

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: P324153

Luminaire Tested: **GLEON-SA9A-740-U-SLL-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P324153  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-27)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GLEON-SA9A-740-U-SLL-HSS  
Description: GALLEON AREA AND ROADWAY LUMINAIRE  
(9) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT  
ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 30887 lumens  
Efficiency: N/A  
Efficacy: 106.5 lumens/watt  
Luminous Opening: Rectangular (W 2.5' x L: 1' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B3 - U0 - G4

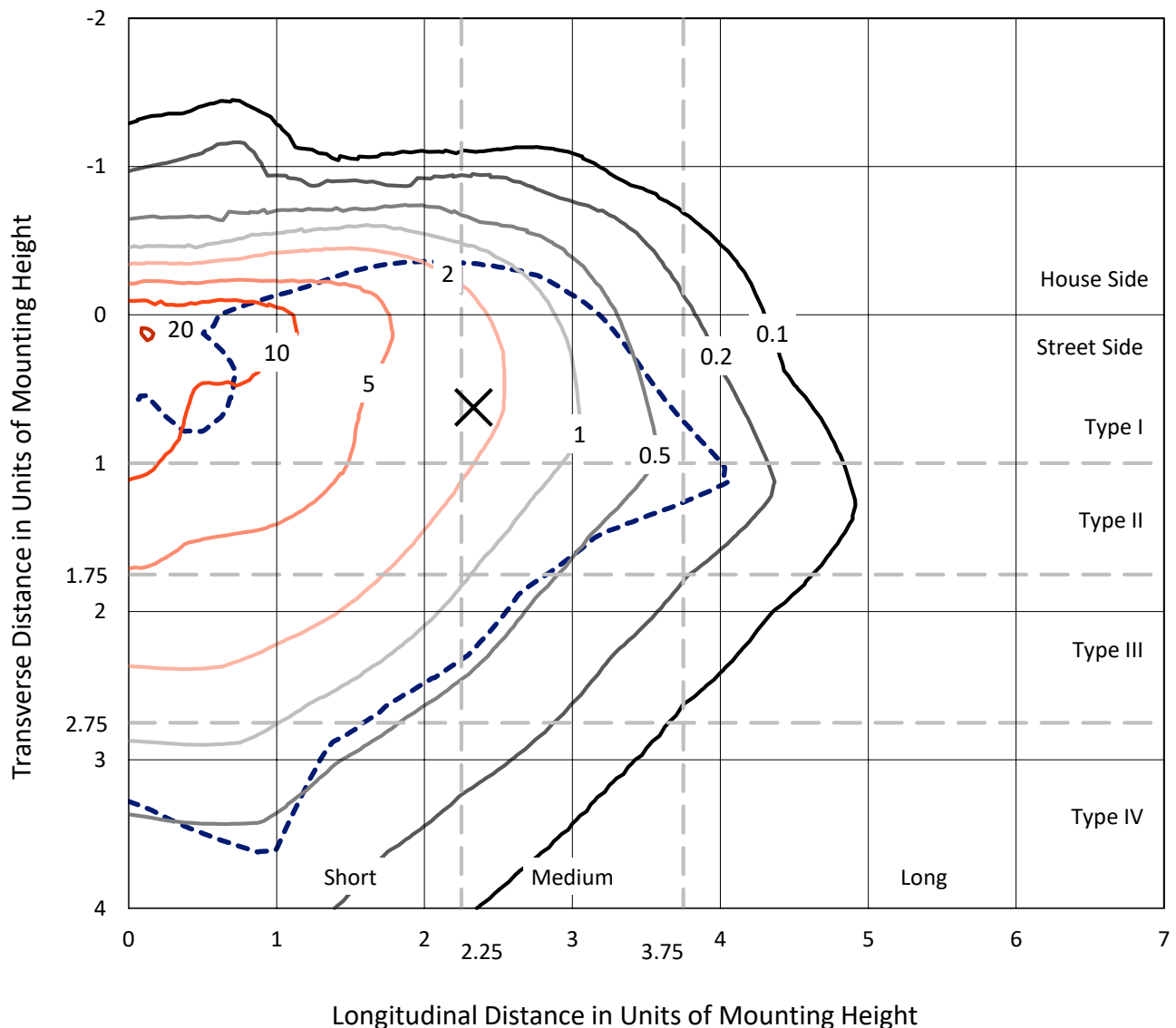
Input Watts (W): 290  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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## Iso-Footcandle Lines of Horizontal Illumination

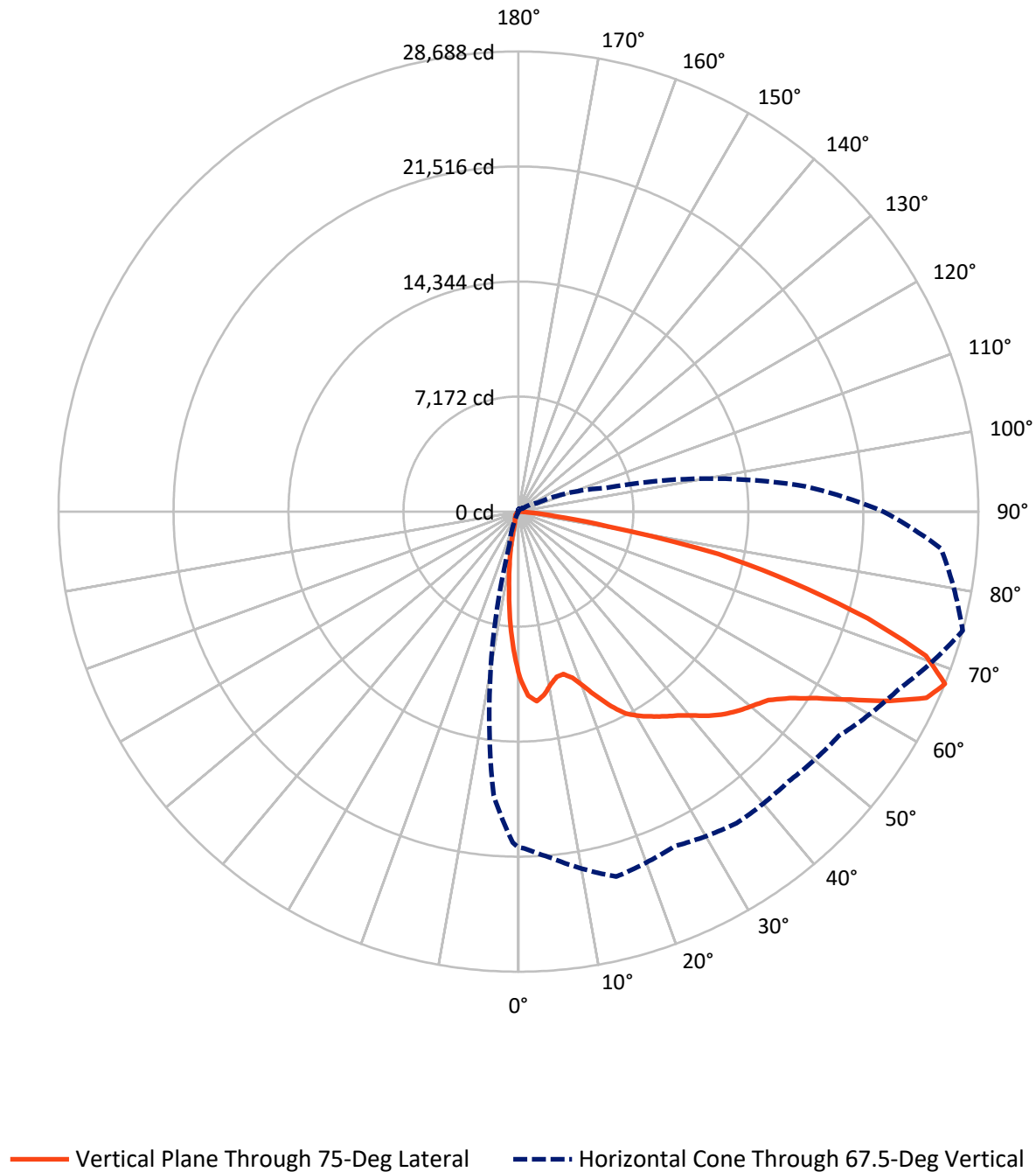
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 21.5 fc  
 Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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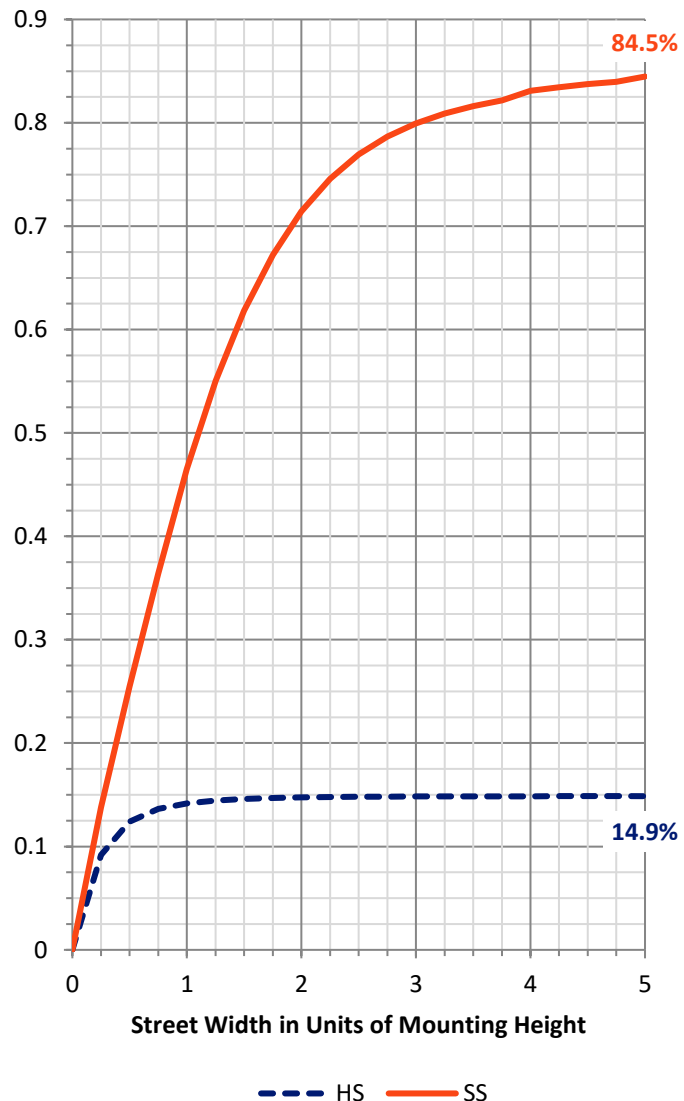
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 4634.9   | 0.0    | 4634.9  |
|                    | % Fixture | 15.0     | 0.0    | 15.0    |
| <b>Street Side</b> | Lumens    | 26252.1  | 0.0    | 26252.1 |
|                    | % Fixture | 85.0     | 0.0    | 85.0    |
| <b>Total</b>       | Lumens    | 30887.0  | 0.0    | 30887.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 786.0   | 2.5       |
| 10°-20°   | 1547.7  | 5.0       |
| 20°-30°   | 2189.5  | 7.1       |
| 30°-40°   | 3219.2  | 10.4      |
| 40°-50°   | 4627.0  | 15.0      |
| 50°-60°   | 6513.7  | 21.1      |
| 60°-70°   | 7607.4  | 24.6      |
| 70°-80°   | 3881.0  | 12.6      |
| 80°-90°   | 515.6   | 1.7       |
| 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°    | 30887.0 | 100.0     |
| 0°-180°   | 30887.0 | 100.0     |

