

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P635879

Luminaire Tested: GWS-SA3E-760-U-AFL-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P635879
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-48)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3E-760-U-AFL-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND
AUTOMOTIVE FRONTLINE OPTICS WITH HOUSE SIDE SHIELD
Light Source: (48) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18606.1 lumens
Efficiency: N/A
Efficacy: 116.9 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B2 - U0 - G2

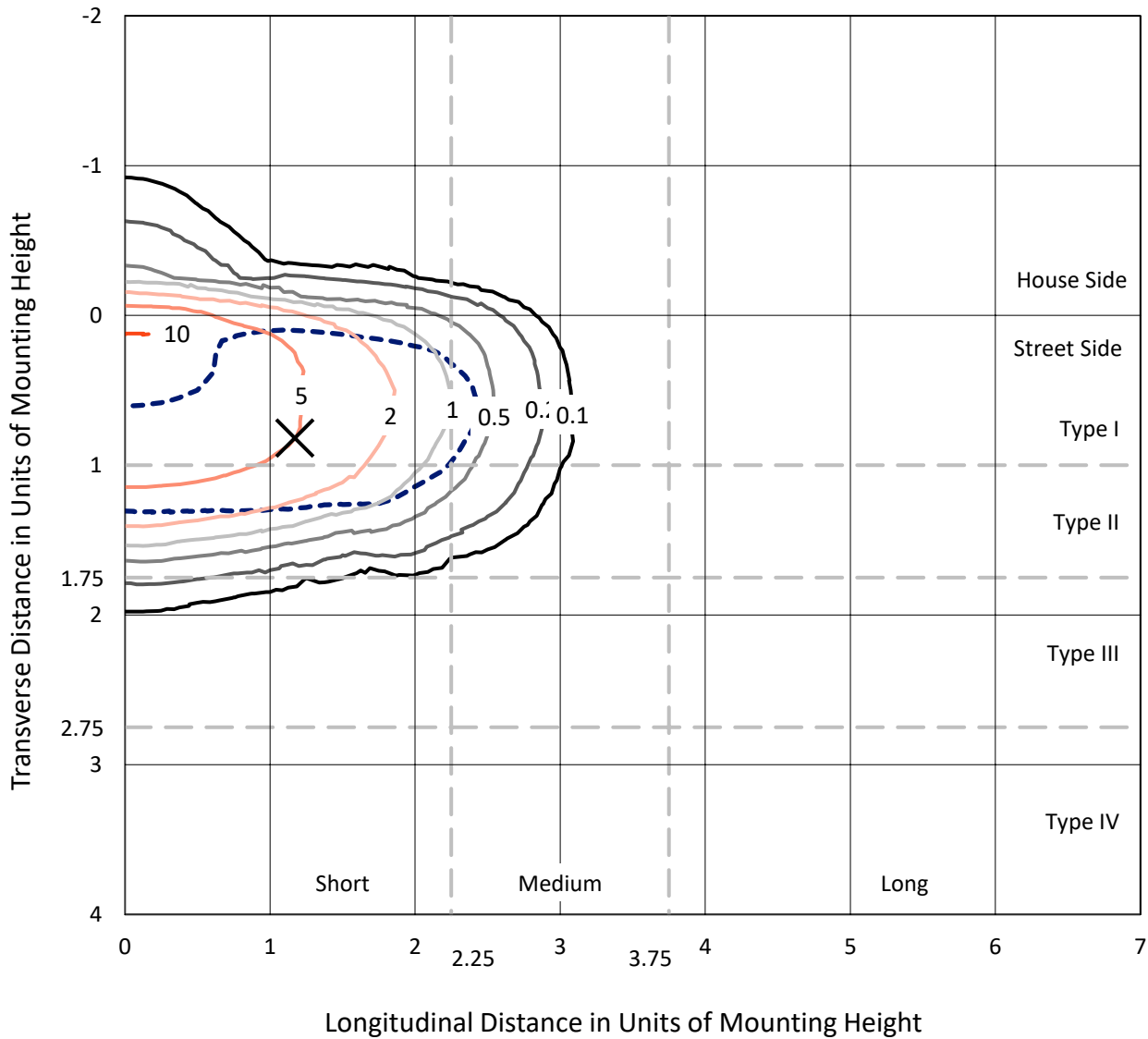
Input Watts (W): 159.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P635879
 CATALOG NUMBER: GWS-SA3E-760-U-AFL-W-HSS

