

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: P324497

Luminaire Tested: **GLEON-SA3D-740-U-SLR-HSS**

Issue Date: 3/3/2020

### Test Information

Test Method: LM-79-08  
Report Number: P324497  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-28)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GLEON-SA3D-740-U-SLR-HSS  
Description: GALLEON AREA AND ROADWAY LUMINAIRE  
(3) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT  
ELIMINATOR RIGHT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

### Summary

Lumens per Lamp: N/A  
Luminaire Lumens: 17559 lumens  
Efficiency: N/A  
Efficacy: 91.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Medium  
BUG Rating: B2 - U0 - G3

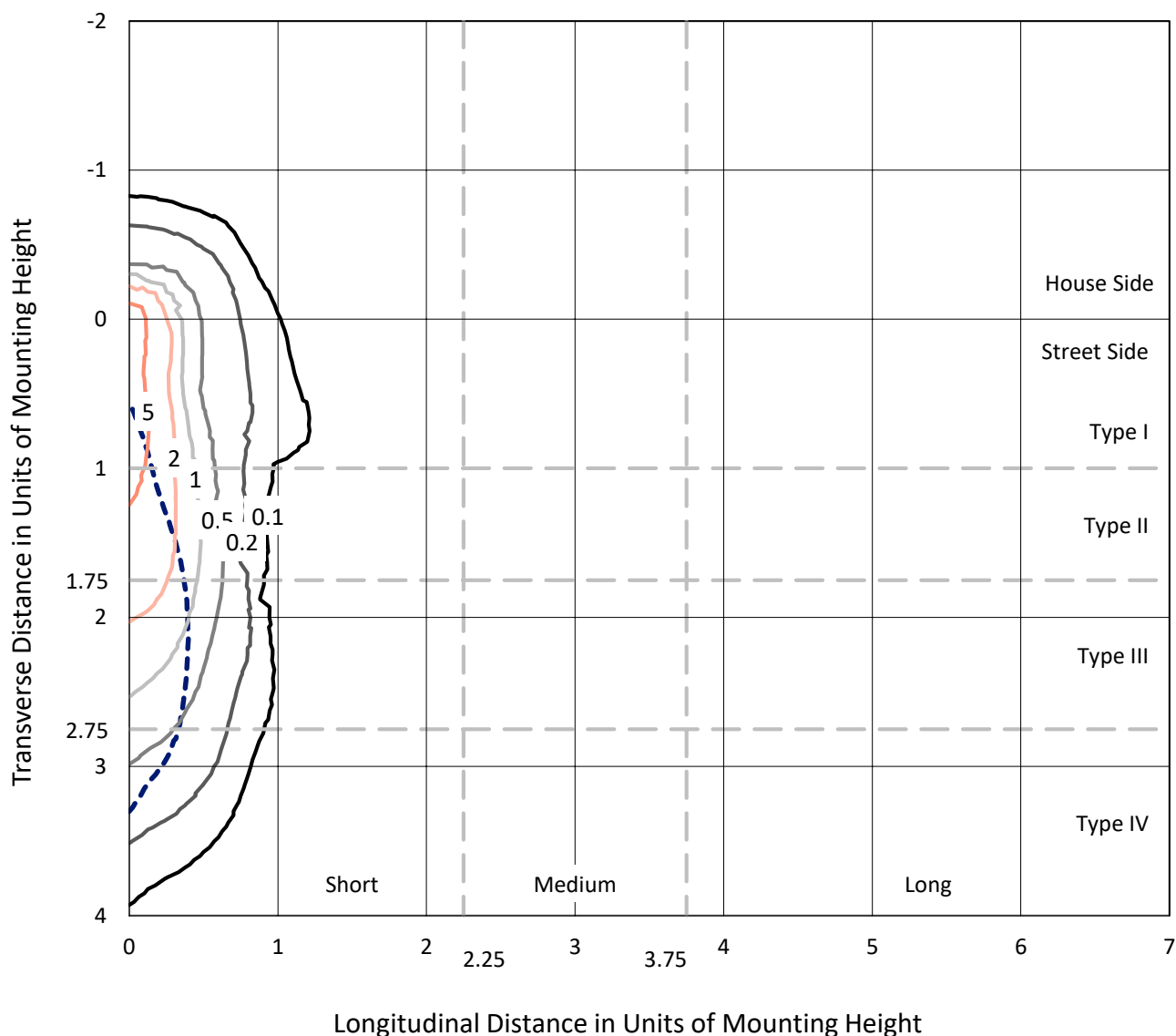
Input Watts (W): 191  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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## Iso-Footcandle Lines of Horizontal Illumination

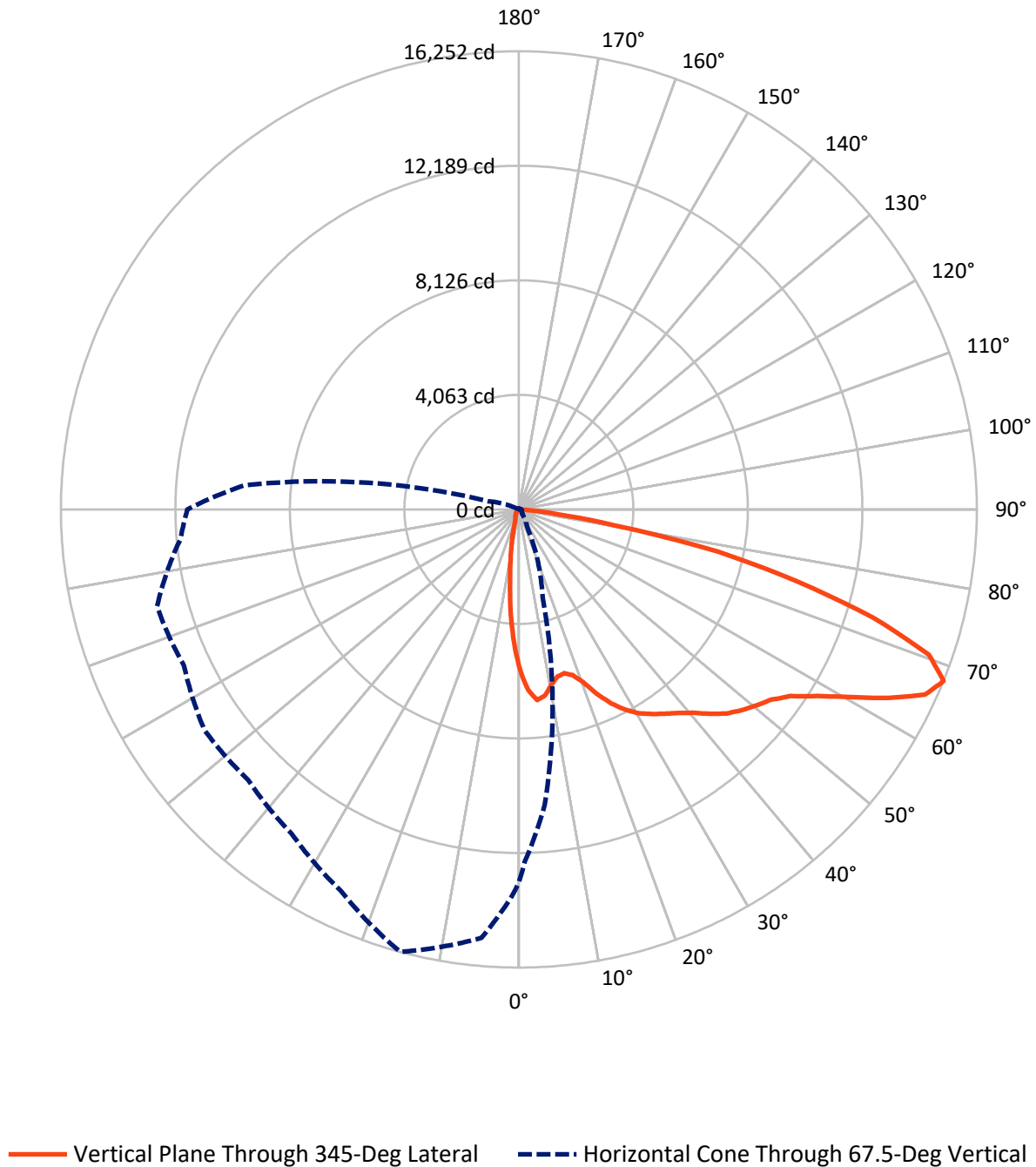
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.2 fc  
 Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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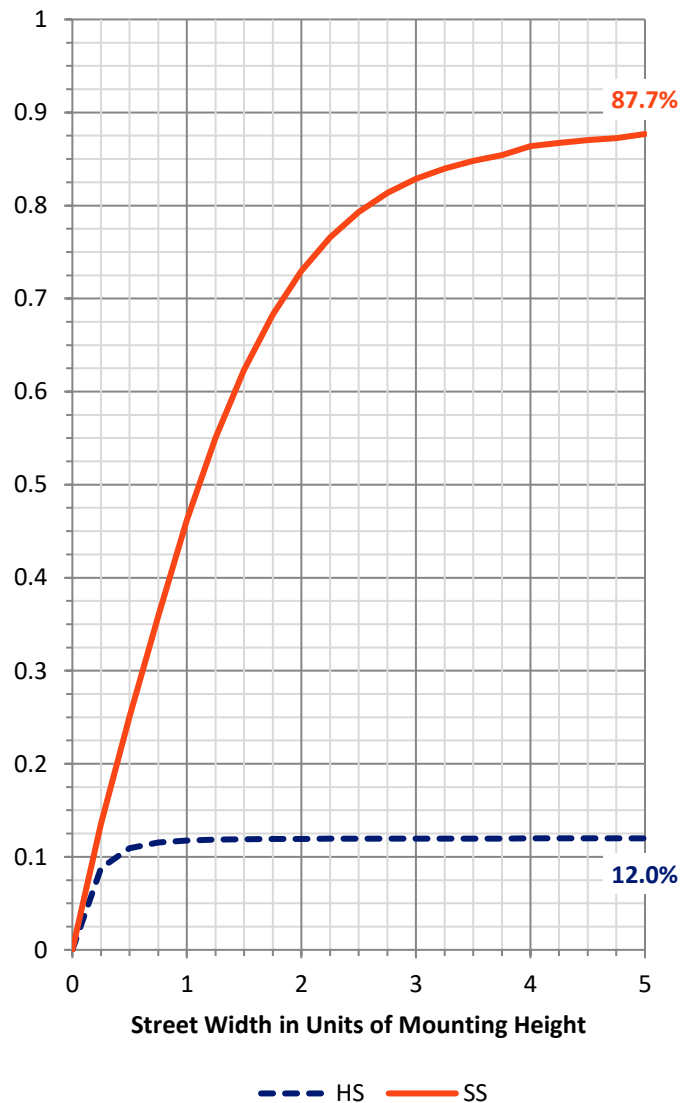
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2125.2   | 0.0    | 2125.2  |
|                    | % Fixture | 12.1     | 0.0    | 12.1    |
| <b>Street Side</b> | Lumens    | 15433.8  | 0.0    | 15433.8 |
|                    | % Fixture | 87.9     | 0.0    | 87.9    |
| <b>Total</b>       | Lumens    | 17559.0  | 0.0    | 17559.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 439.0   | 2.5       |
| 10°-20°   | 873.8   | 5.0       |
| 20°-30°   | 1240.8  | 7.1       |
| 30°-40°   | 1832.7  | 10.4      |
| 40°-50°   | 2643.2  | 15.1      |
| 50°-60°   | 3710.5  | 21.1      |
| 60°-70°   | 4325.4  | 24.6      |
| 70°-80°   | 2211.2  | 12.6      |
| 80°-90°   | 282.4   | 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°    | 17559.0 | 100.0     |
| 0°-180°   | 17559.0 | 100.0     |

