

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: P317163

Luminaire Tested: **GLEON-SA9B-750-U-RW**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P317163  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GLEON-SA9B-750-U-RW  
Description: GALLEON AREA AND ROADWAY LUMINAIRE  
(9) 70 CRI, 5000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR  
WIDE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 52223 lumens  
Efficiency: N/A  
Efficacy: 139.6 lumens/watt  
Luminous Opening: Rectangular (W 2.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B5 - U0 - G5

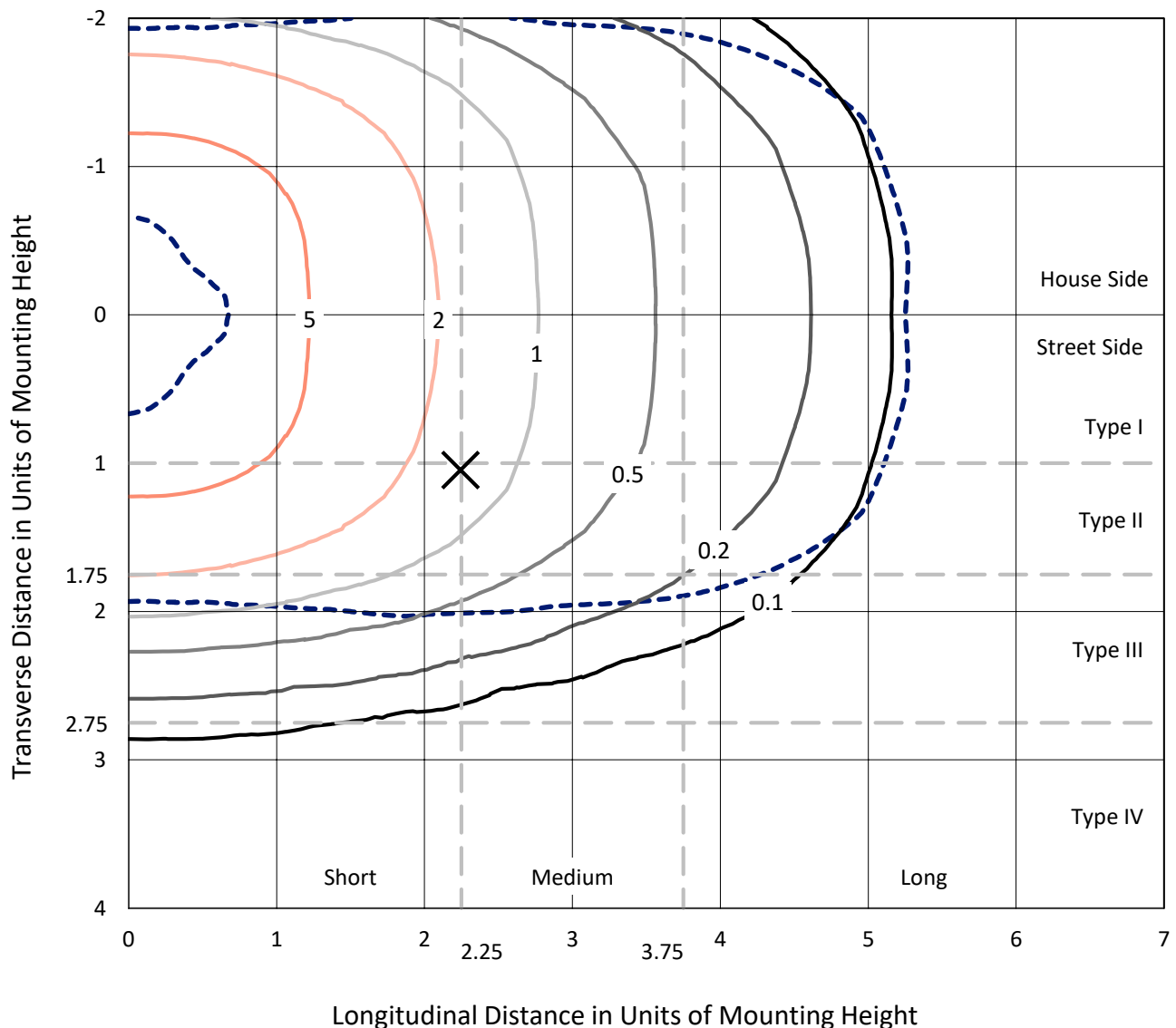
Input Watts (W): 374  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