Iso-Footcandle Lines of Horizontal Illumination

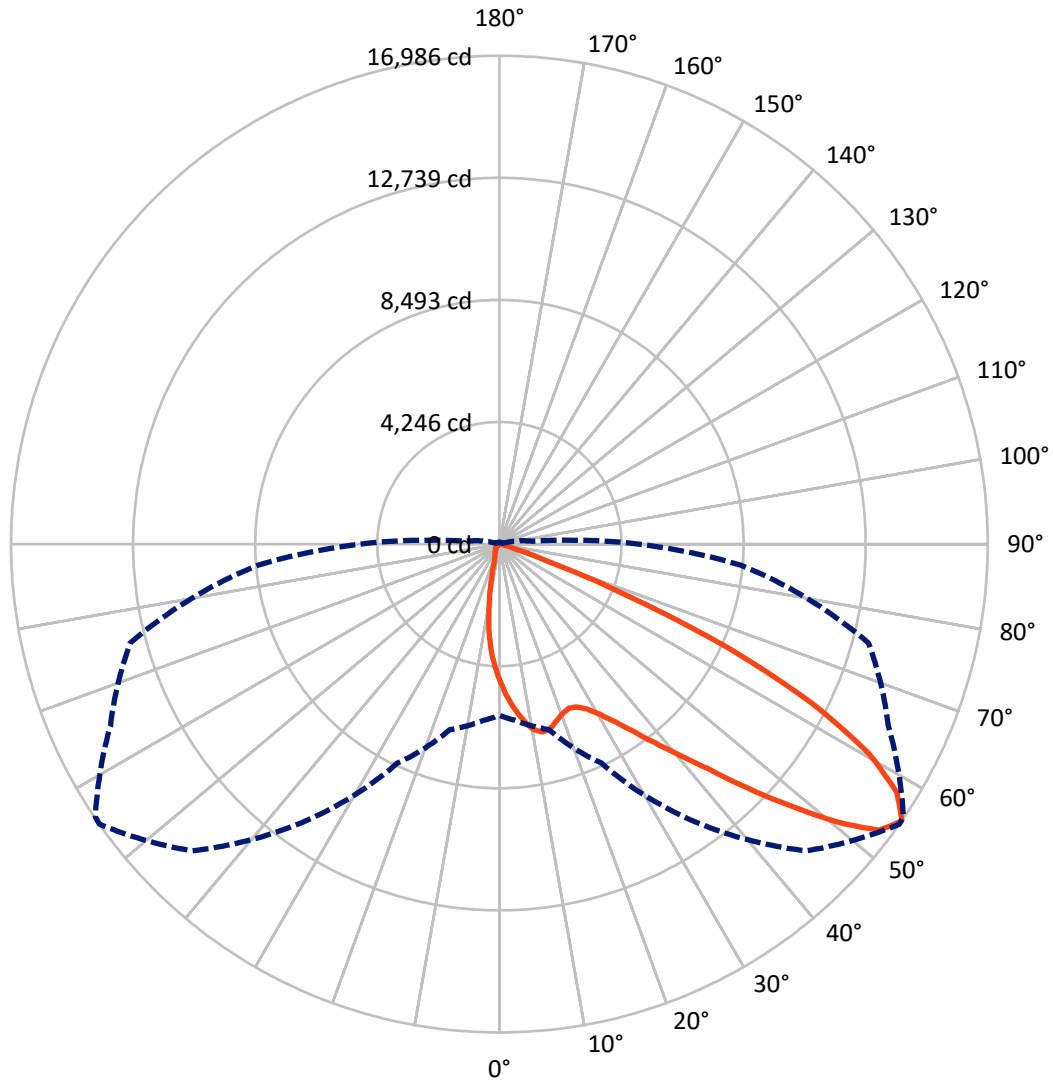
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.1 fc
 Type II - Short - N/A

