

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: P1383352

Luminaire Tested: **VAL-T-SB3B-722-U-SL2**

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: P1383352  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 02/18/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VAL-T-SB3B-722-U-SL2  
Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 3SQUARE 109W 70CRI  
2200K FIXTURE w/ TYPE II SPILL CONTROL DISTRIBUTION OPTIC  
Light Source: (78) 2200K 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               |

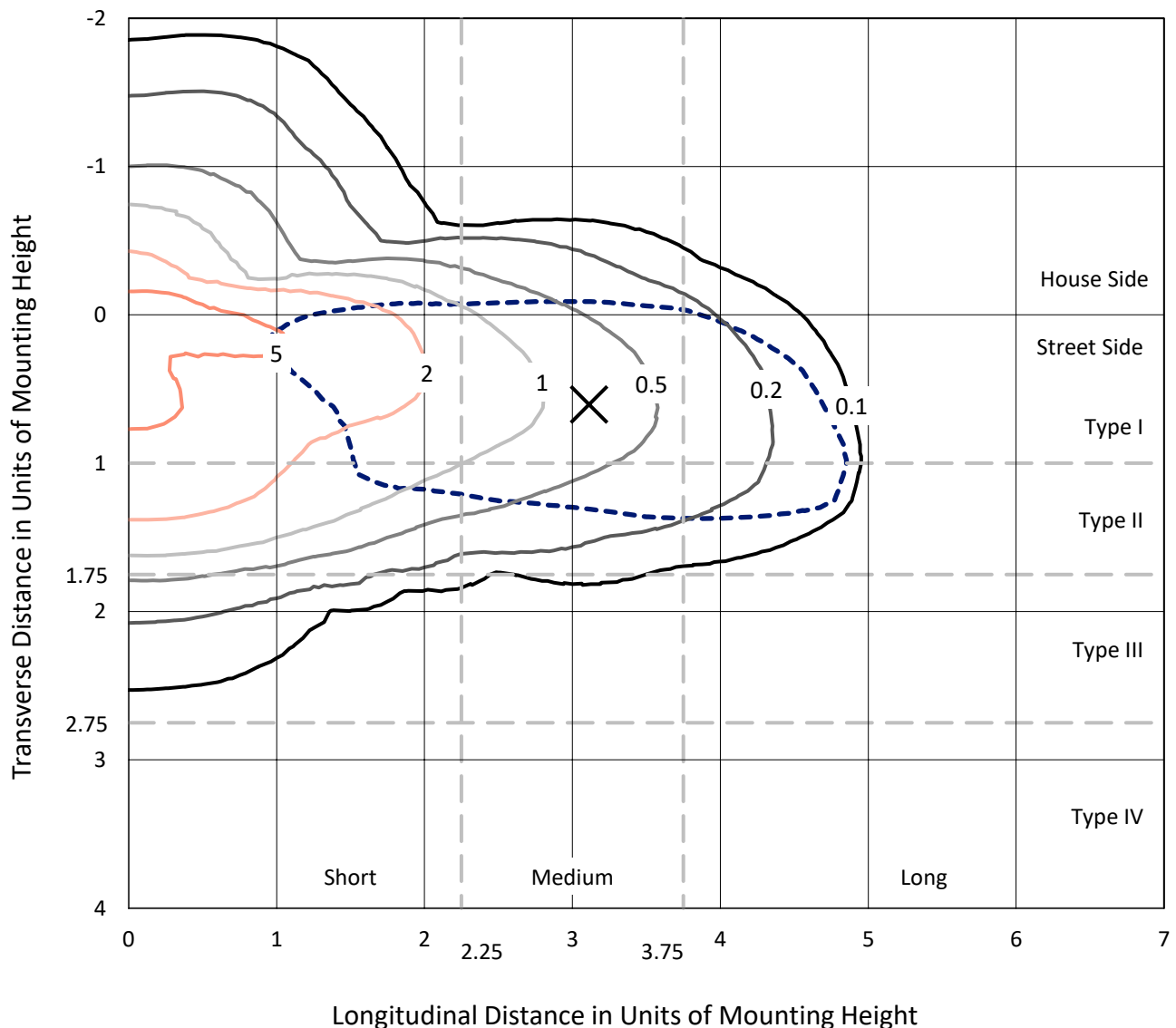
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12791.5 lumens  
Efficiency: N/A  
Efficacy: 117.4 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 109  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.98  
Total Harmonic Distortion (THDi): 8.7%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

