

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



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

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P638806

Luminaire Tested: GWS-SA4F-750-U-SL3-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P638806  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-31)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA4F-750-U-SL3-W  
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS  
Light Source: (64) 5000K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

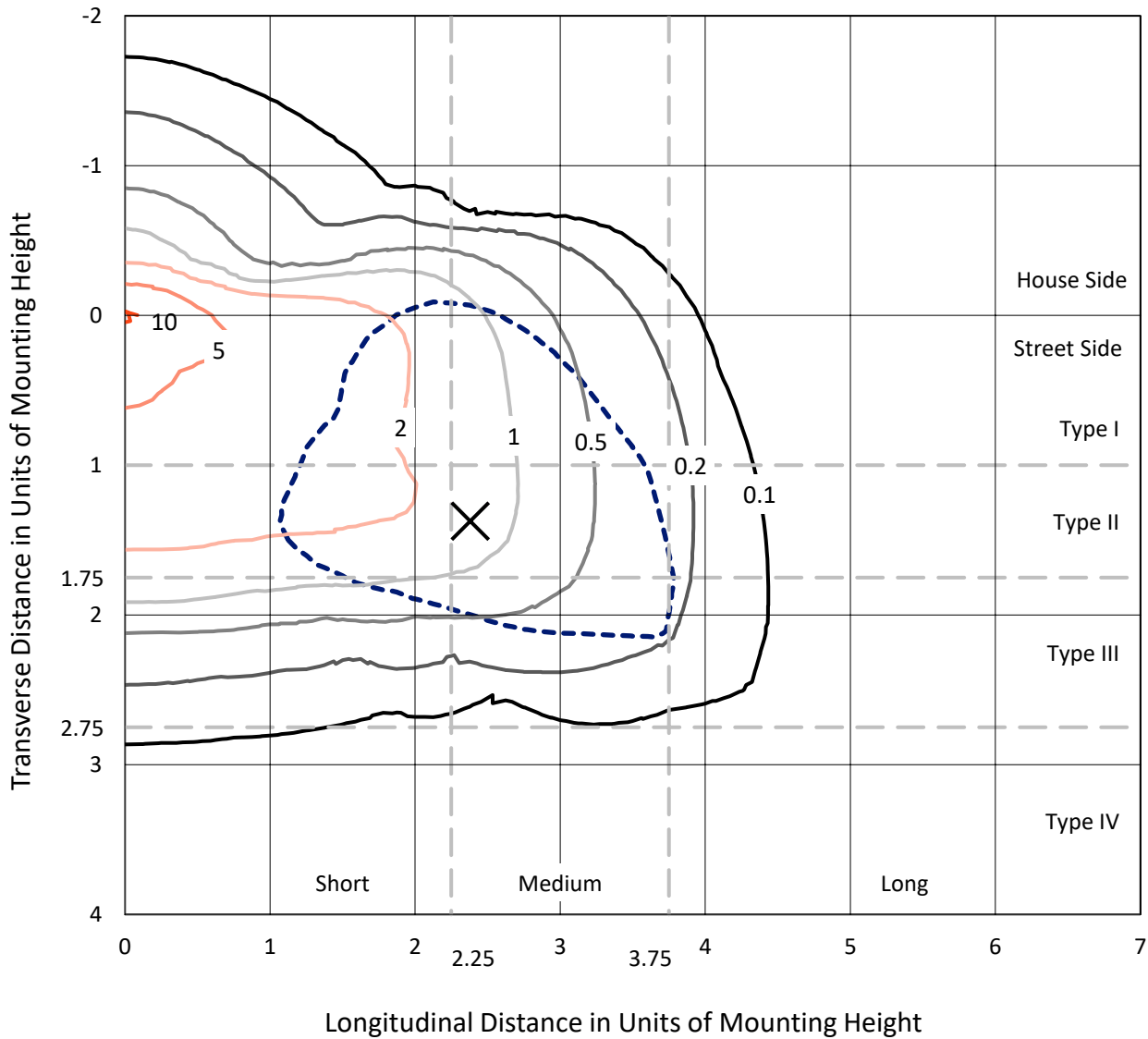
Lumens per Lamp: N/A  
Luminaire Lumens: 34101.9 lumens  
Efficiency: N/A  
Efficacy: 151.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B3 - U0 - G5  
  