**Coefficient of Utilization**



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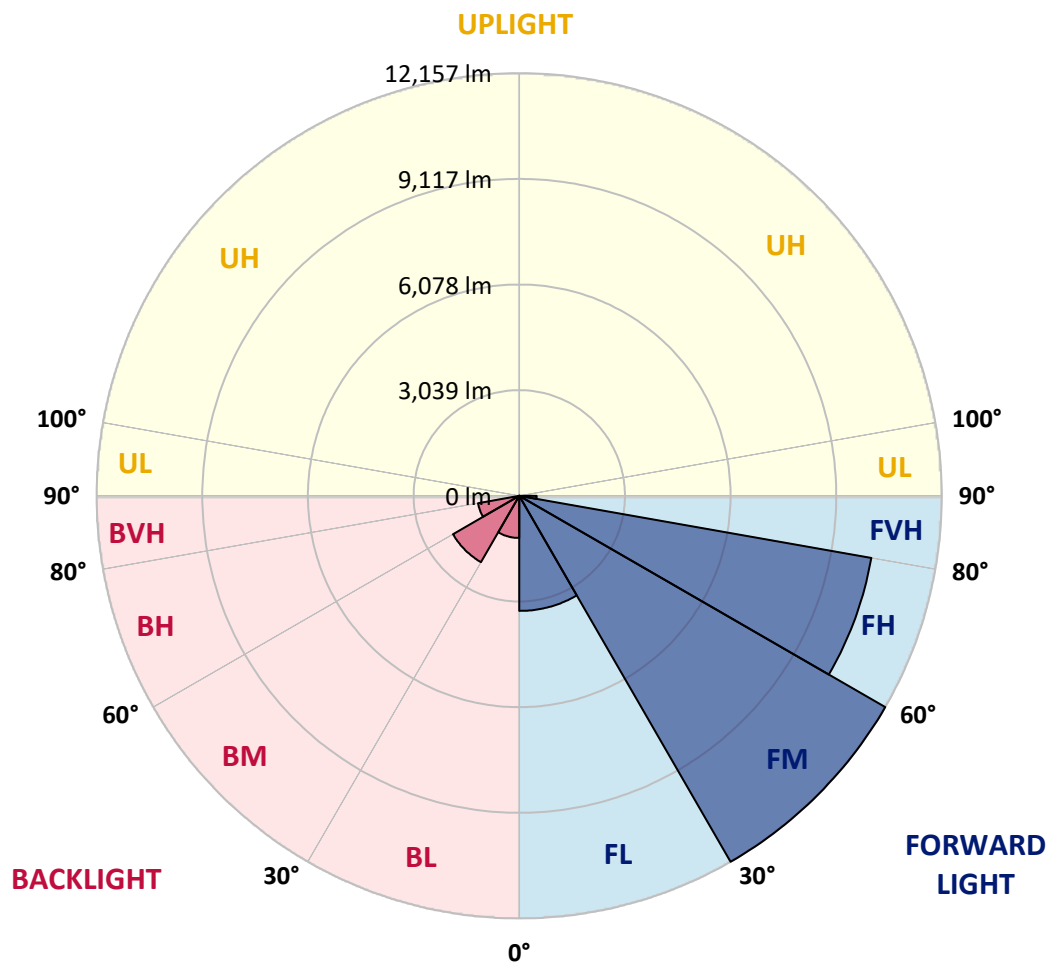
CATALOG NUMBER: GLEON-SA9A-740-U-SLL-HSS

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 3311.1  | 10.7      |                         |      |          |
| FM   | (30°-60°)   | 12156.6 | 39.4      |                         |      |          |
| FH   | (60°-80°)   | 10284.5 | 33.3      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 499.9   | 1.6       |                         |      | G3/500   |
| BL   | (0°-30°)    | 1212.1  | 3.9       | B3/2500                 |      |          |
| BM   | (30°-60°)   | 2203.3  | 7.1       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 1203.9  | 3.9       | B3/2500                 |      | G3/2500  |
| BVH  | (80°-90°)   | 15.6    | 0.1       |                         |      | G1/100   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B3-U0-G4**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 1°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 |
| 2.5°  | 11232.6 | 11250.2 | 11340.9 | 11551.6 | 11781.3 | 11798.9 | 11954.0 | 11794.5 | 11740.4 | 11482.8 | 11216.5 |
| 5°    | 11317.5 | 11384.8 | 11696.5 | 12315.4 | 12852.3 | 13025.0 | 13147.9 | 12834.8 | 12505.6 | 11876.4 | 11204.8 |
| 7.5°  | 10634.2 | 10746.9 | 11237.0 | 12398.8 | 13358.6 | 13782.9 | 13863.4 | 13373.2 | 12567.0 | 11531.1 | 10521.5 |
| 10°   | 9759.2  | 9888.0  | 10479.1 | 11907.2 | 13225.5 | 13952.6 | 14063.8 | 13421.5 | 12262.7 | 10972.2 | 9782.7  |
| 12.5° | 9051.1  | 9201.8  | 9806.1  | 11354.1 | 12767.5 | 13572.2 | 13791.7 | 13259.1 | 11999.3 | 10575.7 | 9277.9  |
| 15°   | 8724.8  | 8897.4  | 9532.5  | 10997.1 | 12259.8 | 12893.3 | 13074.7 | 12845.0 | 11853.0 | 10512.8 | 9160.8  |
| 17.5° | 8912.1  | 9099.4  | 9754.9  | 11027.8 | 11782.8 | 12053.5 | 12199.8 | 12293.4 | 11853.0 | 10891.7 | 9503.2  |
| 20°   | 9680.2  | 9882.1  | 10575.7 | 11339.4 | 11387.7 | 11286.8 | 11443.3 | 11772.5 | 11990.6 | 11611.6 | 10325.5 |
| 22.5° | 10742.5 | 10979.5 | 11762.3 | 11873.5 | 11194.6 | 10812.7 | 10833.2 | 11349.7 | 12240.8 | 12524.6 | 11466.7 |
| 25°   | 12037.4 | 12327.1 | 13123.0 | 12669.5 | 11275.1 | 10530.3 | 10523.0 | 11001.5 | 12485.1 | 13439.1 | 12738.2 |
| 27.5° | 13323.5 | 13642.5 | 14341.8 | 13641.0 | 11607.2 | 10479.1 | 10464.5 | 10896.1 | 12723.6 | 14252.6 | 14126.8 |
| 30°   | 14401.8 | 14712.0 | 15314.8 | 14344.8 | 11965.7 | 10599.1 | 10528.9 | 11008.8 | 12865.5 | 14780.8 | 15139.3 |
| 32.5° | 15279.7 | 15528.5 | 16015.7 | 14829.1 | 12349.0 | 10831.7 | 10679.6 | 11310.2 | 13106.9 | 15227.0 | 16069.8 |
| 35°   | 16245.4 | 16507.3 | 16701.9 | 15290.0 | 12779.2 | 11166.8 | 10948.8 | 11788.6 | 13478.6 | 15680.6 | 17089.6 |
| 37.5° | 17347.2 | 17607.6 | 17584.2 | 15711.4 | 13324.9 | 11721.3 | 11582.3 | 12546.5 | 14056.5 | 16129.8 | 18228.0 |
| 40°   | 18425.5 | 18691.8 | 18501.6 | 16172.2 | 13965.8 | 12635.8 | 12533.4 | 13684.9 | 14830.5 | 16704.8 | 19562.4 |
| 42.5° | 19435.1 | 19723.3 | 19316.6 | 16608.3 | 14729.6 | 13788.8 | 13964.3 | 15151.0 | 15799.1 | 17413.0 | 20712.4 |
| 45°   | 20248.6 | 20542.7 | 19999.9 | 17032.6 | 15534.3 | 15187.5 | 15715.7 | 16775.1 | 16963.8 | 18011.4 | 21489.4 |
| 47.5° | 20839.7 | 21117.7 | 20473.9 | 17456.9 | 16564.4 | 16898.0 | 17818.3 | 18478.2 | 18015.8 | 18530.9 | 22041.0 |
| 50°   | 21217.2 | 21433.8 | 20612.9 | 17988.0 | 17916.3 | 18893.7 | 20008.6 | 20330.5 | 19006.4 | 18999.1 | 22711.1 |
| 52.5° | 21457.2 | 21555.2 | 20715.3 | 18542.6 | 19326.8 | 21066.5 | 22153.6 | 22254.6 | 20026.2 | 19514.1 | 23613.9 |
| 55°   | 22283.8 | 22362.9 | 21441.1 | 19214.1 | 20492.9 | 22970.1 | 24093.8 | 24000.1 | 21180.6 | 20522.2 | 24679.0 |
| 57.5° | 23694.3 | 23777.7 | 22940.8 | 20179.8 | 21436.7 | 24146.4 | 25499.9 | 25668.1 | 22534.0 | 21938.5 | 25820.3 |
| 60°   | 24402.5 | 24557.6 | 24259.1 | 21403.0 | 22351.1 | 24898.5 | 26458.2 | 26995.2 | 24225.4 | 23805.5 | 26926.4 |
| 62.5° | 23760.2 | 23985.5 | 24418.6 | 22759.4 | 23259.8 | 25312.6 | 26756.7 | 27470.7 | 25957.8 | 25981.2 | 27608.3 |
| 65°   | 22478.4 | 22658.4 | 23392.9 | 23502.7 | 23786.5 | 25261.4 | 26019.3 | 26806.5 | 27018.6 | 27979.9 | 27571.7 |
| 67.5° | 20930.4 | 20997.7 | 21621.0 | 23561.2 | 23022.7 | 23722.1 | 23804.1 | 24386.4 | 26180.2 | 28688.1 | 26464.1 |
| 70°   | 18702.0 | 18738.6 | 19282.9 | 21602.0 | 19784.8 | 19938.4 | 19817.0 | 19935.5 | 22507.7 | 26963.0 | 23668.0 |
| 72.5° | 15051.5 | 15143.6 | 15917.7 | 17939.7 | 14413.5 | 13970.2 | 14924.2 | 14871.5 | 17334.0 | 22779.9 | 17578.3 |
| 75°   | 11081.9 | 11241.4 | 12410.5 | 14450.1 | 10116.3 | 9150.6  | 9847.0  | 10032.9 | 12322.7 | 17620.8 | 10992.7 |
| 77.5° | 7759.1  | 7877.6  | 9010.1  | 10622.5 | 7321.6  | 6543.2  | 6291.6  | 6512.5  | 8133.7  | 12747.0 | 5538.0  |
| 80°   | 4469.9  | 4513.8  | 5236.6  | 6133.5  | 4933.8  | 5644.9  | 5113.7  | 5265.9  | 4873.8  | 5671.2  | 2382.0  |
| 82.5° | 2924.8  | 2932.2  | 3214.6  | 3650.6  | 3072.6  | 3570.1  | 2642.5  | 3378.4  | 2998.0  | 2278.1  | 775.5   |
| 85°   | 1580.2  | 1589.0  | 1864.1  | 2591.2  | 1739.7  | 983.2   | 577.9   | 1186.6  | 1853.8  | 522.3   | 212.2   |
| 87.5° | 174.1   | 159.5   | 561.9   | 942.3   | 482.8   | 89.3    | 30.7    | 133.1   | 297.0   | 33.7    | 0.0     |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