**Coefficient of Utilization**



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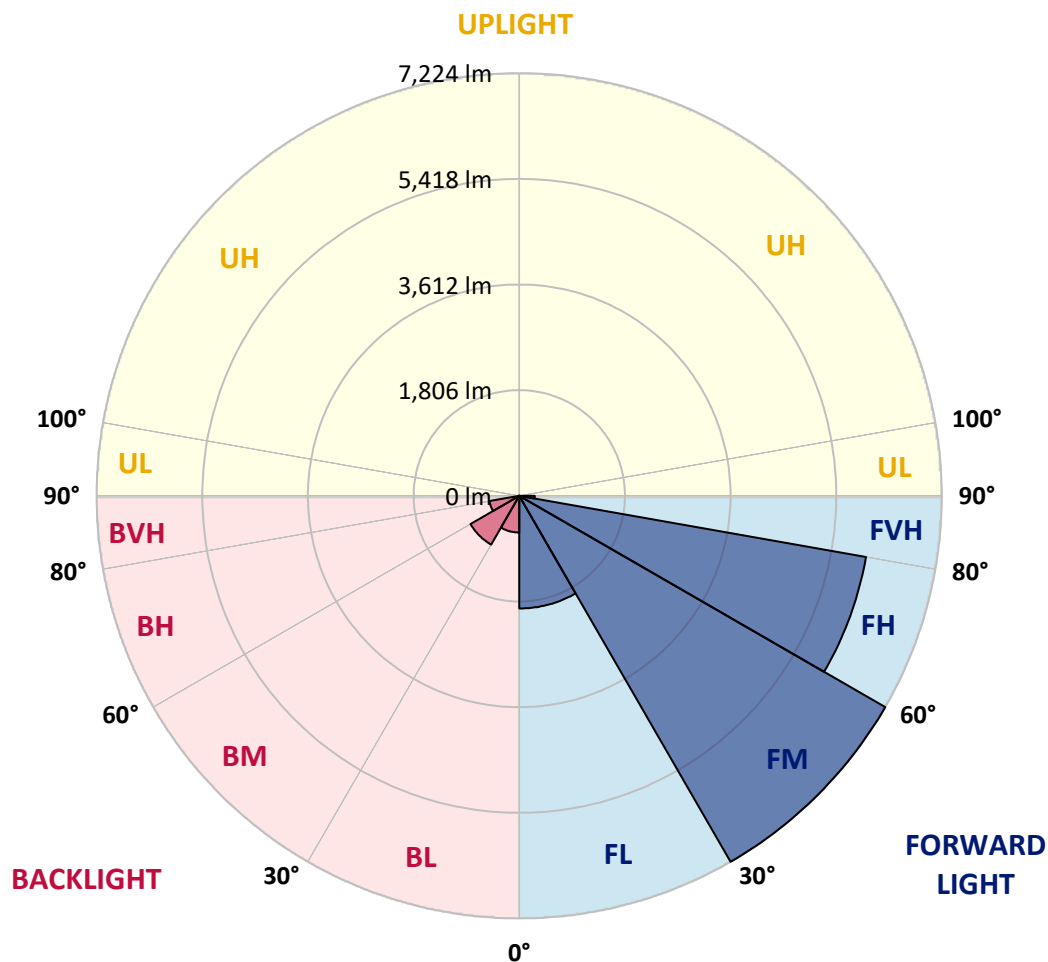
CATALOG NUMBER: GLEON-SA3D-740-U-SLR-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1925.9 | 11.0      |                         |      |         |
| FM   | (30°-60°)   | 7224.1 | 41.1      |                         |      |         |
| FH   | (60°-80°)   | 6018.6 | 34.3      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 265.2  | 1.5       |                         |      | G3/500  |
| BL   | (0°-30°)    | 627.7  | 3.6       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 962.4  | 5.5       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 518.0  | 2.9       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 17.2   | 0.1       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G3**

