

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: P386294

Luminaire Tested: **GPC-SA2A-722-U-5MQ**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P386294  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GPC-SA2A-722-U-5MQ  
Description: GALLEON PEDESTRIAN LUMINAIRE  
(2) 70 CRI, 2200K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7510 lumens  
Efficiency: N/A  
Efficacy: 113.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B3 - U0 - G1

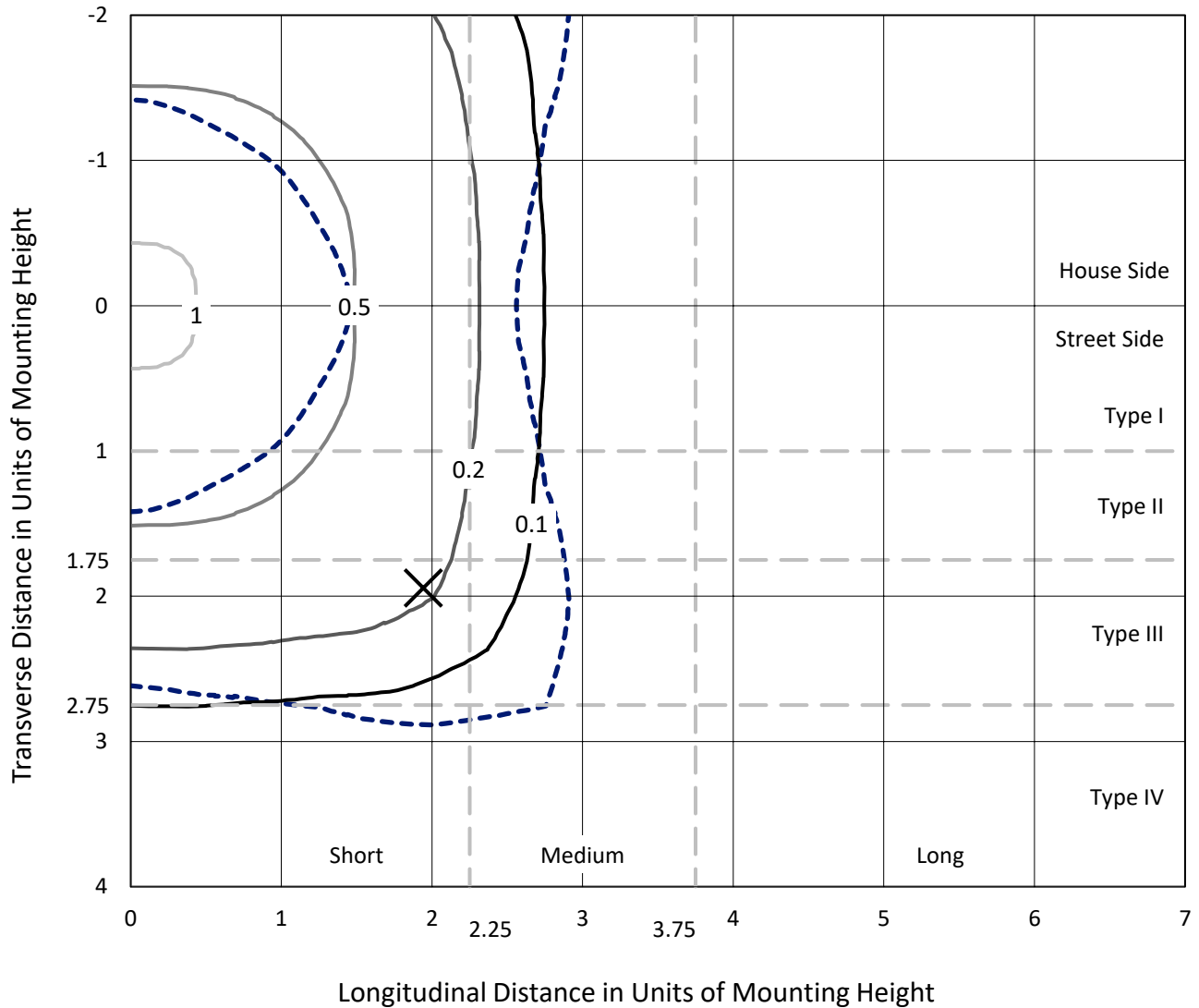
Input Watts (W): 66  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