REPORT NUMBER: P1383352  
 CATALOG NUMBER: VAL-T-SB3B-722-U-SL2

## Iso-Footcandle Lines of Horizontal Illumination

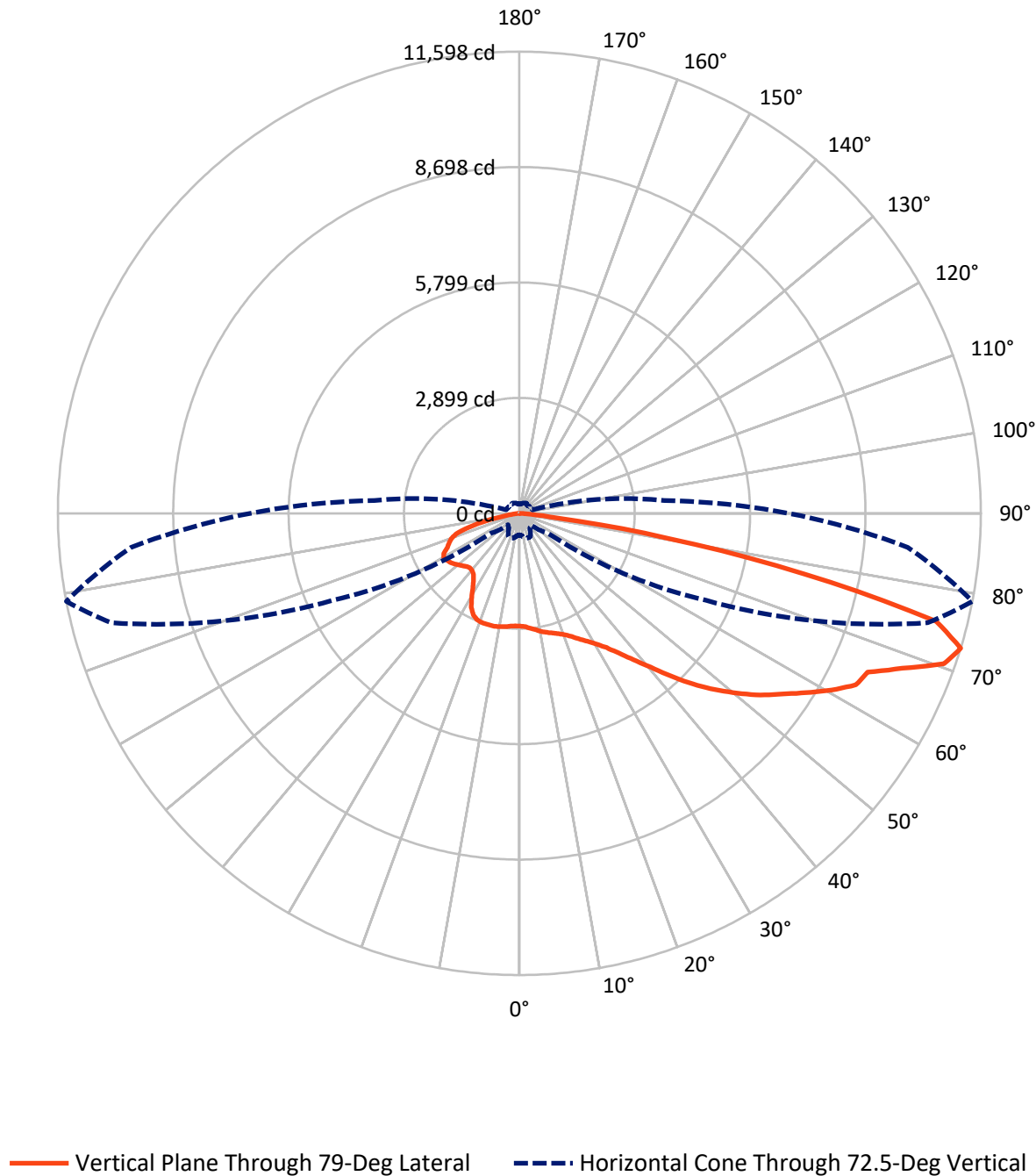
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.1 fc  
 Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: VAL-T-SB3B-722-U-SL2

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2809.9   | 0.0    | 2809.9  |
|                    | % Fixture | 22.0     | 0.0    | 22.0    |
| <b>Street Side</b> | Lumens    | 9981.6   | 0.0    | 9981.6  |
|                    | % Fixture | 78.0     | 0.0    | 78.0    |
| <b>Total</b>       | Lumens    | 12791.5  | 0.0    | 12791.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 263.0   | 2.1       |
| 10°-20°   | 653.1   | 5.1       |
| 20°-30°   | 1028.3  | 8.0       |
| 30°-40°   | 1534.5  | 12.0      |
| 40°-50°   | 2181.8  | 17.1      |
| 50°-60°   | 2756.1  | 21.5      |
| 60°-70°   | 2579.7  | 20.2      |
| 70°-80°   | 1638.7  | 12.8      |
| 80°-90°   | 156.3   | 1.2       |
| 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°    | 12791.5 | 100.0     |
| 0°-180°   | 12791.5 | 100.0     |