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**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°    | 115°    | 125°    | 135°    | 145°    | 155°    | 165°    | 175°    | 180°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 |
| 2.5°  | 11080.5 | 10959.0 | 10656.2 | 10335.7 | 10078.2 | 9836.8  | 9593.9  | 9296.9  | 9067.2  | 9020.3  | 8944.3  |
| 5°    | 10843.4 | 10458.6 | 9823.6  | 9185.7  | 8672.1  | 8023.9  | 7612.8  | 7292.4  | 6979.2  | 6960.2  | 6897.3  |
| 7.5°  | 10015.3 | 9509.0  | 8615.1  | 7732.8  | 7010.0  | 6392.5  | 5769.2  | 5352.2  | 5024.5  | 4908.9  | 4840.1  |
| 10°   | 9219.3  | 8650.2  | 7533.8  | 6527.1  | 5881.9  | 5336.1  | 4897.2  | 4461.2  | 4066.1  | 3794.0  | 3671.1  |
| 12.5° | 8663.3  | 8034.2  | 6803.7  | 5936.0  | 5473.7  | 4955.7  | 4420.2  | 3875.9  | 3420.9  | 3093.1  | 2892.7  |
| 15°   | 8448.3  | 7776.7  | 6559.3  | 5701.9  | 5131.3  | 4475.8  | 3791.0  | 3169.2  | 2664.4  | 2367.4  | 2187.4  |
| 17.5° | 8704.3  | 7923.0  | 6540.3  | 5416.6  | 4619.2  | 3804.2  | 3047.8  | 2313.2  | 1837.7  | 1612.4  | 1496.8  |
| 20°   | 9353.9  | 8388.3  | 6533.0  | 5066.9  | 4010.5  | 3008.2  | 2064.5  | 1521.7  | 1233.4  | 1107.6  | 1053.5  |
| 22.5° | 10272.8 | 8982.3  | 6591.5  | 4721.6  | 3377.0  | 2149.4  | 1425.1  | 1117.9  | 970.1   | 902.8   | 872.0   |
| 25°   | 11455.0 | 9816.3  | 6756.8  | 4408.5  | 2781.5  | 1603.6  | 1110.5  | 936.4   | 832.5   | 779.9   | 757.9   |
| 27.5° | 12714.8 | 10776.1 | 7014.4  | 4136.3  | 2297.2  | 1278.8  | 951.1   | 801.8   | 727.2   | 690.6   | 670.1   |
| 30°   | 13753.7 | 11888.1 | 7274.8  | 3833.5  | 1946.0  | 1114.9  | 870.6   | 731.6   | 645.3   | 621.8   | 602.8   |
| 32.5° | 14662.3 | 12729.4 | 7459.2  | 3559.9  | 1716.3  | 990.6   | 787.2   | 654.0   | 595.5   | 550.1   | 529.7   |
| 35°   | 15603.1 | 13430.3 | 7453.3  | 3368.2  | 1558.3  | 896.9   | 716.9   | 585.3   | 515.0   | 462.4   | 446.3   |
| 37.5° | 16621.4 | 14221.9 | 7326.0  | 3204.3  | 1489.5  | 822.3   | 677.4   | 548.7   | 478.5   | 425.8   | 405.3   |
| 40°   | 17813.9 | 15052.9 | 7195.8  | 3050.7  | 1470.5  | 762.3   | 649.6   | 519.4   | 444.8   | 393.6   | 373.1   |
| 42.5° | 18975.7 | 15802.1 | 7081.7  | 2936.6  | 1388.5  | 760.8   | 624.8   | 497.5   | 418.5   | 368.7   | 345.3   |
| 45°   | 19904.8 | 16500.0 | 7059.7  | 2867.8  | 1302.2  | 787.2   | 611.6   | 482.8   | 398.0   | 348.2   | 326.3   |
| 47.5° | 20677.3 | 17257.9 | 7200.2  | 2819.5  | 1220.3  | 718.4   | 643.8   | 472.6   | 379.0   | 330.7   | 305.8   |
| 50°   | 21596.2 | 18188.5 | 7530.9  | 2740.5  | 1133.9  | 646.7   | 737.4   | 475.5   | 362.9   | 313.1   | 286.8   |
| 52.5° | 22877.9 | 19476.0 | 8016.6  | 2607.3  | 1015.4  | 580.9   | 725.7   | 478.5   | 345.3   | 294.1   | 267.8   |
| 55°   | 24314.7 | 21084.1 | 8539.0  | 2386.4  | 850.1   | 494.5   | 621.8   | 458.0   | 311.7   | 273.6   | 248.7   |
| 57.5° | 25824.7 | 22542.8 | 8849.2  | 2123.0  | 676.0   | 427.2   | 497.5   | 417.0   | 275.1   | 245.8   | 229.7   |
| 60°   | 26061.7 | 23097.4 | 8707.2  | 1799.7  | 537.0   | 371.6   | 368.7   | 424.3   | 245.8   | 216.5   | 204.8   |
| 62.5° | 25472.1 | 22400.9 | 8021.0  | 1511.4  | 449.2   | 326.3   | 302.9   | 370.2   | 222.4   | 193.1   | 181.4   |
| 65°   | 24338.1 | 20517.8 | 6909.0  | 1362.2  | 417.0   | 279.5   | 251.7   | 260.4   | 194.6   | 168.3   | 158.0   |
| 67.5° | 22760.8 | 18004.1 | 5672.7  | 1277.3  | 412.6   | 240.0   | 215.1   | 197.5   | 168.3   | 146.3   | 137.5   |
| 70°   | 19536.0 | 14998.8 | 4525.5  | 1230.5  | 400.9   | 201.9   | 181.4   | 160.9   | 140.5   | 124.4   | 117.1   |
| 72.5° | 14378.4 | 10628.4 | 3520.3  | 1179.3  | 403.8   | 160.9   | 158.0   | 133.1   | 112.7   | 96.6    | 93.6    |
| 75°   | 8307.8  | 6072.1  | 2308.9  | 955.4   | 384.8   | 124.4   | 131.7   | 93.6    | 79.0    | 67.3    | 67.3    |
| 77.5° | 4427.5  | 3703.2  | 879.4   | 398.0   | 140.5   | 79.0    | 74.6    | 55.6    | 49.7    | 41.0    | 39.5    |
| 80°   | 1929.9  | 1630.0  | 264.8   | 111.2   | 77.5    | 42.4    | 27.8    | 24.9    | 21.9    | 17.6    | 16.1    |
| 82.5° | 683.3   | 589.7   | 86.3    | 54.1    | 33.7    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 85°   | 155.1   | 111.2   | 0.0     | 13.2    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 87.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |





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**CANDELA DISTRIBUTION (continued):**

|       | 185°    | 195°    | 205°    | 215°    | 225°    | 235°    | 245°    | 255°    | 265°    | 270°    | 275°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 |
| 2.5°  | 8789.2  | 8757.0  | 8566.8  | 8574.1  | 8607.7  | 8656.0  | 8541.9  | 8594.6  | 8736.5  | 8872.6  | 8923.8  |
| 5°    | 6796.4  | 6803.7  | 6688.1  | 6759.8  | 6824.2  | 6868.0  | 6683.7  | 6686.6  | 6799.3  | 6952.9  | 7033.4  |
| 7.5°  | 4788.9  | 4777.2  | 4783.1  | 4954.2  | 5075.7  | 4987.9  | 5056.7  | 4818.2  | 4832.8  | 4942.5  | 4860.6  |
| 10°   | 3559.9  | 3398.9  | 3308.2  | 3436.9  | 3570.1  | 3521.8  | 3403.3  | 3325.8  | 3379.9  | 3501.3  | 3492.5  |
| 12.5° | 2797.6  | 2566.4  | 2430.3  | 2338.1  | 2447.9  | 2357.1  | 2354.2  | 2286.9  | 2213.8  | 2226.9  | 2421.5  |
| 15°   | 2104.0  | 1935.8  | 1774.8  | 1627.0  | 1624.1  | 1593.4  | 1436.8  | 1261.2  | 1246.6  | 1255.4  | 1356.3  |
| 17.5° | 1447.1  | 1390.0  | 1324.2  | 1196.9  | 1163.2  | 1034.5  | 882.3   | 812.1   | 776.9   | 793.0   | 826.7   |
| 20°   | 1016.9  | 994.9   | 1002.3  | 933.5   | 885.2   | 762.3   | 673.1   | 645.3   | 639.4   | 655.5   | 671.6   |
| 22.5° | 842.8   | 803.3   | 798.9   | 768.2   | 719.9   | 630.6   | 582.3   | 566.2   | 558.9   | 573.6   | 585.3   |
| 25°   | 737.4   | 697.9   | 681.8   | 662.8   | 611.6   | 550.1   | 520.9   | 506.3   | 498.9   | 507.7   | 515.0   |
| 27.5° | 649.6   | 613.1   | 598.4   | 585.3   | 535.5   | 491.6   | 468.2   | 455.0   | 449.2   | 452.1   | 459.4   |
| 30°   | 583.8   | 551.6   | 532.6   | 516.5   | 474.1   | 443.3   | 422.9   | 409.7   | 403.8   | 403.8   | 411.1   |
| 32.5° | 515.0   | 497.5   | 479.9   | 459.4   | 419.9   | 399.4   | 379.0   | 364.3   | 358.5   | 359.9   | 365.8   |
| 35°   | 428.7   | 422.9   | 427.2   | 408.2   | 374.6   | 357.0   | 336.5   | 320.4   | 316.0   | 317.5   | 323.4   |
| 37.5° | 380.4   | 354.1   | 370.2   | 359.9   | 340.9   | 317.5   | 291.2   | 276.5   | 269.2   | 273.6   | 276.5   |
| 40°   | 349.7   | 317.5   | 305.8   | 316.0   | 313.1   | 275.1   | 251.7   | 237.0   | 231.2   | 232.6   | 235.6   |
| 42.5° | 323.4   | 285.3   | 259.0   | 257.5   | 275.1   | 240.0   | 215.1   | 201.9   | 194.6   | 194.6   | 197.5   |
| 45°   | 298.5   | 257.5   | 225.3   | 200.5   | 231.2   | 203.4   | 180.0   | 168.3   | 159.5   | 159.5   | 160.9   |
| 47.5° | 279.5   | 234.1   | 196.1   | 163.9   | 174.1   | 166.8   | 147.8   | 136.1   | 127.3   | 127.3   | 128.8   |
| 50°   | 261.9   | 210.7   | 169.7   | 137.5   | 130.2   | 137.5   | 120.0   | 106.8   | 101.0   | 99.5    | 102.4   |
| 52.5° | 242.9   | 187.3   | 144.9   | 117.1   | 102.4   | 103.9   | 93.6    | 84.9    | 77.5    | 77.5    | 80.5    |
| 55°   | 223.9   | 168.3   | 125.8   | 99.5    | 84.9    | 77.5    | 74.6    | 68.8    | 62.9    | 62.9    | 65.8    |
| 57.5° | 204.8   | 147.8   | 106.8   | 81.9    | 67.3    | 61.5    | 61.5    | 57.1    | 52.7    | 52.7    | 55.6    |
| 60°   | 187.3   | 127.3   | 87.8    | 67.3    | 52.7    | 51.2    | 52.7    | 48.3    | 45.4    | 45.4    | 48.3    |
| 62.5° | 166.8   | 108.3   | 71.7    | 55.6    | 42.4    | 41.0    | 45.4    | 42.4    | 39.5    | 39.5    | 42.4    |
| 65°   | 141.9   | 92.2    | 57.1    | 42.4    | 32.2    | 32.2    | 38.0    | 35.1    | 32.2    | 32.2    | 35.1    |
| 67.5° | 120.0   | 77.5    | 43.9    | 30.7    | 23.4    | 24.9    | 32.2    | 29.3    | 27.8    | 27.8    | 30.7    |
| 70°   | 99.5    | 60.0    | 30.7    | 19.0    | 13.2    | 19.0    | 24.9    | 24.9    | 24.9    | 24.9    | 27.8    |
| 72.5° | 74.6    | 41.0    | 17.6    | 7.3     | 5.9     | 13.2    | 20.5    | 23.4    | 21.9    | 21.9    | 26.3    |
| 75°   | 48.3    | 23.4    | 5.9     | 0.0     | 0.0     | 7.3     | 16.1    | 19.0    | 19.0    | 17.6    | 21.9    |
| 77.5° | 27.8    | 7.3     | 0.0     | 0.0     | 0.0     | 0.0     | 10.2    | 8.8     | 7.3     | 5.9     | 10.2    |
| 80°   | 7.3     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 82.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 85°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 87.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



