

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: STREETWORKS

Report Number: P1381107

Luminaire Tested: **VAL-T-SB6A-730-U-T3-HSS**

Issue Date: 02/18/2026

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been  
influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: P1381107  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/18/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VAL-T-SB6A-730-U-T3-HSS  
Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 6SQUARE 170W 70CRI  
3000K FIXTURE w/ TYPE III DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD  
Light Source: (156) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment: 

| <u>Sample No.</u> | <u>Condition</u> | <u>Description</u> |
|-------------------|------------------|--------------------|
| a                 | good             | reflector          |
| b                 | good             | lens               |
| c                 | good             | housing            |
| d                 | good             | cord               |

**Summary**

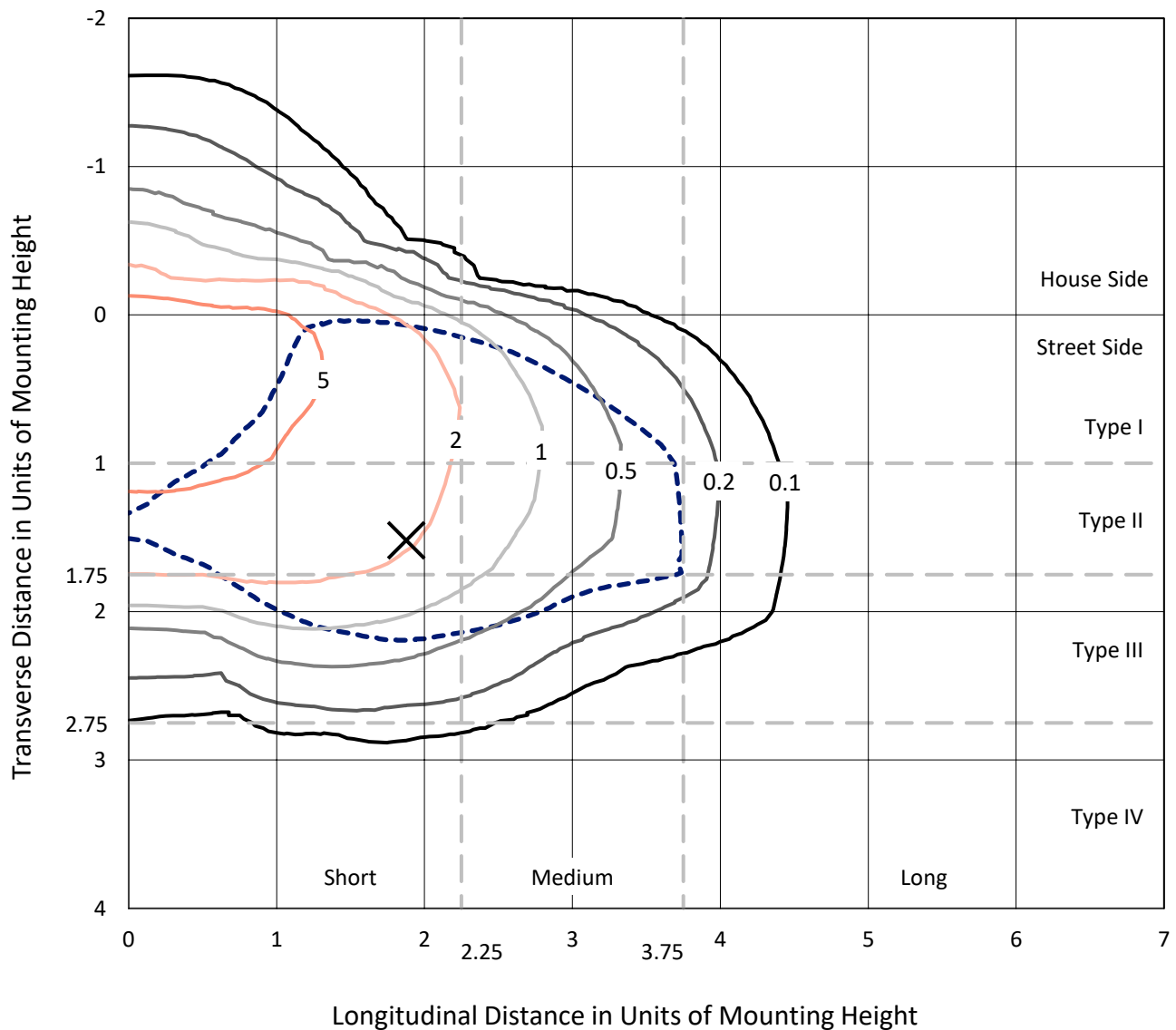
Lumens per Lamp: N/A  
Luminaire Lumens: 18956.8 lumens  
Efficiency: N/A  
Efficacy: 111.5 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G3  
  
