62.5° | 2268.5 | 942.7 | 43.2 | 28.2 | 16.9 | 13.1 | 9.4 | 7.5 | 5.6 | 3.8 | 3.8 |
| 65° | 2537.1 | 993.4 | 35.7 | 22.5 | 13.1 | 9.4 | 7.5 | 5.6 | 3.8 | 1.9 | 1.9 |
| 67.5° | 2364.3 | 807.5 | 28.2 | 16.9 | 11.3 | 7.5 | 5.6 | 3.8 | 1.9 | 0.0 | 0.0 |
| 70° | 1996.2 | 610.3 | 20.7 | 11.3 | 9.4 | 5.6 | 3.8 | 1.9 | 0.0 | 0.0 | 0.0 |
| 72.5° | 1577.5 | 463.8 | 18.8 | 9.4 | 7.5 | 3.8 | 3.8 | 1.9 | 0.0 | 0.0 | 0.0 |
| 75° | 1034.7 | 238.5 | 15.0 | 9.4 | 5.6 | 3.8 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 77.5° | 407.5 | 90.1 | 11.3 | 7.5 | 5.6 | 3.8 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 80° | 110.8 | 30.0 | 5.6 | 3.8 | 3.8 | 1.9 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 82.5° | 28.2 | 13.1 | 3.8 | 3.8 | 1.9 | 1.9 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 85° | 9.4 | 3.8 | 3.8 | 1.9 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 3.8 | 3.8 | 3.8 | 1.9 | 1.9 | 1.9 | 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

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| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 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 | | | |

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Summary

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



Color Vector Graphics



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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 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)