REPORT NUMBER: P324153

CATALOG NUMBER: GLEON-SA9A-740-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°    | 295°    | 305°    | 315°    | 325°    | 335°    | 345°    | 355°    | 359°    | 360°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 | 10362.1 |
| 2.5°  | 9130.1  | 9302.7  | 9545.6  | 9803.1  | 10199.7 | 10514.2 | 10823.0 | 11087.8 | 11190.2 | 11232.6 |
| 5°    | 7226.5  | 7479.6  | 7835.2  | 8291.7  | 9007.2  | 9651.0  | 10303.5 | 10960.5 | 11245.8 | 11317.5 |
| 7.5°  | 5185.4  | 5508.8  | 5960.9  | 6533.0  | 7371.4  | 8205.4  | 9116.9  | 10081.1 | 10523.0 | 10634.2 |
| 10°   | 3837.9  | 4232.9  | 4750.9  | 5353.7  | 6154.0  | 7011.4  | 8004.9  | 9106.7  | 9611.5  | 9759.2  |
| 12.5° | 2722.9  | 3257.0  | 3950.5  | 4683.6  | 5377.1  | 6142.3  | 7147.5  | 8361.9  | 8891.6  | 9051.1  |
| 15°   | 1599.2  | 2115.7  | 2936.6  | 3918.3  | 4806.5  | 5581.9  | 6603.2  | 7980.0  | 8563.8  | 8724.8  |
| 17.5° | 917.4   | 1174.9  | 1795.3  | 2889.7  | 4095.4  | 5169.3  | 6432.0  | 8075.1  | 8762.8  | 8912.1  |
| 20°   | 700.9   | 782.8   | 1034.5  | 1861.1  | 3264.3  | 4764.0  | 6432.0  | 8613.6  | 9460.8  | 9680.2  |
| 22.5° | 613.1   | 673.1   | 775.5   | 1110.5  | 2402.5  | 4329.5  | 6506.6  | 9392.0  | 10499.6 | 10742.5 |
| 25°   | 544.3   | 598.4   | 686.2   | 835.5   | 1638.7  | 3813.0  | 6683.7  | 10347.4 | 11722.8 | 12037.4 |
| 27.5° | 487.2   | 538.4   | 617.5   | 731.6   | 1120.8  | 3189.7  | 6922.2  | 11468.2 | 13071.8 | 13323.5 |
| 30°   | 436.0   | 484.3   | 556.0   | 636.5   | 864.7   | 2483.0  | 7125.6  | 12524.6 | 14131.1 | 14401.8 |
| 32.5° | 387.7   | 431.6   | 496.0   | 556.0   | 708.2   | 1836.3  | 7147.5  | 13361.5 | 15010.5 | 15279.7 |
| 35°   | 342.4   | 381.9   | 440.4   | 487.2   | 586.7   | 1450.0  | 6806.6  | 14087.3 | 15889.9 | 16245.4 |
| 37.5° | 298.5   | 336.5   | 387.7   | 422.9   | 516.5   | 1182.2  | 6285.7  | 14896.4 | 17018.0 | 17347.2 |
| 40°   | 257.5   | 291.2   | 343.8   | 367.3   | 488.7   | 908.6   | 5719.5  | 15745.0 | 18124.1 | 18425.5 |
| 42.5° | 219.5   | 251.7   | 302.9   | 348.2   | 428.7   | 678.9   | 5107.9  | 16541.0 | 19119.0 | 19435.1 |
| 45°   | 182.9   | 216.5   | 267.8   | 368.7   | 355.5   | 507.7   | 4453.8  | 17069.2 | 19904.8 | 20248.6 |
| 47.5° | 147.8   | 185.8   | 256.1   | 351.2   | 283.9   | 373.1   | 3935.9  | 17569.6 | 20500.3 | 20839.7 |
| 50°   | 118.5   | 156.6   | 288.2   | 313.1   | 232.6   | 285.3   | 3719.3  | 18017.3 | 20890.9 | 21217.2 |
| 52.5° | 96.6    | 131.7   | 272.1   | 240.0   | 194.6   | 235.6   | 3836.4  | 18743.0 | 21252.3 | 21457.2 |
| 55°   | 80.5    | 103.9   | 163.9   | 166.8   | 165.3   | 200.5   | 3981.2  | 19784.8 | 22187.3 | 22283.8 |
| 57.5° | 70.2    | 83.4    | 114.1   | 128.8   | 139.0   | 178.5   | 3984.2  | 21280.1 | 23634.3 | 23694.3 |
| 60°   | 60.0    | 73.2    | 95.1    | 103.9   | 120.0   | 159.5   | 3839.3  | 21802.5 | 24203.5 | 24402.5 |
| 62.5° | 52.7    | 64.4    | 79.0    | 86.3    | 101.0   | 143.4   | 3499.9  | 21046.0 | 23422.2 | 23760.2 |
| 65°   | 46.8    | 58.5    | 65.8    | 73.2    | 89.3    | 128.8   | 2940.9  | 19533.1 | 22125.8 | 22478.4 |
| 67.5° | 41.0    | 51.2    | 58.5    | 65.8    | 80.5    | 114.1   | 2165.5  | 17775.9 | 20637.8 | 20930.4 |
| 70°   | 36.6    | 45.4    | 52.7    | 58.5    | 70.2    | 96.6    | 1313.9  | 15083.7 | 18580.6 | 18702.0 |
| 72.5° | 35.1    | 41.0    | 48.3    | 52.7    | 61.5    | 84.9    | 665.7   | 11084.9 | 14853.9 | 15051.5 |
| 75°   | 30.7    | 36.6    | 43.9    | 46.8    | 54.1    | 73.2    | 270.7   | 7280.7  | 10764.4 | 11081.9 |
| 77.5° | 24.9    | 33.7    | 39.5    | 42.4    | 46.8    | 60.0    | 137.5   | 4652.8  | 7554.3  | 7759.1  |
| 80°   | 8.8     | 24.9    | 33.7    | 35.1    | 39.5    | 43.9    | 90.7    | 2547.4  | 4382.1  | 4469.9  |
| 82.5° | 0.0     | 16.1    | 26.3    | 24.9    | 27.8    | 33.7    | 58.5    | 1211.5  | 2892.7  | 2924.8  |
| 85°   | 0.0     | 7.3     | 20.5    | 16.1    | 11.7    | 23.4    | 20.5    | 264.8   | 1517.3  | 1580.2  |
| 87.5° | 0.0     | 0.0     | 1.5     | 7.3     | 5.9     | 8.8     | 2.9     | 1.5     | 137.5   | 174.1   |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |

LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

Luminaire Tested: IFLD-S-SA2A-740-U-T3R-HSS

Test Date: 03/05/2021

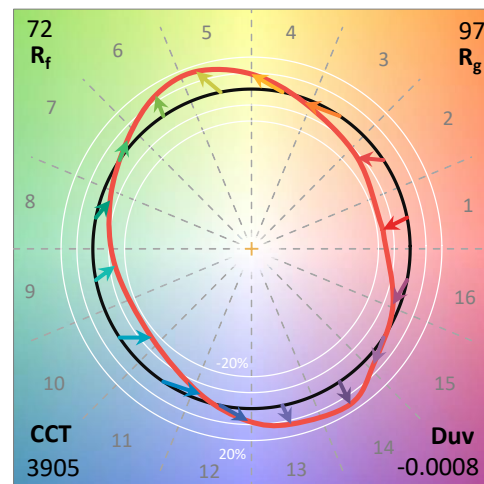
### Test Information

Test Method: LM-79-08  
 Report Number: SP1-2101-121-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry:  $4\pi$   
 Issue Date: 03/05/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**  
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 3905    | CRI (Ra): | 71.2 |      |       |
| CIE u':                   | 0.2273  | R1:       | 68.9 | R9:  | -29.7 |
| CIE v':                   | 0.5024  | R2:       | 77.0 | R10: | 46.2  |
| Duv:                      | -0.0008 | R3:       | 84.0 | R11: | 68.8  |
| CIE x:                    | 0.3841  | R4:       | 71.6 | R12: | 45.6  |
| CIE y:                    | 0.3774  | R5:       | 68.9 | R13: | 69.5  |
| CIE z:                    | 0.2385  | R6:       | 68.3 | R14: | 90.7  |
| Peak Wavelength (nm):     | 443     | R7:       | 78.7 |      |       |
| Dominant Wavelength (nm): | 579     | R8:       | 52.2 |      |       |
| Purity:                   | 28.7    |           |      |      |       |
| Rf:                       | 71.7    |           |      |      |       |
| Rg:                       | 96.9    |           |      |      |       |