Input Watts (W): 225.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P638806  
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### Iso-Footcandle Lines of Horizontal Illumination

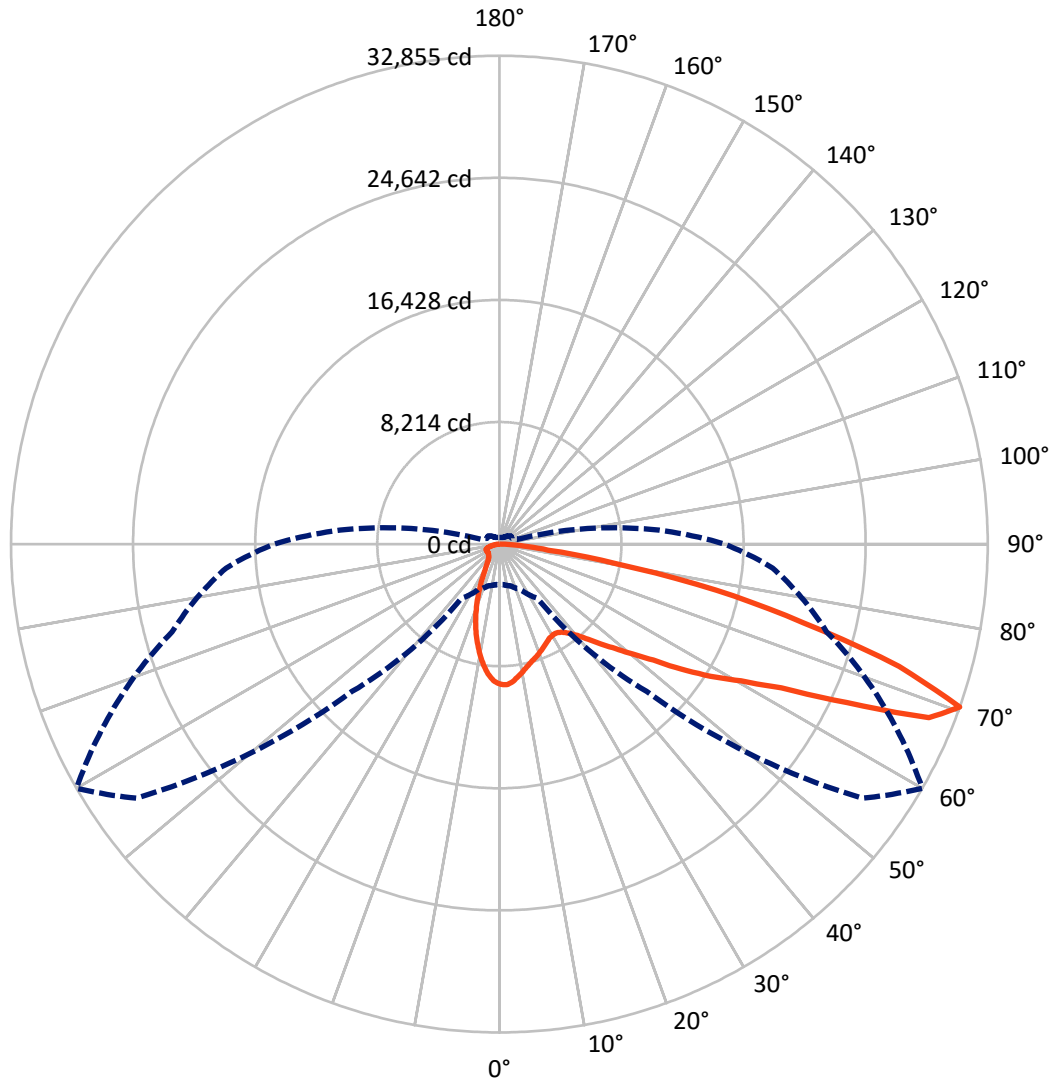
✕ Max cd  
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 10.5 fc  
 Type III - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral    - - - Horizontal Cone Through 70-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 5832.2   | 0.0    | 5832.2  |
|                    | % Fixture | 17.1     | 0.0    | 17.1    |
| <b>Street Side</b> | Lumens    | 28269.7  | 0.0    | 28269.7 |
|                    | % Fixture | 82.9     | 0.0    | 82.9    |
| <b>Total</b>       | Lumens    | 34101.9  | 0.0    | 34101.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 813.4   | 2.4       |
| 10°-20°   | 1822.2  | 5.3       |
| 20°-30°   | 2333.7  | 6.8       |
| 30°-40°   | 3067.0  | 9.0       |
| 40°-50°   | 4449.7  | 13.0      |
| 50°-60°   | 6942.7  | 20.4      |
| 60°-70°   | 9089.3  | 26.7      |
| 70°-80°   | 5026.1  | 14.7      |
| 80°-90°   | 557.8   | 1.6       |
| 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°    | 34101.9 | 100.0     |
| 0°-180°   | 34101.9 | 100.0     |

