

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

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Peachtree City, GA 30269

Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P1458178

Luminaire Tested: GLAN-SB3D-730-U-T3LG-HSS

Issue Date: 05/20/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1458178  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 5/21/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: GLAN-SB3D-730-U-T3LG-HSS  
Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 900mA 3xLight Square PACKAGE 70CRI 3000K FIXTURE w/ TYPE III LOW GLARE WITH HOUSE SIDE SHIELD  
Light Source: (78) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

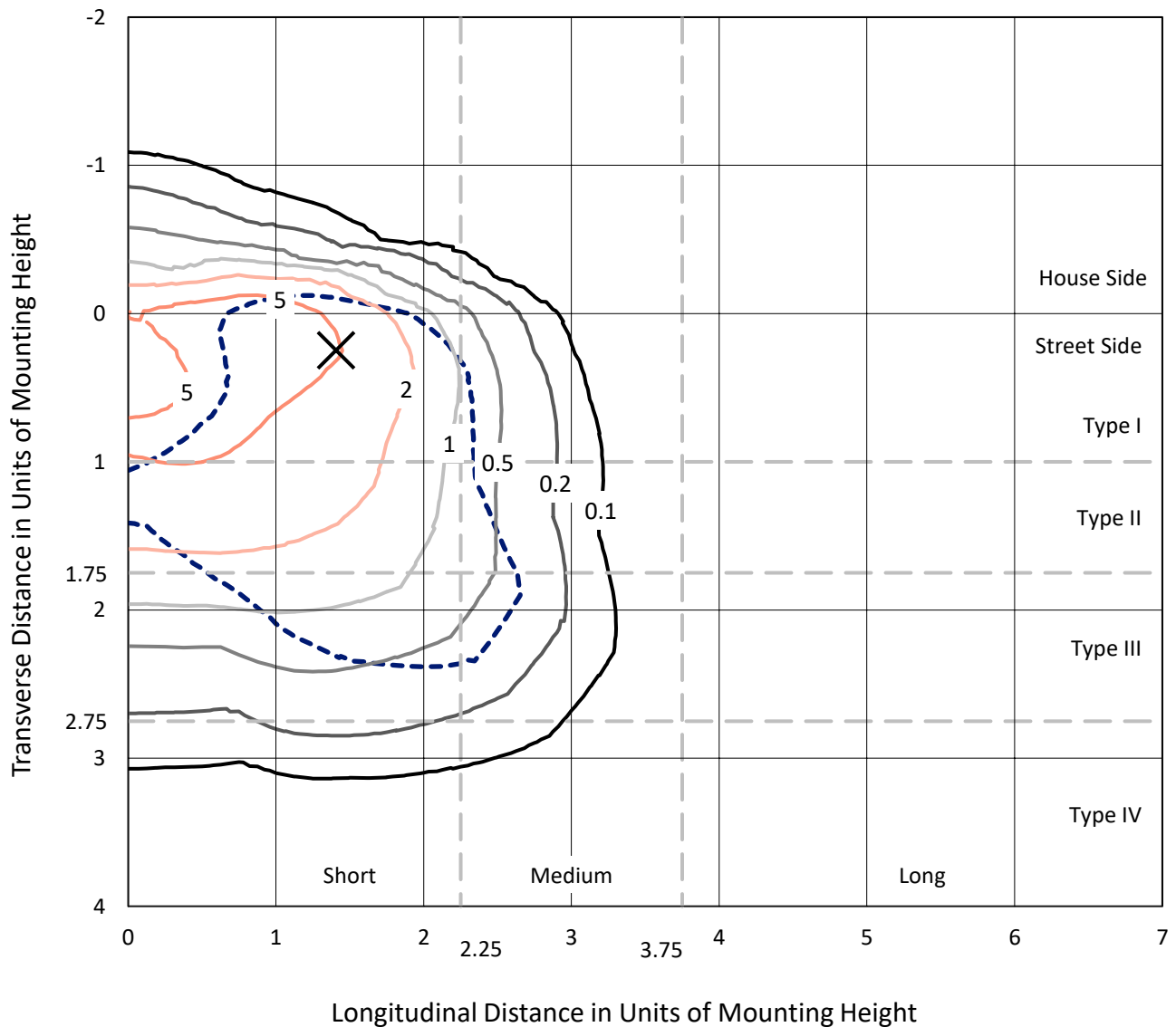
Lumens per Lamp: N/A  
Luminaire Lumens: 23330.5 lumens  
Efficiency: N/A  
Efficacy: 107.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G3

