

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: P318491

Luminaire Tested: **GLEON-SA7C-760-U-T3**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P318491  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GLEON-SA7C-760-U-T3  
Description: GALLEON AREA AND ROADWAY LUMINAIRE  
(7) 70 CRI, 5700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 50039 lumens  
Efficiency: N/A  
Efficacy: 128.0 lumens/watt  
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B4 - U0 - G5

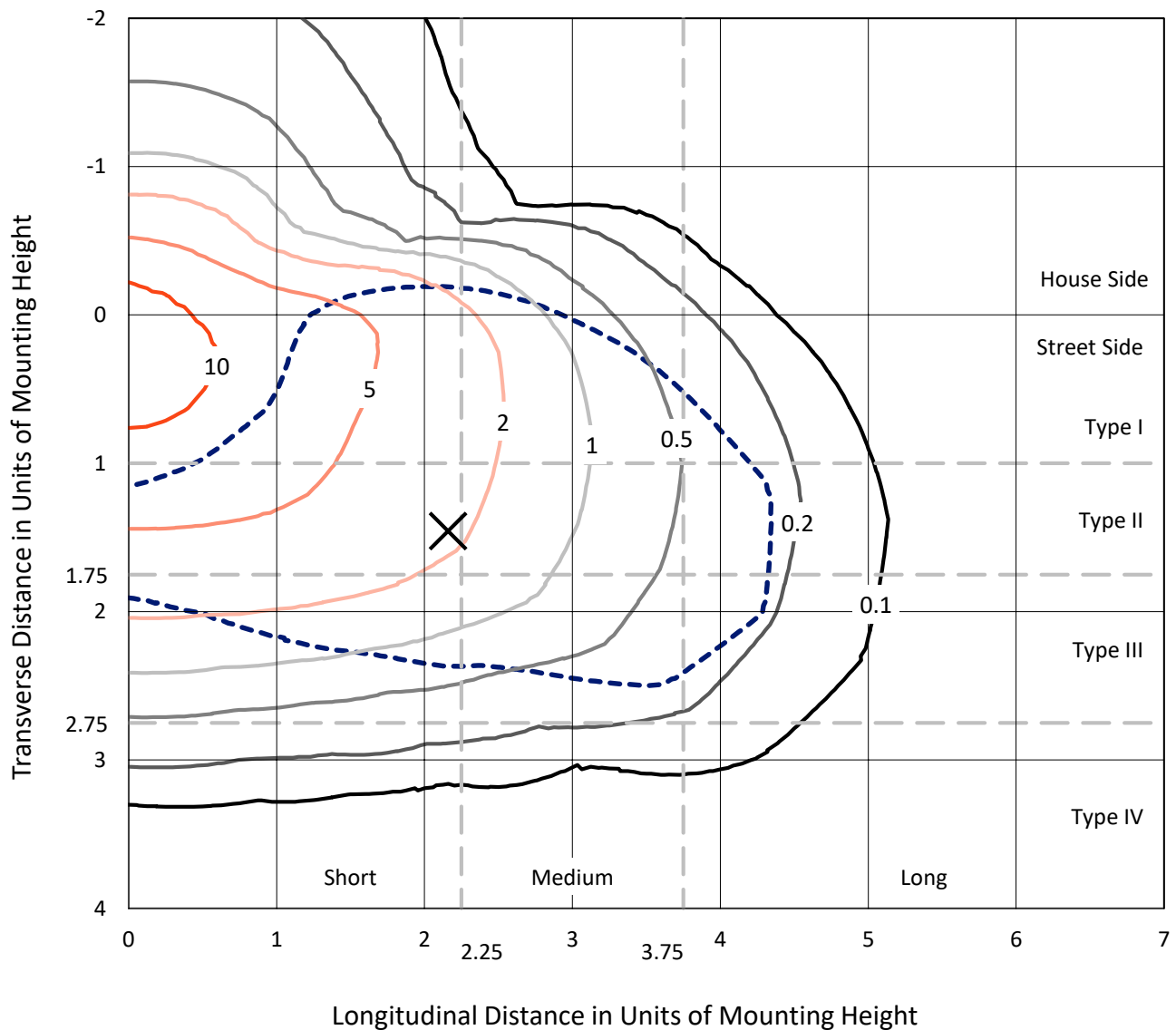
Input Watts (W): 391  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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## Iso-Footcandle Lines of Horizontal Illumination