**Coefficient of Utilization**



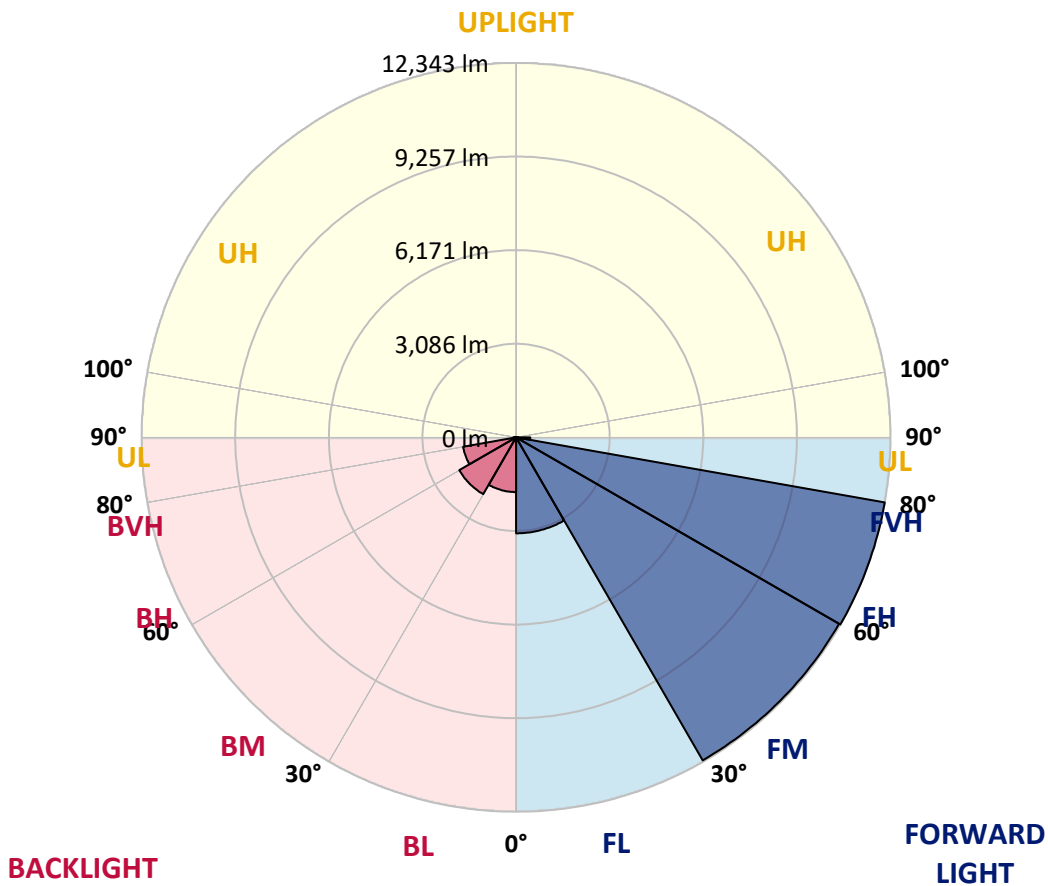
REPORT NUMBER: P638806

CATALOG NUMBER: GWS-SA4F-750-U-SL3-W

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

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|---------|-----------|-------------------------|------|---------|
|                |         |           | B                       | U    | G       |
| FL (0°-30°)    | 3164.9  | 9.3       |                         |      |         |
| FM (30°-60°)   | 12297.0 | 36.1      |                         |      |         |
| FH (60°-80°)   | 12343.0 | 36.2      |                         |      | G5      |
| FVH (80°-90°)  | 464.8   | 1.4       |                         |      | G3/500  |
| BL (0°-30°)    | 1804.4  | 5.3       | B3/2500                 |      |         |
| BM (30°-60°)   | 2162.4  | 6.3       | B2/2500                 |      |         |
| BH (60°-80°)   | 1772.4  | 5.2       | B3/2500                 |      | G3/2500 |
| BVH (80°-90°)  | 93.0    | 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-G5**  
 Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 60°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 9436.4  | 9436.4  | 9436.4  | 9436.4  | 9436.4  | 9436.4  | 9436.4  | 9436.4  | 9436.4  | 9436.4  | 9436.4  |
| 2.5°  | 9304.2  | 9314.2  | 9341.6  | 9381.5  | 9421.5  | 9441.4  | 9491.3  | 9476.4  | 9466.4  | 9446.4  | 9421.5  |
| 5°    | 8892.5  | 8912.5  | 8937.4  | 9014.8  | 9102.1  | 9172.0  | 9284.2  | 9296.7  | 9301.7  | 9311.7  | 9271.8  |
| 7.5°  | 8368.5  | 8373.5  | 8433.4  | 8535.7  | 8650.5  | 8770.2  | 8957.4  | 9009.8  | 9054.7  | 9104.6  | 9072.2  |
| 10°   | 7789.7  | 7802.2  | 7847.1  | 7994.3  | 8191.4  | 8368.5  | 8620.5  | 8707.9  | 8802.7  | 8912.5  | 8867.6  |
| 12.5° | 7315.6  | 7318.1  | 7390.5  | 7547.7  | 7762.2  | 8001.8  | 8316.1  | 8420.9  | 8545.7  | 8717.9  | 8677.9  |