Input Watts (W): 218.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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### Iso-Footcandle Lines of Horizontal Illumination

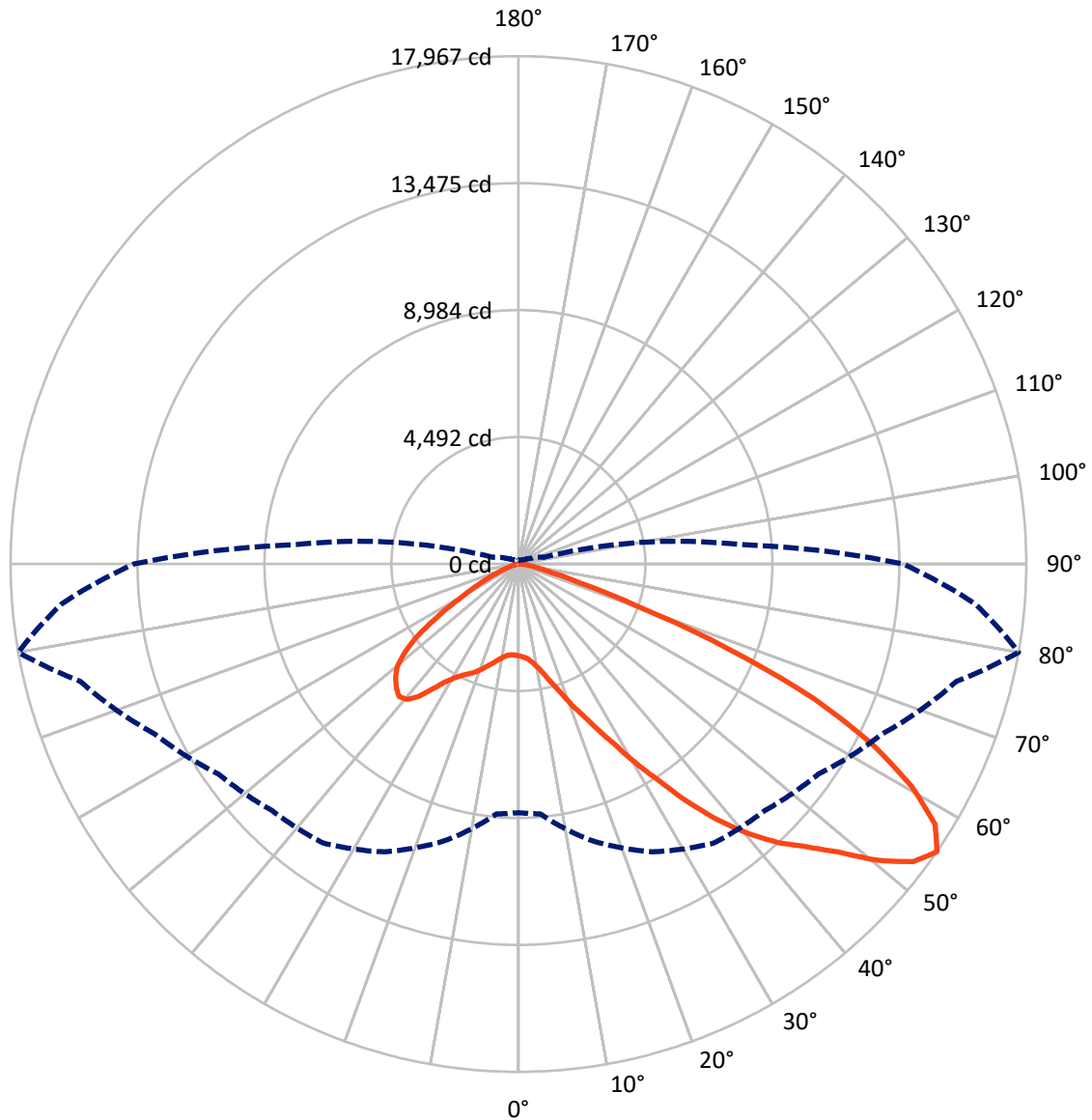
× Max cd  
 - - - 1/2 Max cd



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

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### Luminous Intensity Polar Plot