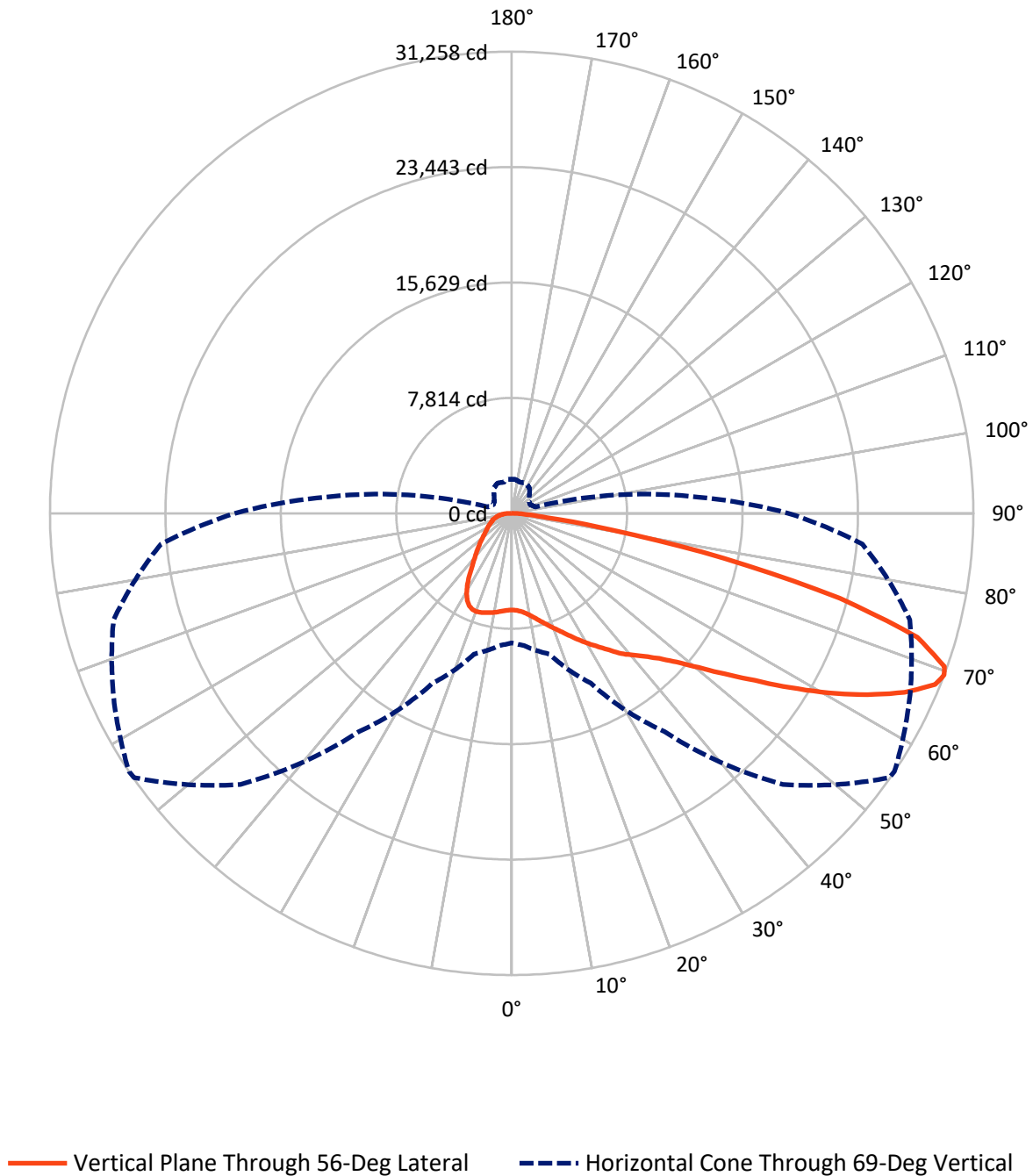
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11.4 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 11143.6  | 0.0    | 11143.6 |
|                    | % Fixture | 22.3     | 0.0    | 22.3    |
| <b>Street Side</b> | Lumens    | 38895.4  | 0.0    | 38895.4 |
|                    | % Fixture | 77.7     | 0.0    | 77.7    |
| <b>Total</b>       | Lumens    | 50039.0  | 0.0    | 50039.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 642.5   | 1.3       |
| 10°-20°   | 2066.1  | 4.1       |
| 20°-30°   | 3606.6  | 7.2       |
| 30°-40°   | 5180.7  | 10.4      |
| 40°-50°   | 7169.8  | 14.3      |
| 50°-60°   | 10504.8 | 21.0      |
| 60°-70°   | 12807.3 | 25.6      |
| 70°-80°   | 7080.7  | 14.2      |
| 80°-90°   | 980.7   | 2.0       |
| 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°    | 50039.0 | 100.0     |
| 0°-180°   | 50039.0 | 100.0     |