Input Watts (W): 170  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.98  
Total Harmonic Distortion (THDi): 12.0%  
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

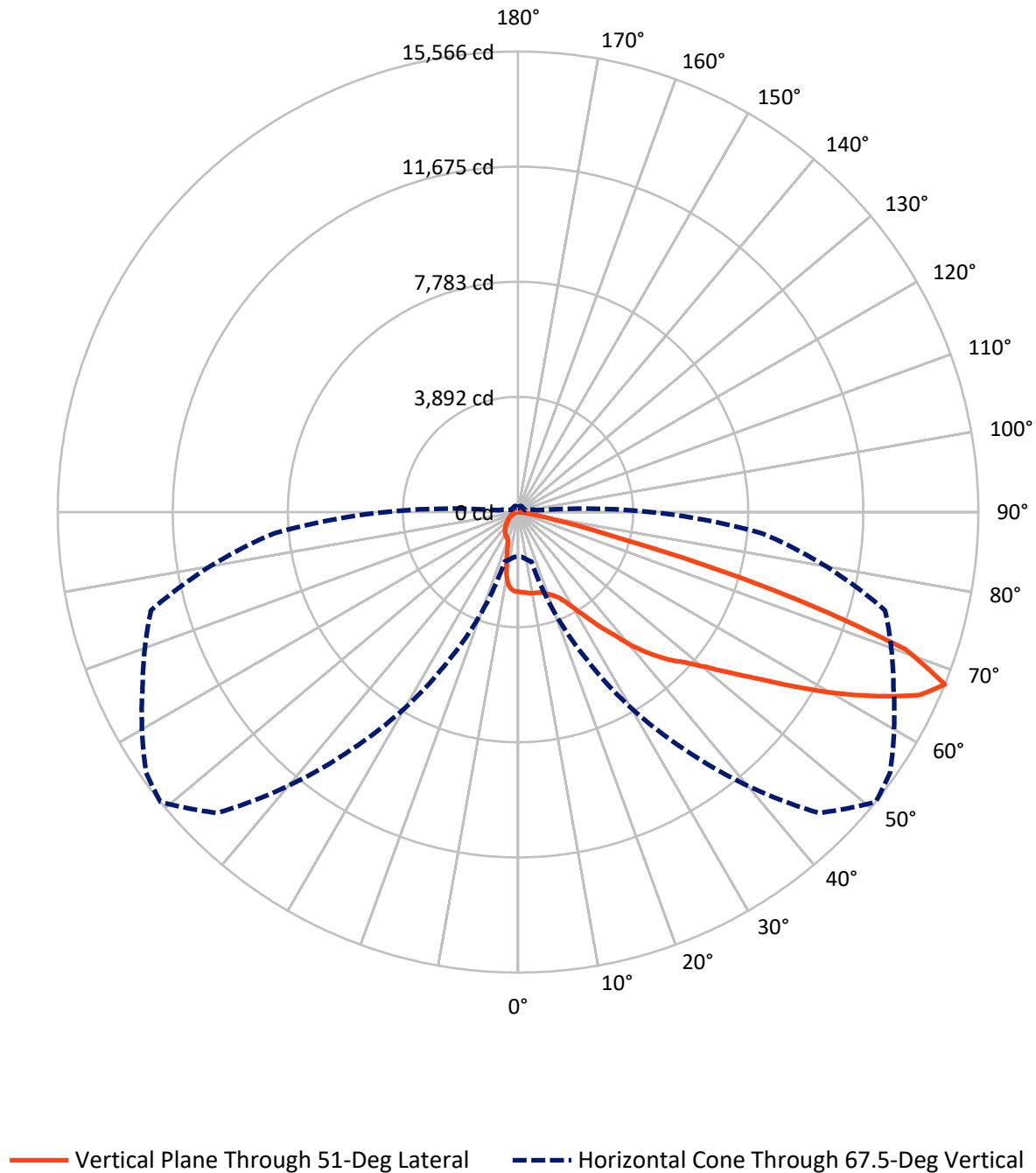
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8.6 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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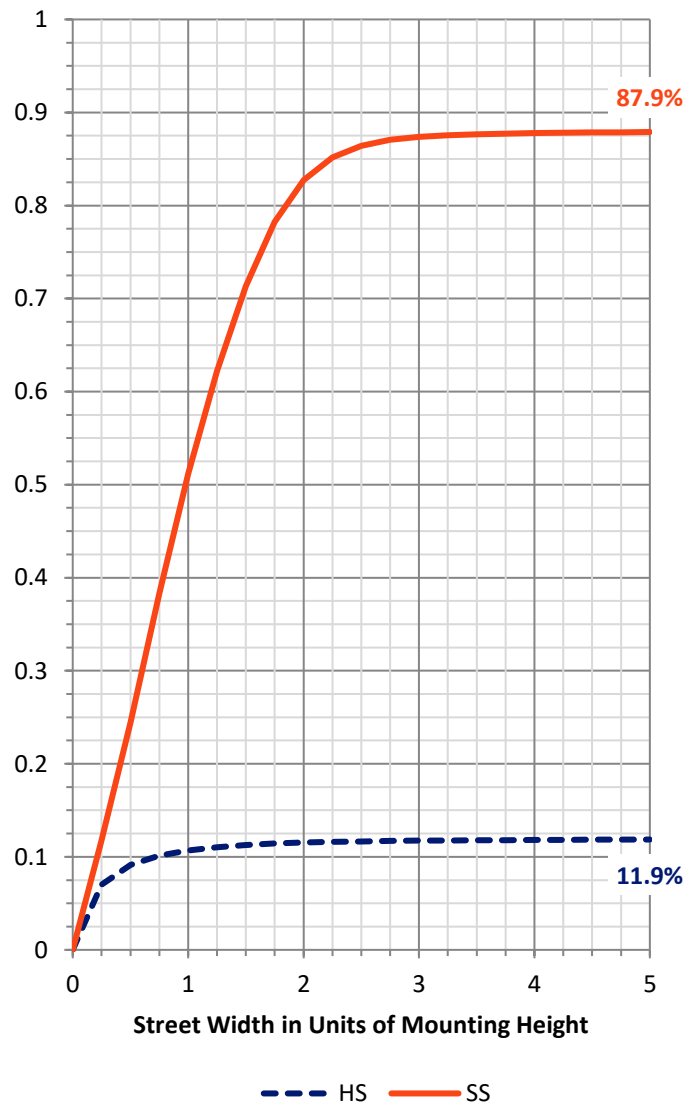
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2266.6   | 0.0    | 2266.6  |
|                    | % Fixture | 12.0     | 0.0    | 12.0    |
| <b>Street Side</b> | Lumens    | 16690.2  | 0.0    | 16690.2 |
|                    | % Fixture | 88.0     | 0.0    | 88.0    |
| <b>Total</b>       | Lumens    | 18956.8  | 0.0    | 18956.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 245.8   | 1.3       |
| 10°-20°   | 631.9   | 3.3       |
| 20°-30°   | 1126.5  | 5.9       |
| 30°-40°   | 2016.1  | 10.6      |
| 40°-50°   | 3175.9  | 16.8      |
| 50°-60°   | 4619.2  | 24.4      |
| 60°-70°   | 5025.8  | 26.5      |
| 70°-80°   | 2030.3  | 10.7      |
| 80°-90°   | 85.3    | 0.4       |
| 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°    | 18956.8 | 100.0     |
| 0°-180°   | 18956.8 | 100.0     |