— Vertical Plane Through 80-Deg Lateral    - - - Horizontal Cone Through 55-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2836.1   | 0.0    | 2836.1  |
|                    | % Fixture | 12.2     | 0.0    | 12.2    |
| <b>Street Side</b> | Lumens    | 20494.4  | 0.0    | 20494.4 |
|                    | % Fixture | 87.8     | 0.0    | 87.8    |
| <b>Total</b>       | Lumens    | 23330.5  | 0.0    | 23330.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 272.7   | 1.2       |
| 10°-20°   | 719.0   | 3.1       |
| 20°-30°   | 1407.6  | 6.0       |
| 30°-40°   | 2863.8  | 12.3      |
| 40°-50°   | 4827.9  | 20.7      |
| 50°-60°   | 6168.5  | 26.4      |
| 60°-70°   | 5266.5  | 22.6      |
| 70°-80°   | 1683.0  | 7.2       |
| 80°-90°   | 121.5   | 0.5       |
| 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°    | 23330.5 | 100.0     |
| 0°-180°   | 23330.5 | 100.0     |



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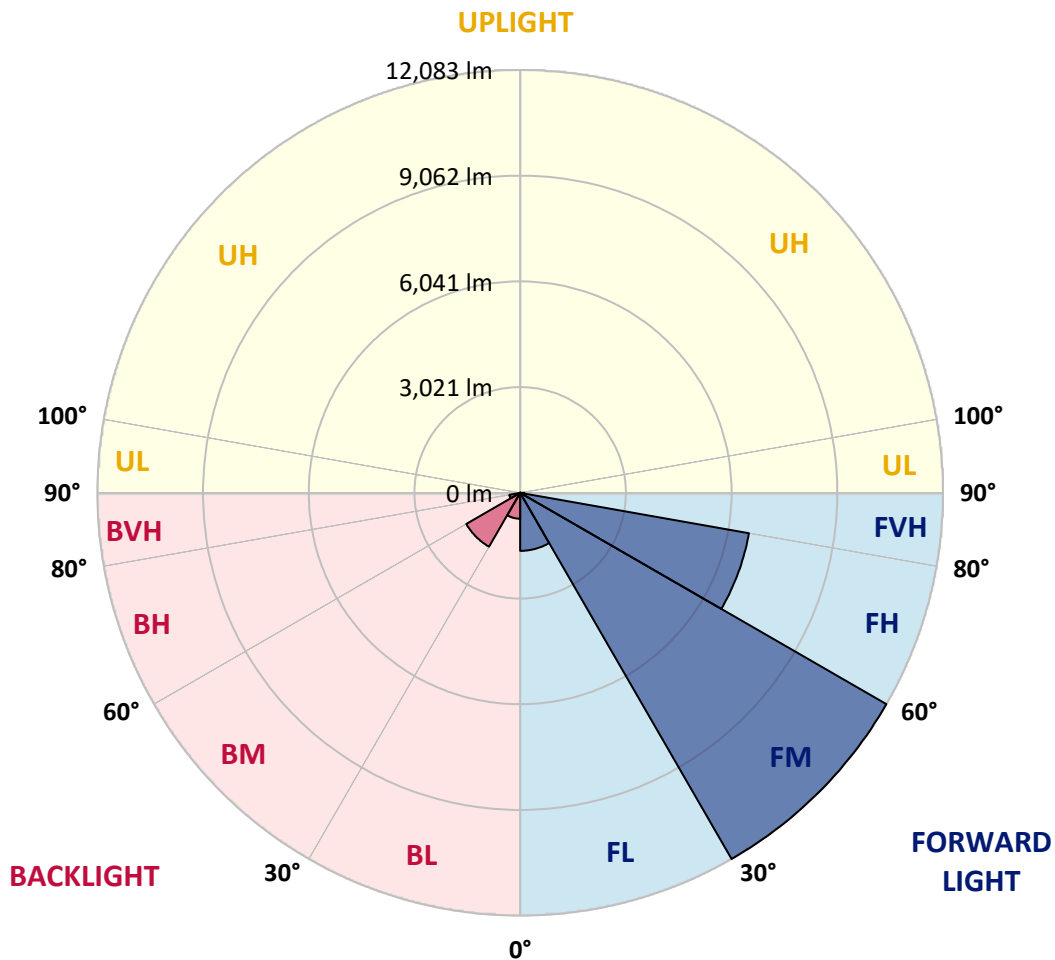
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|---------|-----------|-------------------------|------|---------|
|      |             |         |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1658.8  | 7.1       |                         |      |         |
| FM   | (30°-60°)   | 12082.7 | 51.8      |                         |      |         |
| FH   | (60°-80°)   | 6637.7  | 28.5      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 115.2   | 0.5       |                         |      | G2/225  |
| BL   | (0°-30°)    | 740.6   | 3.2       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1777.4  | 7.6       | B2/2500                 |      |         |
| BH   | (60°-80°)   | 311.7   | 1.3       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 6.3     | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