**Coefficient of Utilization**



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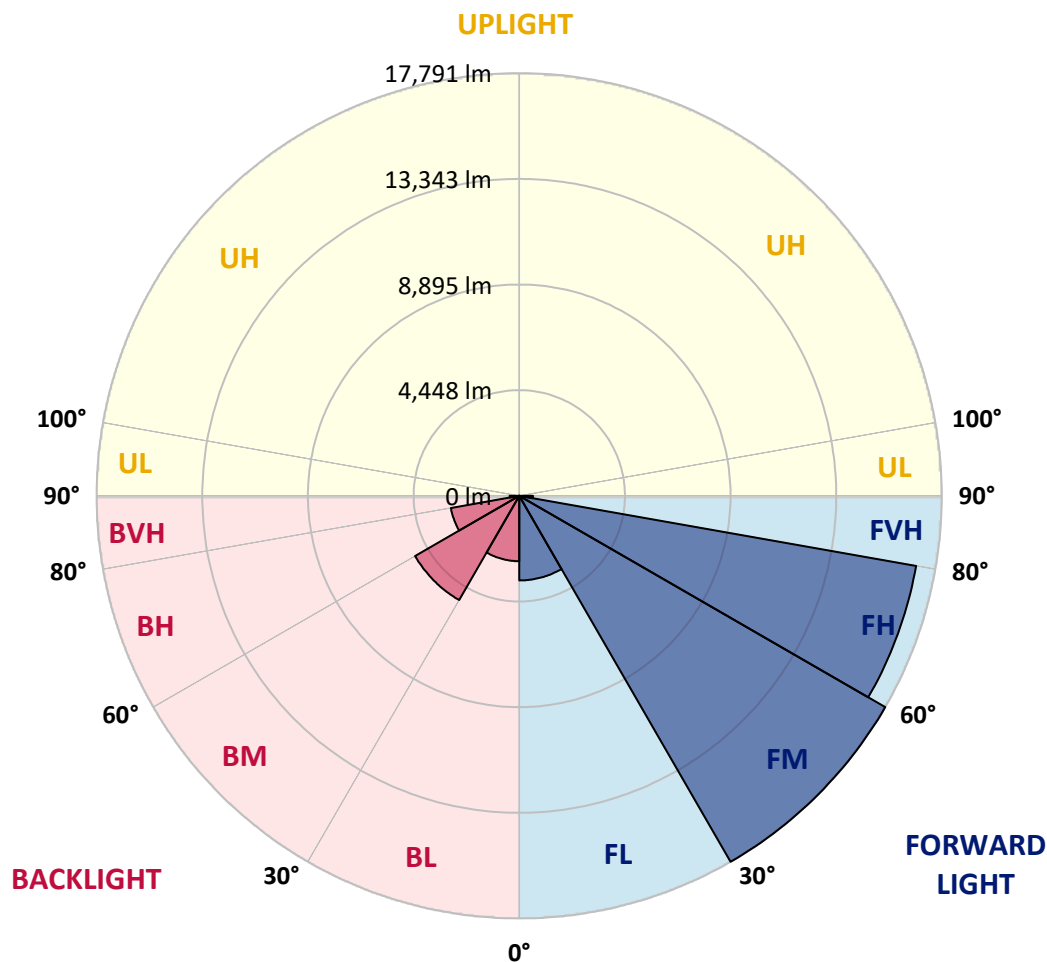
CATALOG NUMBER: GLEON-SA7C-760-U-T3