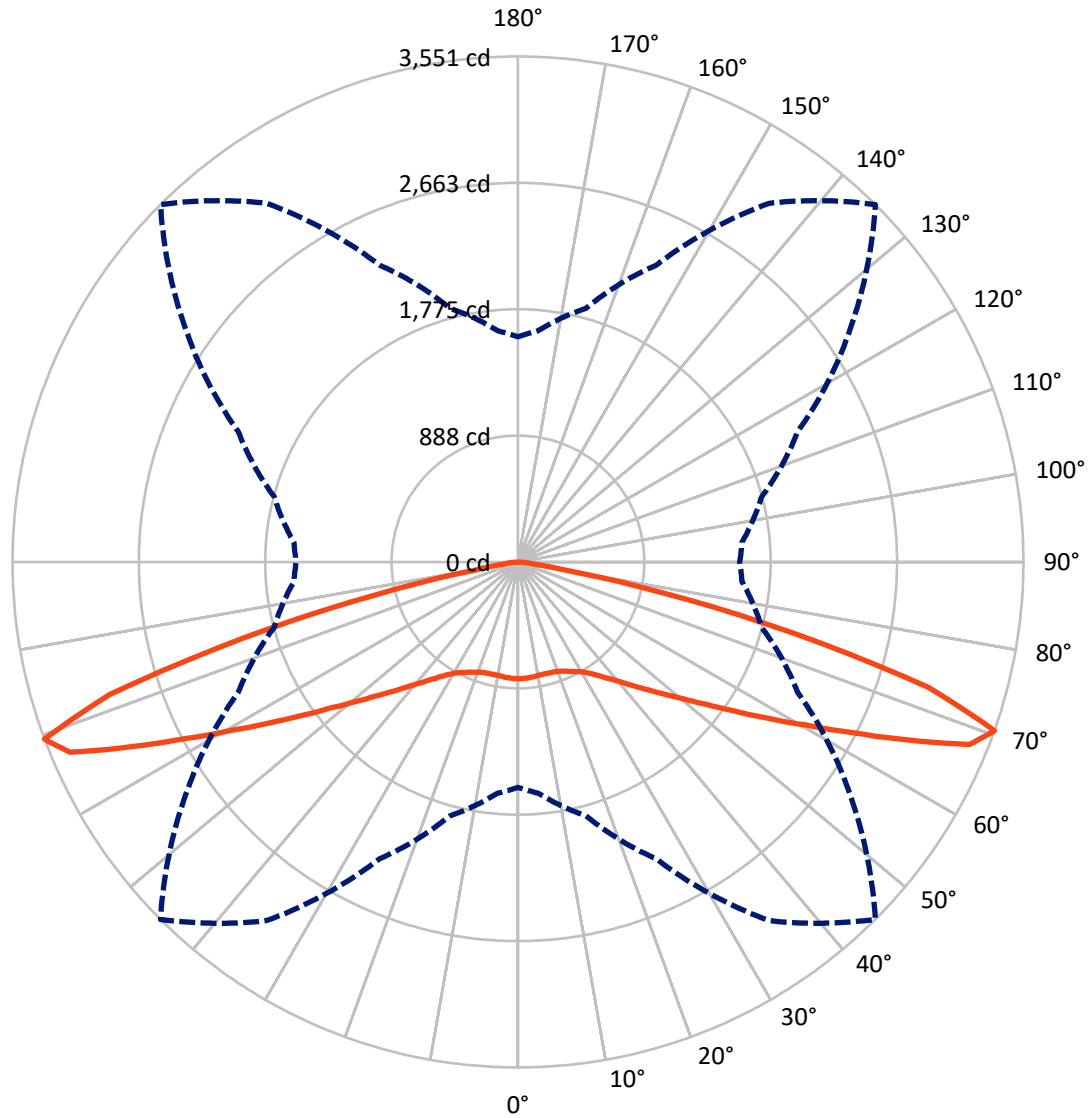
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.3 fc  
 Type V - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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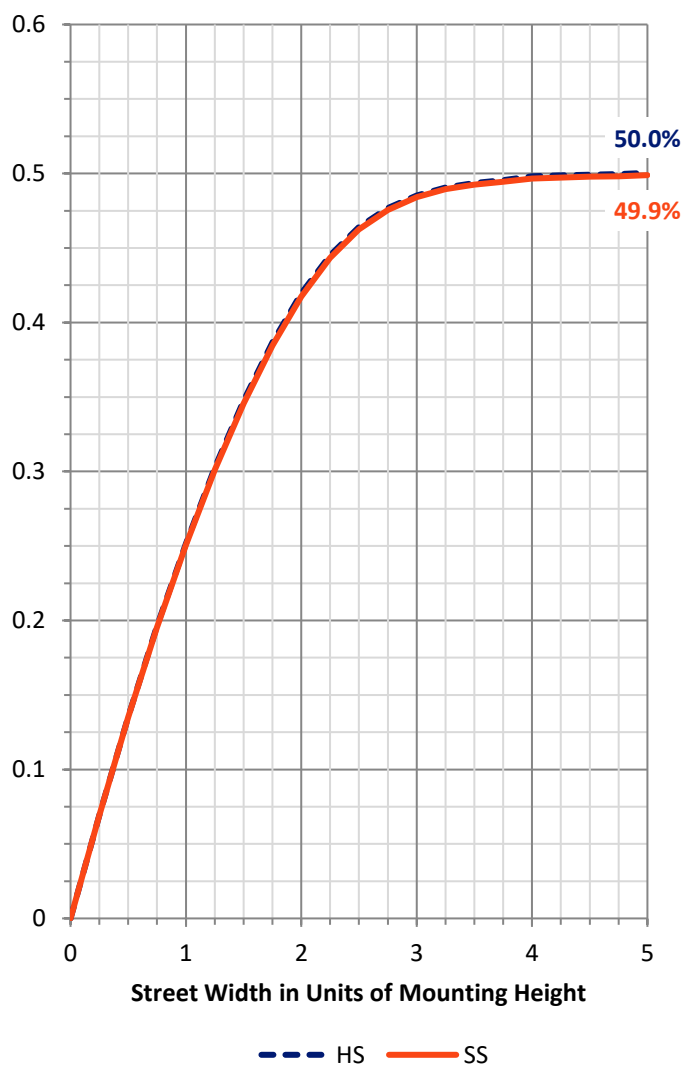
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 3755.0   | 0.0    | 3755.0 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 3755.0   | 0.0    | 3755.0 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 7510.0   | 0.0    | 7510.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 77.7   | 1.0       |
| 10°-20°   | 228.1  | 3.0       |
| 20°-30°   | 388.2  | 5.2       |
| 30°-40°   | 615.7  | 8.2       |
| 40°-50°   | 1002.0 | 13.3      |
| 50°-60°   | 1652.1 | 22.0      |
| 60°-70°   | 2425.3 | 32.3      |
| 70°-80°   | 1072.4 | 14.3      |
| 80°-90°   | 48.6   | 0.6       |
| 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°    | 7510.0 | 100.0     |
| 0°-180°   | 7510.0 | 100.0     |