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

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 80°     | 85°     |
|-------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 3249.9 | 3249.9 | 3249.9  | 3249.9  | 3249.9  | 3249.9  | 3249.9  | 3249.9  | 3249.9  | 3249.9  | 3249.9  |
| 2.5°  | 3269.8 | 3276.4 | 3269.8  | 3276.4  | 3289.7  | 3283.1  | 3309.6  | 3303.0  | 3303.0  | 3296.3  | 3269.8  |
| 5°    | 3084.1 | 3090.7 | 3104.0  | 3137.2  | 3183.6  | 3230.0  | 3289.7  | 3329.5  | 3369.3  | 3362.7  | 3336.1  |
| 7.5°  | 2719.3 | 2732.6 | 2785.6  | 2852.0  | 3004.5  | 3143.8  | 3296.3  | 3395.8  | 3482.0  | 3508.6  | 3488.7  |
| 10°   | 2513.7 | 2527.0 | 2560.1  | 2626.5  | 2765.7  | 2997.9  | 3296.3  | 3501.9  | 3654.5  | 3707.5  | 3714.2  |
| 12.5° | 2493.8 | 2500.4 | 2527.0  | 2599.9  | 2719.3  | 2918.3  | 3289.7  | 3641.2  | 3899.9  | 3979.5  | 4006.0  |
| 15°   | 2507.1 | 2520.3 | 2546.9  | 2606.6  | 2745.8  | 2971.3  | 3342.8  | 3860.1  | 4224.9  | 4337.6  | 4344.3  |
| 17.5° | 2560.1 | 2573.4 | 2606.6  | 2672.9  | 2825.4  | 3110.6  | 3508.6  | 4085.6  | 4616.2  | 4742.2  | 4815.2  |
| 20°   | 2666.2 | 2672.9 | 2712.7  | 2798.9  | 2971.3  | 3283.1  | 3754.0  | 4390.7  | 5087.1  | 5272.8  | 5325.9  |
| 22.5° | 2805.5 | 2825.4 | 2878.5  | 2984.6  | 3203.5  | 3521.8  | 4092.2  | 4762.1  | 5604.4  | 5796.8  | 5889.6  |
| 25°   | 2958.1 | 2984.6 | 3064.2  | 3236.6  | 3515.2  | 3886.6  | 4510.1  | 5252.9  | 6214.6  | 6446.7  | 6572.8  |
| 27.5° | 3269.8 | 3276.4 | 3329.5  | 3548.4  | 3906.5  | 4364.2  | 5040.7  | 5883.0  | 6930.9  | 7202.8  | 7342.1  |
| 30°   | 3952.9 | 3959.6 | 3913.1  | 3972.8  | 4337.6  | 4927.9  | 5664.1  | 6619.2  | 7766.6  | 8144.7  | 8257.4  |
| 32.5° | 4788.6 | 4821.8 | 4815.2  | 4775.4  | 4941.2  | 5491.7  | 6407.0  | 7501.3  | 8748.2  | 9146.2  | 9252.3  |
| 35°   | 5737.1 | 5816.7 | 5796.8  | 5783.5  | 5803.4  | 6214.6  | 7255.9  | 8476.3  | 9862.5  | 10346.6 | 10432.9 |
| 37.5° | 6665.6 | 6685.5 | 6778.4  | 6891.1  | 6904.4  | 7189.6  | 8237.5  | 9510.9  | 10897.1 | 11513.9 | 11646.6 |
| 40°   | 7381.9 | 7448.2 | 7680.4  | 7905.9  | 8138.0  | 8363.5  | 9046.7  | 10346.6 | 11719.6 | 12548.6 | 12608.3 |
| 42.5° | 7939.1 | 8098.2 | 8436.5  | 8788.0  | 9258.9  | 9510.9  | 9816.0  | 10936.9 | 12389.4 | 13470.5 | 13444.0 |