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|---------|-----------|-------------------------|------|---------|
|      |             |         |           | B                       | U    | G       |
| FL   | (0°-30°)    | 3561.3  | 7.1       |                         |      |         |
| FM   | (30°-60°)   | 17790.7 | 35.6      |                         |      |         |
| FH   | (60°-80°)   | 16965.7 | 33.9      |                         |      | G5      |
| FVH  | (80°-90°)   | 577.6   | 1.2       |                         |      | G4/750  |
| BL   | (0°-30°)    | 2753.8  | 5.5       | B4/5000                 |      |         |
| BM   | (30°-60°)   | 5064.5  | 10.1      | B4/8500                 |      |         |
| BH   | (60°-80°)   | 2922.2  | 5.8       | B4/5000                 |      | G4/5000 |
| BVH  | (80°-90°)   | 403.0   | 0.8       |                         |      | G3/500  |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

**BUG Rating: B4-U0-G5**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 56°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 6541.8  | 6541.8  | 6541.8  | 6541.8  | 6541.8  | 6541.8  | 6541.8  | 6541.8  | 6541.8  | 6541.8  | 6541.8  |
| 2.5°  | 6583.2  | 6590.1  | 6584.9  | 6598.7  | 6583.2  | 6593.6  | 6584.9  | 6584.9  | 6579.8  | 6564.3  | 6547.0  |
| 5°    | 6686.6  | 6700.4  | 6691.8  | 6705.6  | 6686.6  | 6690.1  | 6674.6  | 6674.6  | 6659.1  | 6626.3  | 6591.8  |
| 7.5°  | 6848.7  | 6864.2  | 6857.3  | 6871.1  | 6845.2  | 6845.2  | 6824.6  | 6822.8  | 6791.8  | 6738.4  | 6698.7  |
| 10°   | 7041.7  | 7062.4  | 7055.5  | 7076.2  | 7055.5  | 7062.4  | 7041.7  | 7041.7  | 7000.4  | 6924.5  | 6874.5  |
| 12.5° | 7322.7  | 7348.6  | 7329.6  | 7327.9  | 7319.3  | 7333.1  | 7315.8  | 7312.4  | 7274.5  | 7171.0  | 7102.1  |
| 15°   | 7698.5  | 7726.1  | 7686.5  | 7683.0  | 7634.7  | 7629.6  | 7629.6  | 7624.4  | 7600.3  | 7476.1  | 7362.4  |
| 17.5° | 8131.2  | 8139.8  | 8105.3  | 8050.2  | 7988.1  | 7948.5  | 7943.3  | 7957.1  | 7957.1  | 7812.3  | 7631.3  |
| 20°   | 8555.3  | 8570.8  | 8543.2  | 8481.1  | 8401.8  | 8343.2  | 8301.9  | 8329.4  | 8327.7  | 8155.3  | 7898.5  |
| 22.5° | 9017.2  | 9053.4  | 9012.1  | 8932.8  | 8839.7  | 8774.2  | 8701.8  | 8725.9  | 8727.6  | 8515.6  | 8160.5  |
| 25°   | 9615.4  | 9582.6  | 9556.8  | 9444.7  | 9312.0  | 9244.8  | 9177.5  | 9201.7  | 9194.8  | 8903.5  | 8431.1  |
| 27.5° | 10144.6 | 10151.5 | 10117.0 | 9998.1  | 9844.7  | 9696.4  | 9693.0  | 9708.5  | 9682.6  | 9306.8  | 8686.3  |
| 30°   | 10760.0 | 10763.4 | 10715.2 | 10608.3 | 10441.1 | 10249.8 | 10204.9 | 10230.8 | 10175.6 | 9689.5  | 8955.2  |
| 32.5° | 11372.0 | 11389.2 | 11335.8 | 11206.5 | 11072.0 | 10839.3 | 10749.7 | 10766.9 | 10629.0 | 10080.8 | 9232.7  |
| 35°   | 11908.1 | 11932.2 | 11915.0 | 11828.8 | 11682.2 | 11482.3 | 11375.4 | 11365.1 | 11194.4 | 10560.0 | 9599.9  |