| 15°   | 6938.9  | 6938.9  | 7006.2  | 7141.0  | 7388.0  | 7669.9  | 8044.2  | 8178.9  | 8348.6  | 8580.6  | 8510.8  |
| 17.5° | 6639.4  | 6641.9  | 6684.4  | 6826.6  | 7046.1  | 7358.0  | 7802.2  | 7984.3  | 8171.4  | 8478.3  | 8373.5  |
| 20°   | 6482.2  | 6469.8  | 6477.3  | 6564.6  | 6751.7  | 7053.6  | 7560.1  | 7772.2  | 8024.2  | 8408.5  | 8248.8  |
| 22.5° | 6474.8  | 6452.3  | 6419.9  | 6427.4  | 6537.1  | 6786.6  | 7300.6  | 7557.6  | 7874.5  | 8351.1  | 8121.5  |
| 25°   | 6602.0  | 6577.1  | 6519.7  | 6454.8  | 6444.8  | 6594.5  | 7056.1  | 7348.0  | 7719.8  | 8326.1  | 7999.3  |
| 27.5° | 6816.6  | 6799.1  | 6724.3  | 6627.0  | 6524.7  | 6519.7  | 6871.5  | 7175.9  | 7607.5  | 8351.1  | 7911.9  |
| 30°   | 7101.0  | 7071.1  | 7023.7  | 6898.9  | 6744.2  | 6584.5  | 6799.1  | 7083.6  | 7532.7  | 8430.9  | 7874.5  |
| 32.5° | 7422.9  | 7405.4  | 7360.5  | 7235.8  | 7071.1  | 6816.6  | 6856.5  | 7103.5  | 7532.7  | 8570.6  | 7882.0  |
| 35°   | 7764.7  | 7762.2  | 7762.2  | 7679.9  | 7497.8  | 7180.9  | 7083.6  | 7273.2  | 7647.5  | 8795.2  | 7961.8  |
| 37.5° | 8096.6  | 8094.1  | 8173.9  | 8203.9  | 7996.8  | 7654.9  | 7470.3  | 7612.5  | 7899.5  | 9127.0  | 8159.0  |
| 40°   | 8366.0  | 8376.0  | 8550.7  | 8700.4  | 8585.6  | 8268.7  | 8009.2  | 8081.6  | 8308.7  | 9598.6  | 8503.3  |
| 42.5° | 8638.0  | 8665.5  | 8927.4  | 9191.9  | 9236.8  | 8962.4  | 8700.4  | 8742.8  | 8895.0  | 10222.4 | 9017.3  |
| 45°   | 8934.9  | 8947.4  | 9314.2  | 9683.5  | 9900.5  | 9738.3  | 9523.8  | 9581.2  | 9616.1  | 10993.4 | 9783.3  |
| 47.5° | 9221.9  | 9254.3  | 9728.4  | 10234.9 | 10646.6 | 10631.6 | 10511.8 | 10494.4 | 10501.8 | 11931.5 | 10689.0 |
| 50°   | 9613.6  | 9661.0  | 10217.4 | 10828.7 | 11432.5 | 11709.5 | 11744.4 | 11612.2 | 11557.3 | 12974.5 | 11816.8 |