REPORT NUMBER: P635879
CATALOG NUMBER: GWS-SA3E-760-U-AFL-W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

REPORT NUMBER: P635879
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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1148.1 | 0.0 | 1148.1 |
| | % Fixture | 6.2 | 0.0 | 6.2 |
| Street Side | Lumens | 17458.0 | 0.0 | 17458.0 |
| | % Fixture | 93.8 | 0.0 | 93.8 |
| Total | Lumens | 18606.1 | 0.0 | 18606.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 424.8 | 2.3 |
| 10°-20° | 1024.1 | 5.5 |
| 20°-30° | 1705.6 | 9.2 |
| 30°-40° | 2906.4 | 15.6 |
| 40°-50° | 4744.3 | 25.5 |
| 50°-60° | 4967.1 | 26.7 |
| 60°-70° | 2505.3 | 13.5 |
| 70°-80° | 316.5 | 1.7 |
| 80°-90° | 12.0 | 0.1 |
| 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° | 18606.1 | 100.0 |
| 0°-180° | 18606.1 | 100.0 |

Coefficient of Utilization



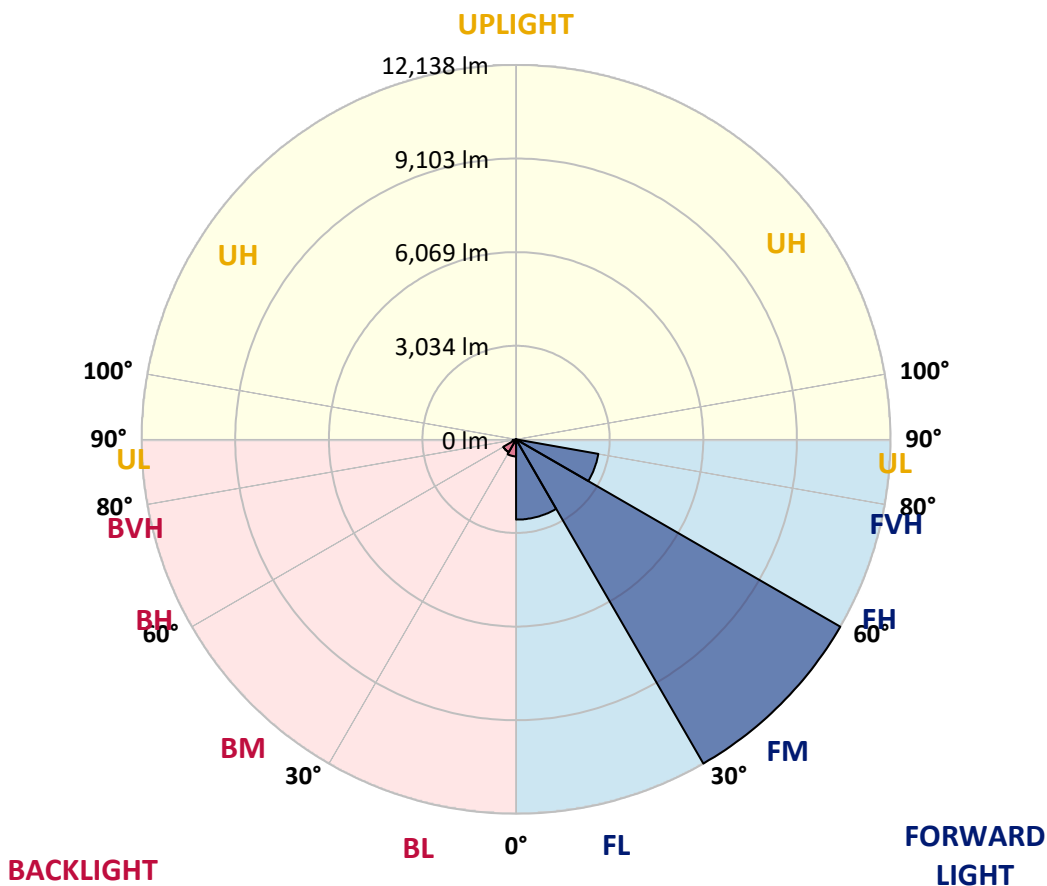
REPORT NUMBER: P635879

CATALOG NUMBER: GWS-SA3E-760-U-AFL-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2602.7 | 14.0 | | | |
| FM (30°-60°) | 12137.8 | 65.2 | | | |
| FH (60°-80°) | 2706.6 | 14.5 | | | G2/5000 |
| FVH (80°-90°) | 10.9 | 0.1 | | | G1/100 |
| BL (0°-30°) | 551.8 | 3.0 | B2/1000 | | |
| BM (30°-60°) | 480.0 | 2.6 | B1/1000 | | |
| BH (60°-80°) | 115.2 | 0.6 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.1 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 56° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0° | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 |
| 2.5° | 5603.6 | 5576.6 | 5617.9 | 5570.2 | 5489.1 | 5420.7 | 5331.6 | 5299.8 | 5156.7 | 5021.5 | 4891.0 |
| 5° | 6284.4 | 6292.3 | 6279.6 | 6212.8 | 6098.3 | 5971.0 | 5791.3 | 5751.5 | 5501.8 | 5244.1 | 4965.8 |