| 37.5° | 12454.5 | 12476.9 | 12458.0 | 12385.6 | 12326.9 | 12114.9 | 12058.0 | 12058.0 | 11761.5 | 11049.6 | 10067.0 |
| 40°   | 13016.5 | 13050.9 | 13028.5 | 12928.5 | 12878.6 | 12782.0 | 12645.8 | 12613.1 | 12292.5 | 11637.4 | 10829.0 |
| 42.5° | 13538.8 | 13583.6 | 13673.2 | 13614.6 | 13512.9 | 13526.7 | 13252.6 | 13235.4 | 13000.9 | 12506.2 | 11785.7 |
| 45°   | 14280.0 | 14345.5 | 14497.2 | 14452.4 | 14431.7 | 14355.9 | 14030.1 | 14014.5 | 13924.9 | 13675.0 | 12973.4 |
| 47.5° | 15088.5 | 15178.1 | 15452.2 | 15460.8 | 15683.2 | 15540.1 | 15097.1 | 15043.7 | 15064.3 | 15074.7 | 14423.1 |
| 50°   | 15833.2 | 15931.4 | 16381.3 | 16593.4 | 17117.4 | 17148.4 | 16439.9 | 16391.7 | 16472.7 | 16710.6 | 16112.4 |
| 52.5° | 16427.9 | 16552.0 | 17114.0 | 17769.0 | 18667.1 | 18922.2 | 18093.1 | 18056.9 | 18117.2 | 18527.5 | 18022.4 |
| 55°   | 16864.0 | 16998.5 | 17610.4 | 18803.3 | 20237.5 | 20687.4 | 19996.2 | 19961.7 | 19999.6 | 20521.9 | 20099.6 |
| 57.5° | 16965.7 | 16998.5 | 17886.2 | 19499.7 | 21563.1 | 22643.9 | 22325.0 | 22256.1 | 22069.9 | 22525.0 | 22392.2 |
| 60°   | 16488.2 | 16619.2 | 17658.7 | 19744.5 | 22588.8 | 24572.9 | 24759.0 | 24672.8 | 24150.5 | 24522.9 | 24416.0 |
| 62.5° | 15519.4 | 15753.9 | 16808.8 | 19372.1 | 22990.4 | 26148.4 | 27146.5 | 27043.1 | 26143.3 | 26384.6 | 25870.9 |
| 65°   | 13937.0 | 14037.0 | 15145.4 | 18087.9 | 22480.2 | 27156.8 | 29275.4 | 29223.7 | 28091.2 | 27713.6 | 26139.8 |
| 67.5° | 11106.5 | 11294.4 | 12235.6 | 15403.9 | 20392.6 | 27037.9 | 30921.6 | 30916.5 | 29363.3 | 28206.6 | 25186.5 |
| 69°   | 8774.2  | 8969.0  | 9865.3  | 12688.9 | 18044.8 | 25950.2 | 31197.5 | 31257.8 | 29721.9 | 27906.7 | 23824.7 |
| 70°   | 6995.2  | 7221.0  | 7836.4  | 10687.6 | 15960.7 | 24516.0 | 30968.2 | 31076.8 | 29652.9 | 27412.0 | 22568.1 |
| 72.5° | 2977.0  | 3159.7  | 3597.6  | 5509.3  | 9727.4  | 18306.8 | 28315.2 | 28725.5 | 28055.0 | 25088.3 | 18651.6 |
| 75°   | 1299.8  | 1356.6  | 1554.9  | 2246.1  | 4318.1  | 9963.6  | 22181.9 | 22940.4 | 23988.5 | 21206.3 | 13893.9 |
| 77.5° | 951.5   | 975.7   | 1084.3  | 1318.7  | 1937.6  | 3763.1  | 14264.5 | 14705.8 | 17300.1 | 15431.5 | 8522.5  |
| 80°   | 736.1   | 753.3   | 837.8   | 968.8   | 1265.3  | 1522.1  | 6505.6  | 6884.9  | 9727.4  | 7926.1  | 3549.3  |
| 82.5° | 586.1   | 598.2   | 656.8   | 713.7   | 874.0   | 922.2   | 2159.9  | 2396.1  | 3590.7  | 2189.2  | 939.5   |
| 85°   | 544.7   | 558.5   | 579.2   | 520.6   | 560.2   | 541.3   | 934.3   | 977.4   | 1084.3  | 860.2   | 393.0   |
| 87.5° | 246.5   | 291.3   | 574.0   | 405.1   | 298.2   | 237.9   | 382.7   | 399.9   | 449.9   | 451.6   | 174.1   |
| 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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CATALOG NUMBER: GLEON-SA7C-760-U-T3