**Coefficient of Utilization**



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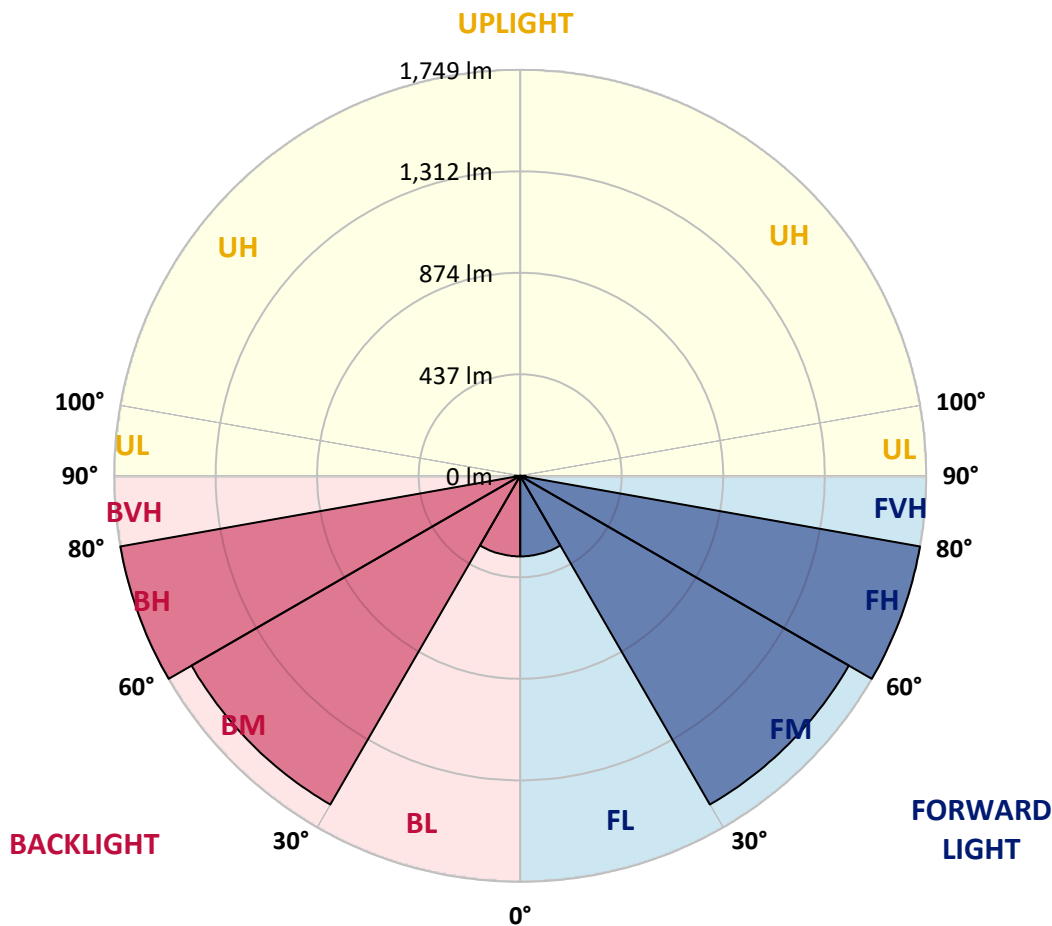
CATALOG NUMBER: GPC-SA2A-722-U-5MQ