| 52.5° | 10357.1 | 10357.1 | 10856.1 | 11457.5 | 12268.4 | 12954.5 | 13189.1 | 12972.0 | 12797.3 | 14077.3 | 13014.4 |
| 55°   | 11287.8 | 11327.7 | 11724.4 | 12211.0 | 13239.0 | 14264.4 | 15057.9 | 14818.3 | 14324.3 | 15277.4 | 14269.4 |
| 57.5° | 11702.0 | 11751.9 | 12380.6 | 13136.7 | 14509.0 | 15754.0 | 16854.3 | 16769.5 | 16048.4 | 16525.0 | 15571.9 |
| 60°   | 10953.5 | 11058.2 | 11924.0 | 13191.6 | 15659.2 | 18156.8 | 18932.8 | 18685.7 | 17655.3 | 17834.9 | 16984.1 |
| 62.5° | 9137.0  | 9251.8  | 10212.4 | 11981.4 | 15499.5 | 20754.2 | 22208.8 | 21298.1 | 19661.3 | 19489.2 | 18865.4 |
| 65°   | 5451.8  | 5446.8  | 6602.0  | 8947.4  | 13530.9 | 21475.3 | 27393.6 | 25694.5 | 22760.2 | 21759.7 | 20801.6 |
| 67.5° | 3465.7  | 3458.2  | 3700.2  | 4740.7  | 9004.8  | 19708.7 | 30727.1 | 31168.7 | 26969.4 | 23428.9 | 20961.3 |
| 70°   | 2734.6  | 2732.1  | 2906.8  | 3380.8  | 4453.7  | 14024.9 | 29798.9 | 32855.4 | 29511.9 | 22792.7 | 18456.2 |
| 72.5° | 1993.6  | 1998.6  | 2268.0  | 2831.9  | 3435.7  | 7041.1  | 24130.0 | 28112.2 | 27144.1 | 20120.4 | 14983.0 |
| 75°   | 1432.2  | 1439.7  | 1601.8  | 2168.2  | 3168.8  | 3849.9  | 16045.9 | 21138.4 | 20651.9 | 16128.3 | 10307.2 |
| 77.5° | 910.7   | 920.7   | 1062.9  | 1519.5  | 2560.0  | 3108.9  | 9728.4  | 14923.1 | 13740.5 | 9087.1  | 3665.3  |
| 80°   | 556.4   | 588.8   | 708.6   | 1132.8  | 2046.0  | 2332.9  | 4862.9  | 7862.0  | 6881.5  | 2492.6  | 1232.6  |
| 82.5° | 286.9   | 311.9   | 426.7   | 701.1   | 1409.7  | 2048.5  | 2752.1  | 3303.5  | 2130.8  | 1042.9  | 656.2   |
| 85°   | 89.8    | 104.8   | 149.7   | 284.4   | 671.2   | 1270.0  | 1821.4  | 1641.8  | 978.1   | 491.5   | 304.4   |
| 87.5° | 22.5    | 22.5    | 25.0    | 25.0    | 27.4    | 57.4    | 351.8   | 371.8   | 259.5   | 154.7   | 124.8   |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