**Coefficient of Utilization**



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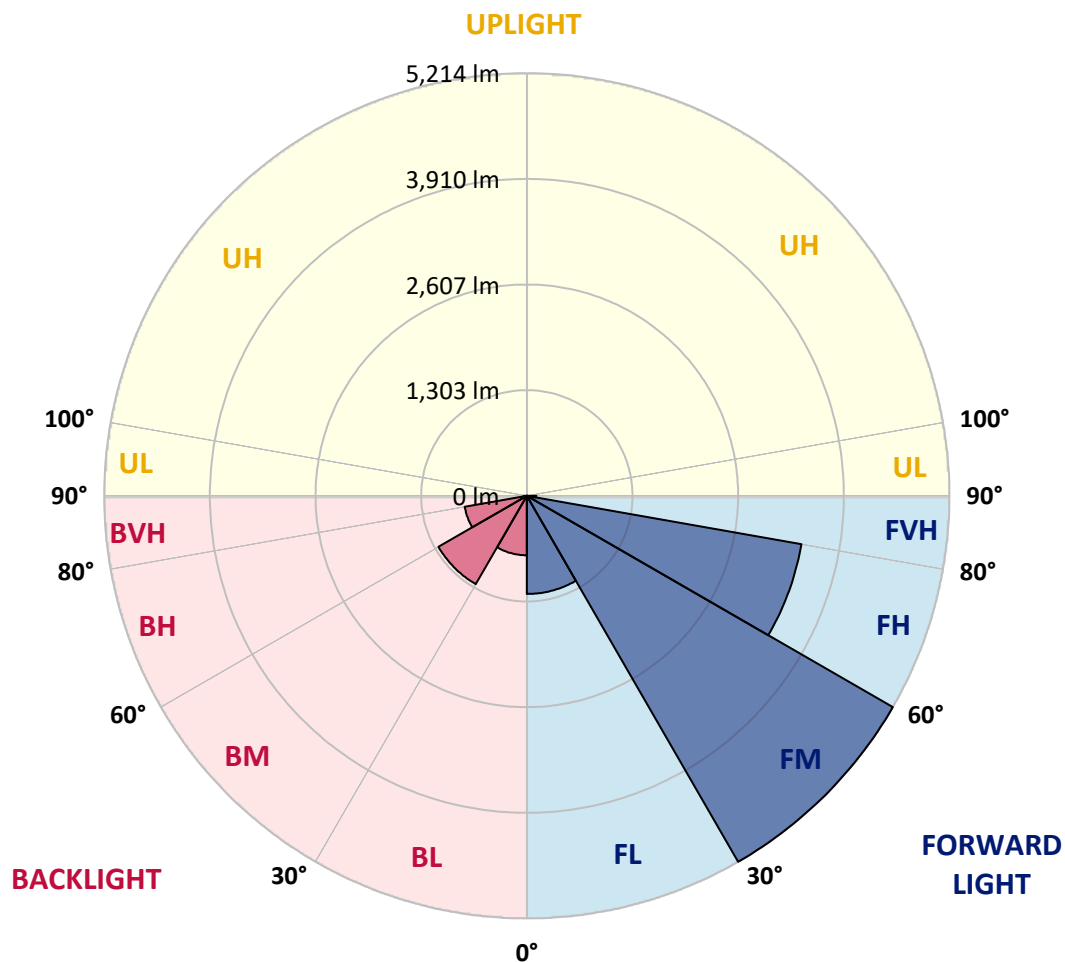
CATALOG NUMBER: VAL-T-SB3B-722-U-SL2