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 6541.8  | 6541.8  | 6541.8 | 6541.8 | 6541.8 | 6541.8 | 6541.8 | 6541.8 | 6541.8 | 6541.8 | 6541.8 |
| 2.5°  | 6557.4  | 6552.2  | 6560.8 | 6540.1 | 6566.0 | 6564.3 | 6555.6 | 6559.1 | 6576.3 | 6574.6 | 6576.3 |
| 5°    | 6597.0  | 6593.6  | 6603.9 | 6588.4 | 6619.4 | 6629.8 | 6631.5 | 6647.0 | 6666.0 | 6671.1 | 6671.1 |
| 7.5°  | 6697.0  | 6697.0  | 6702.2 | 6681.5 | 6702.2 | 6700.4 | 6691.8 | 6707.3 | 6726.3 | 6728.0 | 6726.3 |
| 10°   | 6869.4  | 6871.1  | 6862.5 | 6809.0 | 6791.8 | 6745.3 | 6702.2 | 6703.9 | 6728.0 | 6747.0 | 6752.2 |
| 12.5° | 7086.6  | 7079.7  | 7041.7 | 6943.5 | 6871.1 | 6776.3 | 6731.5 | 6729.7 | 6753.9 | 6769.4 | 6774.6 |
| 15°   | 7334.8  | 7315.8  | 7217.6 | 7057.3 | 6929.7 | 6836.6 | 6764.2 | 6747.0 | 6733.2 | 6716.0 | 6717.7 |
| 17.5° | 7569.2  | 7526.1  | 7362.4 | 7140.0 | 7005.5 | 6881.4 | 6741.8 | 6629.8 | 6552.2 | 6507.4 | 6493.6 |
| 20°   | 7807.1  | 7722.7  | 7486.5 | 7217.6 | 7046.9 | 6821.1 | 6552.2 | 6324.6 | 6183.3 | 6117.8 | 6105.7 |
| 22.5° | 8024.3  | 7888.1  | 7602.0 | 7298.6 | 7014.2 | 6617.7 | 6195.4 | 5864.4 | 5667.9 | 5580.0 | 5586.9 |
| 25°   | 8236.3  | 8046.7  | 7722.7 | 7355.5 | 6848.7 | 6259.1 | 5698.9 | 5292.1 | 5064.5 | 4966.3 | 4962.8 |
| 27.5° | 8422.5  | 8207.0  | 7853.7 | 7308.9 | 6540.1 | 5748.9 | 5111.1 | 4714.6 | 4525.0 | 4440.5 | 4426.7 |
| 30°   | 8636.3  | 8408.7  | 8027.8 | 7131.4 | 6088.5 | 5159.4 | 4537.1 | 4257.8 | 4123.3 | 4038.9 | 4023.4 |
| 32.5° | 8896.6  | 8682.8  | 8170.8 | 6809.0 | 5511.0 | 4544.0 | 4088.9 | 3894.1 | 3771.7 | 3676.9 | 3659.6 |
| 35°   | 9275.8  | 9044.8  | 8207.0 | 6347.1 | 4876.6 | 4057.8 | 3759.6 | 3559.7 | 3394.2 | 3271.8 | 3259.7 |
| 37.5° | 9751.6  | 9498.2  | 8124.3 | 5748.9 | 4261.2 | 3742.4 | 3485.5 | 3239.0 | 3023.6 | 2851.2 | 2823.6 |
| 40°   | 10437.6 | 10055.0 | 7895.0 | 5059.4 | 3807.9 | 3499.3 | 3218.3 | 2937.4 | 2670.2 | 2468.5 | 2428.8 |
| 42.5° | 11261.6 | 10708.3 | 7543.4 | 4373.3 | 3475.2 | 3252.8 | 2952.9 | 2604.7 | 2349.5 | 2206.5 | 2185.8 |
| 45°   | 12309.7 | 11387.5 | 7055.5 | 3773.4 | 3147.7 | 3006.3 | 2666.7 | 2346.1 | 2187.5 | 2082.4 | 2065.1 |
| 47.5° | 13506.0 | 12149.4 | 6543.6 | 3285.6 | 2870.1 | 2775.3 | 2437.5 | 2230.6 | 2104.8 | 2022.0 | 2006.5 |
| 50°   | 14976.4 | 13009.6 | 6000.6 | 2885.7 | 2590.9 | 2497.8 | 2328.9 | 2166.8 | 2066.8 | 2003.1 | 1987.5 |
| 52.5° | 16634.7 | 13980.1 | 5609.3 | 2570.2 | 2359.9 | 2292.7 | 2272.0 | 2132.3 | 2051.3 | 2003.1 | 1987.5 |
| 55°   | 18420.6 | 14967.8 | 5186.9 | 2304.7 | 2159.9 | 2178.9 | 2234.1 | 2135.8 | 2080.6 | 2022.0 | 1999.6 |
| 57.5° | 20208.2 | 15988.3 | 4716.3 | 2080.6 | 2001.3 | 2094.4 | 2208.2 | 2142.7 | 2096.1 | 2039.3 | 2018.6 |