Type IV Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 1°      | 5°      | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 5719.8  | 5719.8  | 5719.8  | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 |
| 2.5°  | 6263.0  | 6214.8  | 6161.5  | 5987.7 | 5826.3 | 5641.6 | 5491.1 | 5386.2 | 5254.8 | 5084.3 | 5041.0 |
| 5°    | 6218.1  | 6166.5  | 5999.3  | 5612.5 | 5273.9 | 4944.5 | 4626.8 | 4440.4 | 4209.2 | 3974.6 | 3916.4 |
| 7.5°  | 5766.4  | 5712.3  | 5471.1  | 4941.2 | 4485.3 | 4009.5 | 3596.9 | 3341.5 | 3080.3 | 2865.7 | 2751.8 |
| 10°   | 5296.4  | 5237.3  | 4966.2  | 4323.1 | 3761.6 | 3331.6 | 3028.8 | 2785.0 | 2538.0 | 2308.4 | 2125.4 |
| 12.5° | 4972.8  | 4895.4  | 4601.0  | 3872.3 | 3383.1 | 3091.2 | 2808.3 | 2516.4 | 2181.9 | 1935.7 | 1734.4 |
| 15°   | 4837.2  | 4749.0  | 4437.9  | 3698.4 | 3249.2 | 2906.5 | 2538.0 | 2179.5 | 1787.6 | 1505.7 | 1321.0 |
| 17.5° | 4942.0  | 4827.2  | 4493.7  | 3686.8 | 3081.2 | 2614.5 | 2148.7 | 1727.8 | 1302.7 | 1017.4 | 885.9  |
| 20°   | 5298.1  | 5147.5  | 4724.1  | 3683.4 | 2877.4 | 2267.6 | 1677.0 | 1201.2 | 858.5  | 690.4  | 621.4  |
| 22.5° | 5858.7  | 5659.9  | 5055.2  | 3710.1 | 2666.9 | 1903.3 | 1211.2 | 816.0  | 644.7  | 557.3  | 516.6  |
| 25°   | 6535.9  | 6305.4  | 5531.8  | 3804.1 | 2482.2 | 1548.9 | 880.1  | 644.7  | 544.0  | 480.0  | 445.9  |
| 27.5° | 7179.7  | 6992.5  | 6134.1  | 3939.6 | 2339.2 | 1262.8 | 714.6  | 546.5  | 465.0  | 422.6  | 395.1  |
| 30°   | 7822.7  | 7587.3  | 6752.1  | 4101.0 | 2167.0 | 1068.9 | 628.0  | 498.3  | 416.8  | 371.8  | 354.4  |
| 32.5° | 8290.2  | 8094.7  | 7236.3  | 4217.5 | 1983.1 | 942.5  | 561.5  | 455.9  | 389.3  | 343.6  | 317.8  |
| 35°   | 8840.1  | 8618.8  | 7651.4  | 4243.3 | 1865.0 | 862.6  | 504.9  | 410.1  | 337.7  | 297.0  | 269.5  |
| 37.5° | 9434.0  | 9158.7  | 8130.5  | 4186.7 | 1772.7 | 823.5  | 462.5  | 389.3  | 315.3  | 273.7  | 244.6  |
| 40°   | 10091.2 | 9780.1  | 8590.5  | 4105.2 | 1682.0 | 810.2  | 430.1  | 373.5  | 297.8  | 255.4  | 225.4  |
| 42.5° | 10783.3 | 10416.4 | 8989.0  | 4019.5 | 1624.6 | 764.5  | 426.7  | 357.7  | 284.5  | 238.7  | 208.8  |
| 45°   | 11364.8 | 10992.9 | 9398.3  | 3991.2 | 1583.8 | 714.6  | 440.9  | 346.9  | 275.3  | 225.4  | 196.3  |
| 47.5° | 11828.1 | 11476.2 | 9817.5  | 4054.4 | 1560.6 | 668.8  | 401.8  | 361.0  | 270.4  | 213.8  | 185.5  |
| 50°   | 12381.3 | 11982.8 | 10408.1 | 4243.3 | 1526.4 | 623.1  | 363.5  | 413.4  | 270.4  | 206.3  | 176.4  |
| 52.5° | 13075.0 | 12680.7 | 11067.0 | 4536.1 | 1458.2 | 559.8  | 326.9  | 414.3  | 272.8  | 196.3  | 164.7  |
| 55°   | 13947.7 | 13661.5 | 12007.8 | 4857.2 | 1349.3 | 466.7  | 282.8  | 356.0  | 262.9  | 178.0  | 153.9  |
| 57.5° | 14784.5 | 14550.7 | 12865.4 | 5076.8 | 1203.7 | 364.4  | 246.2  | 287.0  | 240.4  | 156.4  | 137.3  |
| 59°   | 15013.3 | 14757.9 | 13179.9 | 5086.8 | 1094.7 | 317.8  | 227.9  | 237.1  | 235.4  | 146.4  | 127.3  |
| 60°   | 15013.3 | 14742.1 | 13270.5 | 5033.5 | 1015.7 | 292.0  | 216.3  | 211.3  | 245.4  | 139.8  | 121.5  |
| 62.5° | 14741.2 | 14360.3 | 12976.1 | 4673.3 | 828.5  | 248.7  | 188.8  | 174.7  | 220.4  | 125.6  | 107.3  |
| 65°   | 14175.6 | 13620.7 | 11972.8 | 4022.0 | 738.7  | 227.9  | 163.0  | 143.1  | 153.1  | 110.6  | 94.0   |
| 67.5° | 13232.3 | 12480.3 | 10526.3 | 3249.2 | 702.9  | 222.1  | 140.6  | 121.5  | 115.6  | 94.8   | 82.4   |
| 70°   | 11571.1 | 10736.7 | 8770.2  | 2554.6 | 672.1  | 219.6  | 118.1  | 102.3  | 93.2   | 79.9   | 69.9   |
| 72.5° | 8421.7  | 7551.5  | 6226.4  | 1997.3 | 653.8  | 224.6  | 94.8   | 85.7   | 76.5   | 62.4   | 54.1   |
| 75°   | 4817.3  | 4247.4  | 3499.6  | 1319.3 | 557.3  | 214.6  | 73.2   | 71.5   | 54.9   | 44.9   | 37.4   |
| 77.5° | 2488.9  | 2413.2  | 2097.1  | 506.6  | 267.0  | 94.0   | 48.2   | 41.6   | 32.4   | 27.5   | 22.5   |
| 80°   | 1073.9  | 1062.3  | 919.2   | 146.4  | 70.7   | 52.4   | 27.5   | 17.5   | 15.0   | 11.6   | 9.2    |
| 82.5° | 371.0   | 371.0   | 326.9   | 49.1   | 31.6   | 25.8   | 3.3    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 74.9    | 84.0    | 59.1    | 0.0    | 10.8   | 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):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 |
| 2.5°  | 4988.6 | 4888.0 | 4881.3 | 4818.1 | 4739.1 | 4703.3 | 4682.5 | 4719.1 | 4764.0 | 4769.0 | 4836.4 |
| 5°    | 3872.3 | 3766.6 | 3810.7 | 3698.4 | 3720.9 | 3698.4 | 3661.8 | 3668.5 | 3688.4 | 3626.0 | 3703.4 |
| 7.5°  | 2719.3 | 2639.5 | 2690.2 | 2660.3 | 2700.2 | 2716.0 | 2693.5 | 2660.3 | 2562.1 | 2550.5 | 2617.8 |
| 10°   | 2049.7 | 1959.0 | 1904.9 | 1848.4 | 1860.9 | 1886.6 | 1878.3 | 1854.2 | 1791.8 | 1795.1 | 1860.0 |
| 12.5° | 1647.1 | 1545.6 | 1438.3 | 1299.4 | 1265.2 | 1284.4 | 1265.2 | 1251.1 | 1191.2 | 1196.2 | 1253.6 |
| 15°   | 1249.4 | 1166.3 | 1054.0 | 942.5  | 881.8  | 887.6  | 834.3  | 796.9  | 759.5  | 714.6  | 749.5  |
| 17.5° | 843.5  | 792.8  | 759.5  | 726.2  | 653.8  | 637.2  | 569.8  | 497.4  | 469.2  | 448.4  | 463.3  |
| 20°   | 597.3  | 569.8  | 556.5  | 554.8  | 513.3  | 492.5  | 426.7  | 381.8  | 367.7  | 363.5  | 372.7  |
| 22.5° | 499.1  | 479.1  | 460.0  | 449.2  | 428.4  | 404.3  | 354.4  | 331.9  | 321.9  | 316.9  | 323.6  |
| 25°   | 434.2  | 419.3  | 399.3  | 381.0  | 372.7  | 346.9  | 311.1  | 294.5  | 287.8  | 282.8  | 286.2  |
| 27.5° | 386.0  | 372.7  | 349.4  | 337.7  | 331.1  | 308.6  | 277.8  | 264.5  | 258.7  | 257.0  | 256.2  |
| 30°   | 347.7  | 335.2  | 313.6  | 300.3  | 288.7  | 268.7  | 250.4  | 237.1  | 231.3  | 229.6  | 227.9  |
| 32.5° | 309.4  | 299.5  | 285.3  | 272.0  | 259.5  | 241.2  | 225.4  | 214.6  | 205.5  | 203.8  | 203.0  |
| 35°   | 261.2  | 251.2  | 243.7  | 242.9  | 231.3  | 213.8  | 202.1  | 188.0  | 180.5  | 178.0  | 178.8  |
| 37.5° | 232.1  | 218.8  | 202.1  | 208.0  | 204.6  | 192.2  | 176.4  | 162.2  | 154.7  | 153.1  | 153.1  |
| 40°   | 213.8  | 199.6  | 180.5  | 170.5  | 180.5  | 178.0  | 153.1  | 138.9  | 131.4  | 130.6  | 128.9  |
| 42.5° | 196.3  | 182.2  | 160.5  | 143.9  | 148.9  | 156.4  | 132.3  | 119.0  | 111.5  | 109.8  | 107.3  |
| 45°   | 183.8  | 168.9  | 144.7  | 125.6  | 115.6  | 131.4  | 113.1  | 96.5   | 92.3   | 89.0   | 87.3   |
| 47.5° | 172.2  | 158.1  | 130.6  | 109.0  | 92.3   | 94.8   | 90.7   | 79.0   | 74.0   | 70.7   | 69.9   |
| 50°   | 162.2  | 147.2  | 118.1  | 93.2   | 76.5   | 69.9   | 73.2   | 62.4   | 58.2   | 54.9   | 53.2   |
| 52.5° | 150.6  | 136.4  | 104.8  | 80.7   | 64.1   | 54.9   | 55.7   | 49.1   | 44.9   | 42.4   | 41.6   |
| 55°   | 141.4  | 127.3  | 94.0   | 70.7   | 56.6   | 44.9   | 39.9   | 38.3   | 35.8   | 34.1   | 33.3   |
| 57.5° | 128.9  | 115.6  | 83.2   | 59.9   | 48.2   | 36.6   | 30.8   | 30.8   | 29.9   | 28.3   | 27.5   |
| 59°   | 121.5  | 109.8  | 76.5   | 54.1   | 44.1   | 31.6   | 27.5   | 28.3   | 27.5   | 25.8   | 25.0   |
| 60°   | 115.6  | 104.8  | 71.5   | 49.9   | 41.6   | 29.1   | 25.0   | 26.6   | 25.8   | 24.1   | 23.3   |
| 62.5° | 102.3  | 94.8   | 61.6   | 41.6   | 36.6   | 23.3   | 20.8   | 22.5   | 22.5   | 21.6   | 20.8   |
| 65°   | 89.8   | 81.5   | 52.4   | 34.9   | 34.1   | 20.0   | 16.6   | 20.0   | 20.8   | 19.1   | 17.5   |
| 67.5° | 78.2   | 69.9   | 45.8   | 28.3   | 31.6   | 15.8   | 12.5   | 16.6   | 22.5   | 17.5   | 15.8   |
| 70°   | 66.5   | 58.2   | 35.8   | 22.5   | 33.3   | 10.8   | 10.0   | 15.0   | 26.6   | 19.1   | 15.0   |
| 72.5° | 51.6   | 44.9   | 25.0   | 16.6   | 35.8   | 7.5    | 7.5    | 12.5   | 29.9   | 20.8   | 14.1   |
| 75°   | 35.8   | 29.1   | 15.0   | 10.0   | 29.1   | 5.0    | 5.0    | 11.6   | 28.3   | 19.1   | 13.3   |
| 77.5° | 20.8   | 15.8   | 5.0    | 0.8    | 15.0   | 0.0    | 0.8    | 8.3    | 20.0   | 11.6   | 5.8    |
| 80°   | 7.5    | 3.3    | 0.0    | 0.0    | 9.2    | 0.0    | 0.0    | 0.0    | 1.7    | 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    |