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1210.8 | 9.5       |                         |      |         |
| FM   | (30°-60°)   | 5213.8 | 40.8      |                         |      |         |
| FH   | (60°-80°)   | 3440.6 | 26.9      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 116.4  | 0.9       |                         |      | G2/225  |
| BL   | (0°-30°)    | 733.6  | 5.7       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1258.6 | 9.8       | B2/2500                 |      |         |
| BH   | (60°-80°)   | 777.8  | 6.1       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 39.9   | 0.3       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°     | 79°     | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|
| 0°    | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8  | 2832.8  | 2832.8 |
| 2.5°  | 2899.4 | 2902.4 | 2890.3 | 2890.3 | 2893.4 | 2881.2 | 2866.1 | 2863.1 | 2851.0  | 2851.0  | 2851.0 |
| 5°    | 2914.5 | 2914.5 | 2911.5 | 2926.6 | 2932.7 | 2941.8 | 2929.7 | 2920.6 | 2902.4  | 2902.4  | 2878.2 |
| 7.5°  | 2754.1 | 2748.1 | 2772.3 | 2841.9 | 2914.5 | 2953.9 | 2978.1 | 2978.1 | 2969.0  | 2953.9  | 2932.7 |
| 10°   | 2451.5 | 2460.6 | 2496.9 | 2590.7 | 2723.9 | 2902.4 | 2999.3 | 3038.6 | 3023.5  | 3017.4  | 2981.1 |
| 12.5° | 2291.1 | 2288.0 | 2315.3 | 2384.9 | 2499.9 | 2717.8 | 2956.9 | 3081.0 | 3084.0  | 3068.9  | 3026.5 |
| 15°   | 2272.9 | 2263.8 | 2275.9 | 2300.2 | 2375.8 | 2551.4 | 2829.8 | 3096.1 | 3126.4  | 3120.3  | 3071.9 |
| 17.5° | 2375.8 | 2372.8 | 2354.6 | 2348.6 | 2345.6 | 2442.4 | 2705.7 | 3084.0 | 3183.9  | 3177.8  | 3123.4 |
| 20°   | 2554.4 | 2539.2 | 2506.0 | 2475.7 | 2412.1 | 2421.2 | 2608.9 | 3068.9 | 3262.6  | 3253.5  | 3199.0 |
| 22.5° | 2745.1 | 2751.1 | 2720.8 | 2648.2 | 2536.2 | 2484.8 | 2578.6 | 3047.7 | 3368.5  | 3362.5  | 3289.8 |
| 25°   | 2978.1 | 2972.0 | 2935.7 | 2854.0 | 2705.7 | 2593.7 | 2611.9 | 3041.7 | 3489.6  | 3495.6  | 3407.9 |
| 27.5° | 3217.2 | 3211.1 | 3165.7 | 3062.8 | 2890.3 | 2726.9 | 2687.5 | 3065.9 | 3643.9  | 3640.9  | 3531.9 |
| 30°   | 3483.5 | 3486.5 | 3429.0 | 3289.8 | 3081.0 | 2893.4 | 2808.6 | 3129.4 | 3798.3  | 3807.4  | 3674.2 |
| 32.5° | 3722.6 | 3737.8 | 3704.5 | 3574.3 | 3314.0 | 3065.9 | 2956.9 | 3232.3 | 4004.1  | 4019.2  | 3855.8 |
| 35°   | 3873.9 | 3883.0 | 3880.0 | 3819.5 | 3562.2 | 3262.6 | 3105.2 | 3362.5 | 4252.3  | 4309.8  | 4097.9 |
| 37.5° | 4019.2 | 4040.4 | 4043.4 | 3998.0 | 3804.3 | 3495.6 | 3280.7 | 3544.1 | 4570.0  | 4663.9  | 4415.7 |
| 40°   | 4176.6 | 4170.5 | 4212.9 | 4158.4 | 4022.2 | 3743.8 | 3462.3 | 3749.9 | 4921.1  | 5075.5  | 4788.0 |
| 42.5° | 4270.4 | 4285.6 | 4340.0 | 4327.9 | 4191.7 | 3973.8 | 3668.1 | 3979.9 | 5360.0  | 5587.0  | 5238.9 |
| 45°   | 4330.9 | 4346.1 | 4424.8 | 4436.9 | 4364.2 | 4131.2 | 3861.8 | 4200.8 | 5762.5  | 6116.6  | 5723.1 |
| 47.5° | 4352.1 | 4361.2 | 4464.1 | 4512.5 | 4482.3 | 4231.1 | 4013.2 | 4452.0 | 6159.0  | 6616.0  | 6207.4 |
| 50°   | 4267.4 | 4300.7 | 4433.9 | 4542.8 | 4564.0 | 4282.5 | 4143.3 | 4718.3 | 6585.7  | 7100.2  | 6694.7 |
| 52.5° | 4137.3 | 4155.4 | 4315.8 | 4548.9 | 4615.4 | 4367.3 | 4303.7 | 4999.8 | 6988.2  | 7584.5  | 7112.3 |
| 55°   | 3883.0 | 3919.3 | 4119.1 | 4449.0 | 4645.7 | 4479.2 | 4512.5 | 5317.6 | 7405.9  | 8008.2  | 7566.3 |
| 57.5° | 3162.7 | 3226.3 | 3556.2 | 4022.2 | 4564.0 | 4700.2 | 4824.3 | 5711.0 | 7862.9  | 8498.5  | 7971.9 |
| 60°   | 1982.4 | 2067.1 | 2412.1 | 3165.7 | 4100.9 | 4830.3 | 5320.6 | 6222.5 | 8407.7  | 9013.0  | 8422.8 |
| 62.5° | 1074.4 | 1071.4 | 1174.3 | 1619.2 | 2956.9 | 4491.4 | 5747.4 | 7109.3 | 9109.8  | 9491.2  | 8686.1 |
| 65°   | 932.2  | 932.2  | 944.3  | 941.2  | 1277.2 | 3314.0 | 5323.6 | 7638.9 | 9594.1  | 9618.3  | 8462.1 |
| 67.5° | 838.3  | 838.3  | 856.5  | 811.1  | 696.1  | 1483.0 | 3895.1 | 7324.2 | 10396.1 | 10381.0 | 8749.7 |
| 70°   | 738.5  | 741.5  | 771.8  | 744.5  | 559.9  | 602.3  | 2130.7 | 6670.4 | 10995.3 | 11319.2 | 9321.7 |
| 72.5° | 541.7  | 559.9  | 647.7  | 647.7  | 460.0  | 405.6  | 865.6  | 5172.3 | 10620.1 | 11597.6 | 9796.8 |
| 75°   | 381.3  | 384.4  | 429.8  | 463.1  | 363.2  | 305.7  | 420.7  | 3462.3 | 9742.4  | 10819.8 | 9373.1 |
| 77.5° | 290.5  | 293.6  | 308.7  | 369.2  | 248.2  | 224.0  | 290.5  | 1891.6 | 7027.6  | 7306.0  | 6080.3 |
| 80°   | 193.7  | 190.7  | 211.9  | 260.3  | 175.5  | 151.3  | 187.6  | 632.5  | 3943.6  | 3762.0  | 2539.2 |
| 82.5° | 96.8   | 99.9   | 115.0  | 136.2  | 102.9  | 90.8   | 109.0  | 326.9  | 1546.6  | 898.9   | 369.2  |
| 85°   | 27.2   | 33.3   | 39.3   | 54.5   | 42.4   | 39.3   | 51.5   | 115.0  | 196.7   | 145.3   | 99.9   |
| 87.5° | 3.0    | 3.0    | 6.1    | 6.1    | 6.1    | 9.1    | 15.1   | 24.2   | 33.3    | 33.3    | 33.3   |
| 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: P1383352