### Test Conditions

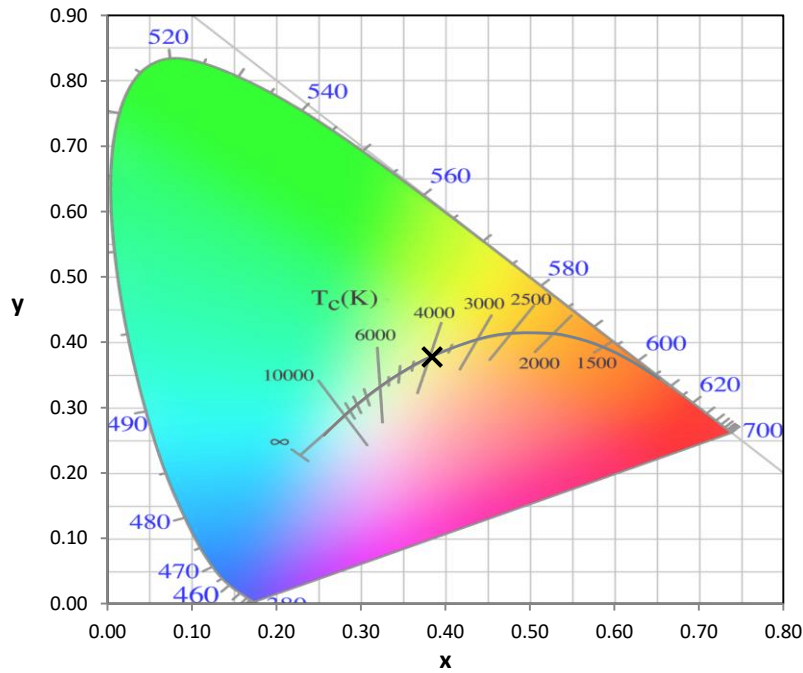
Stabilization Time: 211M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.8/312%  
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

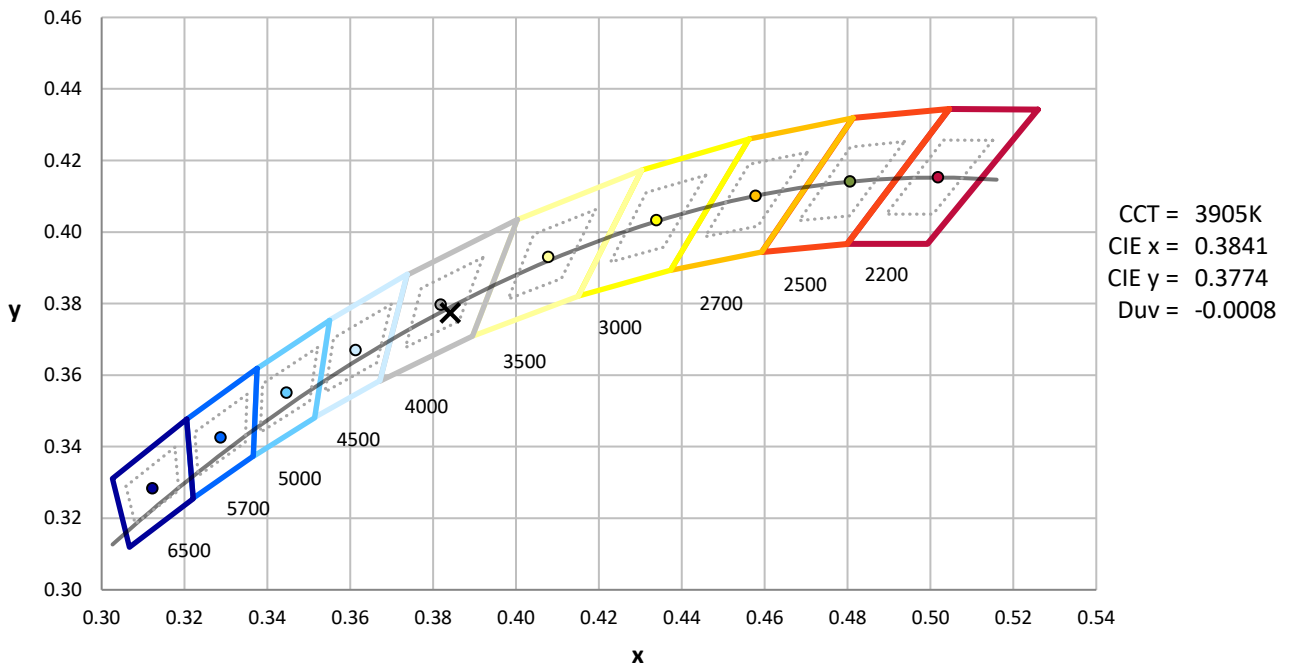
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 1/31/2021        | 7/31/2021            |
| Power Meter                    | IN0071                | 12/1/2020        | 12/1/2021            |
| AC Power Source                | IN0063                | 12/1/2020        | 12/1/2021            |
| DC Power Source                | IN0208                | 12/1/2020        | 12/1/2021            |
| Sphere Thermometer             | IN0085                | 12/1/2020        | 12/1/2021            |
| Room Thermometer               | IN0046                | 12/1/2020        | 12/1/2021            |

REPORT NUMBER: SP1-2101-121-2

**CIE 1931 Chromaticity Diagram**



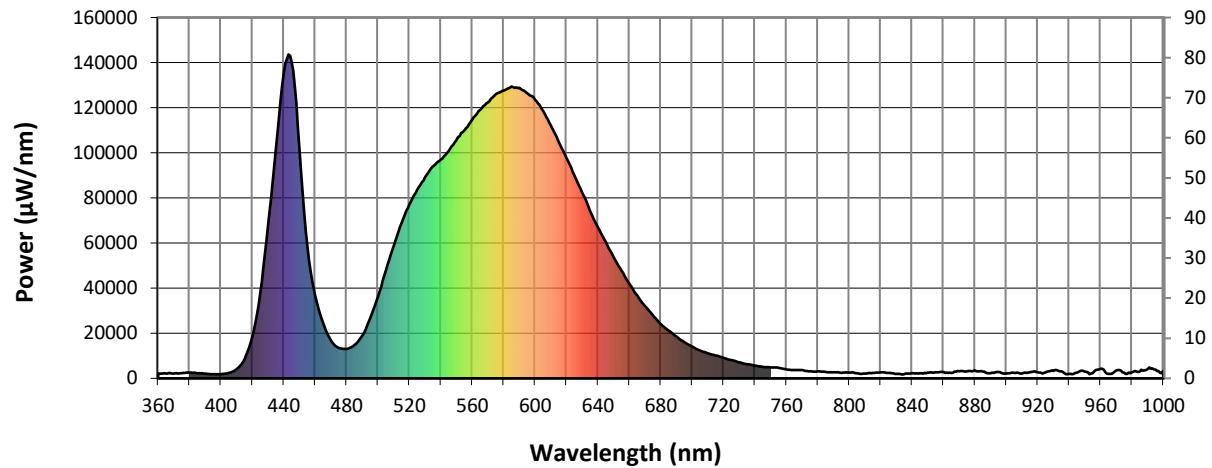
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