| 60°   | 21621.7 | 16634.7 | 3987.2 | 1892.7 | 1875.5 | 2001.3 | 2146.1 | 2091.0 | 2030.6 | 2032.4 | 2028.9 |
| 62.5° | 22281.9 | 16600.3 | 3182.1 | 1725.5 | 1749.7 | 1875.5 | 2046.2 | 2010.0 | 1960.0 | 2027.2 | 2032.4 |
| 65°   | 21911.3 | 15772.8 | 2477.1 | 1573.8 | 1615.2 | 1744.5 | 1942.7 | 1970.3 | 1987.5 | 2116.8 | 2134.1 |
| 67.5° | 20356.4 | 14162.8 | 1918.6 | 1441.1 | 1492.8 | 1654.9 | 1953.1 | 2146.1 | 2168.5 | 2304.7 | 2303.0 |
| 69°   | 18748.1 | 12652.7 | 1666.9 | 1372.2 | 1432.5 | 1677.3 | 2087.5 | 2258.2 | 2173.7 | 2318.5 | 2297.8 |
| 70°   | 17400.1 | 11458.1 | 1532.5 | 1325.6 | 1404.9 | 1716.9 | 2177.2 | 2256.5 | 2147.9 | 2272.0 | 2237.5 |
| 72.5° | 13400.9 | 8243.2  | 1299.8 | 1239.4 | 1311.8 | 1642.8 | 2203.0 | 2206.5 | 2087.5 | 2111.7 | 2053.1 |
| 75°   | 9191.3  | 5209.3  | 1134.3 | 1122.2 | 1170.5 | 1480.7 | 2120.3 | 2108.2 | 1930.7 | 1896.2 | 1847.9 |
| 77.5° | 5068.0  | 2646.0  | 963.6  | 1010.2 | 1042.9 | 1311.8 | 1927.2 | 1910.0 | 1763.5 | 1691.1 | 1673.8 |
| 80°   | 1954.8  | 1158.4  | 813.6  | 898.1  | 918.8  | 1136.0 | 1689.3 | 1673.8 | 1551.4 | 1458.3 | 1432.5 |
| 82.5° | 737.8   | 606.8   | 672.3  | 777.4  | 770.5  | 937.8  | 1430.8 | 1422.1 | 1303.2 | 1167.0 | 1125.6 |
| 85°   | 341.3   | 363.7   | 532.7  | 641.3  | 591.3  | 694.7  | 1144.6 | 1160.1 | 1015.3 | 853.3  | 853.3  |
| 87.5° | 144.8   | 203.4   | 377.5  | 484.4  | 398.2  | 468.9  | 839.5  | 801.6  | 736.1  | 510.2  | 479.2  |
| 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: SP1-1908-441-9-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:  $4\pi$   
 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 |      |       |
| CIE u':                   | 0.2052 | R1:       | 70.6 | R9:  | -27.1 |
| CIE v':                   | 0.4804 | R2:       | 74.6 | R10: | 40.8  |
| Duv:                      | 0.0025 | R3:       | 78.3 | R11: | 74.6  |
| CIE x:                    | 0.3330 | R4:       | 73.8 | R12: | 50.4  |
| CIE y:                    | 0.3466 | R5:       | 72.4 | R13: | 70.0  |
| CIE z:                    | 0.3204 | R6:       | 67.5 | R14: | 87.8  |
| 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

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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       | 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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Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3

S/P: 1.85

| 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       | 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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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 5527.6 M/P: 0.74**

| 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       | 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)