| 45°   | 8615.6 | 8681.9 | 9159.4  | 9623.7  | 10101.2 | 10485.9 | 10479.3 | 11434.4 | 12913.4 | 14259.8 | 14094.0 |
| 47.5° | 9073.2 | 9152.8 | 9802.8  | 10346.6 | 10837.4 | 11029.8 | 11069.6 | 11971.6 | 13636.3 | 15214.9 | 14823.5 |
| 50°   | 9318.6 | 9457.9 | 10167.6 | 10857.3 | 11387.9 | 11447.6 | 11626.7 | 12674.6 | 14584.8 | 16481.7 | 15745.5 |
| 52.5° | 9345.1 | 9477.8 | 10293.6 | 11182.3 | 11759.3 | 11878.7 | 12183.8 | 13470.5 | 15506.7 | 17496.4 | 16276.0 |
| 55°   | 8794.6 | 8874.2 | 10141.0 | 11235.4 | 12051.2 | 12329.7 | 12953.2 | 14206.7 | 16043.9 | 17967.3 | 16229.6 |
| 57.5° | 8277.3 | 8356.9 | 9457.9  | 11142.5 | 12349.6 | 12920.0 | 13775.6 | 14710.8 | 15626.1 | 17383.7 | 15195.0 |
| 60°   | 7832.9 | 7872.7 | 8874.2  | 10711.4 | 12462.4 | 13497.0 | 14485.3 | 14213.4 | 14545.0 | 15984.2 | 13424.1 |
| 62.5° | 6997.2 | 7023.8 | 8211.0  | 9935.4  | 12236.9 | 13941.4 | 14730.7 | 13158.8 | 13357.8 | 14054.2 | 11341.5 |
| 65°   | 5286.1 | 5385.6 | 6473.3  | 9351.8  | 11865.5 | 14147.0 | 14160.3 | 11872.1 | 11666.5 | 11500.7 | 8920.7  |
| 67.5° | 3588.2 | 3700.9 | 4357.5  | 8410.0  | 11261.9 | 14233.3 | 13052.7 | 10207.4 | 8887.5  | 8031.9  | 5843.2  |
| 70°   | 2865.2 | 2865.2 | 3090.7  | 6758.5  | 9829.3  | 13132.3 | 11679.8 | 7706.9  | 5644.2  | 4437.1  | 3130.5  |
| 72.5° | 1883.6 | 1890.3 | 2102.5  | 4291.2  | 6970.7  | 10015.0 | 9524.2  | 4457.0  | 2931.5  | 2261.7  | 1545.4  |
| 75°   | 683.1  | 683.1  | 921.9   | 1717.8  | 3687.6  | 5962.6  | 5803.4  | 2129.0  | 1591.8  | 1233.6  | 935.2   |
| 77.5° | 364.8  | 378.1  | 444.4   | 709.7   | 1412.7  | 2427.5  | 2268.3  | 1087.7  | 902.0   | 769.4   | 583.7   |
| 80°   | 245.4  | 252.0  | 298.5   | 437.7   | 683.1   | 935.2   | 729.6   | 610.2   | 610.2   | 517.3   | 391.3   |
| 82.5° | 132.6  | 139.3  | 199.0   | 285.2   | 364.8   | 437.7   | 351.5   | 358.2   | 431.1   | 351.5   | 225.5   |
| 85°   | 92.9   | 92.9   | 152.5   | 205.6   | 205.6   | 212.2   | 152.5   | 225.5   | 252.0   | 218.9   | 152.5   |
| 87.5° | 53.1   | 53.1   | 86.2    | 99.5    | 99.5    | 92.9    | 46.4    | 79.6    | 99.5    | 112.8   | 66.3    |
| 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: P1458178