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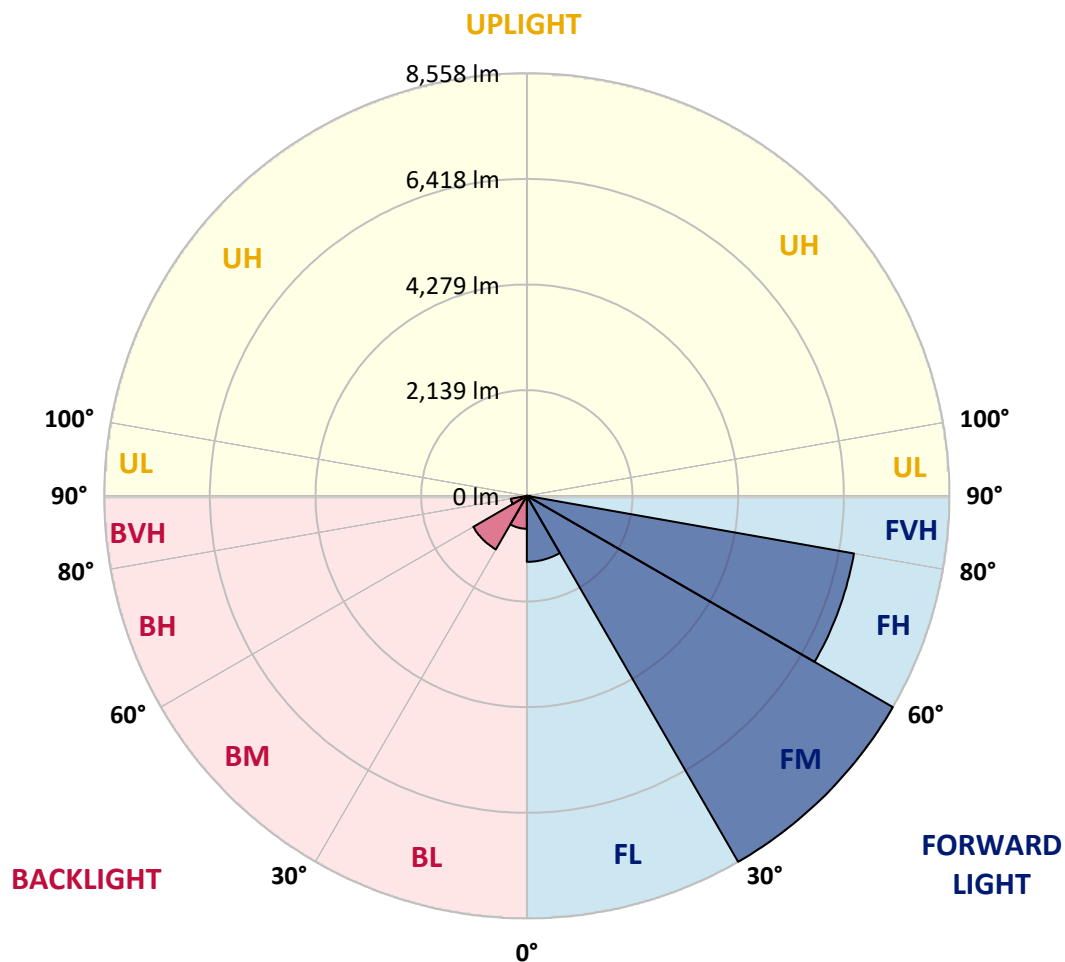
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1336.7 | 7.1       |                         |      |         |
| FM   | (30°-60°)   | 8557.6 | 45.1      |                         |      |         |
| FH   | (60°-80°)   | 6726.6 | 35.5      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 69.2   | 0.4       |                         |      | G1/100  |
| BL   | (0°-30°)    | 667.5  | 3.5       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1253.6 | 6.6       | B2/2500                 |      |         |
| BH   | (60°-80°)   | 329.5  | 1.7       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 16.1   | 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 III Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°     | 45°     | 51°     | 55°     | 65°     | 75°     | 85°    |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 2691.8 | 2691.8 | 2691.8 | 2691.8 | 2691.8  | 2691.8  | 2691.8  | 2691.8  | 2691.8  | 2691.8  | 2691.8 |
| 2.5°  | 2714.6 | 2708.9 | 2714.6 | 2691.8 | 2703.2  | 2708.9  | 2720.2  | 2703.2  | 2697.5  | 2703.2  | 2697.5 |
| 5°    | 2703.2 | 2697.5 | 2703.2 | 2708.9 | 2720.2  | 2737.3  | 2731.6  | 2731.6  | 2742.9  | 2720.2  | 2720.2 |
| 7.5°  | 2606.7 | 2601.0 | 2635.0 | 2646.4 | 2691.8  | 2731.6  | 2777.0  | 2760.0  | 2782.7  | 2777.0  | 2760.0 |
| 10°   | 2487.4 | 2470.4 | 2504.4 | 2566.9 | 2635.0  | 2737.3  | 2782.7  | 2794.1  | 2845.2  | 2867.9  | 2856.5 |
| 12.5° | 2419.2 | 2402.2 | 2447.6 | 2493.1 | 2601.0  | 2725.9  | 2805.4  | 2833.8  | 2890.6  | 2936.0  | 2947.4 |
| 15°   | 2368.1 | 2385.2 | 2430.6 | 2515.8 | 2618.0  | 2748.6  | 2816.8  | 2873.6  | 2992.8  | 3038.3  | 3038.3 |