CATALOG NUMBER: VAL-T-SB3B-722-U-SL2

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 | 2832.8 |
| 2.5°  | 2844.9 | 2835.8 | 2823.7 | 2805.6 | 2805.6 | 2784.4 | 2772.3 | 2748.1 | 2757.2 | 2745.1 | 2739.0 |
| 5°    | 2872.2 | 2860.1 | 2832.8 | 2802.6 | 2772.3 | 2726.9 | 2690.6 | 2639.1 | 2633.1 | 2621.0 | 2602.8 |
| 7.5°  | 2920.6 | 2890.3 | 2857.0 | 2787.4 | 2729.9 | 2627.0 | 2545.3 | 2442.4 | 2384.9 | 2348.6 | 2351.6 |
| 10°   | 2969.0 | 2929.7 | 2860.1 | 2769.3 | 2645.2 | 2475.7 | 2263.8 | 2061.1 | 1906.7 | 1818.9 | 1837.1 |
| 12.5° | 3002.3 | 2959.9 | 2866.1 | 2720.8 | 2490.8 | 2151.9 | 1758.4 | 1470.9 | 1358.9 | 1301.4 | 1301.4 |
| 15°   | 3035.6 | 2981.1 | 2857.0 | 2617.9 | 2200.3 | 1622.2 | 1310.5 | 1201.5 | 1171.3 | 1153.1 | 1147.1 |
| 17.5° | 3078.0 | 3014.4 | 2829.8 | 2427.3 | 1734.2 | 1268.1 | 1159.2 | 1125.9 | 1125.9 | 1122.8 | 1116.8 |
| 20°   | 3129.4 | 3053.8 | 2796.5 | 2124.6 | 1331.7 | 1138.0 | 1107.7 | 1101.7 | 1107.7 | 1104.7 | 1101.7 |
| 22.5° | 3208.1 | 3102.2 | 2711.8 | 1707.0 | 1144.0 | 1077.4 | 1074.4 | 1044.1 | 1050.2 | 1056.3 | 1053.2 |
| 25°   | 3308.0 | 3162.7 | 2551.4 | 1304.4 | 1050.2 | 1038.1 | 1007.8 | 980.6  | 977.6  | 980.6  | 980.6  |
| 27.5° | 3401.8 | 3208.1 | 2291.1 | 1074.4 | 983.6  | 980.6  | 953.4  | 929.1  | 929.1  | 932.2  | 932.2  |
| 30°   | 3504.7 | 3235.3 | 1891.6 | 956.4  | 944.3  | 929.1  | 920.1  | 911.0  | 914.0  | 923.1  | 923.1  |
| 32.5° | 3640.9 | 3262.6 | 1501.2 | 889.8  | 904.9  | 883.7  | 889.8  | 886.8  | 892.8  | 908.0  | 911.0  |
| 35°   | 3807.4 | 3274.7 | 1201.5 | 850.5  | 850.5  | 832.3  | 835.3  | 823.2  | 823.2  | 832.3  | 838.3  |
| 37.5° | 4028.3 | 3280.7 | 1010.9 | 829.3  | 808.1  | 799.0  | 792.9  | 777.8  | 756.6  | 741.5  | 744.5  |
| 40°   | 4267.4 | 3295.9 | 908.0  | 814.1  | 789.9  | 786.9  | 774.8  | 753.6  | 693.1  | 644.6  | 641.6  |
| 42.5° | 4585.2 | 3338.3 | 856.5  | 789.9  | 789.9  | 789.9  | 771.8  | 677.9  | 629.5  | 596.2  | 593.2  |
| 45°   | 4906.0 | 3450.2 | 829.3  | 768.7  | 786.9  | 789.9  | 708.2  | 650.7  | 611.4  | 575.0  | 566.0  |
| 47.5° | 5263.1 | 3610.6 | 817.2  | 756.6  | 765.7  | 771.8  | 665.8  | 638.6  | 593.2  | 550.8  | 541.7  |
| 50°   | 5617.2 | 3780.1 | 805.1  | 735.4  | 735.4  | 696.1  | 656.8  | 626.5  | 581.1  | 535.7  | 529.6  |
| 52.5° | 5992.5 | 3976.8 | 792.9  | 699.1  | 696.1  | 653.7  | 647.7  | 623.5  | 575.0  | 517.5  | 505.4  |
| 55°   | 6319.4 | 4155.4 | 771.8  | 656.8  | 653.7  | 611.4  | 641.6  | 611.4  | 538.7  | 472.1  | 460.0  |
| 57.5° | 6631.1 | 4300.7 | 744.5  | 611.4  | 617.4  | 578.1  | 617.4  | 587.1  | 505.4  | 438.8  | 432.8  |
| 60°   | 6927.7 | 4452.0 | 708.2  | 572.0  | 572.0  | 547.8  | 587.1  | 547.8  | 472.1  | 405.6  | 396.5  |
| 62.5° | 7015.5 | 4403.6 | 647.7  | 529.6  | 526.6  | 508.5  | 547.8  | 502.4  | 429.8  | 369.2  | 360.2  |
| 65°   | 6712.8 | 4155.4 | 575.0  | 487.3  | 478.2  | 463.1  | 490.3  | 447.9  | 381.3  | 332.9  | 329.9  |
| 67.5° | 6755.2 | 4058.6 | 493.3  | 432.8  | 423.7  | 411.6  | 420.7  | 387.4  | 335.9  | 299.6  | 296.6  |
| 70°   | 6809.7 | 3952.6 | 417.7  | 381.3  | 360.2  | 339.0  | 360.2  | 332.9  | 296.6  | 266.3  | 263.3  |
| 72.5° | 6767.3 | 3659.1 | 345.0  | 320.8  | 305.7  | 281.5  | 308.7  | 287.5  | 257.3  | 233.0  | 227.0  |
| 75°   | 6155.9 | 2941.8 | 281.5  | 263.3  | 245.1  | 230.0  | 248.2  | 242.1  | 217.9  | 214.9  | 193.7  |
| 77.5° | 4140.3 | 1885.5 | 217.9  | 202.8  | 196.7  | 181.6  | 193.7  | 184.6  | 172.5  | 160.4  | 151.3  |
| 80°   | 1794.7 | 844.4  | 157.4  | 142.2  | 136.2  | 127.1  | 139.2  | 136.2  | 130.1  | 121.1  | 118.0  |
| 82.5° | 257.3  | 199.8  | 105.9  | 96.8   | 81.7   | 75.7   | 81.7   | 87.8   | 127.1  | 154.4  | 151.3  |
| 85°   | 72.6   | 60.5   | 51.5   | 45.4   | 36.3   | 30.3   | 33.3   | 54.5   | 72.6   | 45.4   | 39.3   |
| 87.5° | 33.3   | 30.3   | 24.2   | 15.1   | 9.1    | 9.1    | 6.1    | 3.0    | 3.0    | 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    |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-2