REPORT NUMBER: P317163  
 CATALOG NUMBER: GLEON-SA9B-750-U-RW

## Iso-Footcandle Lines of Horizontal Illumination

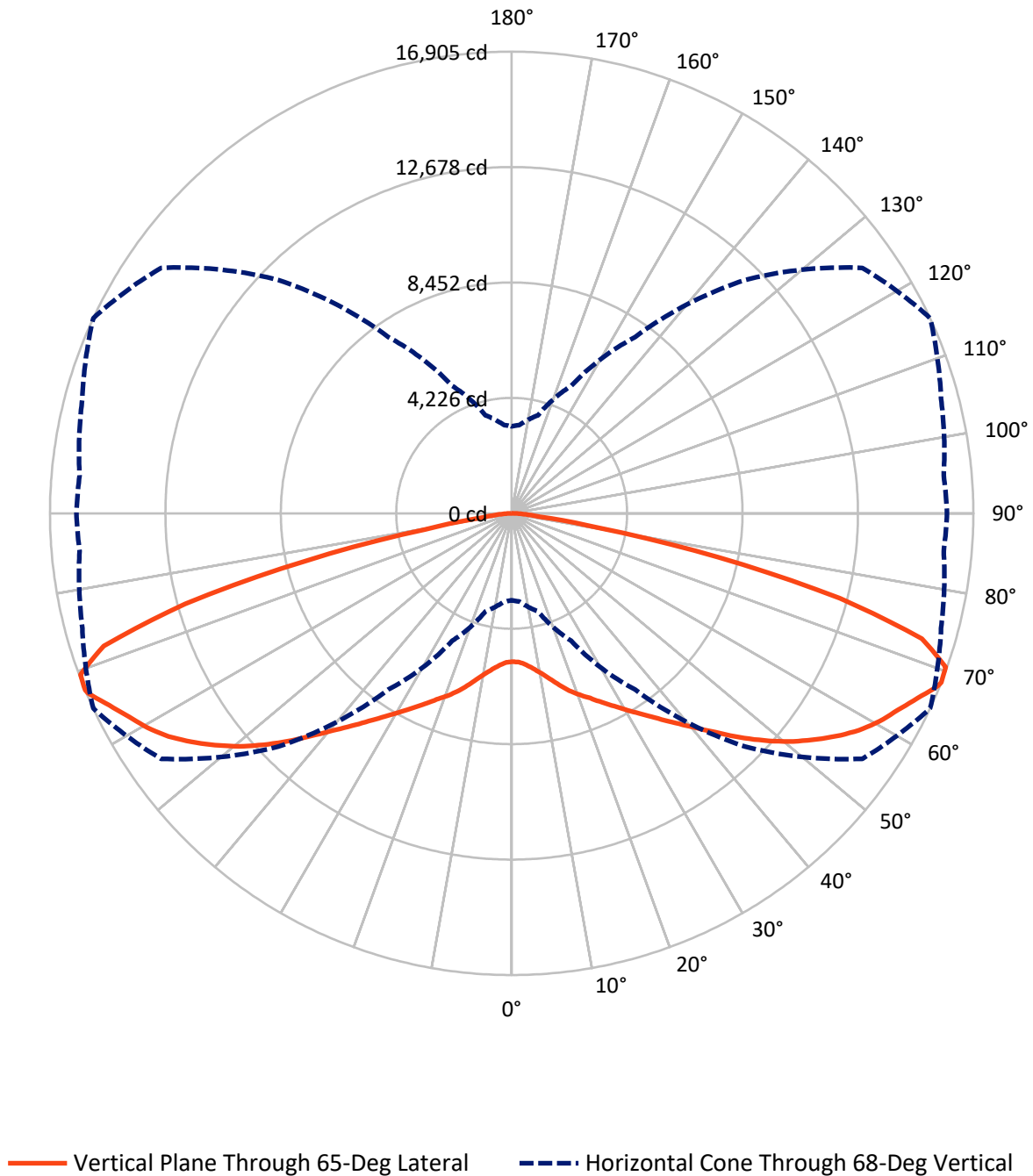
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.8 fc  
 Type III - Short - N/A

REPORT NUMBER: P317163  
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## Luminous Intensity Polar Plot



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CATALOG NUMBER: GLEON-SA9B-750-U-RW