| 17.5° | 2402.2 | 2396.5 | 2436.3 | 2521.5 | 2646.4  | 2777.0  | 2879.2  | 2936.0  | 3078.0  | 3140.5  | 3134.8 |
| 20°   | 2737.3 | 2703.2 | 2697.5 | 2652.1 | 2691.8  | 2845.2  | 2970.1  | 3026.9  | 3163.2  | 3248.4  | 3242.7 |
| 22.5° | 3168.9 | 3202.9 | 3112.1 | 3009.9 | 2884.9  | 2936.0  | 3066.7  | 3146.2  | 3282.5  | 3373.3  | 3339.2 |
| 25°   | 3753.8 | 3736.8 | 3674.3 | 3469.9 | 3242.7  | 3134.8  | 3202.9  | 3282.5  | 3452.8  | 3526.6  | 3469.9 |
| 27.5° | 4372.8 | 4299.0 | 4219.5 | 3935.5 | 3634.5  | 3435.8  | 3447.1  | 3498.3  | 3697.0  | 3742.4  | 3611.8 |
| 30°   | 5037.3 | 5048.6 | 4918.0 | 4531.8 | 4117.3  | 3816.3  | 3793.6  | 3816.3  | 3975.3  | 3969.6  | 3787.9 |
| 32.5° | 5798.2 | 5769.8 | 5644.9 | 5230.3 | 4770.3  | 4276.3  | 4219.5  | 4179.7  | 4247.9  | 4185.4  | 3975.3 |
| 35°   | 6332.1 | 6360.5 | 6224.2 | 5951.6 | 5491.6  | 4878.2  | 4742.0  | 4645.4  | 4577.3  | 4509.1  | 4282.0 |
| 37.5° | 6809.1 | 6775.0 | 6695.5 | 6542.2 | 6093.5  | 5531.3  | 5270.1  | 5184.9  | 5037.3  | 4849.9  | 4639.7 |
| 40°   | 6917.0 | 6900.0 | 6860.2 | 6865.9 | 6576.3  | 6139.0  | 5951.6  | 5798.2  | 5542.7  | 5389.4  | 5116.8 |
| 42.5° | 6900.0 | 6956.8 | 6968.1 | 7013.5 | 6848.9  | 6741.0  | 6547.9  | 6400.2  | 6161.7  | 5974.3  | 5690.3 |
| 45°   | 6990.8 | 7087.4 | 7166.9 | 7206.6 | 7098.7  | 7087.4  | 7110.1  | 7041.9  | 6877.2  | 6684.2  | 6360.5 |
| 47.5° | 7172.6 | 7337.2 | 7462.2 | 7547.4 | 7524.7  | 7712.1  | 7592.8  | 7575.8  | 7643.9  | 7456.5  | 7132.8 |
| 50°   | 7513.3 | 7558.7 | 7854.0 | 7979.0 | 8189.1  | 8461.7  | 8228.8  | 8285.6  | 8421.9  | 8439.0  | 7842.7 |
| 52.5° | 7768.8 | 7808.6 | 8103.9 | 8473.0 | 8938.7  | 9239.7  | 9029.6  | 9023.9  | 9268.1  | 9336.2  | 8529.8 |