| 7.5° | 6453.0 | 6448.2 | 6475.2 | 6500.7 | 6481.6 | 6418.0 | 6222.3 | 6182.6 | 5872.4 | 5485.9 | 5080.3 |
| 10° | 5932.9 | 5936.0 | 5991.7 | 6163.5 | 6376.6 | 6597.7 | 6567.5 | 6545.2 | 6241.4 | 5759.5 | 5207.6 |
| 12.5° | 5198.0 | 5226.6 | 5285.5 | 5530.4 | 5891.5 | 6394.1 | 6705.9 | 6728.1 | 6580.2 | 6060.1 | 5357.1 |
| 15° | 4879.9 | 4886.3 | 4934.0 | 5081.9 | 5350.7 | 5971.0 | 6647.0 | 6709.1 | 6863.3 | 6362.3 | 5519.3 |
| 17.5° | 4871.9 | 4879.9 | 4900.6 | 4965.8 | 5140.7 | 5638.6 | 6457.7 | 6565.9 | 7076.5 | 6686.8 | 5713.4 |
| 20° | 5171.0 | 5166.2 | 5151.9 | 5116.9 | 5193.2 | 5528.8 | 6282.8 | 6402.1 | 7192.6 | 7003.3 | 5909.0 |
| 22.5° | 5713.4 | 5707.0 | 5643.4 | 5498.6 | 5436.6 | 5629.1 | 6196.9 | 6305.1 | 7262.6 | 7284.8 | 6069.6 |
| 25° | 6338.5 | 6383.0 | 6263.7 | 6044.2 | 5891.5 | 5885.1 | 6273.2 | 6349.6 | 7323.0 | 7534.6 | 6179.4 |
| 27.5° | 7024.0 | 7038.3 | 6936.5 | 6690.0 | 6468.9 | 6295.5 | 6494.3 | 6551.6 | 7389.8 | 7757.2 | 6241.4 |
| 30° | 7776.3 | 7771.6 | 7655.5 | 7369.1 | 7100.3 | 6850.6 | 6866.5 | 6888.8 | 7545.7 | 8011.7 | 6309.8 |
| 32.5° | 8716.4 | 8737.0 | 8530.3 | 8140.6 | 7817.7 | 7472.5 | 7353.2 | 7356.4 | 7827.2 | 8339.4 | 6413.2 |
| 35° | 9993.6 | 9942.7 | 9669.1 | 9114.0 | 8563.7 | 8191.5 | 7987.9 | 7970.4 | 8261.5 | 8780.0 | 6592.9 |
| 37.5° | 11210.4 | 11215.2 | 10928.9 | 10318.1 | 9623.0 | 9036.1 | 8748.2 | 8700.5 | 8872.2 | 9390.8 | 6892.0 |
| 40° | 12055.0 | 12070.9 | 11951.6 | 11631.9 | 10895.5 | 10065.2 | 9642.1 | 9592.8 | 9664.4 | 10163.8 | 7283.3 |
| 42.5° | 12501.9 | 12546.5 | 12579.9 | 12654.6 | 12096.3 | 11350.4 | 10699.8 | 10695.0 | 10620.3 | 11045.0 | 7736.6 |
| 45° | 12519.4 | 12586.2 | 12789.8 | 13300.4 | 13364.0 | 12816.9 | 12109.1 | 12002.5 | 11714.6 | 11988.2 | 8142.2 |