CATALOG NUMBER: GLAN-SB3D-730-U-T3LG-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3249.9  | 3249.9 | 3249.9 | 3249.9 | 3249.9 | 3249.9 | 3249.9 | 3249.9 | 3249.9 | 3249.9 | 3249.9 |
| 2.5°  | 3263.2  | 3243.3 | 3203.5 | 3123.9 | 3084.1 | 3031.0 | 2984.6 | 2924.9 | 2911.6 | 2905.0 | 2878.5 |
| 5°    | 3316.2  | 3276.4 | 3157.0 | 2984.6 | 2838.7 | 2699.4 | 2560.1 | 2480.5 | 2414.2 | 2381.1 | 2374.4 |
| 7.5°  | 3448.9  | 3369.3 | 3150.4 | 2845.3 | 2573.4 | 2334.6 | 2129.0 | 1949.9 | 1857.1 | 1777.5 | 1784.1 |
| 10°   | 3647.9  | 3521.8 | 3163.7 | 2712.7 | 2308.1 | 1923.4 | 1625.0 | 1366.3 | 1180.6 | 1094.4 | 1087.7 |
| 12.5° | 3913.1  | 3734.1 | 3210.1 | 2580.0 | 1983.1 | 1445.9 | 1067.8 | 915.3  | 875.5  | 868.9  | 862.2  |
| 15°   | 4238.1  | 3986.1 | 3256.5 | 2407.6 | 1545.4 | 1001.5 | 868.9  | 835.7  | 829.1  | 822.4  | 822.4  |
| 17.5° | 4629.5  | 4277.9 | 3283.1 | 2115.8 | 1127.5 | 862.2  | 815.8  | 795.9  | 789.3  | 782.6  | 782.6  |
| 20°   | 5120.3  | 4602.9 | 3316.2 | 1744.3 | 955.1  | 829.1  | 776.0  | 749.5  | 742.8  | 742.8  | 736.2  |
| 22.5° | 5604.4  | 4967.7 | 3289.7 | 1419.3 | 921.9  | 789.3  | 729.6  | 703.0  | 689.8  | 689.8  | 683.1  |
| 25°   | 6161.6  | 5339.1 | 3210.1 | 1280.1 | 915.3  | 756.1  | 683.1  | 643.3  | 623.5  | 616.8  | 616.8  |
| 27.5° | 6798.3  | 5763.6 | 3084.1 | 1286.7 | 915.3  | 729.6  | 623.5  | 570.4  | 557.1  | 543.9  | 543.9  |
| 30°   | 7527.8  | 6280.9 | 2991.2 | 1372.9 | 928.5  | 703.0  | 570.4  | 504.1  | 484.2  | 470.9  | 477.5  |
| 32.5° | 8363.5  | 6858.0 | 2984.6 | 1512.2 | 948.4  | 663.2  | 510.7  | 437.7  | 417.8  | 411.2  | 417.8  |
| 35°   | 9312.0  | 7574.3 | 3137.2 | 1618.3 | 895.4  | 577.0  | 437.7  | 378.1  | 358.2  | 358.2  | 364.8  |
| 37.5° | 10366.5 | 8396.7 | 3342.8 | 1591.8 | 722.9  | 457.6  | 378.1  | 331.6  | 311.7  | 318.4  | 325.0  |
| 40°   | 11328.2 | 9040.0 | 3375.9 | 1359.7 | 543.9  | 391.3  | 325.0  | 291.8  | 278.6  | 285.2  | 291.8  |