| 55°   | 7837.0 | 7927.9 | 8308.4 | 8950.1 | 9824.6  | 10131.3 | 9983.7  | 9932.5  | 10256.2 | 10375.5 | 9137.5 |
| 57.5° | 7740.5 | 7774.5 | 8319.7 | 9245.4 | 10466.4 | 11130.8 | 11176.2 | 11017.2 | 11312.5 | 11340.9 | 9586.1 |
| 60°   | 6695.5 | 6843.2 | 7797.2 | 9432.8 | 11011.5 | 12215.5 | 12454.0 | 12363.1 | 12385.9 | 12334.7 | 9921.2 |
| 62.5° | 4628.4 | 4656.8 | 6059.5 | 9234.0 | 11460.2 | 13311.5 | 13709.1 | 13640.9 | 13447.8 | 12965.1 | 9750.8 |
| 65°   | 2203.4 | 2356.8 | 3254.1 | 7814.3 | 11522.7 | 14146.3 | 14918.7 | 14964.1 | 14066.8 | 12970.8 | 9092.1 |
| 67.5° | 1516.3 | 1522.0 | 1732.1 | 5514.3 | 9773.5  | 14384.9 | 15566.1 | 15356.0 | 14010.0 | 12851.5 | 8285.6 |
| 70°   | 959.7  | 891.6  | 999.5  | 3146.2 | 6604.7  | 11295.5 | 13885.1 | 14623.4 | 13771.5 | 12073.5 | 7002.2 |
| 72.5° | 380.5  | 408.9  | 471.4  | 1033.6 | 3237.0  | 6434.3  | 9069.3  | 11130.8 | 12419.9 | 10443.6 | 5468.9 |
| 75°   | 170.4  | 181.7  | 238.5  | 431.6  | 834.8   | 2623.7  | 3509.6  | 4918.0  | 9938.2  | 8245.9  | 3873.1 |
| 77.5° | 113.6  | 119.3  | 153.3  | 249.9  | 380.5   | 732.6   | 1283.5  | 1504.9  | 5957.3  | 4509.1  | 1817.3 |
| 80°   | 68.1   | 73.8   | 102.2  | 153.3  | 210.1   | 261.2   | 391.8   | 454.3   | 1573.1  | 1493.6  | 499.8  |
| 82.5° | 45.4   | 39.8   | 68.1   | 85.2   | 124.9   | 107.9   | 124.9   | 147.7   | 431.6   | 380.5   | 136.3  |
| 85°   | 17.0   | 17.0   | 28.4   | 34.1   | 45.4    | 56.8    | 51.1    | 62.5    | 102.2   | 102.2   | 62.5   |
| 87.5° | 0.0    | 0.0    | 5.7    | 5.7    | 17.0    | 22.7    | 28.4    | 28.4    | 39.8    | 39.8    | 34.1   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    |