| 47.5° | 11827.5 | 11981.8 | 12414.5 | 13426.1 | 14094.1 | 14275.4 | 13574.0 | 13508.8 | 12700.8 | 12734.2 | 8446.0 |
| 50° | 10214.7 | 10375.3 | 11172.2 | 12781.9 | 14278.6 | 15433.4 | 15182.1 | 15046.9 | 13524.7 | 13227.2 | 8592.3 |
| 52.5° | 8560.5 | 8706.8 | 9247.6 | 11248.6 | 13513.5 | 15797.6 | 16537.2 | 16376.6 | 14264.3 | 13399.0 | 8531.9 |
| 55° | 5956.7 | 6152.4 | 6680.4 | 8407.8 | 11751.2 | 15088.2 | 16985.8 | 16952.4 | 14924.4 | 13290.9 | 8438.0 |
| 57.5° | 2920.3 | 3114.4 | 3640.8 | 5183.7 | 8705.2 | 13173.2 | 16300.2 | 16476.8 | 15318.9 | 13174.8 | 8361.7 |
| 60° | 1220.0 | 1299.5 | 1480.8 | 2274.5 | 4870.3 | 9955.4 | 14752.6 | 14997.6 | 15077.1 | 13017.3 | 8353.7 |
| 62.5° | 707.8 | 720.5 | 739.6 | 943.2 | 1894.4 | 5707.0 | 12237.9 | 12586.2 | 13806.2 | 12808.9 | 8228.1 |
| 65° | 534.4 | 539.2 | 531.3 | 579.0 | 782.6 | 2164.8 | 8842.0 | 9316.0 | 11523.7 | 11994.5 | 7731.8 |
| 67.5° | 439.0 | 439.0 | 418.3 | 427.9 | 491.5 | 811.2 | 4881.5 | 5543.2 | 8527.1 | 9858.4 | 6384.6 |
| 70° | 349.9 | 357.9 | 348.3 | 335.6 | 351.5 | 448.5 | 1736.9 | 2153.6 | 4965.8 | 5821.5 | 3723.5 |
| 72.5° | 265.6 | 265.6 | 281.5 | 272.0 | 260.9 | 281.5 | 606.0 | 680.8 | 1993.0 | 2427.2 | 1344.0 |
| 75° | 205.2 | 211.5 | 222.7 | 213.1 | 197.2 | 167.0 | 291.1 | 308.6 | 601.2 | 564.7 | 300.6 |
| 77.5° | 105.0 | 106.6 | 141.6 | 155.9 | 146.3 | 101.8 | 127.2 | 140.0 | 195.6 | 175.0 | 111.3 |
| 80° | 63.6 | 66.8 | 79.5 | 122.5 | 97.0 | 54.1 | 52.5 | 55.7 | 92.3 | 79.5 | 46.1 |
| 82.5° | 27.0 | 28.6 | 44.5 | 44.5 | 39.8 | 20.7 | 20.7 | 20.7 | 44.5 | 41.4 | 19.1 |
| 85° | 0.0 | 0.0 | 8.0 | 6.4 | 6.4 | 8.0 | 8.0 | 8.0 | 11.1 | 15.9 | 9.5 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 4.8 | 4.8 |
| 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: P635879