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 347.0  | 4.6       |                         |      |         |
| FM (30°-60°)   | 1634.9 | 21.8      |                         |      |         |
| FH (60°-80°)   | 1748.9 | 23.3      |                         |      | G1/1800 |
| FVH (80°-90°)  | 24.3   | 0.3       |                         |      | G1/100  |
| BL (0°-30°)    | 347.0  | 4.6       | B1/500                  |      |         |
| BM (30°-60°)   | 1634.9 | 21.8      | B2/2500                 |      |         |
| BH (60°-80°)   | 1748.9 | 23.3      | B3/2500                 |      | G1/1800 |
| BVH (80°-90°)  | 24.3   | 0.3       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G1**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 820.2  | 820.2  | 820.2  | 820.2  | 820.2  | 820.2  | 820.2  | 820.2  | 820.2  | 820.2  | 820.2  |
| 2.5°  | 819.0  | 818.2  | 820.0  | 819.7  | 818.2  | 818.5  | 818.5  | 819.2  | 819.2  | 818.7  | 818.7  |
| 5°    | 816.0  | 815.5  | 817.5  | 817.5  | 816.0  | 816.5  | 817.0  | 817.7  | 817.5  | 817.0  | 816.7  |
| 7.5°  | 812.3  | 812.0  | 814.0  | 814.0  | 813.0  | 813.5  | 813.0  | 813.2  | 812.8  | 812.3  | 811.5  |
| 10°   | 806.0  | 806.5  | 808.3  | 808.8  | 808.8  | 809.0  | 808.5  | 807.3  | 806.5  | 805.8  | 805.0  |
| 12.5° | 800.3  | 800.1  | 802.6  | 803.8  | 805.8  | 808.0  | 806.5  | 803.1  | 801.6  | 800.1  | 799.6  |
| 15°   | 796.6  | 796.8  | 799.3  | 801.6  | 805.0  | 809.8  | 808.0  | 802.6  | 799.6  | 797.8  | 797.3  |
| 17.5° | 795.9  | 796.3  | 799.6  | 803.6  | 807.3  | 812.5  | 811.5  | 806.0  | 801.1  | 797.8  | 797.1  |
| 20°   | 797.6  | 797.8  | 802.8  | 808.5  | 815.0  | 820.0  | 817.7  | 811.8  | 805.0  | 800.1  | 798.8  |
| 22.5° | 800.8  | 801.8  | 808.0  | 817.0  | 826.9  | 833.6  | 830.9  | 820.7  | 810.3  | 804.1  | 802.3  |
| 25°   | 811.0  | 811.3  | 819.7  | 831.9  | 843.8  | 851.5  | 848.3  | 833.9  | 820.5  | 813.5  | 811.3  |
| 27.5° | 832.1  | 832.9  | 841.3  | 855.5  | 865.7  | 870.7  | 868.7  | 857.0  | 845.6  | 838.1  | 838.8  |
| 30°   | 862.7  | 863.7  | 873.1  | 888.8  | 895.0  | 896.3  | 895.8  | 890.3  | 879.9  | 869.9  | 870.7  |
| 32.5° | 900.0  | 900.5  | 913.2  | 927.3  | 932.3  | 933.3  | 932.3  | 927.3  | 914.9  | 901.5  | 902.2  |
| 35°   | 948.0  | 949.5  | 961.6  | 975.3  | 979.3  | 981.3  | 979.5  | 973.1  | 960.1  | 947.0  | 946.5  |