REPORT NUMBER: P638806  
 CATALOG NUMBER: GWS-SA4F-750-U-SL3-W

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 9436.4  | 9436.4  | 9436.4 | 9436.4 | 9436.4 | 9436.4 | 9436.4 | 9436.4 | 9436.4 | 9436.4 | 9436.4 |
| 2.5°  | 9371.6  | 9311.7  | 9286.7 | 9284.2 | 9221.9 | 9132.0 | 9072.2 | 9029.7 | 9004.8 | 8999.8 | 8999.8 |
| 5°    | 9204.4  | 9127.0  | 9024.7 | 8947.4 | 8780.2 | 8610.6 | 8468.3 | 8388.5 | 8296.2 | 8283.7 | 8281.2 |
| 7.5°  | 8982.3  | 8870.1  | 8675.4 | 8458.4 | 8166.4 | 7884.5 | 7645.0 | 7482.8 | 7320.6 | 7290.7 | 7280.7 |
| 10°   | 8742.8  | 8590.6  | 8258.8 | 7877.0 | 7440.4 | 7018.7 | 6651.9 | 6365.0 | 6175.4 | 6040.6 | 6015.7 |
| 12.5° | 8505.8  | 8303.7  | 7817.1 | 7248.2 | 6649.4 | 6073.1 | 5521.6 | 5052.6 | 4713.2 | 4516.1 | 4481.2 |
| 15°   | 8283.7  | 8001.8  | 7335.6 | 6609.5 | 5831.0 | 5042.6 | 4261.6 | 3652.8 | 3176.3 | 3006.6 | 2966.7 |
| 17.5° | 8081.6  | 7729.8  | 6869.0 | 5948.3 | 4977.7 | 3947.2 | 3059.0 | 2517.5 | 2238.1 | 2153.3 | 2133.3 |
| 20°   | 7879.5  | 7450.3  | 6394.9 | 5252.2 | 4072.0 | 2916.8 | 2235.6 | 1981.1 | 1876.3 | 1843.9 | 1833.9 |
| 22.5° | 7662.4  | 7143.4  | 5878.4 | 4566.0 | 3156.3 | 2183.2 | 1828.9 | 1716.6 | 1684.2 | 1686.7 | 1684.2 |
| 25°   | 7445.4  | 6831.6  | 5337.0 | 3820.0 | 2350.4 | 1771.5 | 1596.9 | 1554.4 | 1561.9 | 1584.4 | 1589.4 |
| 27.5° | 7265.7  | 6554.6  | 4805.5 | 3001.6 | 1836.4 | 1524.5 | 1442.2 | 1439.7 | 1467.1 | 1497.1 | 1502.0 |
| 30°   | 7136.0  | 6307.6  | 4281.6 | 2308.0 | 1512.0 | 1354.8 | 1322.4 | 1337.4 | 1369.8 | 1392.3 | 1399.7 |
| 32.5° | 7043.6  | 6095.5  | 3722.7 | 1813.9 | 1324.9 | 1235.1 | 1220.1 | 1235.1 | 1255.0 | 1277.5 | 1282.5 |
| 35°   | 7011.2  | 5940.8  | 3173.8 | 1479.6 | 1197.6 | 1147.7 | 1137.8 | 1145.2 | 1155.2 | 1167.7 | 1172.7 |
| 37.5° | 7083.6  | 5863.5  | 2599.9 | 1287.5 | 1120.3 | 1090.4 | 1075.4 | 1070.4 | 1072.9 | 1077.9 | 1080.4 |
| 40°   | 7298.1  | 5898.4  | 2130.8 | 1175.2 | 1070.4 | 1042.9 | 1018.0 | 1008.0 | 1005.5 | 1010.5 | 1008.0 |
| 42.5° | 7667.4  | 6045.6  | 1791.5 | 1110.3 | 1030.5 | 990.6  | 963.1  | 953.1  | 953.1  | 965.6  | 965.6  |
| 45°   | 8208.9  | 6335.0  | 1547.0 | 1062.9 | 995.5  | 945.6  | 915.7  | 910.7  | 920.7  | 940.6  | 943.1  |
| 47.5° | 9002.3  | 6759.2  | 1399.7 | 1028.0 | 963.1  | 905.7  | 875.8  | 873.3  | 893.2  | 925.7  | 928.2  |
| 50°   | 9942.9  | 7370.5  | 1319.9 | 1003.0 | 940.6  | 873.3  | 843.3  | 845.8  | 868.3  | 903.2  | 910.7  |
| 52.5° | 11075.7 | 8203.9  | 1324.9 | 993.0  | 928.2  | 853.3  | 823.4  | 818.4  | 840.8  | 875.8  | 883.3  |
| 55°   | 12245.9 | 9216.9  | 1422.2 | 995.5  | 910.7  | 843.3  | 803.4  | 786.0  | 805.9  | 830.9  | 833.4  |
| 57.5° | 13533.4 | 10359.6 | 1664.2 | 990.6  | 888.3  | 833.4  | 786.0  | 746.0  | 758.5  | 773.5  | 781.0  |