CATALOG NUMBER: GWS-SA3E-760-U-AFL-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 | 4806.7 |
| 2.5° | 4806.7 | 4704.9 | 4568.1 | 4444.1 | 4277.1 | 4183.2 | 4052.8 | 3946.2 | 3855.6 | 3826.9 | 3814.2 |
| 5° | 4808.3 | 4633.4 | 4340.7 | 4048.0 | 3688.6 | 3405.4 | 3114.4 | 2883.7 | 2694.4 | 2634.0 | 2618.1 |
| 7.5° | 4840.1 | 4582.5 | 4108.5 | 3577.2 | 2976.0 | 2479.7 | 2035.9 | 1638.3 | 1453.8 | 1391.8 | 1379.0 |
| 10° | 4883.1 | 4539.5 | 3839.7 | 3012.6 | 2148.9 | 1511.0 | 1070.5 | 816.0 | 695.1 | 628.3 | 637.8 |
| 12.5° | 4938.7 | 4504.5 | 3542.2 | 2401.8 | 1422.0 | 830.3 | 588.5 | 493.1 | 467.6 | 454.9 | 448.5 |
| 15° | 5013.5 | 4463.2 | 3173.2 | 1795.8 | 871.6 | 534.4 | 453.3 | 427.9 | 418.3 | 412.0 | 410.4 |
| 17.5° | 5089.8 | 4415.4 | 2797.8 | 1262.9 | 579.0 | 443.8 | 407.2 | 394.5 | 388.1 | 383.3 | 381.7 |
| 20° | 5171.0 | 4334.3 | 2357.2 | 870.0 | 456.5 | 399.2 | 375.4 | 361.1 | 353.1 | 345.2 | 343.6 |
| 22.5° | 5206.0 | 4203.9 | 1935.7 | 609.2 | 405.6 | 367.4 | 337.2 | 319.7 | 310.2 | 303.8 | 303.8 |
| 25° | 5172.6 | 3992.4 | 1499.9 | 462.9 | 369.0 | 332.4 | 302.2 | 283.1 | 275.2 | 268.8 | 268.8 |
| 27.5° | 5083.5 | 3720.4 | 1094.3 | 383.3 | 329.2 | 295.8 | 267.2 | 249.7 | 243.4 | 240.2 | 240.2 |
| 30° | 4984.9 | 3376.8 | 771.4 | 329.2 | 284.7 | 257.7 | 233.8 | 222.7 | 221.1 | 217.9 | 217.9 |
| 32.5° | 4900.6 | 3055.5 | 531.3 | 289.5 | 251.3 | 224.3 | 208.4 | 203.6 | 205.2 | 202.0 | 203.6 |
| 35° | 4854.4 | 2740.6 | 394.5 | 257.7 | 224.3 | 198.8 | 190.9 | 190.9 | 190.9 | 189.3 | 189.3 |
| 37.5° | 4873.5 | 2430.4 | 321.3 | 235.4 | 200.4 | 181.3 | 173.4 | 176.6 | 179.7 | 179.7 | 179.7 |
| 40° | 4969.0 | 2155.2 | 284.7 | 214.7 | 179.7 | 165.4 | 159.1 | 163.8 | 168.6 | 171.8 | 171.8 |
| 42.5° | 5089.8 | 1932.6 | 257.7 | 197.2 | 165.4 | 149.5 | 146.3 | 151.1 | 155.9 | 159.1 | 159.1 |
| 45° | 5166.2 | 1708.3 | 230.6 | 175.0 | 151.1 | 132.0 | 132.0 | 138.4 | 136.8 | 138.4 | 138.4 |
| 47.5° | 5201.2 | 1530.1 | 203.6 | 151.1 | 128.8 | 114.5 | 116.1 | 119.3 | 116.1 | 119.3 | 119.3 |
| 50° | 5115.3 | 1350.4 | 179.7 | 125.7 | 106.6 | 100.2 | 103.4 | 101.8 | 101.8 | 108.2 | 108.2 |
| 52.5° | 4957.8 | 1216.8 | 159.1 | 106.6 | 90.7 | 89.1 | 92.3 | 85.9 | 87.5 | 87.5 | 85.9 |
| 55° | 4841.7 | 1140.4 | 141.6 | 92.3 | 77.9 | 79.5 | 77.9 | 66.8 | 60.4 | 54.1 | 52.5 |
| 57.5° | 4784.5 | 1110.2 | 128.8 | 82.7 | 70.0 | 70.0 | 63.6 | 46.1 | 35.0 | 27.0 | 23.9 |