| 37.5° | 1007.1 | 1007.4 | 1020.0 | 1034.2 | 1039.2 | 1039.7 | 1037.7 | 1033.5 | 1017.3 | 1005.4 | 1004.6 |
| 40°   | 1075.7 | 1076.7 | 1091.6 | 1106.8 | 1108.8 | 1106.5 | 1109.3 | 1106.8 | 1090.1 | 1076.5 | 1078.7 |
| 42.5° | 1159.2 | 1161.5 | 1179.4 | 1194.3 | 1188.6 | 1187.3 | 1189.1 | 1189.8 | 1176.4 | 1159.7 | 1158.2 |
| 45°   | 1256.4 | 1258.4 | 1280.8 | 1292.7 | 1289.0 | 1280.8 | 1284.2 | 1290.2 | 1271.6 | 1250.9 | 1252.9 |
| 47.5° | 1367.3 | 1372.2 | 1396.1 | 1407.3 | 1398.1 | 1386.9 | 1393.6 | 1402.6 | 1380.7 | 1355.1 | 1353.8 |
| 50°   | 1490.5 | 1496.8 | 1528.6 | 1544.2 | 1535.0 | 1514.4 | 1525.6 | 1531.6 | 1500.0 | 1466.9 | 1464.2 |
| 52.5° | 1622.0 | 1628.2 | 1668.3 | 1700.6 | 1694.6 | 1662.5 | 1678.2 | 1672.0 | 1635.7 | 1591.2 | 1587.7 |
| 55°   | 1770.9 | 1773.4 | 1816.6 | 1868.8 | 1874.8 | 1851.2 | 1850.2 | 1840.0 | 1786.3 | 1734.9 | 1732.4 |
| 57.5° | 1924.0 | 1925.8 | 1981.7 | 2043.3 | 2071.4 | 2071.4 | 2043.6 | 2021.9 | 1950.6 | 1891.0 | 1884.7 |
| 60°   | 2089.3 | 2095.5 | 2157.4 | 2241.2 | 2306.8 | 2326.2 | 2276.9 | 2218.0 | 2140.5 | 2067.7 | 2060.5 |
| 62.5° | 2236.4 | 2243.6 | 2338.3 | 2463.1 | 2568.5 | 2639.1 | 2518.8 | 2422.8 | 2281.7 | 2164.9 | 2151.2 |
| 65°   | 2255.1 | 2274.5 | 2412.4 | 2638.3 | 2874.2 | 3015.1 | 2784.5 | 2548.1 | 2290.9 | 2128.6 | 2114.6 |
| 67.5° | 2059.5 | 2092.3 | 2278.7 | 2630.4 | 3117.8 | 3420.3 | 2954.2 | 2476.5 | 2125.8 | 1946.4 | 1931.0 |
| 70°   | 1582.5 | 1630.2 | 1845.2 | 2300.8 | 3075.8 | 3550.8 | 2847.9 | 2168.1 | 1772.4 | 1579.3 | 1557.7 |
| 72.5° | 868.2  | 887.8  | 1081.2 | 1575.5 | 2465.8 | 3017.4 | 2375.4 | 1603.1 | 1175.4 | 956.4  | 920.1  |
| 75°   | 275.4  | 282.4  | 380.8  | 644.7  | 1394.9 | 1998.6 | 1508.9 | 786.9  | 433.2  | 319.4  | 315.7  |
| 77.5° | 122.3  | 123.0  | 137.7  | 188.2  | 480.4  | 1012.6 | 577.1  | 214.2  | 147.6  | 129.0  | 133.2  |
| 80°   | 77.3   | 77.3   | 85.3   | 93.2   | 130.7  | 294.0  | 156.1  | 101.9  | 87.0   | 80.8   | 82.5   |
| 82.5° | 37.0   | 41.0   | 55.4   | 59.7   | 71.8   | 98.9   | 80.0   | 66.6   | 58.2   | 43.2   | 40.3   |
| 85°   | 24.4   | 20.4   | 35.0   | 39.5   | 41.8   | 47.5   | 46.5   | 44.0   | 38.0   | 21.6   | 24.1   |
| 87.5° | 10.9   | 10.4   | 18.1   | 16.7   | 15.7   | 11.9   | 17.9   | 22.1   | 21.4   | 10.7   | 10.7   |
| 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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Peachtree City, GA 30269