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**CANDELA DISTRIBUTION (continued):**

|       | 185°   | 195°   | 205°   | 215°   | 225°   | 235°   | 245°   | 255°   | 265°    | 270°    | 275°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| 0°    | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8 | 5719.8  | 5719.8  | 5719.8  |
| 2.5°  | 4853.9 | 4966.2 | 5066.8 | 5219.0 | 5399.5 | 5607.5 | 5786.4 | 5978.5 | 6159.0  | 6233.9  | 6285.5  |
| 5°    | 3719.2 | 3858.1 | 4020.3 | 4244.1 | 4541.9 | 4908.8 | 5252.3 | 5640.8 | 6058.4  | 6267.2  | 6463.5  |
| 7.5°  | 2629.5 | 2770.9 | 2972.2 | 3210.1 | 3570.3 | 4007.0 | 4456.2 | 4992.8 | 5558.4  | 5888.7  | 6213.9  |
| 10°   | 1890.8 | 2064.7 | 2252.7 | 2577.9 | 2943.9 | 3358.2 | 3820.7 | 4419.6 | 5050.2  | 5416.2  | 5808.0  |
| 12.5° | 1286.9 | 1484.9 | 1769.3 | 2133.7 | 2563.8 | 2969.7 | 3371.5 | 3943.0 | 4675.0  | 5037.7  | 5457.8  |
| 15°   | 772.0  | 881.8  | 1182.9 | 1604.6 | 2132.0 | 2637.8 | 3077.9 | 3651.0 | 4431.3  | 4875.5  | 5312.2  |
| 17.5° | 475.8  | 526.6  | 690.4  | 1036.5 | 1590.5 | 2230.2 | 2833.3 | 3552.0 | 4466.2  | 5006.9  | 5474.4  |
| 20°   | 379.3  | 399.3  | 451.7  | 612.2  | 1054.0 | 1781.0 | 2557.9 | 3532.0 | 4751.5  | 5417.0  | 5918.6  |
| 22.5° | 329.4  | 348.5  | 383.5  | 445.0  | 663.0  | 1333.5 | 2296.7 | 3550.3 | 5160.8  | 6031.8  | 6617.4  |
| 25°   | 290.3  | 307.0  | 340.2  | 391.0  | 485.8  | 939.2  | 2017.2 | 3631.9 | 5694.0  | 6794.6  | 7416.8  |
| 27.5° | 259.5  | 273.7  | 304.5  | 351.0  | 416.8  | 655.5  | 1700.3 | 3730.9 | 6326.2  | 7574.8  | 8188.7  |
| 30°   | 231.3  | 243.7  | 271.2  | 314.4  | 361.9  | 504.1  | 1352.6 | 3798.2 | 6959.3  | 8188.7  | 8740.3  |
| 32.5° | 207.1  | 216.3  | 241.2  | 277.8  | 314.4  | 401.8  | 1028.2 | 3787.4 | 7429.3  | 8699.5  | 9137.1  |
| 35°   | 182.2  | 191.3  | 213.0  | 244.6  | 273.7  | 331.9  | 808.6  | 3585.3 | 7838.5  | 9229.4  | 9591.2  |
| 37.5° | 154.7  | 166.4  | 187.2  | 215.4  | 235.4  | 292.0  | 653.8  | 3341.5 | 8253.6  | 9835.0  | 10097.8 |
| 40°   | 131.4  | 143.1  | 161.4  | 192.2  | 204.6  | 277.0  | 502.4  | 3044.6 | 8720.3  | 10512.1 | 10653.5 |
| 42.5° | 109.0  | 119.8  | 138.9  | 165.5  | 193.0  | 238.7  | 371.8  | 2705.2 | 9168.7  | 11091.1 | 11160.1 |
| 45°   | 88.2   | 99.0   | 119.0  | 145.6  | 206.3  | 198.0  | 287.8  | 2341.7 | 9530.5  | 11572.7 | 11595.2 |
| 47.5° | 69.9   | 79.9   | 100.7  | 137.3  | 192.2  | 158.1  | 205.5  | 2056.3 | 9834.1  | 11948.7 | 11889.7 |
| 50°   | 54.1   | 62.4   | 84.0   | 157.2  | 168.0  | 130.6  | 155.6  | 1961.5 | 10106.2 | 12181.6 | 12028.6 |
| 52.5° | 42.4   | 49.9   | 69.0   | 147.2  | 130.6  | 108.1  | 130.6  | 2050.5 | 10478.8 | 12374.6 | 12106.8 |
| 55°   | 34.1   | 41.6   | 54.1   | 84.0   | 89.0   | 91.5   | 111.5  | 2133.7 | 11121.9 | 12827.2 | 12568.4 |
| 57.5° | 28.3   | 35.8   | 44.1   | 59.1   | 67.4   | 77.4   | 99.0   | 2142.8 | 11879.7 | 13579.1 | 13334.6 |
| 59°   | 25.8   | 32.4   | 39.9   | 52.4   | 59.1   | 70.7   | 93.2   | 2092.9 | 12146.7 | 13852.8 | 13730.5 |
| 60°   | 24.1   | 30.8   | 37.4   | 48.2   | 54.9   | 66.5   | 89.8   | 2045.5 | 12158.3 | 13842.8 | 13899.4 |
| 62.5° | 20.8   | 27.5   | 33.3   | 40.8   | 46.6   | 56.6   | 80.7   | 1870.0 | 11665.9 | 13389.5 | 13797.9 |
| 65°   | 18.3   | 24.1   | 29.9   | 34.9   | 39.9   | 50.7   | 73.2   | 1549.7 | 10824.9 | 12658.3 | 13103.3 |
| 67.5° | 16.6   | 20.8   | 27.5   | 30.8   | 35.8   | 44.9   | 64.9   | 1104.7 | 9774.3  | 11764.0 | 12052.7 |
| 70°   | 15.0   | 20.0   | 25.0   | 28.3   | 32.4   | 39.1   | 55.7   | 634.7  | 8253.6  | 10454.7 | 10660.2 |
| 72.5° | 14.1   | 19.1   | 22.5   | 26.6   | 29.1   | 34.9   | 50.7   | 298.6  | 6043.4  | 8375.1  | 8911.6  |
| 75°   | 12.5   | 17.5   | 20.8   | 25.0   | 27.5   | 31.6   | 43.3   | 143.1  | 4019.5  | 6060.9  | 6670.6  |
| 77.5° | 7.5    | 14.1   | 19.1   | 22.5   | 24.1   | 27.5   | 35.8   | 82.4   | 2565.4  | 4195.0  | 4941.2  |
| 80°   | 0.0    | 5.0    | 14.1   | 19.1   | 20.8   | 23.3   | 27.5   | 64.9   | 1372.6  | 2396.6  | 2876.5  |
| 82.5° | 0.0    | 0.0    | 10.0   | 15.0   | 14.1   | 15.8   | 20.8   | 40.8   | 618.9   | 1566.4  | 1765.2  |
| 85°   | 0.0    | 0.0    | 3.3    | 11.6   | 10.0   | 7.5    | 14.1   | 14.1   | 135.6   | 792.8   | 989.1   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.8    | 5.0    | 3.3    | 5.8    | 1.7    | 0.8     | 59.1    | 239.6   |
| 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: P324497