| 60° | 4771.7 | 1073.6 | 116.1 | 71.6 | 62.0 | 58.9 | 46.1 | 27.0 | 17.5 | 12.7 | 11.1 |
| 62.5° | 4650.8 | 984.6 | 105.0 | 57.3 | 54.1 | 47.7 | 28.6 | 15.9 | 9.5 | 6.4 | 4.8 |
| 65° | 4254.8 | 809.6 | 93.8 | 44.5 | 41.4 | 35.0 | 17.5 | 9.5 | 4.8 | 1.6 | 0.0 |
| 67.5° | 3384.7 | 574.2 | 82.7 | 33.4 | 28.6 | 22.3 | 11.1 | 6.4 | 1.6 | 0.0 | 0.0 |
| 70° | 1951.6 | 310.2 | 68.4 | 23.9 | 19.1 | 14.3 | 8.0 | 3.2 | 0.0 | 0.0 | 0.0 |
| 72.5° | 652.1 | 144.7 | 52.5 | 15.9 | 14.3 | 11.1 | 4.8 | 1.6 | 0.0 | 0.0 | 0.0 |
| 75° | 143.2 | 85.9 | 35.0 | 11.1 | 9.5 | 8.0 | 3.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 54.1 | 60.4 | 17.5 | 8.0 | 6.4 | 4.8 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 20.7 | 39.8 | 8.0 | 4.8 | 4.8 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 11.1 | 15.9 | 4.8 | 3.2 | 3.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 6.4 | 8.0 | 3.2 | 1.6 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 3.2 | 1.6 | 1.6 | 1.6 | 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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-9-R4

Test Date: 10/23/2019

Luminaire Tested: SA1C-760-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-9-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-760-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 5474 | CRI (Ra): | 71.7 | R9: | -27.1 |
| CIE u': | 0.2052 | R1: | 70.6 | R10: | 40.8 |
| CIE v': | 0.4804 | R2: | 74.6 | R11: | 74.6 |
| Duv: | 0.0025 | R3: | 78.3 | R12: | 50.4 |
| CIE x: | 0.3330 | R4: | 73.8 | R13: | 70.0 |
| CIE y: | 0.3466 | R5: | 72.4 | R14: | 87.8 |
| CIE z: | 0.3204 | R6: | 67.5 | | |
| Peak Wavelength (nm): | 442 | R7: | 77.5 | | |
| Dominant Wavelength (nm): | 554 | R8: | 58.9 | | |
| Purity: | 4.1 | | | | |
| Rf: | 72.1 | | | | |
| Rg: | 97.2 | | | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

REPORT NUMBER: SP1-1908-441-9-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 |

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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 5700K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-9-R4

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5527.6 M/P: 0.74

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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Summary

$R_f = 72.1$
 $R_g = 97.2$
 CIE $R_a = 71.7$
 $R_g = -27.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)