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-722-U-5WQ

Data in this report applies to families of products including GSS-SB1A-722-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-2  
 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-722-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 2200K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2160     | CRI (Ra): | 71.9 |      |       |
| CIE u':                   | 0.2927   | R1:       | 68.7 | R9:  | -17.8 |
| CIE v':                   | 0.5388   | R2:       | 82.6 | R10: | 60.5  |
| Duv:                      | 0.0015   | R3:       | 95.5 | R11: | 60.2  |
| CIE x:                    | 0.5130   | R4:       | 66.4 | R12: | 48.2  |
| CIE y:                    | 0.4197   | R5:       | 65.4 | R13: | 70.7  |
| CIE z:                    | 0.0674   | R6:       | 75.9 | R14: | 96.8  |
| Peak Wavelength (nm):     | 609      | R7:       | 77.2 | R15: | 61.8  |
| Dominant Wavelength (nm): | 587      | R8:       | 43.5 |      |       |
| Purity:                   | 79.96089 |           |      |      |       |
| Rf:                       | 70.6     |           |      |      |       |
| Rg:                       | 97.6     |           |      |      |       |



### Test Conditions

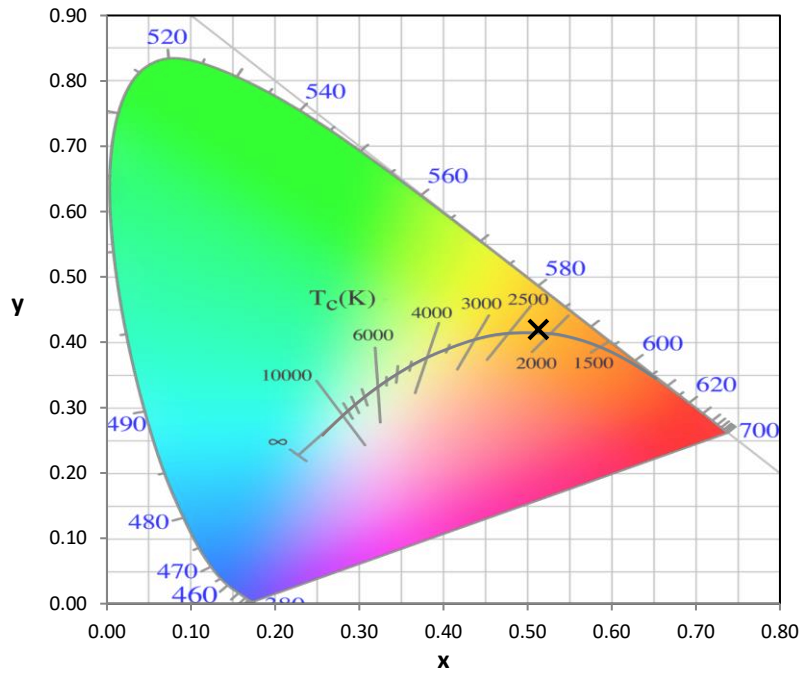
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-2