CATALOG NUMBER: GLEON-SA3D-740-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°    | 295°    | 305°    | 315°    | 325°    | 335°    | 345°    | 355°    | 359°    | 360°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 5719.8  | 5719.8  | 5719.8  | 5719.8  | 5719.8  | 5719.8  | 5719.8  | 5719.8  | 5719.8  | 5719.8  |
| 2.5°  | 6466.0  | 6527.5  | 6631.5  | 6680.6  | 6656.5  | 6554.2  | 6431.9  | 6307.1  | 6233.9  | 6263.0  |
| 5°    | 6863.6  | 7180.5  | 7363.6  | 7424.3  | 7322.8  | 7093.2  | 6792.9  | 6396.9  | 6256.4  | 6218.1  |
| 7.5°  | 6863.6  | 7460.0  | 7837.7  | 7904.3  | 7678.0  | 7228.0  | 6664.8  | 6046.7  | 5841.3  | 5766.4  |
| 10°   | 6622.4  | 7434.3  | 7960.8  | 8066.5  | 7750.4  | 7077.4  | 6322.9  | 5617.5  | 5373.8  | 5296.4  |
| 12.5° | 6350.4  | 7224.6  | 7779.5  | 7925.1  | 7665.5  | 6927.7  | 6085.8  | 5327.2  | 5040.2  | 4972.8  |
| 15°   | 6183.2  | 6966.8  | 7425.9  | 7531.6  | 7421.8  | 6840.3  | 6029.3  | 5239.8  | 4902.1  | 4837.2  |
| 17.5° | 6243.0  | 6767.1  | 6932.7  | 6994.2  | 7068.2  | 6809.5  | 6183.2  | 5431.2  | 5003.6  | 4942.0  |
| 20°   | 6468.5  | 6556.7  | 6471.0  | 6548.3  | 6748.0  | 6839.5  | 6550.0  | 5893.7  | 5380.4  | 5298.1  |
| 22.5° | 6851.1  | 6447.7  | 6207.3  | 6238.1  | 6481.0  | 6938.5  | 7110.7  | 6554.2  | 5961.9  | 5858.7  |
| 25°   | 7297.0  | 6535.9  | 6060.9  | 6033.4  | 6283.0  | 7069.1  | 7623.1  | 7272.9  | 6649.8  | 6535.9  |
| 27.5° | 7857.7  | 6733.8  | 6030.9  | 6003.5  | 6213.9  | 7191.4  | 8049.0  | 7983.3  | 7374.4  | 7179.7  |
| 30°   | 8290.2  | 6928.5  | 6119.9  | 6056.7  | 6283.0  | 7276.2  | 8390.9  | 8586.4  | 7951.7  | 7822.7  |
| 32.5° | 8600.5  | 7158.1  | 6264.7  | 6173.2  | 6477.6  | 7422.6  | 8654.6  | 9138.7  | 8485.7  | 8290.2  |
| 35°   | 8836.8  | 7407.6  | 6498.4  | 6347.9  | 6745.5  | 7644.7  | 8901.6  | 9726.8  | 9053.9  | 8840.1  |
| 37.5° | 9058.0  | 7757.8  | 6863.6  | 6683.9  | 7165.6  | 8002.4  | 9162.8  | 10394.0 | 9689.4  | 9434.0  |
| 40°   | 9366.6  | 8154.6  | 7426.8  | 7267.1  | 7871.8  | 8489.9  | 9488.9  | 11089.4 | 10412.3 | 10091.2 |
| 42.5° | 9675.3  | 8580.5  | 8003.2  | 8046.5  | 8752.7  | 9082.2  | 9909.8  | 11824.8 | 11126.0 | 10783.3 |
| 45°   | 9957.3  | 9019.8  | 8824.3  | 9023.9  | 9570.5  | 9731.8  | 10328.3 | 12249.8 | 11695.8 | 11364.8 |
| 47.5° | 10208.5 | 9568.8  | 9640.3  | 10171.9 | 10500.5 | 10320.0 | 10641.0 | 12616.7 | 12120.1 | 11828.1 |
| 50°   | 10500.5 | 10279.2 | 10715.9 | 11467.9 | 11571.1 | 10852.3 | 10925.5 | 13050.9 | 12615.9 | 12381.3 |
| 52.5° | 10819.9 | 11027.9 | 11907.1 | 12570.1 | 12536.8 | 11430.5 | 11211.7 | 13537.6 | 13295.5 | 13075.0 |
| 55°   | 11182.6 | 11632.6 | 12956.1 | 13601.6 | 13573.3 | 12076.0 | 11685.9 | 14139.0 | 14147.3 | 13947.7 |
| 57.5° | 11720.8 | 12153.4 | 13668.2 | 14436.0 | 14483.4 | 12821.3 | 12489.4 | 14812.8 | 14917.6 | 14784.5 |
| 59°   | 12106.8 | 12491.1 | 13950.2 | 14784.5 | 14977.5 | 13397.8 | 13076.7 | 15203.8 | 15134.7 | 15013.3 |
| 60°   | 12392.9 | 12705.7 | 14089.9 | 14966.7 | 15264.5 | 13788.8 | 13510.1 | 15433.3 | 15160.5 | 15013.3 |
| 62.5° | 13100.8 | 13173.2 | 14342.0 | 15173.0 | 15594.7 | 14657.2 | 14729.6 | 15824.3 | 14981.6 | 14741.2 |
| 65°   | 13431.1 | 13468.5 | 14338.6 | 14803.6 | 15275.3 | 15333.5 | 15836.0 | 15836.0 | 14544.9 | 14175.6 |
| 67.5° | 13293.0 | 13112.5 | 13627.4 | 13579.1 | 14050.0 | 14931.7 | 16251.9 | 15255.3 | 13709.7 | 13232.3 |
| 70°   | 12170.0 | 11475.4 | 11246.6 | 11267.4 | 11627.6 | 12987.7 | 15428.4 | 13546.7 | 12129.2 | 11571.1 |
| 72.5° | 10126.1 | 8459.9  | 7895.1  | 8539.8  | 8633.8  | 9981.4  | 13148.2 | 10201.8 | 8944.9  | 8421.7  |
| 75°   | 8144.7  | 5963.5  | 5045.2  | 5725.6  | 5885.4  | 7304.5  | 10171.0 | 6353.7  | 5224.9  | 4817.3  |
| 77.5° | 5851.2  | 4280.7  | 3620.2  | 3572.8  | 3779.1  | 4632.6  | 7217.1  | 3197.6  | 2666.9  | 2488.9  |
| 80°   | 3324.1  | 2817.5  | 3033.8  | 2862.4  | 2966.4  | 2896.5  | 3428.9  | 1402.5  | 1148.8  | 1073.9  |
| 82.5° | 2006.4  | 1665.4  | 1803.5  | 1501.5  | 1899.9  | 1654.6  | 1321.0  | 449.2   | 390.1   | 371.0   |
| 85°   | 1305.2  | 910.0   | 474.2   | 317.8   | 654.7   | 1057.3  | 295.3   | 122.3   | 94.0    | 74.9    |
| 87.5° | 450.0   | 232.1   | 23.3    | 10.0    | 69.9    | 197.1   | 10.8    | 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     |