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 26111.5  | 0.0    | 26111.5 |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Street Side</b> | Lumens    | 26111.5  | 0.0    | 26111.5 |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Total</b>       | Lumens    | 52223.0  | 0.0    | 52223.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 531.6   | 1.0       |
| 10°-20°   | 1780.1  | 3.4       |
| 20°-30°   | 3470.8  | 6.6       |
| 30°-40°   | 5830.7  | 11.2      |
| 40°-50°   | 9187.0  | 17.6      |
| 50°-60°   | 12286.1 | 23.5      |
| 60°-70°   | 11943.6 | 22.9      |
| 70°-80°   | 6529.0  | 12.5      |
| 80°-90°   | 664.0   | 1.3       |
| 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°    | 52223.0 | 100.0     |
| 0°-180°   | 52223.0 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P317163

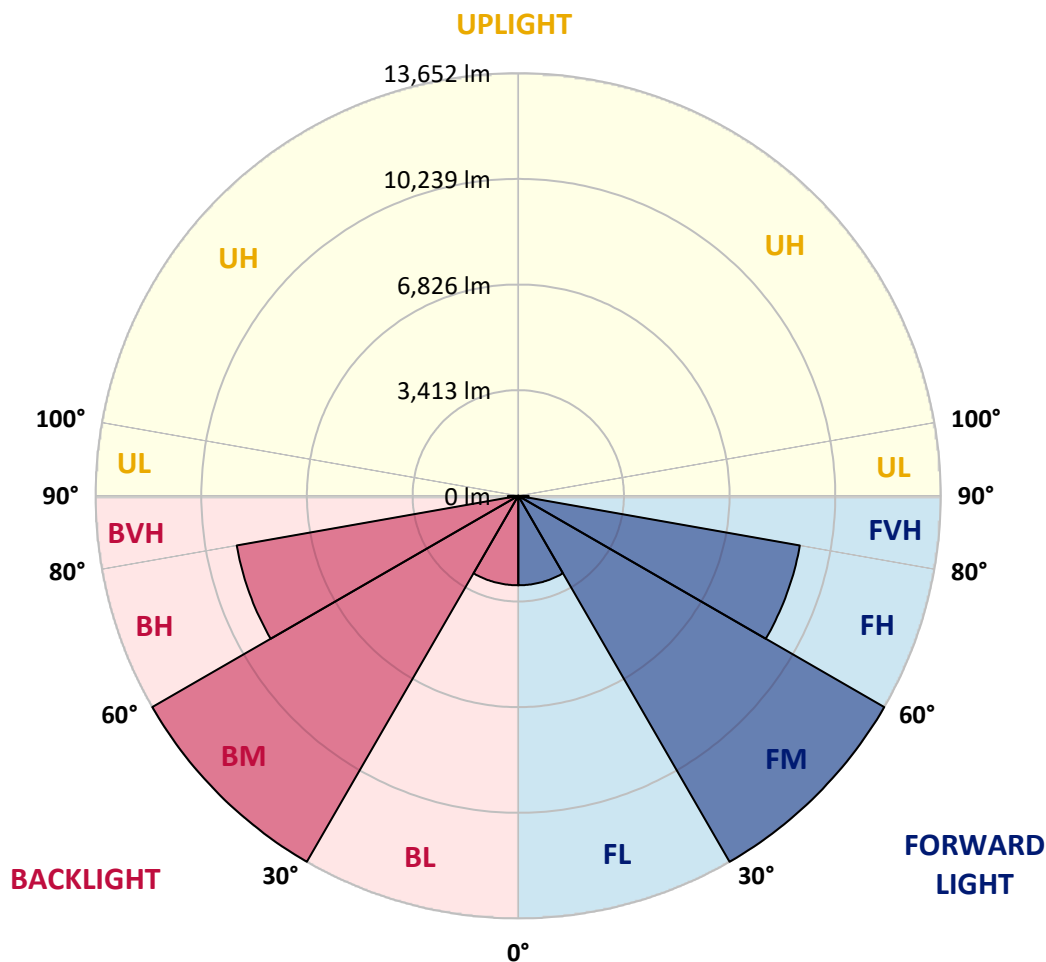
CATALOG NUMBER: GLEON-SA9B-750-U-RW

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 2891.3  | 5.5       |                         |      |          |
| FM   | (30°-60°)   | 13651.9 | 26.1      |                         |      |          |
| FH   | (60°-80°)   | 9236.3  | 17.7      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 332.0   | 0.6       |                         |      | G3/500   |
| BL   | (0°-30°)    | 2891.3  | 5.5       | B4/5000                 |      |          |
| BM   | (30°-60°)   | 13651.9 | 26.1      | B5                      |      |          |
| BH   | (60°-80°)   | 9236.3  | 17.7      | B5                      |      | G5       |
| BVH  | (80°-90°)   | 332.0   | 0.6       |                         |      | G3/500   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B5-U0-G5**