| 42.5° | 12057.8 | 9557.4 | 3057.6 | 1054.6 | 457.6  | 331.6  | 278.6  | 252.0  | 245.4  | 258.7  | 258.7  |
| 45°   | 12648.1 | 9763.0 | 2553.5 | 782.6  | 404.6  | 285.2  | 245.4  | 232.1  | 218.9  | 225.5  | 225.5  |
| 47.5° | 13264.9 | 9796.1 | 2082.6 | 630.1  | 358.2  | 258.7  | 225.5  | 212.2  | 199.0  | 199.0  | 199.0  |
| 50°   | 13861.8 | 9716.5 | 1591.8 | 557.1  | 331.6  | 232.1  | 205.6  | 192.3  | 179.1  | 172.4  | 172.4  |
| 52.5° | 14007.7 | 9079.8 | 1167.3 | 517.3  | 305.1  | 218.9  | 192.3  | 179.1  | 165.8  | 159.2  | 159.2  |
| 55°   | 13603.2 | 7872.7 | 915.3  | 464.3  | 278.6  | 199.0  | 179.1  | 165.8  | 145.9  | 139.3  | 139.3  |
| 57.5° | 12270.0 | 6002.4 | 729.6  | 397.9  | 252.0  | 192.3  | 165.8  | 152.5  | 132.6  | 126.0  | 126.0  |
| 60°   | 10539.0 | 4258.0 | 590.3  | 325.0  | 232.1  | 172.4  | 152.5  | 132.6  | 119.4  | 106.1  | 106.1  |
| 62.5° | 8622.2  | 3057.6 | 477.5  | 271.9  | 218.9  | 152.5  | 139.3  | 119.4  | 92.9   | 73.0   | 73.0   |
| 65°   | 6612.6  | 2195.3 | 371.4  | 218.9  | 199.0  | 132.6  | 119.4  | 99.5   | 73.0   | 53.1   | 53.1   |
| 67.5° | 4277.9  | 1419.3 | 278.6  | 192.3  | 152.5  | 112.8  | 92.9   | 79.6   | 66.3   | 46.4   | 39.8   |
| 70°   | 2255.0  | 829.1  | 205.6  | 165.8  | 112.8  | 86.2   | 79.6   | 66.3   | 53.1   | 33.2   | 33.2   |
| 72.5° | 1167.3  | 543.9  | 152.5  | 145.9  | 86.2   | 59.7   | 66.3   | 53.1   | 39.8   | 19.9   | 19.9   |
| 75°   | 749.5   | 364.8  | 112.8  | 119.4  | 53.1   | 46.4   | 46.4   | 33.2   | 19.9   | 13.3   | 6.6    |
| 77.5° | 484.2   | 245.4  | 79.6   | 99.5   | 33.2   | 26.5   | 26.5   | 13.3   | 6.6    | 0.0    | 0.0    |
| 80°   | 285.2   | 152.5  | 53.1   | 66.3   | 13.3   | 13.3   | 6.6    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 145.9   | 79.6   | 26.5   | 26.5   | 6.6    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 92.9    | 39.8   | 6.6    | 6.6    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 46.4    | 13.3   | 6.6    | 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    |