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

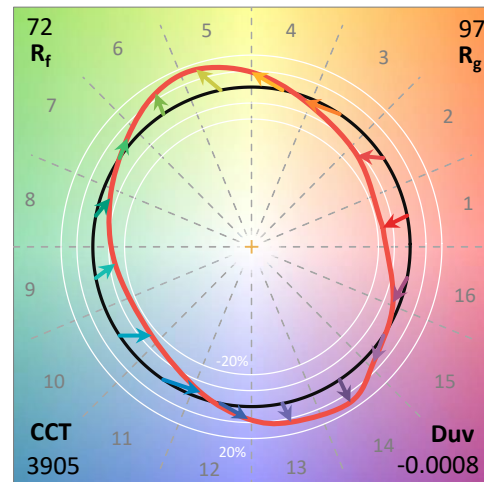
### Test Information

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

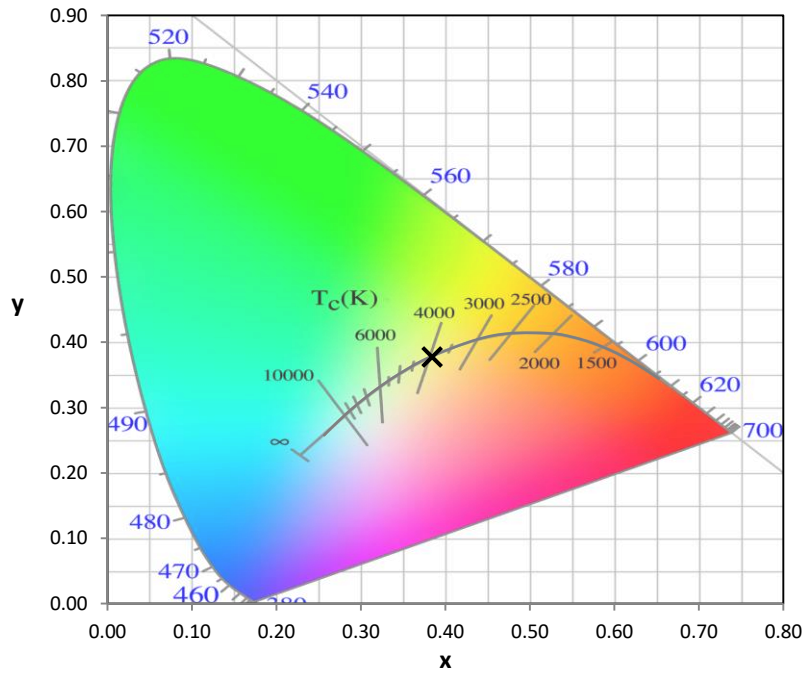
Stabilization Time: 211M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.8/312%  
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

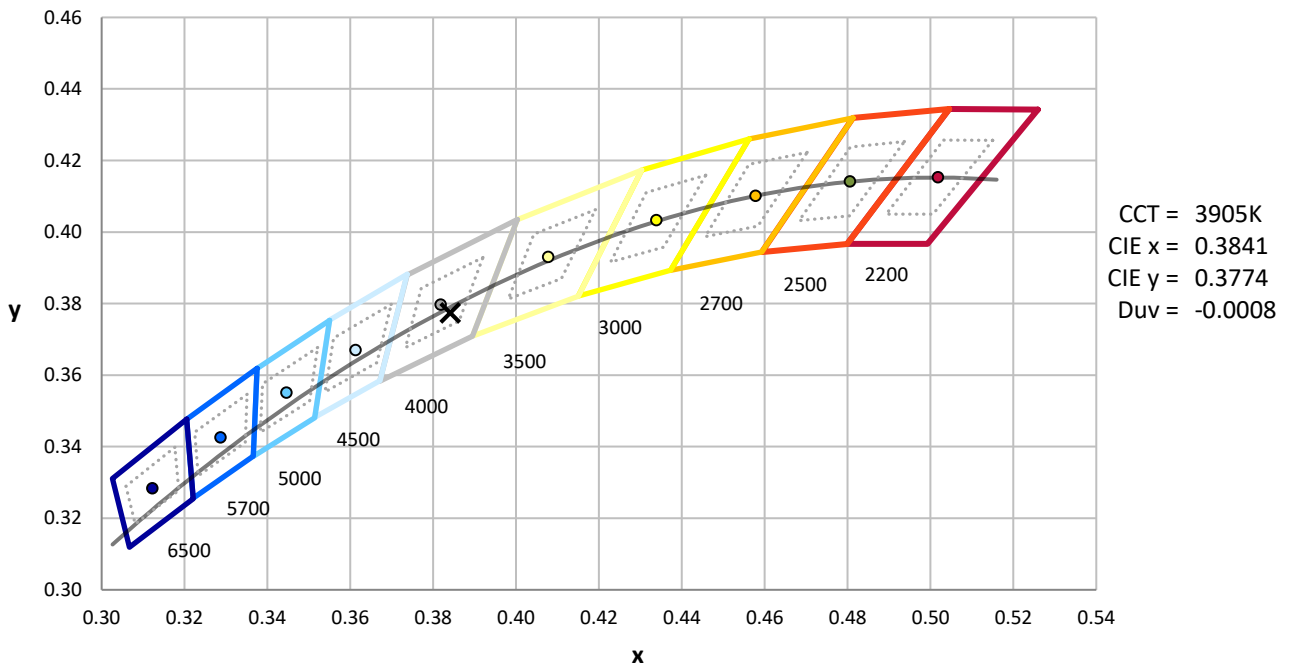
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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**



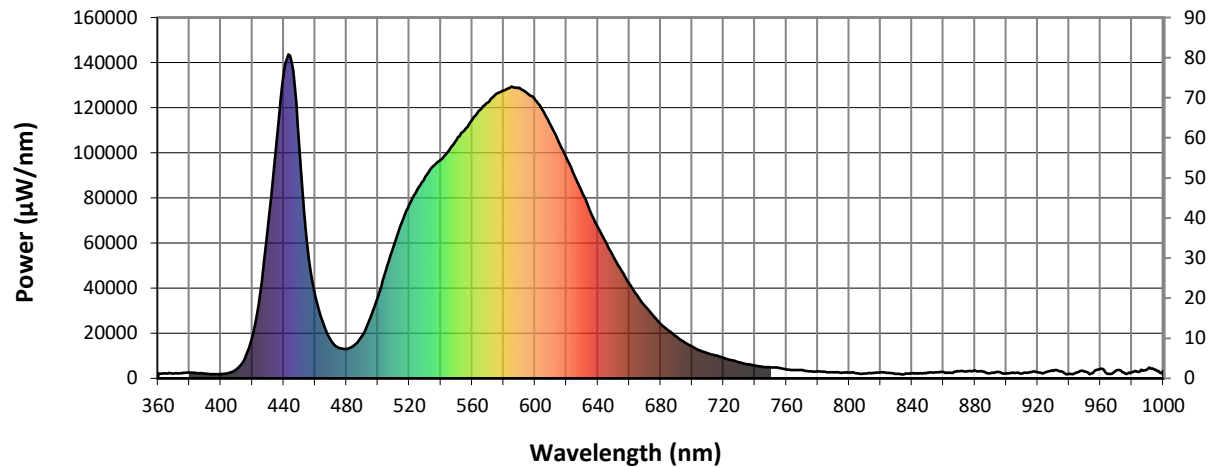
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