Type III Short





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CATALOG NUMBER: GLEON-SA9B-750-U-RW

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     | 90°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 5430.0  | 5430.0  | 5430.0  | 5430.0  | 5430.0  | 5430.0  | 5430.0  | 5430.0  | 5430.0  | 5430.0  | 5430.0  |
| 2.5°  | 5391.4  | 5393.2  | 5401.9  | 5412.5  | 5421.2  | 5444.0  | 5449.2  | 5458.0  | 5461.5  | 5470.2  | 5470.2  |
| 5°    | 5344.2  | 5347.7  | 5368.7  | 5396.7  | 5428.2  | 5484.2  | 5524.5  | 5570.0  | 5592.8  | 5617.3  | 5615.6  |
| 7.5°  | 5338.9  | 5347.7  | 5377.4  | 5423.0  | 5475.5  | 5568.3  | 5652.3  | 5743.4  | 5804.7  | 5860.7  | 5857.2  |
| 10°   | 5393.2  | 5407.2  | 5449.2  | 5517.5  | 5596.3  | 5711.9  | 5836.2  | 5958.8  | 6065.6  | 6151.4  | 6154.9  |
| 12.5° | 5475.5  | 5493.0  | 5559.5  | 5662.9  | 5781.9  | 5930.8  | 6077.8  | 6216.2  | 6363.3  | 6491.1  | 6501.6  |
| 15°   | 5584.1  | 5606.8  | 5706.6  | 5860.7  | 6042.8  | 6219.7  | 6377.3  | 6519.1  | 6689.0  | 6865.8  | 6883.3  |
| 17.5° | 5745.1  | 5776.7  | 5908.0  | 6116.4  | 6356.3  | 6550.6  | 6715.2  | 6822.0  | 6963.9  | 7146.0  | 7179.2  |
| 20°   | 5990.3  | 6030.6  | 6196.9  | 6445.6  | 6738.0  | 6941.1  | 7067.2  | 7089.9  | 7160.0  | 7322.8  | 7361.4  |
| 22.5° | 6309.0  | 6344.0  | 6529.6  | 6825.5  | 7153.0  | 7373.6  | 7440.2  | 7349.1  | 7342.1  | 7473.4  | 7510.2  |
| 25°   | 6664.4  | 6696.0  | 6911.3  | 7244.0  | 7596.0  | 7839.4  | 7837.6  | 7660.8  | 7538.2  | 7639.8  | 7678.3  |
| 27.5° | 7063.7  | 7112.7  | 7319.3  | 7669.5  | 8046.0  | 8285.9  | 8271.9  | 7998.7  | 7765.8  | 7792.1  | 7825.4  |
| 30°   | 7522.5  | 7576.7  | 7778.1  | 8133.6  | 8510.0  | 8744.7  | 8727.2  | 8366.5  | 8016.2  | 7946.2  | 7970.7  |
| 32.5° | 8091.5  | 8156.3  | 8347.2  | 8697.4  | 9030.1  | 9242.0  | 9191.2  | 8765.7  | 8317.4  | 8165.1  | 8187.8  |
| 35°   | 8776.2  | 8814.7  | 9016.1  | 9361.0  | 9630.7  | 9776.0  | 9669.2  | 9228.0  | 8699.1  | 8515.3  | 8515.3  |
| 37.5° | 9469.6  | 9499.4  | 9725.3  | 10059.7 | 10320.6 | 10397.7 | 10189.3 | 9734.0  | 9198.2  | 8937.3  | 8942.5  |
| 40°   | 10135.0 | 10215.5 | 10469.4 | 10812.6 | 11070.1 | 11091.1 | 10814.4 | 10311.9 | 9753.3  | 9483.6  | 9515.1  |
| 42.5° | 10830.2 | 10909.0 | 11211.9 | 11600.6 | 11828.2 | 11863.3 | 11539.3 | 10959.7 | 10380.1 | 10161.3 | 10196.3 |