### Photopic Flux vs. Wavelength

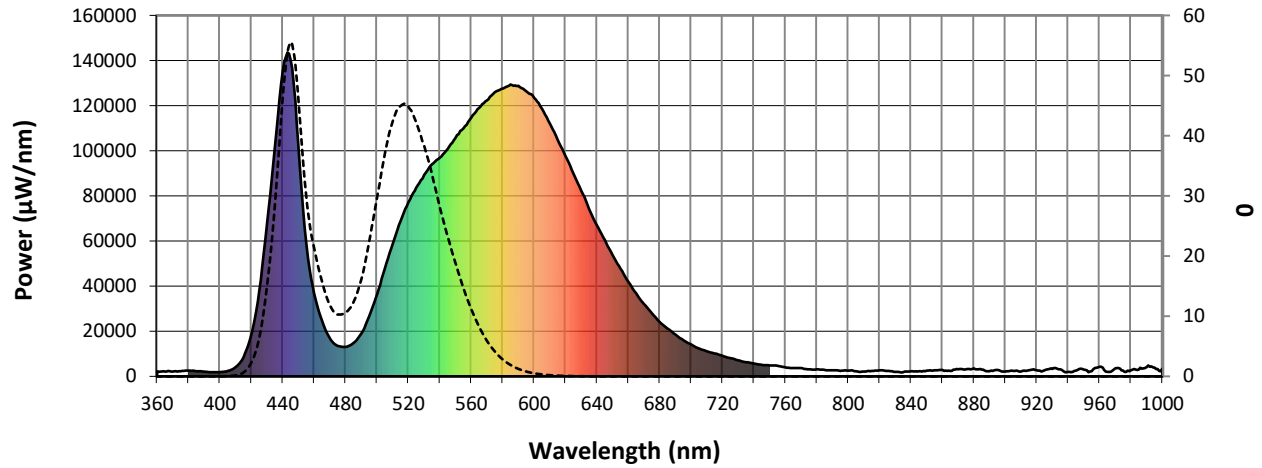


#####

| 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       | 2304             | 0.0              | 490       | 19043            | 2.7              | 620       | 97577            | 25.4             | 750       | 4830             | 0.0              | 880       | 3505             | 0.0              |
| 365       | 2150             | 0.0              | 495       | 26606            | 4.8              | 625       | 90158            | 19.9             | 755       | 4664             | 0.0              | 885       | 2991             | 0.0              |
| 370       | 2146             | 0.0              | 500       | 36376            | 8.0              | 630       | 82240            | 14.9             | 760       | 4006             | 0.0              | 890       | 2327             | 0.0              |
| 375       | 2332             | 0.0              | 505       | 47714            | 13.3             | 635       | 74361            | 11.2             | 765       | 3715             | 0.0              | 895       | 2775             | 0.0              |
| 380       | 2527             | 0.0              | 510       | 58741            | 20.2             | 640       | 66994            | 8.0              | 770       | 3696             | 0.0              | 900       | 2141             | 0.0              |
| 385       | 2304             | 0.0              | 515       | 68716            | 28.5             | 645       | 60405            | 5.8              | 775       | 3117             | 0.0              | 905       | 2421             | 0.0              |
| 390       | 2064             | 0.0              | 520       | 77136            | 37.4             | 650       | 53806            | 3.9              | 780       | 3062             | 0.0              | 910       | 2200             | 0.0              |
| 395       | 1856             | 0.0              | 525       | 83567            | 44.9             | 655       | 47610            | 2.7              | 785       | 2907             | 0.0              | 915       | 2716             | 0.0              |
| 400       | 1856             | 0.0              | 530       | 89283            | 52.6             | 660       | 42018            | 1.8              | 790       | 2655             | 0.0              | 920       | 2656             | 0.0              |
| 405       | 2374             | 0.0              | 535       | 94097            | 58.4             | 665       | 36742            | 1.2              | 795       | 2467             | 0.0              | 925       | 2671             | 0.0              |
| 410       | 4084             | 0.0              | 540       | 96845            | 63.1             | 670       | 32105            | 0.7              | 800       | 2609             | 0.0              | 930       | 3292             | 0.0              |
| 415       | 8543             | 0.0              | 545       | 100829           | 67.1             | 675       | 27946            | 0.5              | 805       | 2293             | 0.0              | 935       | 3188             | 0.0              |
| 420       | 18394            | 0.1              | 550       | 105648           | 71.8             | 680       | 24146            | 0.3              | 810       | 2188             | 0.0              | 940       | 1997             | 0.0              |
| 425       | 37987            | 0.2              | 555       | 110017           | 75.1             | 685       | 21191            | 0.2              | 815       | 2386             | 0.0              | 945       | 2623             | 0.0              |
| 430       | 67605            | 0.5              | 560       | 114586           | 77.9             | 690       | 18544            | 0.1              | 820       | 2712             | 0.0              | 950       | 2969             | 0.0              |
| 435       | 102160           | 1.2              | 565       | 118987           | 79.1             | 695       | 16058            | 0.1              | 825       | 2473             | 0.0              | 955       | 2277             | 0.0              |
| 440       | 135103           | 2.1              | 570       | 122326           | 79.5             | 700       | 14133            | 0.0              | 830       | 1969             | 0.0              | 960       | 4267             | 0.0              |
| 445       | 140126           | 2.9              | 575       | 125968           | 78.4             | 705       | 12309            | 0.0              | 835       | 1917             | 0.0              | 965       | 2034             | 0.0              |
| 450       | 102339           | 2.7              | 580       | 127613           | 75.8             | 710       | 11142            | 0.0              | 840       | 2248             | 0.0              | 970       | 3586             | 0.0              |
| 455       | 58751            | 2.0              | 585       | 129466           | 71.9             | 715       | 10143            | 0.0              | 845       | 2266             | 0.0              | 975       | 2505             | 0.0              |
| 460       | 36892            | 1.5              | 590       | 128813           | 66.6             | 720       | 9072             | 0.0              | 850       | 2558             | 0.0              | 980       | 2666             | 0.0              |
| 465       | 24637            | 1.3              | 595       | 126387           | 59.9             | 725       | 8130             | 0.0              | 855       | 2767             | 0.0              | 985       | 2934             | 0.0              |
| 470       | 16738            | 1.0              | 600       | 123477           | 53.2             | 730       | 7149             | 0.0              | 860       | 2826             | 0.0              | 990       | 4120             | 0.0              |
| 475       | 13456            | 1.1              | 605       | 118718           | 46.0             | 735       | 6311             | 0.0              | 865       | 2385             | 0.0              | 995       | 3858             | 0.0              |
| 480       | 13081            | 1.2              | 610       | 112091           | 38.5             | 740       | 5711             | 0.0              | 870       | 3194             | 0.0              | 1000      | 3405             | 0.0              |
| 485       | 14734            | 1.7              | 615       | 105039           | 31.7             | 745       | 5111             | 0.0              | 875       | 3189             | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2101-121-2

### Scotopic Flux vs. Wavelength

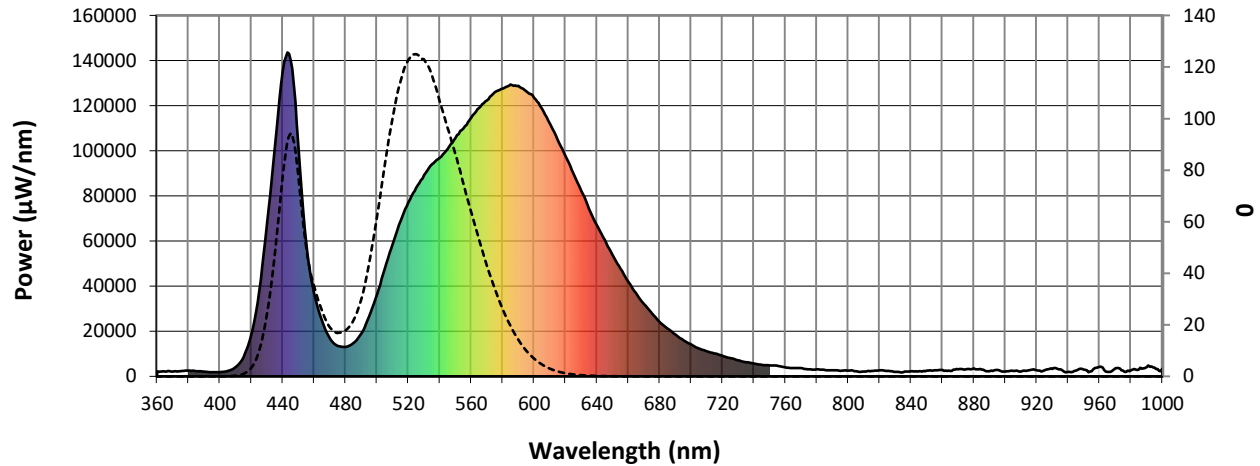

**Scotopic Lumens: 10425.8**
**S/P: 1.47**

| $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 360               | 2304                          | 0.0                            | 490               | 19043                         | 29.3                           | 620               | 97577                         | 1.2                            | 750               | 4830                          | 0.0                            | 880               | 3505                          | 0.0                            |
| 365               | 2150                          | 0.0                            | 495               | 26606                         | 43.0                           | 625               | 90158                         | 0.8                            | 755               | 4664                          | 0.0                            | 885               | 2991                          | 0.0                            |
| 370               | 2146                          | 0.0                            | 500               | 36376                         | 60.8                           | 630               | 82240                         | 0.5                            | 760               | 4006                          | 0.0                            | 890               | 2327                          | 0.0                            |
| 375               | 2332                          | 0.0                            | 505               | 47714                         | 81.1                           | 635               | 74361                         | 0.3                            | 765               | 3715                          | 0.0                            | 895               | 2775                          | 0.0                            |
| 380               | 2527                          | 0.0                            | 510               | 58741                         | 99.6                           | 640               | 66994                         | 0.2                            | 770               | 3696                          | 0.0                            | 900               | 2141                          | 0.0                            |
| 385               | 2304                          | 0.0                            | 515               | 68716                         | 113.9                          | 645               | 60405                         | 0.1                            | 775               | 3117                          | 0.0                            | 905               | 2421                          | 0.0                            |
| 390               | 2064                          | 0.0                            | 520               | 77136                         | 122.6                          | 650               | 53806                         | 0.1                            | 780               | 3062                          | 0.0                            | 910               | 2200                          | 0.0                            |
| 395               | 1856                          | 0.0                            | 525               | 83567                         | 125.0                          | 655               | 47610                         | 0.0                            | 785               | 2907                          | 0.0                            | 915               | 2716                          | 0.0                            |
| 400               | 1856                          | 0.0                            | 530               | 89283                         | 123.1                          | 660               | 42018                         | 0.0                            | 790               | 2655                          | 0.0                            | 920               | 2656                          | 0.0                            |
| 405               | 2374                          | 0.1                            | 535               | 94097                         | 117.3                          | 665               | 36742                         | 0.0                            | 795               | 2467                          | 0.0                            | 925               | 2671                          | 0.0                            |
| 410               | 4084                          | 0.2                            | 540               | 96845                         | 107.0                          | 670               | 32105                         | 0.0                            | 800               | 2609                          | 0.0                            | 930               | 3292                          | 0.0                            |
| 415               | 8543                          | 0.9                            | 545               | 100829                        | 96.7                           | 675               | 27946                         | 0.0                            | 805               | 2293                          | 0.0                            | 935               | 3188                          | 0.0                            |
| 420               | 18394                         | 3.0                            | 550               | 105648                        | 86.4                           | 680               | 24146                         | 0.0                            | 810               | 2188                          | 0.0                            | 940               | 1997                          | 0.0                            |
| 425               | 37987                         | 9.3                            | 555               | 110017                        | 75.2                           | 685               | 21191                         | 0.0                            | 815               | 2386                          | 0.0                            | 945               | 2623                          | 0.0                            |
| 430               | 67605                         | 23.0                           | 560               | 114586                        | 64.0                           | 690               | 18544                         | 0.0                            | 820               | 2712                          | 0.0                            | 950               | 2969                          | 0.0                            |
| 435               | 102160                        | 45.7                           | 565               | 118987                        | 53.4                           | 695               | 16058                         | 0.0                            | 825               | 2473                          | 0.0                            | 955               | 2277                          | 0.0                            |
| 440               | 135103                        | 75.5                           | 570               | 122326                        | 43.2                           | 700               | 14133                         | 0.0                            | 830               | 1969                          | 0.0                            | 960               | 4267                          | 0.0                            |
| 445               | 140126                        | 93.8                           | 575               | 125968                        | 34.3                           | 705               | 12309                         | 0.0                            | 835               | 1917                          | 0.0                            | 965               | 2034                          | 0.0                            |
| 450               | 102339                        | 79.3                           | 580               | 127613                        | 26.3                           | 710               | 11142                         | 0.0                            | 840               | 2248                          | 0.0                            | 970               | 3586                          | 0.0                            |
| 455               | 58751                         | 51.3                           | 585               | 129466                        | 19.8                           | 715               | 10143                         | 0.0                            | 845               | 2266                          | 0.0                            | 975               | 2505                          | 0.0                            |
| 460               | 36892                         | 35.6                           | 590               | 128813                        | 14.3                           | 720               | 9072                          | 0.0                            | 850               | 2558                          | 0.0                            | 980               | 2666                          | 0.0                            |
| 465               | 24637                         | 26.0                           | 595               | 126387                        | 10.1                           | 725               | 8130                          | 0.0                            | 855               | 2767                          | 0.0                            | 985               | 2934                          | 0.0                            |
| 470               | 16738                         | 19.3                           | 600               | 123477                        | 7.0                            | 730               | 7149                          | 0.0                            | 860               | 2826                          | 0.0                            | 990               | 4120                          | 0.0                            |
| 475               | 13456                         | 16.8                           | 605               | 118718                        | 4.7                            | 735               | 6311                          | 0.0                            | 865               | 2385                          | 0.0                            | 995               | 3858                          | 0.0                            |
| 480               | 13081                         | 17.7                           | 610               | 112091                        | 3.0                            | 740               | 5711                          | 0.0                            | 870               | 3194                          | 0.0                            | 1000              | 3405                          | 0.0                            |
| 485               | 14734                         | 21.4                           | 615               | 105039                        | 1.9                            | 745               | 5111                          | 0.0                            | 875               | 3189                          | 0.0                            |                   |                               |                                |