### Photopic Flux vs. Wavelength

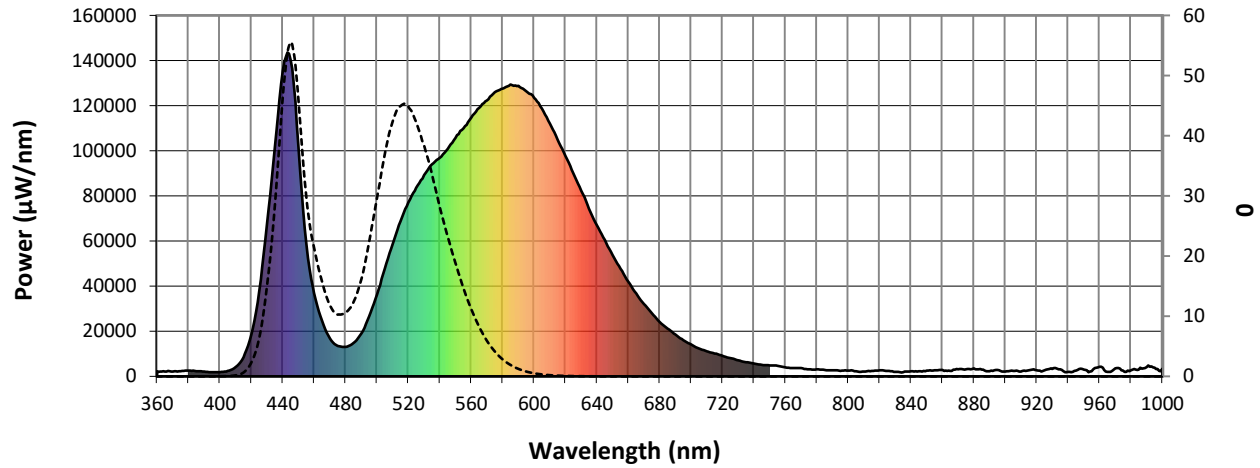


#####

| 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

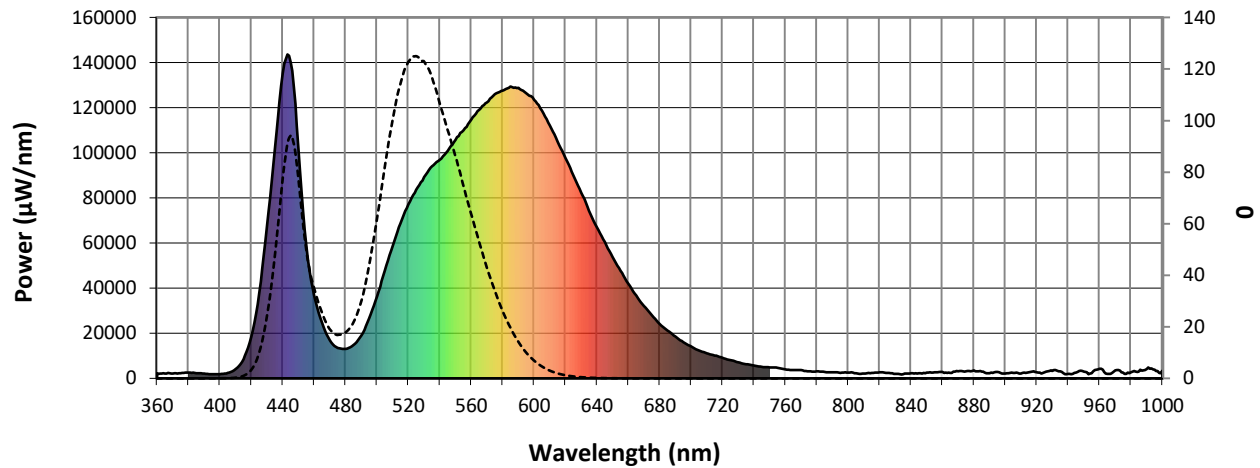

**Scotopic Lumens: 10425.8**
**S/P: 1.47**

| $\lambda$<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**

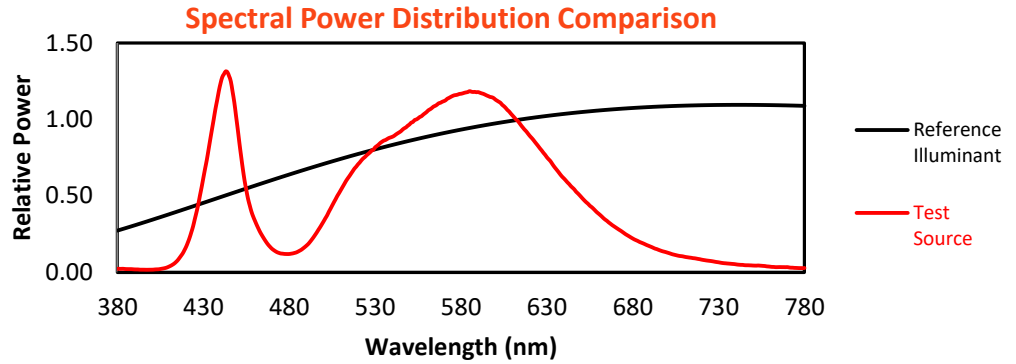
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 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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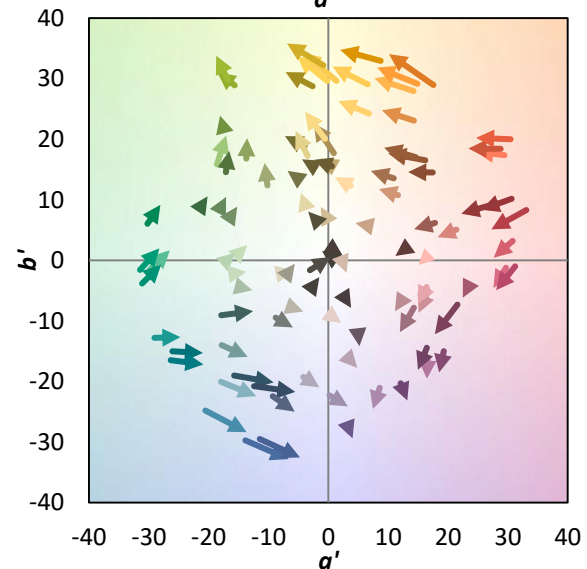
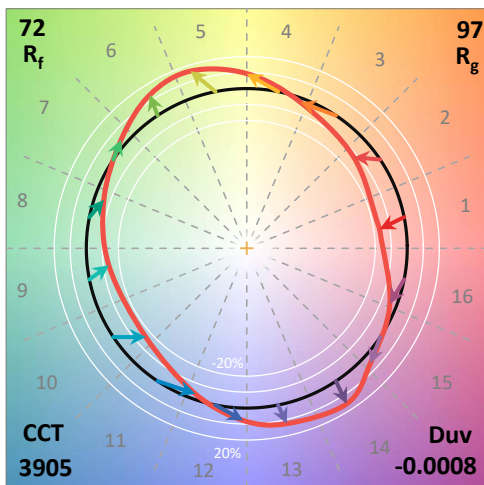
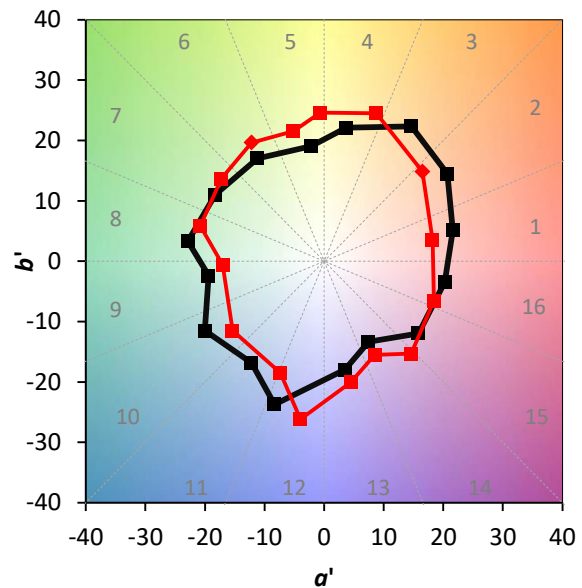
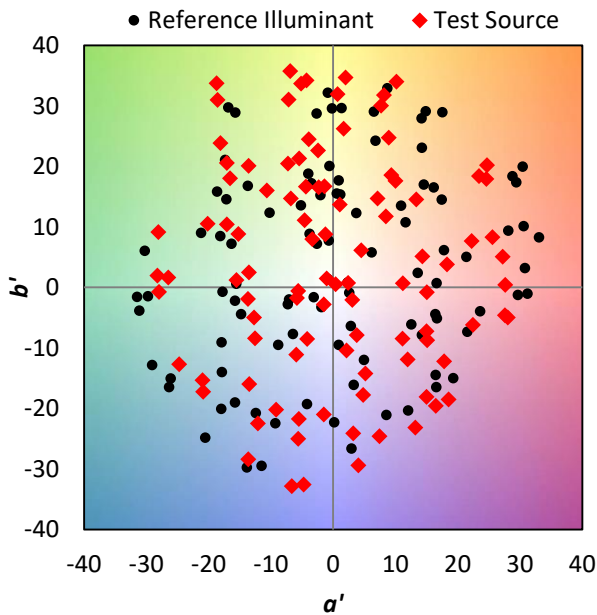
TM-30-18