| 45°   | 11450.0 | 11513.1 | 11863.3 | 12315.0 | 12598.7 | 12689.8 | 12306.3 | 11702.2 | 11057.8 | 10844.2 | 10852.9 |
| 47.5° | 11882.5 | 11964.8 | 12350.1 | 12882.4 | 13295.6 | 13435.7 | 13059.2 | 12425.4 | 11724.9 | 11465.8 | 11488.5 |
| 50°   | 12274.8 | 12318.5 | 12709.0 | 13290.4 | 13815.7 | 14104.6 | 13782.4 | 13139.8 | 12399.1 | 12124.2 | 12148.7 |
| 52.5° | 12493.6 | 12549.7 | 12927.9 | 13533.8 | 14155.4 | 14621.2 | 14425.0 | 13782.4 | 13050.5 | 12782.6 | 12812.3 |
| 55°   | 12341.3 | 12383.3 | 12836.8 | 13588.0 | 14365.5 | 14939.8 | 14969.6 | 14411.0 | 13689.6 | 13455.0 | 13539.0 |
| 57.5° | 11647.9 | 11700.4 | 12253.8 | 13237.8 | 14391.8 | 15155.2 | 15379.4 | 14994.1 | 14286.7 | 14095.8 | 14144.9 |
| 60°   | 10564.0 | 10597.3 | 11187.4 | 12294.0 | 13880.5 | 15244.5 | 15640.3 | 15470.4 | 14871.6 | 14680.7 | 14747.2 |
| 62.5° | 8632.6  | 8681.6  | 9387.3  | 10870.4 | 12800.1 | 14980.1 | 15892.4 | 15864.4 | 15416.1 | 15241.0 | 15300.6 |
| 65°   | 5901.0  | 5986.8  | 6767.8  | 8643.1  | 11134.8 | 14171.1 | 16121.8 | 16323.2 | 15897.7 | 15677.0 | 15755.8 |
| 67.5° | 3563.4  | 3626.4  | 4192.0  | 5706.6  | 8520.5  | 12539.2 | 15885.4 | 16845.0 | 16237.4 | 15881.9 | 15946.7 |
| 68°   | 3185.1  | 3242.9  | 3715.7  | 5149.8  | 7881.4  | 12078.6 | 15670.0 | 16904.5 | 16274.1 | 15878.4 | 15936.2 |
| 70°   | 1924.4  | 1962.9  | 2279.8  | 3183.4  | 5254.9  | 9581.7  | 14200.9 | 16855.5 | 16508.8 | 15927.4 | 15960.7 |
| 72.5° | 1253.7  | 1266.0  | 1318.5  | 1633.7  | 2684.3  | 5358.2  | 10658.6 | 15706.8 | 16860.7 | 16212.8 | 16207.6 |
| 75°   | 1041.9  | 1034.9  | 1040.1  | 1076.9  | 1323.8  | 2349.9  | 6228.4  | 12407.8 | 16072.8 | 15762.8 | 15652.5 |
| 77.5° | 880.8   | 875.5   | 873.8   | 875.5   | 886.0   | 1134.7  | 2703.6  | 7729.1  | 12299.3 | 13943.5 | 14041.6 |
| 80°   | 712.7   | 705.7   | 728.4   | 717.9   | 686.4   | 705.7   | 1132.9  | 3214.9  | 5797.7  | 6237.2  | 5845.0  |
| 82.5° | 518.3   | 492.0   | 590.1   | 562.1   | 535.8   | 497.3   | 625.1   | 1038.4  | 1383.3  | 949.1   | 667.1   |
| 85°   | 399.2   | 371.2   | 448.3   | 430.8   | 367.7   | 253.9   | 371.2   | 507.8   | 560.3   | 320.4   | 252.1   |
| 87.5° | 162.8   | 171.6   | 323.9   | 255.7   | 215.4   | 122.6   | 152.3   | 203.1   | 273.2   | 136.6   | 105.1   |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |

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

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

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

### Test Information

Test Method: LM-79-2008  
 Report Number: SP1-1908-441-4-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/28/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **SA1C-750-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):                  | 4884   | CRI (Ra): | 73.5 |      |       |
| CIE u':                   | 0.2101 | R1:       | 70.5 | R9:  | -28.4 |
| CIE v':                   | 0.4904 | R2:       | 77.7 | R10: | 48.6  |
| Duv:                      | 0.0037 | R3:       | 84.6 | R11: | 73.2  |
| CIE x:                    | 0.3493 | R4:       | 74.7 | R12: | 50.7  |
| CIE y:                    | 0.3624 | R5:       | 71.9 | R13: | 71.2  |
| CIE z:                    | 0.2884 | R6:       | 70.7 | R14: | 91.4  |
| Peak Wavelength (nm):     | 444    | R7:       | 81.2 |      |       |
| Dominant Wavelength (nm): | 571    | R8:       | 56.9 |      |       |
| Purity:                   | 13.7   |           |      |      |       |
| Rf:                       | 74.9   |           |      |      |       |
| Rg:                       | 96.3   |           |      |      |       |



### Test Conditions

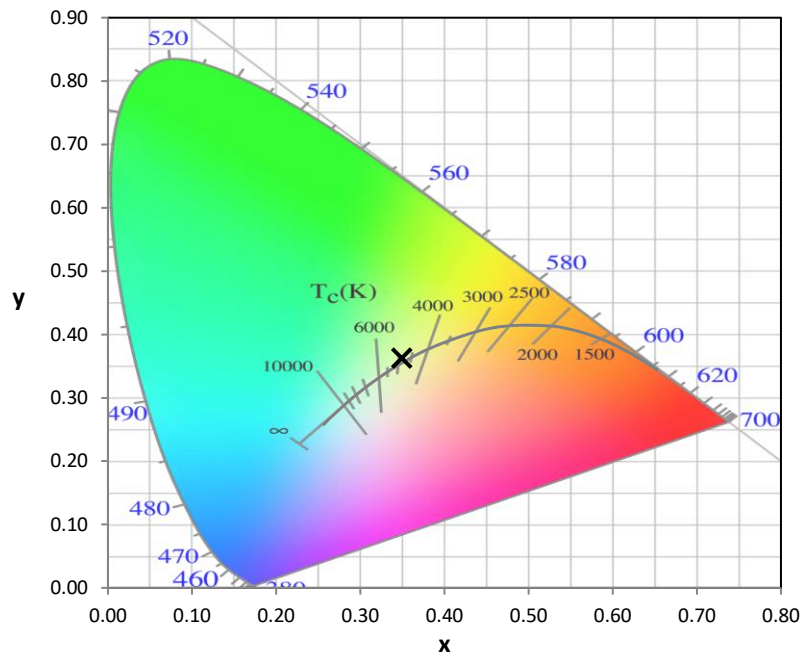
Stabilization Time: 240M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0./44%  
 Sphere Temperature (°C): 25.7

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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 5000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

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Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5

S/P: 1.77

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 5378.9 M/P: 0.71**

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

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**Summary**

$R_f = 74.9$   
 $R_g = 96.3$   
 CIE  $R_a = 73.5$   
 $R_g = -28.4$



**Color Vector Graphics**



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

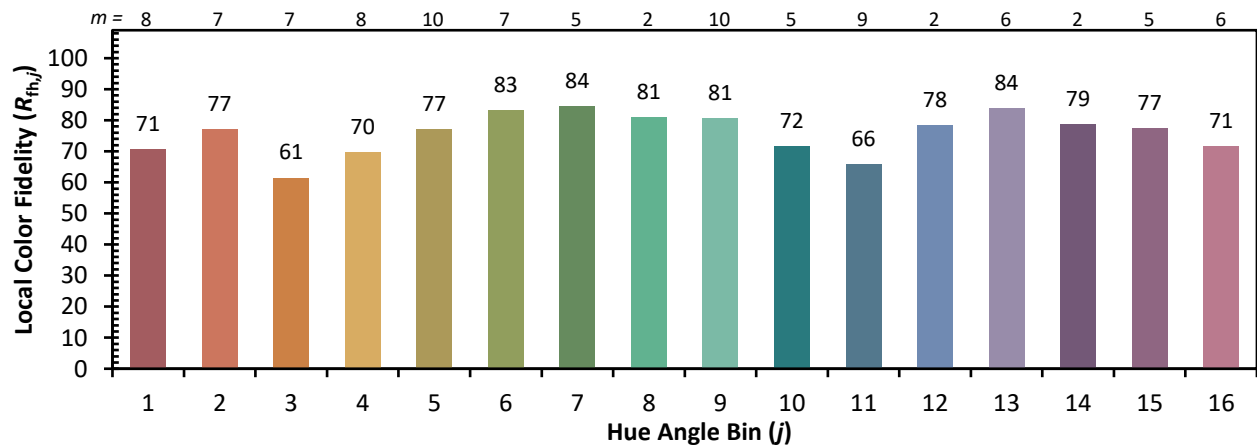
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 |            |



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**Color Rendition by Hue-Angle Bin**



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**Measure Comparisons**



(END OF REPORT)