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### Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2

M/P: 0.55

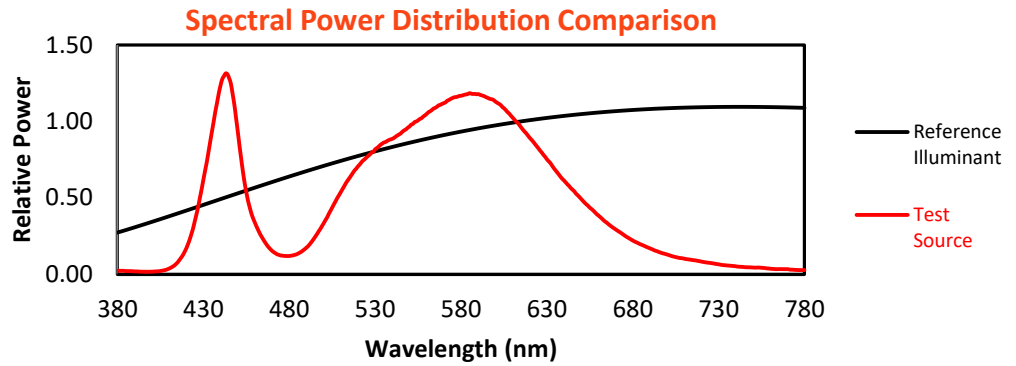
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2304             | 0.0              | 490       | 19043            | 15.8             | 620       | 97577            | 0.1              | 750       | 4830             | 0.0              | 880       | 3505             | 0.0              |
| 365       | 2150             | 0.0              | 495       | 26606            | 22.0             | 625       | 90158            | 0.0              | 755       | 4664             | 0.0              | 885       | 2991             | 0.0              |
| 370       | 2146             | 0.0              | 500       | 36376            | 29.2             | 630       | 82240            | 0.0              | 760       | 4006             | 0.0              | 890       | 2327             | 0.0              |
| 375       | 2332             | 0.0              | 505       | 47714            | 36.6             | 635       | 74361            | 0.0              | 765       | 3715             | 0.0              | 895       | 2775             | 0.0              |
| 380       | 2527             | 0.0              | 510       | 58741            | 42.2             | 640       | 66994            | 0.0              | 770       | 3696             | 0.0              | 900       | 2141             | 0.0              |
| 385       | 2304             | 0.0              | 515       | 68716            | 44.9             | 645       | 60405            | 0.0              | 775       | 3117             | 0.0              | 905       | 2421             | 0.0              |
| 390       | 2064             | 0.0              | 520       | 77136            | 44.9             | 650       | 53806            | 0.0              | 780       | 3062             | 0.0              | 910       | 2200             | 0.0              |
| 395       | 1856             | 0.0              | 525       | 83567            | 42.4             | 655       | 47610            | 0.0              | 785       | 2907             | 0.0              | 915       | 2716             | 0.0              |
| 400       | 1856             | 0.0              | 530       | 89283            | 38.6             | 660       | 42018            | 0.0              | 790       | 2655             | 0.0              | 920       | 2656             | 0.0              |
| 405       | 2374             | 0.0              | 535       | 94097            | 33.9             | 665       | 36742            | 0.0              | 795       | 2467             | 0.0              | 925       | 2671             | 0.0              |
| 410       | 4084             | 0.2              | 540       | 96845            | 28.3             | 670       | 32105            | 0.0              | 800       | 2609             | 0.0              | 930       | 3292             | 0.0              |
| 415       | 8543             | 0.6              | 545       | 100829           | 23.4             | 675       | 27946            | 0.0              | 805       | 2293             | 0.0              | 935       | 3188             | 0.0              |
| 420       | 18394            | 2.1              | 550       | 105648           | 19.0             | 680       | 24146            | 0.0              | 810       | 2188             | 0.0              | 940       | 1997             | 0.0              |
| 425       | 37987            | 5.9              | 555       | 110017           | 14.8             | 685       | 21191            | 0.0              | 815       | 2386             | 0.0              | 945       | 2623             | 0.0              |
| 430       | 67605            | 14.3             | 560       | 114586           | 11.3             | 690       | 18544            | 0.0              | 820       | 2712             | 0.0              | 950       | 2969             | 0.0              |
| 435       | 102160           | 27.3             | 565       | 118987           | 8.4              | 695       | 16058            | 0.0              | 825       | 2473             | 0.0              | 955       | 2277             | 0.0              |
| 440       | 135103           | 45.1             | 570       | 122326           | 6.0              | 700       | 14133            | 0.0              | 830       | 1969             | 0.0              | 960       | 4267             | 0.0              |
| 445       | 140126           | 55.3             | 575       | 125968           | 4.2              | 705       | 12309            | 0.0              | 835       | 1917             | 0.0              | 965       | 2034             | 0.0              |
| 450       | 102339           | 47.2             | 580       | 127613           | 2.9              | 710       | 11142            | 0.0              | 840       | 2248             | 0.0              | 970       | 3586             | 0.0              |
| 455       | 58751            | 30.8             | 585       | 129466           | 1.9              | 715       | 10143            | 0.0              | 845       | 2266             | 0.0              | 975       | 2505             | 0.0              |
| 460       | 36892            | 21.7             | 590       | 128813           | 1.3              | 720       | 9072             | 0.0              | 850       | 2558             | 0.0              | 980       | 2666             | 0.0              |
| 465       | 24637            | 16.1             | 595       | 126387           | 0.8              | 725       | 8130             | 0.0              | 855       | 2767             | 0.0              | 985       | 2934             | 0.0              |
| 470       | 16738            | 12.0             | 600       | 123477           | 0.5              | 730       | 7149             | 0.0              | 860       | 2826             | 0.0              | 990       | 4120             | 0.0              |
| 475       | 13456            | 10.3             | 605       | 118718           | 0.3              | 735       | 6311             | 0.0              | 865       | 2385             | 0.0              | 995       | 3858             | 0.0              |
| 480       | 13081            | 10.5             | 610       | 112091           | 0.2              | 740       | 5711             | 0.0              | 870       | 3194             | 0.0              | 1000      | 3405             | 0.0              |
| 485       | 14734            | 12.1             | 615       | 105039           | 0.1              | 745       | 5111             | 0.0              | 875       | 3189             | 0.0              |           |                  |                  |

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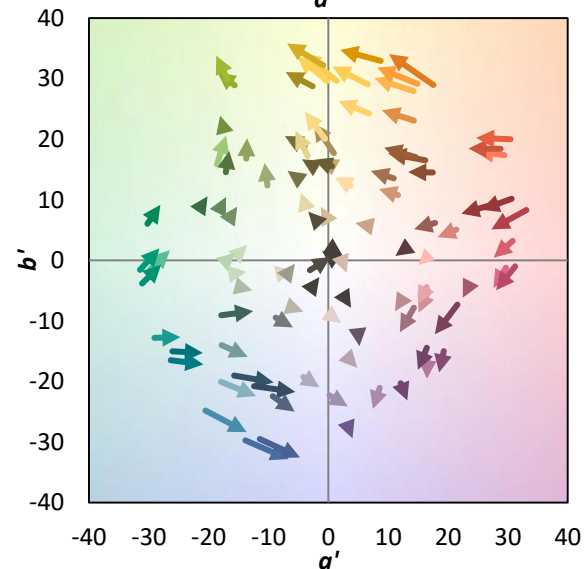
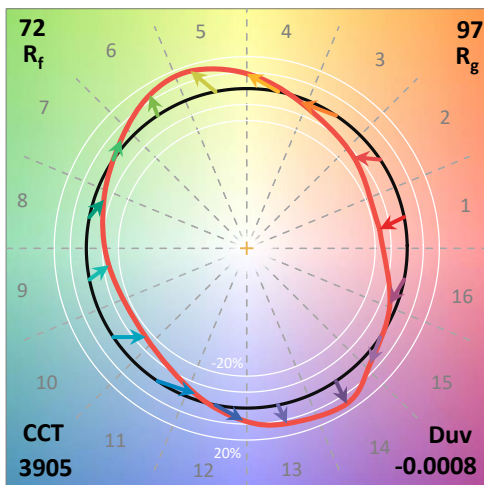
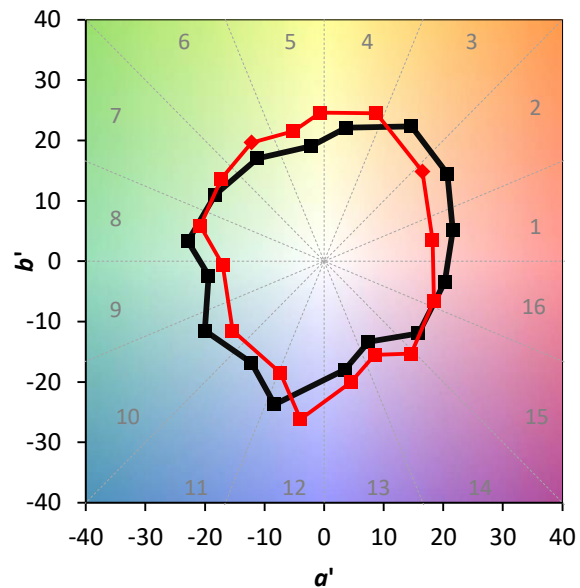
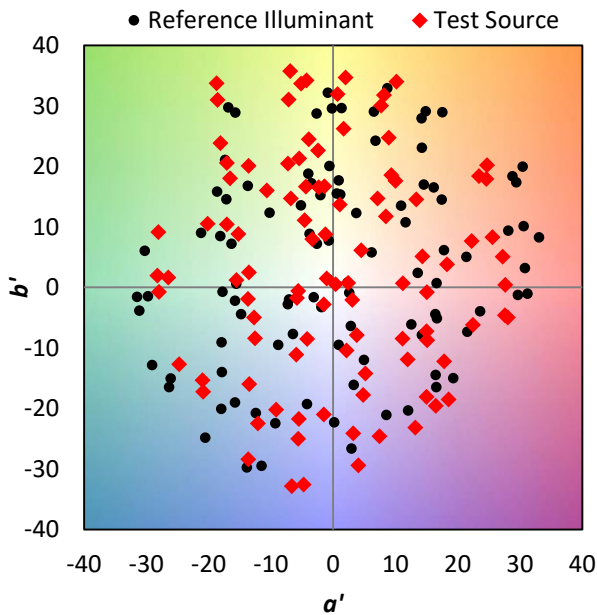
TM-30-18