**Test Information**

Test Method: LM-79-2008 Report  
 Number: SP1-1908-441-10-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-722-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): 2237  
 CIE u': 0.2876  
 CIE v': 0.5346  
 Duv: -0.0006  
 CIE x: 0.5005  
 CIE y: 0.4134  
 CIE z: 0.0860  
 Peak Wavelength (nm): 603  
 Dominant Wavelength (nm): 587  
 Purity: 74.5  
 Rf: 69.8  
 Rg: 99.2

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 |      |       |
| R1:       | 68.9 | R9:  | -17.4 |
| R2:       | 83.0 | R10: | 61.3  |
| R3:       | 95.2 | R11: | 59.8  |
| R4:       | 66.2 | R12: | 50.5  |
| R5:       | 65.9 | R13: | 71.1  |
| R6:       | 76.3 | R14: | 96.9  |
| R7:       | 76.7 |      |       |
| R8:       | 43.8 |      |       |



**Test Conditions**

Stabilization Time: 71M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.7/41%  
 Sphere Temperature (°C): 25.6

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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 2200K 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    | 1768          | NR            | 490    | 5206          | NR            | 620    | 130919        | NR            | 750    | 8553          | NR            | 880    | 2713          | NR            |
| 365    | 1569          | NR            | 495    | 7286          | NR            | 625    | 125335        | NR            | 755    | 7696          | NR            | 885    | 2316          | NR            |
| 370    | 1594          | NR            | 500    | 10654         | NR            | 630    | 118388        | NR            | 760    | 6978          | NR            | 890    | 2539          | NR            |
| 375    | 1744          | NR            | 505    | 15189         | NR            | 635    | 111855        | NR            | 765    | 6377          | NR            | 895    | 1933          | NR            |
| 380    | 1659          | NR            | 510    | 20541         | NR            | 640    | 104062        | NR            | 770    | 5600          | NR            | 900    | 2216          | NR            |
| 385    | 1504          | NR            | 515    | 26492         | NR            | 645    | 96365         | NR            | 775    | 5000          | NR            | 905    | 2067          | NR            |
| 390    | 1541          | NR            | 520    | 32294         | NR            | 650    | 88651         | NR            | 780    | 4709          | NR            | 910    | 1959          | NR            |
| 395    | 1355          | NR            | 525    | 38123         | NR            | 655    | 81152         | NR            | 785    | 4305          | NR            | 915    | 1874          | NR            |
| 400    | 1243          | NR            | 530    | 43232         | NR            | 660    | 73523         | NR            | 790    | 4040          | NR            | 920    | 1484          | NR            |
| 405    | 1417          | NR            | 535    | 48012         | NR            | 665    | 66123         | NR            | 795    | 3642          | NR            | 925    | 1914          | NR            |
| 410    | 2147          | NR            | 540    | 52623         | NR            | 670    | 58677         | NR            | 800    | 3594          | NR            | 930    | 1948          | NR            |
| 415    | 3837          | NR            | 545    | 57516         | NR            | 675    | 52349         | NR            | 805    | 3190          | NR            | 935    | 2079          | NR            |
| 420    | 7159          | NR            | 550    | 62613         | NR            | 680    | 46159         | NR            | 810    | 3241          | NR            | 940    | 2263          | NR            |
| 425    | 12599         | NR            | 555    | 68554         | NR            | 685    | 40525         | NR            | 815    | 2732          | NR            | 945    | 1688          | NR            |
| 430    | 19019         | NR            | 560    | 75325         | NR            | 690    | 35615         | NR            | 820    | 2612          | NR            | 950    | 1560          | NR            |
| 435    | 24875         | NR            | 565    | 82533         | NR            | 695    | 31158         | NR            | 825    | 2966          | NR            | 955    | 2826          | NR            |
| 440    | 29103         | NR            | 570    | 90909         | NR            | 700    | 27409         | NR            | 830    | 2574          | NR            | 960    | 1477          | NR            |
| 445    | 29901         | NR            | 575    | 99621         | NR            | 705    | 24204         | NR            | 835    | 2633          | NR            | 965    | 1568          | NR            |
| 450    | 24862         | NR            | 580    | 108484        | NR            | 710    | 21558         | NR            | 840    | 2526          | NR            | 970    | 2030          | NR            |
| 455    | 15942         | NR            | 585    | 116679        | NR            | 715    | 19222         | NR            | 845    | 2631          | NR            | 975    | 1986          | NR            |
| 460    | 9916          | NR            | 590    | 123752        | NR            | 720    | 17310         | NR            | 850    | 2079          | NR            | 980    | 2540          | NR            |
| 465    | 7051          | NR            | 595    | 129324        | NR            | 725    | 15280         | NR            | 855    | 2309          | NR            | 985    | 1139          | NR            |
| 470    | 5227          | NR            | 600    | 134082        | NR            | 730    | 13282         | NR            | 860    | 2528          | NR            | 990    | 2018          | NR            |
| 475    | 4257          | NR            | 605    | 135698        | NR            | 735    | 11753         | NR            | 865    | 2121          | NR            | 995    | 3445          | NR            |
| 480    | 4052          | NR            | 610    | 135144        | NR            | 740    | 10654         | NR            | 870    | 2751          | NR            | 1000   | 3704          | NR            |
| 485    | 4298          | NR            | 615    | 134180        | NR            | 745    | 9451          | NR            | 875    | 2317          | NR            |        |               |               |