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-730-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 3000K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 2985  
 CIE u': 0.2504  
 CIE v': 0.5243  
 Duv: 0.0019  
 CIE x: 0.4408  
 CIE y: 0.4101  
 CIE z: 0.1491  
 Peak Wavelength (nm): 595  
 Dominant Wavelength (nm): 582  
 Purity: 55.41818  
 Rf: 73.8  
 Rg: 94.4

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 70.8 |      |       |
| R1:       | 66.3 | R9:  | -43.2 |
| R2:       | 80.6 | R10: | 57.6  |
| R3:       | 94.5 | R11: | 64.8  |
| R4:       | 68.2 | R12: | 53.5  |
| R5:       | 66.5 | R13: | 68.7  |
| R6:       | 74.7 | R14: | 97.0  |
| R7:       | 76.2 | R15: | 56.4  |
| R8:       | 39.6 |      |       |



**Test Conditions**

Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-4

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.19**

| $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360            | 0                        | NR                   | 490            | 142                      | NR                   | 620            | 803                      | NR                   | 750            | 17                       | NR                   | 880            | 0                        | NR                   |
| 365            | 0                        | NR                   | 495            | 189                      | NR                   | 625            | 734                      | NR                   | 755            | 15                       | NR                   | 885            | 0                        | NR                   |
| 370            | 0                        | NR                   | 500            | 240                      | NR                   | 630            | 670                      | NR                   | 760            | 13                       | NR                   | 890            | 0                        | NR                   |
| 375            | 0                        | NR                   | 505            | 290                      | NR                   | 635            | 600                      | NR                   | 765            | 11                       | NR                   | 895            | 0                        | NR                   |
| 380            | 0                        | NR                   | 510            | 335                      | NR                   | 640            | 535                      | NR                   | 770            | 9                        | NR                   | 900            | 0                        | NR                   |
| 385            | 0                        | NR                   | 515            | 375                      | NR                   | 645            | 473                      | NR                   | 775            | 8                        | NR                   | 905            | 0                        | NR                   |
| 390            | 1                        | NR                   | 520            | 408                      | NR                   | 650            | 415                      | NR                   | 780            | 7                        | NR                   | 910            | 0                        | NR                   |
| 395            | 2                        | NR                   | 525            | 434                      | NR                   | 655            | 362                      | NR                   | 785            | 6                        | NR                   | 915            | 0                        | NR                   |
| 400            | 4                        | NR                   | 530            | 461                      | NR                   | 660            | 313                      | NR                   | 790            | 5                        | NR                   | 920            | 0                        | NR                   |
| 405            | 8                        | NR                   | 535            | 486                      | NR                   | 665            | 271                      | NR                   | 795            | 4                        | NR                   | 925            | 0                        | NR                   |
| 410            | 16                       | NR                   | 540            | 514                      | NR                   | 670            | 231                      | NR                   | 800            | 4                        | NR                   | 930            | 0                        | NR                   |
| 415            | 33                       | NR                   | 545            | 549                      | NR                   | 675            | 198                      | NR                   | 805            | 3                        | NR                   | 935            | 0                        | NR                   |
| 420            | 69                       | NR                   | 550            | 591                      | NR                   | 680            | 169                      | NR                   | 810            | 3                        | NR                   | 940            | 0                        | NR                   |
| 425            | 131                      | NR                   | 555            | 640                      | NR                   | 685            | 144                      | NR                   | 815            | 2                        | NR                   | 945            | 0                        | NR                   |
| 430            | 227                      | NR                   | 560            | 695                      | NR                   | 690            | 123                      | NR                   | 820            | 2                        | NR                   | 950            | 0                        | NR                   |
| 435            | 369                      | NR                   | 565            | 757                      | NR                   | 695            | 104                      | NR                   | 825            | 2                        | NR                   | 955            | 0                        | NR                   |
| 440            | 517                      | NR                   | 570            | 822                      | NR                   | 700            | 88                       | NR                   | 830            | 2                        | NR                   | 960            | 0                        | NR                   |
| 445            | 498                      | NR                   | 575            | 882                      | NR                   | 705            | 75                       | NR                   | 835            | 1                        | NR                   | 965            | 0                        | NR                   |
| 450            | 315                      | NR                   | 580            | 935                      | NR                   | 710            | 63                       | NR                   | 840            | 1                        | NR                   | 970            | 0                        | NR                   |
| 455            | 204                      | NR                   | 585            | 972                      | NR                   | 715            | 54                       | NR                   | 845            | 1                        | NR                   | 975            | 0                        | NR                   |
| 460            | 145                      | NR                   | 590            | 996                      | NR                   | 720            | 46                       | NR                   | 850            | 1                        | NR                   | 980            | 0                        | NR                   |
| 465            | 100                      | NR                   | 595            | 1000                     | NR                   | 725            | 39                       | NR                   | 855            | 1                        | NR                   | 985            | 0                        | NR                   |
| 470            | 78                       | NR                   | 600            | 989                      | NR                   | 730            | 33                       | NR                   | 860            | 1                        | NR                   | 990            | 0                        | NR                   |
| 475            | 76                       | NR                   | 605            | 960                      | NR                   | 735            | 28                       | NR                   | 865            | 1                        | NR                   | 995            | 0                        | NR                   |
| 480            | 83                       | NR                   | 610            | 918                      | NR                   | 740            | 24                       | NR                   | 870            | 1                        | NR                   | 1000           | 0                        | NR                   |
| 485            | 105                      | NR                   | 615            | 864                      | NR                   | 745            | 20                       | NR                   | 875            | 1                        | NR                   |                |                          |                      |

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.13

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

**Summary**

$R_f = 73.8$   
 $R_g = 94.4$   
 $CIE R_a = 70.8$   
 $R_g = -43.2$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)