| 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 2200K 7-step quadrangle

REPORT NUMBER: SP1-2407-184-2

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 27                          | NR               | 620       | 966                         | NR               | 750       | 46                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 42                          | NR               | 625       | 930                         | NR               | 755       | 39                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 67                          | NR               | 630       | 888                         | NR               | 760       | 34                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 101                         | NR               | 635       | 835                         | NR               | 765       | 30                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 139                         | NR               | 640       | 778                         | NR               | 770       | 26                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 183                         | NR               | 645       | 717                         | NR               | 775       | 22                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 656                         | NR               | 780       | 19                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 262                         | NR               | 655       | 595                         | NR               | 785       | 17                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 299                         | NR               | 660       | 536                         | NR               | 790       | 15                          | NR               | 920       | 1                           | NR               |
| 405       | 3                           | NR               | 535       | 332                         | NR               | 665       | 480                         | NR               | 795       | 13                          | NR               | 925       | 1                           | NR               |
| 410       | 7                           | NR               | 540       | 365                         | NR               | 670       | 425                         | NR               | 800       | 11                          | NR               | 930       | 1                           | NR               |
| 415       | 17                          | NR               | 545       | 400                         | NR               | 675       | 376                         | NR               | 805       | 10                          | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 437                         | NR               | 680       | 332                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 67                          | NR               | 555       | 479                         | NR               | 685       | 291                         | NR               | 815       | 8                           | NR               | 945       | 0                           | NR               |
| 430       | 105                         | NR               | 560       | 525                         | NR               | 690       | 255                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 141                         | NR               | 565       | 579                         | NR               | 695       | 221                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 169                         | NR               | 570       | 639                         | NR               | 700       | 192                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 173                         | NR               | 575       | 703                         | NR               | 705       | 167                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 136                         | NR               | 580       | 769                         | NR               | 710       | 144                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 80                          | NR               | 585       | 832                         | NR               | 715       | 125                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 45                          | NR               | 590       | 890                         | NR               | 720       | 109                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 32                          | NR               | 595       | 937                         | NR               | 725       | 94                          | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 972                         | NR               | 730       | 81                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 18                          | NR               | 605       | 992                         | NR               | 735       | 70                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 18                          | NR               | 610       | 998                         | NR               | 740       | 61                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 20                          | NR               | 615       | 990                         | NR               | 745       | 53                          | NR               | 875       | 2                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 0.8

| $\lambda$<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               | 27                                   | NR                             | 620               | 966                                  | NR                             | 750               | 46                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 42                                   | NR                             | 625               | 930                                  | NR                             | 755               | 39                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 67                                   | NR                             | 630               | 888                                  | NR                             | 760               | 34                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 101                                  | NR                             | 635               | 835                                  | NR                             | 765               | 30                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 139                                  | NR                             | 640               | 778                                  | NR                             | 770               | 26                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 183                                  | NR                             | 645               | 717                                  | NR                             | 775               | 22                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 224                                  | NR                             | 650               | 656                                  | NR                             | 780               | 19                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 262                                  | NR                             | 655               | 595                                  | NR                             | 785               | 17                                   | NR                             | 915               | 1                                    | NR                             |
| 400               | 1                                    | NR                             | 530               | 299                                  | NR                             | 660               | 536                                  | NR                             | 790               | 15                                   | NR                             | 920               | 1                                    | NR                             |
| 405               | 3                                    | NR                             | 535               | 332                                  | NR                             | 665               | 480                                  | NR                             | 795               | 13                                   | NR                             | 925               | 1                                    | NR                             |
| 410               | 7                                    | NR                             | 540               | 365                                  | NR                             | 670               | 425                                  | NR                             | 800               | 11                                   | NR                             | 930               | 1                                    | NR                             |
| 415               | 17                                   | NR                             | 545               | 400                                  | NR                             | 675               | 376                                  | NR                             | 805               | 10                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 36                                   | NR                             | 550               | 437                                  | NR                             | 680               | 332                                  | NR                             | 810               | 8                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 67                                   | NR                             | 555               | 479                                  | NR                             | 685               | 291                                  | NR                             | 815               | 8                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 105                                  | NR                             | 560               | 525                                  | NR                             | 690               | 255                                  | NR                             | 820               | 7                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 141                                  | NR                             | 565               | 579                                  | NR                             | 695               | 221                                  | NR                             | 825               | 6                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 169                                  | NR                             | 570               | 639                                  | NR                             | 700               | 192                                  | NR                             | 830               | 5                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 173                                  | NR                             | 575               | 703                                  | NR                             | 705               | 167                                  | NR                             | 835               | 4                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 136                                  | NR                             | 580               | 769                                  | NR                             | 710               | 144                                  | NR                             | 840               | 4                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 80                                   | NR                             | 585               | 832                                  | NR                             | 715               | 125                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 45                                   | NR                             | 590               | 890                                  | NR                             | 720               | 109                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 32                                   | NR                             | 595               | 937                                  | NR                             | 725               | 94                                   | NR                             | 855               | 3                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 23                                   | NR                             | 600               | 972                                  | NR                             | 730               | 81                                   | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 18                                   | NR                             | 605               | 992                                  | NR                             | 735               | 70                                   | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 18                                   | NR                             | 610               | 998                                  | NR                             | 740               | 61                                   | NR                             | 870               | 2                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 20                                   | NR                             | 615               | 990                                  | NR                             | 745               | 53                                   | NR                             | 875               | 2                                    | NR                             |                   |                                      |                                |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 1.21**