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Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| $\lambda$ (nm) | Power ( $\mu\text{W}/\text{nm}$ ) | Lumens ( $\phi/\text{nm}$ ) | $\lambda$ (nm) | Power ( $\mu\text{W}/\text{nm}$ ) | Lumens ( $\phi/\text{nm}$ ) | $\lambda$ (nm) | Power ( $\mu\text{W}/\text{nm}$ ) | Lumens ( $\phi/\text{nm}$ ) | $\lambda$ (nm) | Power ( $\mu\text{W}/\text{nm}$ ) | Lumens ( $\phi/\text{nm}$ ) | $\lambda$ (nm) | Power ( $\mu\text{W}/\text{nm}$ ) | Lumens ( $\phi/\text{nm}$ ) |
|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|
| 360            | 1768                              | NR                          | 490            | 5206                              | NR                          | 620            | 130919                            | NR                          | 750            | 8553                              | NR                          | 880            | 2713                              | NR                          |
| 365            | 1569                              | NR                          | 495            | 7286                              | NR                          | 625            | 125335                            | NR                          | 755            | 7696                              | NR                          | 885            | 2316                              | NR                          |
| 370            | 1594                              | NR                          | 500            | 10654                             | NR                          | 630            | 118388                            | NR                          | 760            | 6978                              | NR                          | 890            | 2539                              | NR                          |
| 375            | 1744                              | NR                          | 505            | 15189                             | NR                          | 635            | 111855                            | NR                          | 765            | 6377                              | NR                          | 895            | 1933                              | NR                          |
| 380            | 1659                              | NR                          | 510            | 20541                             | NR                          | 640            | 104062                            | NR                          | 770            | 5600                              | NR                          | 900            | 2216                              | NR                          |
| 385            | 1504                              | NR                          | 515            | 26492                             | NR                          | 645            | 96365                             | NR                          | 775            | 5000                              | NR                          | 905            | 2067                              | NR                          |
| 390            | 1541                              | NR                          | 520            | 32294                             | NR                          | 650            | 88651                             | NR                          | 780            | 4709                              | NR                          | 910            | 1959                              | NR                          |
| 395            | 1355                              | NR                          | 525            | 38123                             | NR                          | 655            | 81152                             | NR                          | 785            | 4305                              | NR                          | 915            | 1874                              | NR                          |
| 400            | 1243                              | NR                          | 530            | 43232                             | NR                          | 660            | 73523                             | NR                          | 790            | 4040                              | NR                          | 920            | 1484                              | NR                          |
| 405            | 1417                              | NR                          | 535            | 48012                             | NR                          | 665            | 66123                             | NR                          | 795            | 3642                              | NR                          | 925            | 1914                              | NR                          |
| 410            | 2147                              | NR                          | 540            | 52623                             | NR                          | 670            | 58677                             | NR                          | 800            | 3594                              | NR                          | 930            | 1948                              | NR                          |
| 415            | 3837                              | NR                          | 545            | 57516                             | NR                          | 675            | 52349                             | NR                          | 805            | 3190                              | NR                          | 935            | 2079                              | NR                          |
| 420            | 7159                              | NR                          | 550            | 62613                             | NR                          | 680            | 46159                             | NR                          | 810            | 3241                              | NR                          | 940            | 2263                              | NR                          |
| 425            | 12599                             | NR                          | 555            | 68554                             | NR                          | 685            | 40525                             | NR                          | 815            | 2732                              | NR                          | 945            | 1688                              | NR                          |
| 430            | 19019                             | NR                          | 560            | 75325                             | NR                          | 690            | 35615                             | NR                          | 820            | 2612                              | NR                          | 950            | 1560                              | NR                          |
| 435            | 24875                             | NR                          | 565            | 82533                             | NR                          | 695            | 31158                             | NR                          | 825            | 2966                              | NR                          | 955            | 2826                              | NR                          |
| 440            | 29103                             | NR                          | 570            | 90909                             | NR                          | 700            | 27409                             | NR                          | 830            | 2574                              | NR                          | 960            | 1477                              | NR                          |
| 445            | 29901                             | NR                          | 575            | 99621                             | NR                          | 705            | 24204                             | NR                          | 835            | 2633                              | NR                          | 965            | 1568                              | NR                          |
| 450            | 24862                             | NR                          | 580            | 108484                            | NR                          | 710            | 21558                             | NR                          | 840            | 2526                              | NR                          | 970            | 2030                              | NR                          |
| 455            | 15942                             | NR                          | 585            | 116679                            | NR                          | 715            | 19222                             | NR                          | 845            | 2631                              | NR                          | 975            | 1986                              | NR                          |
| 460            | 9916                              | NR                          | 590            | 123752                            | NR                          | 720            | 17310                             | NR                          | 850            | 2079                              | NR                          | 980            | 2540                              | NR                          |
| 465            | 7051                              | NR                          | 595            | 129324                            | NR                          | 725            | 15280                             | NR                          | 855            | 2309                              | NR                          | 985            | 1139                              | NR                          |
| 470            | 5227                              | NR                          | 600            | 134082                            | NR                          | 730            | 13282                             | NR                          | 860            | 2528                              | NR                          | 990            | 2018                              | NR                          |
| 475            | 4257                              | NR                          | 605            | 135698                            | NR                          | 735            | 11753                             | NR                          | 865            | 2121                              | NR                          | 995            | 3445                              | NR                          |
| 480            | 4052                              | NR                          | 610            | 135144                            | NR                          | 740            | 10654                             | NR                          | 870            | 2751                              | NR                          | 1000           | 3704                              | NR                          |
| 485            | 4298                              | NR                          | 615            | 134180                            | NR                          | 745            | 9451                              | NR                          | 875            | 2317                              | NR                          |                |                                   |                             |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 1470.8 M/P: 0.27**