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CATALOG NUMBER: VAL-T-SB6A-730-U-T3-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2691.8 | 2691.8 | 2691.8 | 2691.8 | 2691.8 | 2691.8 | 2691.8 | 2691.8 | 2691.8 | 2691.8 | 2691.8 |
| 2.5°  | 2703.2 | 2686.2 | 2691.8 | 2680.5 | 2686.2 | 2674.8 | 2652.1 | 2674.8 | 2657.8 | 2657.8 | 2674.8 |
| 5°    | 2720.2 | 2714.6 | 2697.5 | 2669.1 | 2652.1 | 2612.3 | 2549.9 | 2521.5 | 2493.1 | 2476.0 | 2487.4 |
| 7.5°  | 2777.0 | 2754.3 | 2725.9 | 2657.8 | 2566.9 | 2447.6 | 2322.7 | 2180.7 | 2072.8 | 2061.5 | 2021.7 |
| 10°   | 2850.8 | 2828.1 | 2765.7 | 2612.3 | 2424.9 | 2084.2 | 1811.6 | 1624.2 | 1510.6 | 1436.8 | 1408.4 |
| 12.5° | 2947.4 | 2919.0 | 2805.4 | 2544.2 | 2084.2 | 1607.2 | 1283.5 | 1147.2 | 1107.4 | 1090.4 | 1084.7 |
| 15°   | 3038.3 | 3004.2 | 2805.4 | 2322.7 | 1686.7 | 1209.6 | 1044.9 | 1010.9 | 1005.2 | 1010.9 | 1005.2 |
| 17.5° | 3123.4 | 3078.0 | 2777.0 | 2021.7 | 1294.8 | 1022.2 | 982.5  | 965.4  | 959.7  | 954.1  | 954.1  |
| 20°   | 3225.7 | 3151.8 | 2697.5 | 1692.3 | 1067.6 | 971.1  | 954.1  | 931.4  | 931.4  | 908.6  | 914.3  |
| 22.5° | 3322.2 | 3220.0 | 2544.2 | 1363.0 | 982.5  | 942.7  | 925.7  | 903.0  | 891.6  | 874.6  | 874.6  |
| 25°   | 3418.7 | 3288.1 | 2362.5 | 1130.1 | 931.4  | 914.3  | 897.3  | 874.6  | 846.2  | 823.5  | 823.5  |
| 27.5° | 3560.7 | 3379.0 | 2146.7 | 1033.6 | 903.0  | 874.6  | 857.5  | 829.1  | 795.1  | 766.7  | 766.7  |
| 30°   | 3719.7 | 3503.9 | 1970.6 | 1016.5 | 891.6  | 823.5  | 795.1  | 749.6  | 726.9  | 704.2  | 704.2  |
| 32.5° | 3912.8 | 3674.3 | 1840.0 | 1044.9 | 863.2  | 755.3  | 709.9  | 664.4  | 647.4  | 647.4  | 647.4  |
| 35°   | 4196.8 | 3924.2 | 1698.0 | 1050.6 | 829.1  | 687.2  | 613.3  | 567.9  | 567.9  | 590.6  | 590.6  |
| 37.5° | 4577.3 | 4196.8 | 1624.2 | 1039.3 | 800.7  | 619.0  | 533.8  | 499.8  | 494.1  | 516.8  | 516.8  |
| 40°   | 5014.5 | 4497.8 | 1652.6 | 999.5  | 761.0  | 550.9  | 471.4  | 443.0  | 437.3  | 443.0  | 448.6  |
| 42.5° | 5491.6 | 4821.5 | 1720.7 | 942.7  | 692.8  | 494.1  | 425.9  | 408.9  | 403.2  | 403.2  | 403.2  |
| 45°   | 5997.0 | 5042.9 | 1788.9 | 885.9  | 624.7  | 448.6  | 397.5  | 386.2  | 380.5  | 380.5  | 380.5  |
| 47.5° | 6479.7 | 5219.0 | 1743.4 | 834.8  | 567.9  | 420.2  | 374.8  | 374.8  | 369.1  | 369.1  | 369.1  |
| 50°   | 6894.3 | 5201.9 | 1550.4 | 783.7  | 505.4  | 397.5  | 363.5  | 357.8  | 357.8  | 352.1  | 352.1  |