| 60°   | 14985.5 | 11704.5 | 2185.7 | 1000.5 | 878.3  | 810.9  | 751.0  | 698.6  | 696.1  | 706.1  | 708.6  |
| 62.5° | 16926.7 | 13533.4 | 2772.0 | 1018.0 | 900.7  | 783.5  | 698.6  | 643.7  | 633.8  | 638.7  | 641.2  |
| 65°   | 18411.3 | 14406.7 | 2587.4 | 1003.0 | 948.1  | 763.5  | 648.7  | 591.3  | 571.4  | 566.4  | 566.4  |
| 67.5° | 17807.5 | 13251.4 | 1801.5 | 963.1  | 970.6  | 766.0  | 608.8  | 536.4  | 511.5  | 499.0  | 496.5  |
| 70°   | 15152.7 | 10763.8 | 1252.5 | 923.2  | 945.6  | 761.0  | 566.4  | 491.5  | 459.1  | 441.6  | 439.1  |
| 72.5° | 11971.5 | 8218.8  | 1013.0 | 843.3  | 858.3  | 686.2  | 504.0  | 441.6  | 414.2  | 391.7  | 391.7  |
| 75°   | 7704.8  | 5015.1  | 845.8  | 751.0  | 701.1  | 533.9  | 436.6  | 394.2  | 366.8  | 344.3  | 344.3  |
| 77.5° | 2592.4  | 1861.3  | 656.2  | 636.2  | 524.0  | 401.7  | 366.8  | 339.3  | 316.9  | 296.9  | 294.4  |
| 80°   | 1052.9  | 883.3   | 481.6  | 481.6  | 366.8  | 306.9  | 286.9  | 274.5  | 259.5  | 234.5  | 234.5  |
| 82.5° | 611.3   | 536.4   | 336.8  | 291.9  | 244.5  | 212.1  | 199.6  | 187.1  | 187.1  | 169.7  | 169.7  |
| 85°   | 294.4   | 296.9   | 202.1  | 179.6  | 139.7  | 122.3  | 117.3  | 109.8  | 107.3  | 97.3   | 94.8   |
| 87.5° | 159.7   | 162.2   | 102.3  | 79.8   | 54.9   | 47.4   | 39.9   | 37.4   | 34.9   | 32.4   | 32.4   |
| 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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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: 4π  
 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  
 CIE u': 0.2101  
 CIE v': 0.4904  
 Duv: 0.0037  
 CIE x: 0.3493  
 CIE y: 0.3624  
 CIE z: 0.2884  
 Peak Wavelength (nm): 444  
 Dominant Wavelength (nm): 571  
 Purity: 13.7  
 Rf: 74.9  
 Rg: 96.3

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 73.5 |      |       |
| R1:       | 70.5 | R9:  | -28.4 |
| R2:       | 77.7 | R10: | 48.6  |
| R3:       | 84.6 | R11: | 73.2  |
| R4:       | 74.7 | R12: | 50.7  |
| R5:       | 71.9 | R13: | 71.2  |
| R6:       | 70.7 | R14: | 91.4  |
| R7:       | 81.2 |      |       |
| R8:       | 56.9 |      |       |



**Test Conditions**

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

REPORT NUMBER: SP1-1908-441-4-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 5000K 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    | 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 (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    | 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 (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    | 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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**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)