### Summary

$R_f = 71.7$   
 $R_g = 96.9$   
 CIE  $R_a = 71.2$   
 $R_g = -29.7$

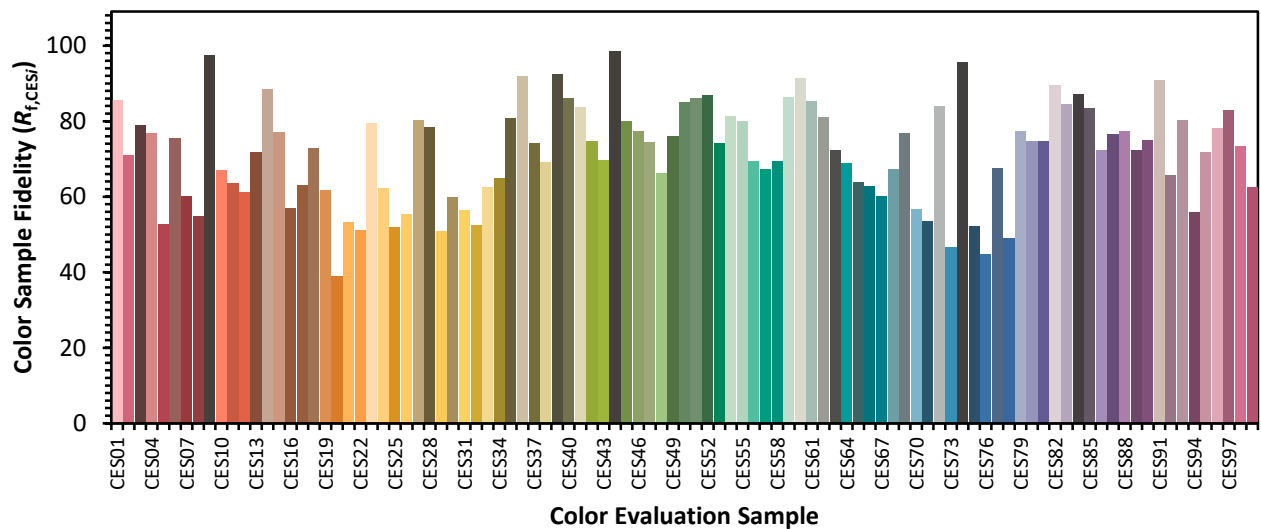


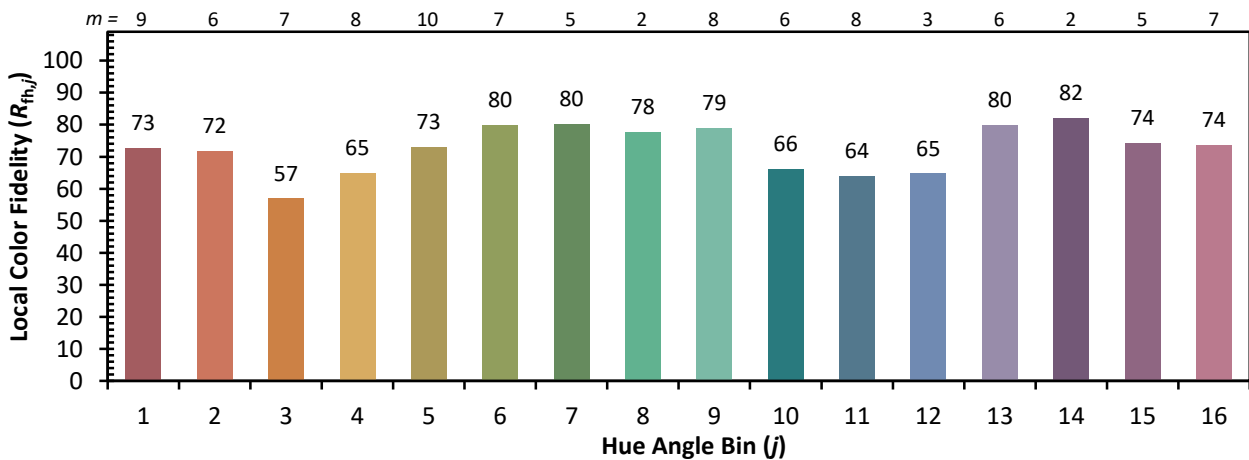
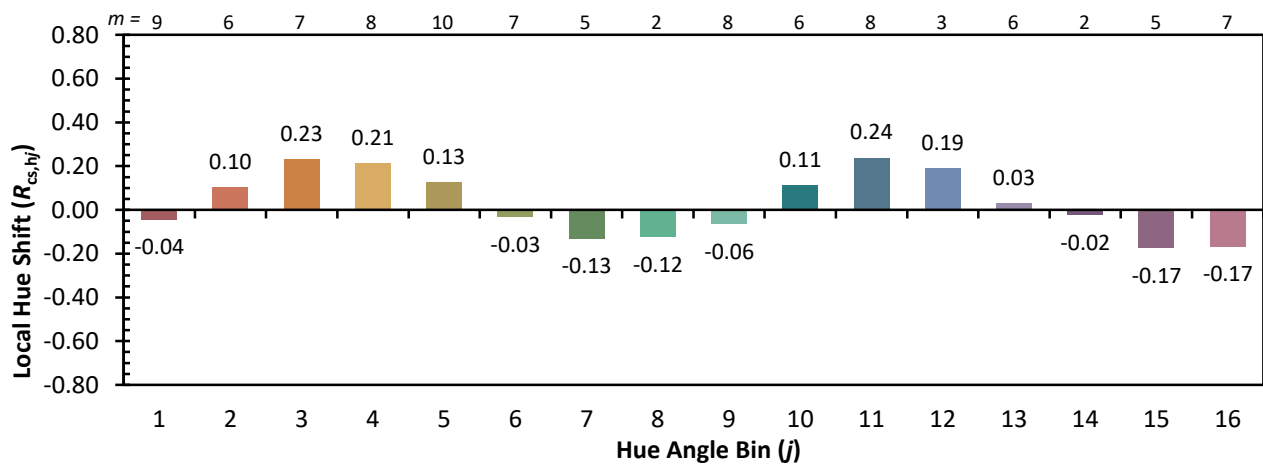
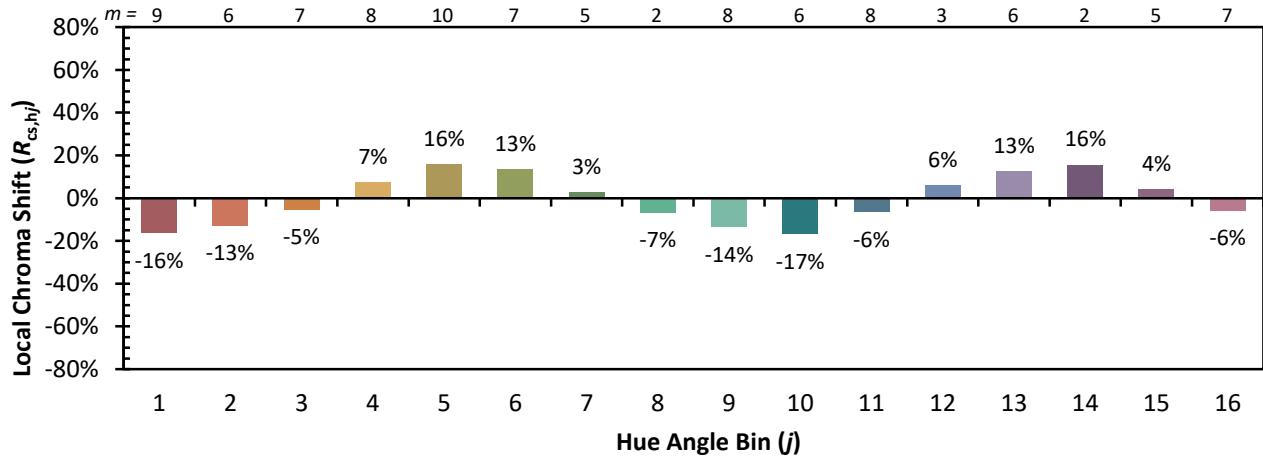
### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 |            |

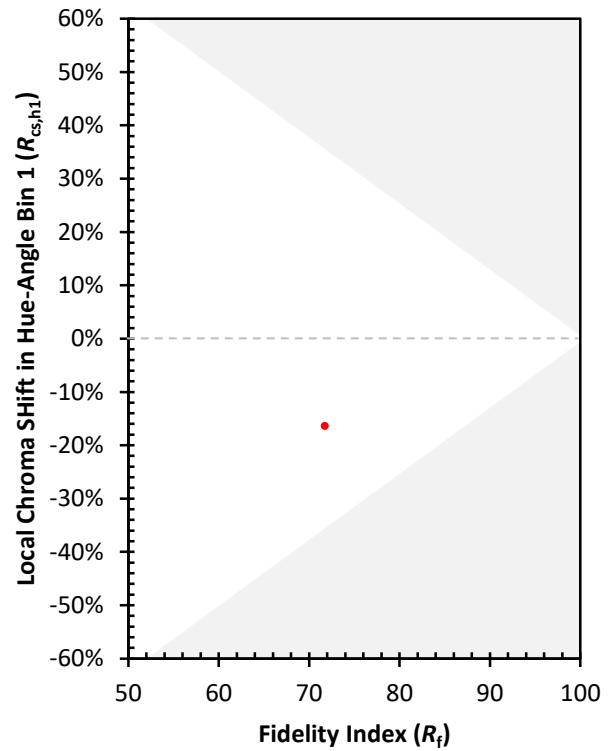
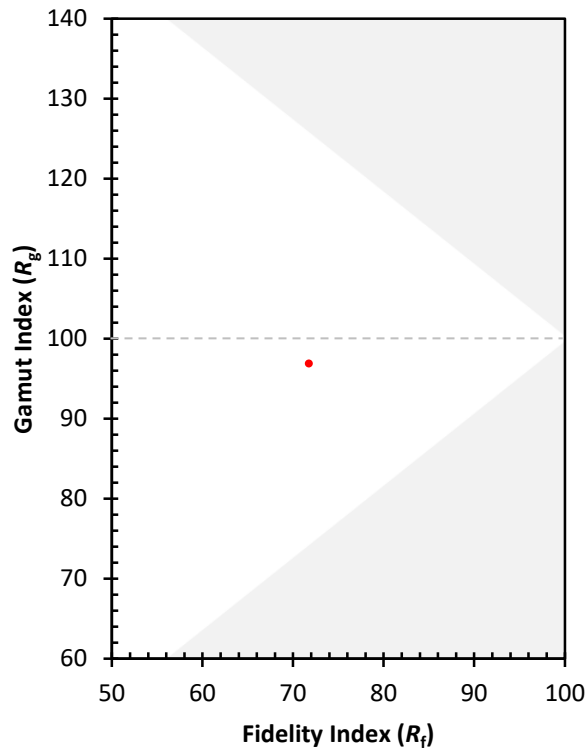


**Color Rendition by Hue-Angle Bin**


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**TM-30-18**

**Measure Comparisons**



(END OF REPORT)