| 52.5° | 7127.1 | 4855.5 | 1249.4 | 726.9  | 448.6  | 374.8  | 352.1  | 346.4  | 340.7  | 335.1  | 335.1  |
| 55°   | 7218.0 | 4395.5 | 971.1  | 641.7  | 408.9  | 357.8  | 340.7  | 335.1  | 323.7  | 318.0  | 312.3  |
| 57.5° | 7059.0 | 3719.7 | 749.6  | 511.1  | 374.8  | 335.1  | 323.7  | 318.0  | 306.7  | 289.6  | 283.9  |
| 60°   | 6735.3 | 2981.5 | 562.2  | 391.8  | 335.1  | 306.7  | 306.7  | 301.0  | 278.3  | 249.9  | 244.2  |
| 62.5° | 6167.4 | 2141.0 | 425.9  | 318.0  | 289.6  | 278.3  | 289.6  | 278.3  | 244.2  | 204.4  | 198.8  |
| 65°   | 5366.6 | 1323.2 | 329.4  | 272.6  | 255.6  | 244.2  | 261.2  | 249.9  | 210.1  | 164.7  | 153.3  |
| 67.5° | 4486.4 | 675.8  | 255.6  | 232.8  | 215.8  | 204.4  | 221.5  | 221.5  | 181.7  | 136.3  | 130.6  |
| 70°   | 3464.2 | 374.8  | 204.4  | 193.1  | 176.0  | 159.0  | 187.4  | 193.1  | 159.0  | 119.3  | 113.6  |
| 72.5° | 2572.6 | 238.5  | 164.7  | 159.0  | 136.3  | 113.6  | 153.3  | 164.7  | 136.3  | 90.9   | 85.2   |
| 75°   | 1681.0 | 187.4  | 124.9  | 124.9  | 96.5   | 90.9   | 130.6  | 142.0  | 119.3  | 68.1   | 68.1   |
| 77.5° | 806.4  | 142.0  | 96.5   | 85.2   | 68.1   | 68.1   | 113.6  | 119.3  | 85.2   | 51.1   | 51.1   |
| 80°   | 266.9  | 96.5   | 68.1   | 56.8   | 45.4   | 45.4   | 90.9   | 68.1   | 45.4   | 39.8   | 39.8   |
| 82.5° | 90.9   | 62.5   | 45.4   | 39.8   | 34.1   | 28.4   | 28.4   | 34.1   | 34.1   | 28.4   | 28.4   |
| 85°   | 45.4   | 39.8   | 34.1   | 28.4   | 22.7   | 22.7   | 22.7   | 22.7   | 28.4   | 28.4   | 28.4   |
| 87.5° | 28.4   | 28.4   | 22.7   | 17.0   | 17.0   | 17.0   | 17.0   | 17.0   | 22.7   | 11.4   | 11.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

LM-79-2019: 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:  $4\pi$   
 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  
 R<sub>f</sub>: 73.8  
 R<sub>g</sub>: 94.4

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



### 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

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 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

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 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**

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 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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TM-30-18

### 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)