### Summary

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

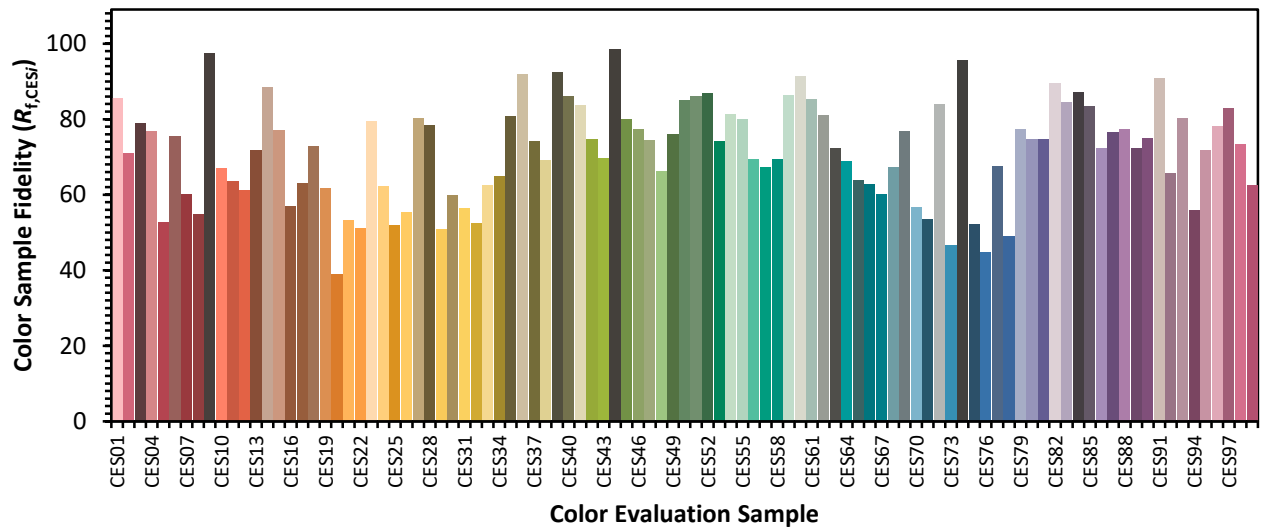


### Color Vector Graphics

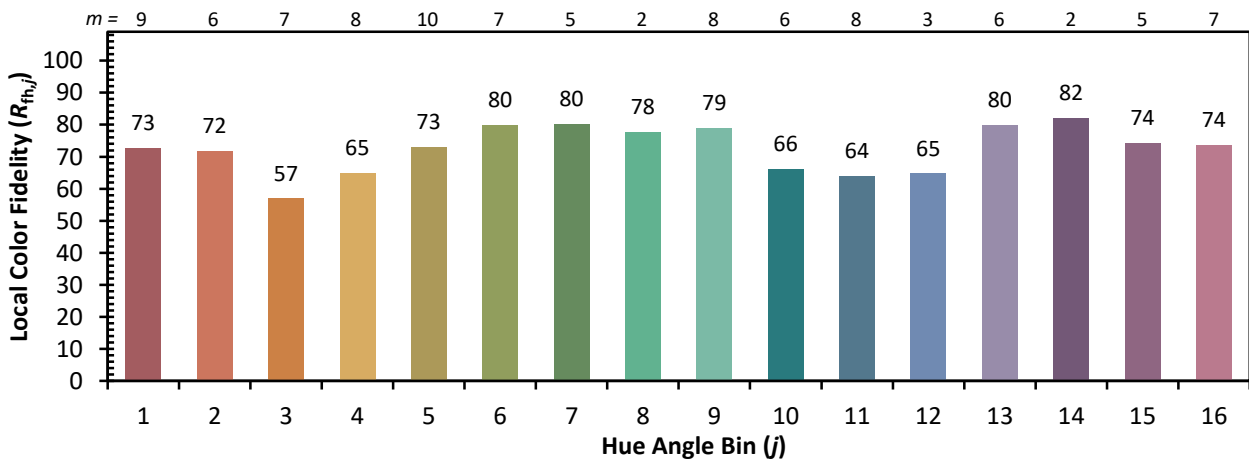
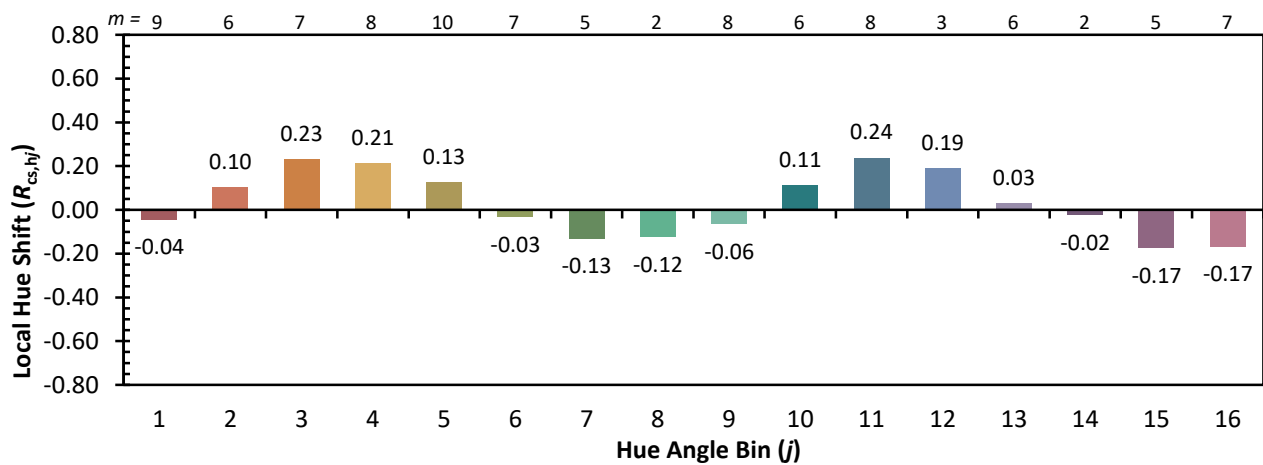
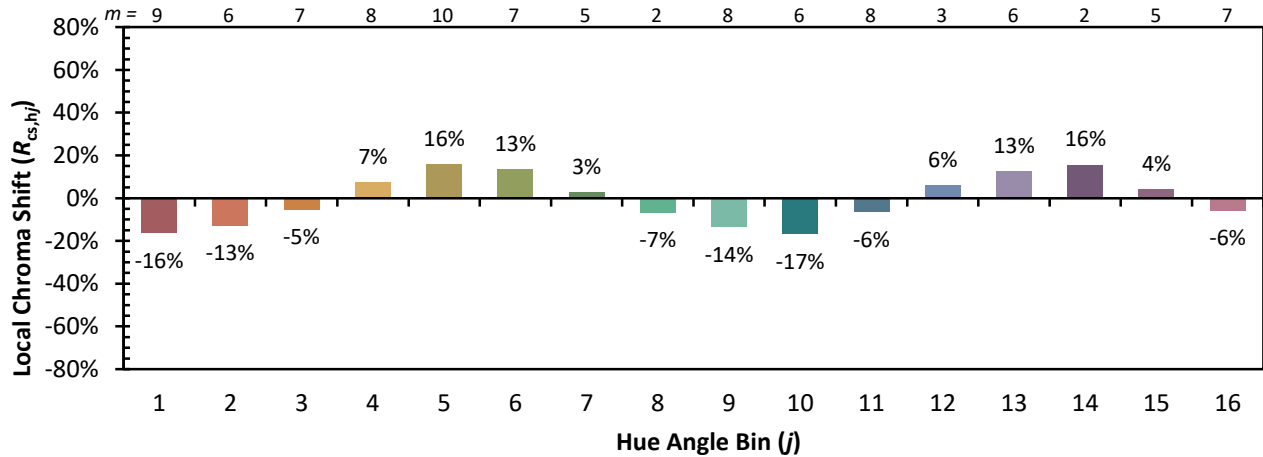


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

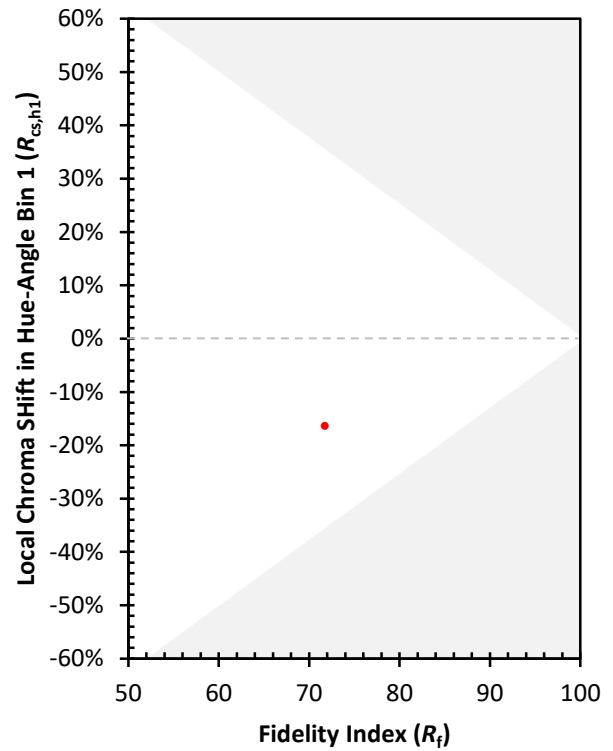
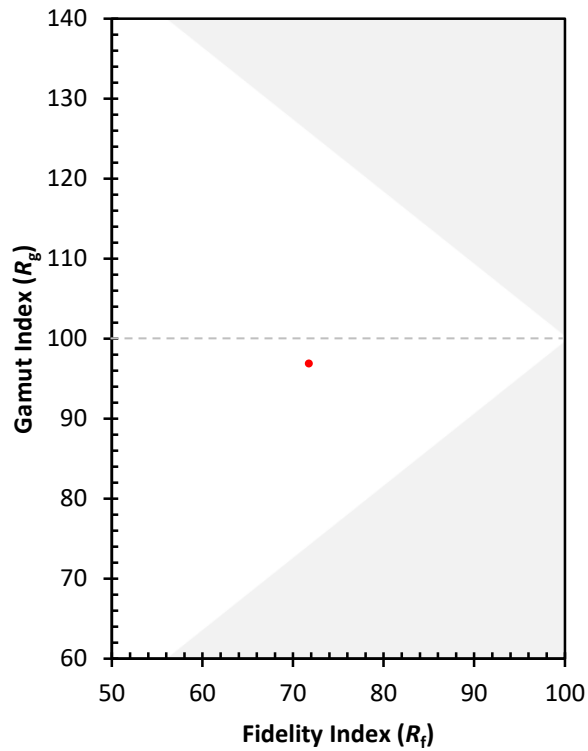
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 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



**Measure Comparisons**



(END OF REPORT)