| 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    | 1768          | NR            | 490    | 5206          | NR            | 620    | 130919        | NR            | 750    | 8553          | NR            | 880    | 2713          | NR            |
| 365    | 1569          | NR            | 495    | 7286          | NR            | 625    | 125335        | NR            | 755    | 7696          | NR            | 885    | 2316          | NR            |
| 370    | 1594          | NR            | 500    | 10654         | NR            | 630    | 118388        | NR            | 760    | 6978          | NR            | 890    | 2539          | NR            |
| 375    | 1744          | NR            | 505    | 15189         | NR            | 635    | 111855        | NR            | 765    | 6377          | NR            | 895    | 1933          | NR            |
| 380    | 1659          | NR            | 510    | 20541         | NR            | 640    | 104062        | NR            | 770    | 5600          | NR            | 900    | 2216          | NR            |
| 385    | 1504          | NR            | 515    | 26492         | NR            | 645    | 96365         | NR            | 775    | 5000          | NR            | 905    | 2067          | NR            |
| 390    | 1541          | NR            | 520    | 32294         | NR            | 650    | 88651         | NR            | 780    | 4709          | NR            | 910    | 1959          | NR            |
| 395    | 1355          | NR            | 525    | 38123         | NR            | 655    | 81152         | NR            | 785    | 4305          | NR            | 915    | 1874          | NR            |
| 400    | 1243          | NR            | 530    | 43232         | NR            | 660    | 73523         | NR            | 790    | 4040          | NR            | 920    | 1484          | NR            |
| 405    | 1417          | NR            | 535    | 48012         | NR            | 665    | 66123         | NR            | 795    | 3642          | NR            | 925    | 1914          | NR            |
| 410    | 2147          | NR            | 540    | 52623         | NR            | 670    | 58677         | NR            | 800    | 3594          | NR            | 930    | 1948          | NR            |
| 415    | 3837          | NR            | 545    | 57516         | NR            | 675    | 52349         | NR            | 805    | 3190          | NR            | 935    | 2079          | NR            |
| 420    | 7159          | NR            | 550    | 62613         | NR            | 680    | 46159         | NR            | 810    | 3241          | NR            | 940    | 2263          | NR            |
| 425    | 12599         | NR            | 555    | 68554         | NR            | 685    | 40525         | NR            | 815    | 2732          | NR            | 945    | 1688          | NR            |
| 430    | 19019         | NR            | 560    | 75325         | NR            | 690    | 35615         | NR            | 820    | 2612          | NR            | 950    | 1560          | NR            |
| 435    | 24875         | NR            | 565    | 82533         | NR            | 695    | 31158         | NR            | 825    | 2966          | NR            | 955    | 2826          | NR            |
| 440    | 29103         | NR            | 570    | 90909         | NR            | 700    | 27409         | NR            | 830    | 2574          | NR            | 960    | 1477          | NR            |
| 445    | 29901         | NR            | 575    | 99621         | NR            | 705    | 24204         | NR            | 835    | 2633          | NR            | 965    | 1568          | NR            |
| 450    | 24862         | NR            | 580    | 108484        | NR            | 710    | 21558         | NR            | 840    | 2526          | NR            | 970    | 2030          | NR            |
| 455    | 15942         | NR            | 585    | 116679        | NR            | 715    | 19222         | NR            | 845    | 2631          | NR            | 975    | 1986          | NR            |
| 460    | 9916          | NR            | 590    | 123752        | NR            | 720    | 17310         | NR            | 850    | 2079          | NR            | 980    | 2540          | NR            |
| 465    | 7051          | NR            | 595    | 129324        | NR            | 725    | 15280         | NR            | 855    | 2309          | NR            | 985    | 1139          | NR            |
| 470    | 5227          | NR            | 600    | 134082        | NR            | 730    | 13282         | NR            | 860    | 2528          | NR            | 990    | 2018          | NR            |
| 475    | 4257          | NR            | 605    | 135698        | NR            | 735    | 11753         | NR            | 865    | 2121          | NR            | 995    | 3445          | NR            |
| 480    | 4052          | NR            | 610    | 135144        | NR            | 740    | 10654         | NR            | 870    | 2751          | NR            | 1000   | 3704          | NR            |
| 485    | 4298          | NR            | 615    | 134180        | NR            | 745    | 9451          | NR            | 875    | 2317          | NR            |        |               |               |

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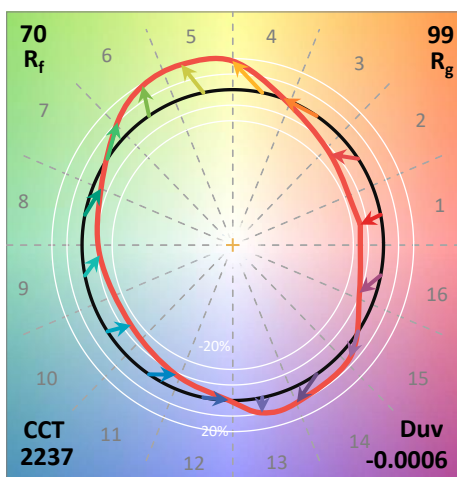
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**Summary**

$R_f = 69.8$   
 $R_g = 99.2$   
 $CIE R_a = 72.0$   
 $R_g = -17.4$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 |            |





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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)