| $\lambda$<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               | 27                                   | NR                             | 620               | 966                                  | NR                             | 750               | 46                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 42                                   | NR                             | 625               | 930                                  | NR                             | 755               | 39                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 67                                   | NR                             | 630               | 888                                  | NR                             | 760               | 34                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 101                                  | NR                             | 635               | 835                                  | NR                             | 765               | 30                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 139                                  | NR                             | 640               | 778                                  | NR                             | 770               | 26                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 183                                  | NR                             | 645               | 717                                  | NR                             | 775               | 22                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 224                                  | NR                             | 650               | 656                                  | NR                             | 780               | 19                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 262                                  | NR                             | 655               | 595                                  | NR                             | 785               | 17                                   | NR                             | 915               | 1                                    | NR                             |
| 400               | 1                                    | NR                             | 530               | 299                                  | NR                             | 660               | 536                                  | NR                             | 790               | 15                                   | NR                             | 920               | 1                                    | NR                             |
| 405               | 3                                    | NR                             | 535               | 332                                  | NR                             | 665               | 480                                  | NR                             | 795               | 13                                   | NR                             | 925               | 1                                    | NR                             |
| 410               | 7                                    | NR                             | 540               | 365                                  | NR                             | 670               | 425                                  | NR                             | 800               | 11                                   | NR                             | 930               | 1                                    | NR                             |
| 415               | 17                                   | NR                             | 545               | 400                                  | NR                             | 675               | 376                                  | NR                             | 805               | 10                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 36                                   | NR                             | 550               | 437                                  | NR                             | 680               | 332                                  | NR                             | 810               | 8                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 67                                   | NR                             | 555               | 479                                  | NR                             | 685               | 291                                  | NR                             | 815               | 8                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 105                                  | NR                             | 560               | 525                                  | NR                             | 690               | 255                                  | NR                             | 820               | 7                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 141                                  | NR                             | 565               | 579                                  | NR                             | 695               | 221                                  | NR                             | 825               | 6                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 169                                  | NR                             | 570               | 639                                  | NR                             | 700               | 192                                  | NR                             | 830               | 5                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 173                                  | NR                             | 575               | 703                                  | NR                             | 705               | 167                                  | NR                             | 835               | 4                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 136                                  | NR                             | 580               | 769                                  | NR                             | 710               | 144                                  | NR                             | 840               | 4                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 80                                   | NR                             | 585               | 832                                  | NR                             | 715               | 125                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 45                                   | NR                             | 590               | 890                                  | NR                             | 720               | 109                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 32                                   | NR                             | 595               | 937                                  | NR                             | 725               | 94                                   | NR                             | 855               | 3                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 23                                   | NR                             | 600               | 972                                  | NR                             | 730               | 81                                   | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 18                                   | NR                             | 605               | 992                                  | NR                             | 735               | 70                                   | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 18                                   | NR                             | 610               | 998                                  | NR                             | 740               | 61                                   | NR                             | 870               | 2                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 20                                   | NR                             | 615               | 990                                  | NR                             | 745               | 53                                   | NR                             | 875               | 2                                    | NR                             |                   |                                      |                                |

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TM-30-18

### Summary

$R_f = 70.6$   
 $R_g = 97.6$   
 $CIE\ R_a = 71.9$   
 $R_g = -17.8$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 60 | CES51 = 74 | CES76 = 58 |
| CES02 = 65 | CES27 = 77 | CES52 = 77 | CES77 = 82 |
| CES03 = 32 | CES28 = 85 | CES53 = 65 | CES78 = 65 |
| CES04 = 72 | CES29 = 50 | CES54 = 77 | CES79 = 86 |
| CES05 = 52 | CES30 = 49 | CES55 = 74 | CES80 = 85 |
| CES06 = 53 | CES31 = 55 | CES56 = 64 | CES81 = 61 |
| CES07 = 44 | CES32 = 55 | CES57 = 60 | CES82 = 93 |
| CES08 = 43 | CES33 = 55 | CES58 = 64 | CES83 = 83 |
| CES09 = 29 | CES34 = 75 | CES59 = 84 | CES84 = 93 |
| CES10 = 79 | CES35 = 88 | CES60 = 89 | CES85 = 81 |
| CES11 = 62 | CES36 = 78 | CES61 = 84 | CES86 = 55 |
| CES12 = 68 | CES37 = 82 | CES62 = 68 | CES87 = 79 |
| CES13 = 45 | CES38 = 54 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 86 | CES65 = 66 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 89 |
| CES17 = 51 | CES42 = 83 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 68 | CES68 = 71 | CES93 = 78 |
| CES19 = 74 | CES44 = 98 | CES69 = 81 | CES94 = 52 |
| CES20 = 68 | CES45 = 76 | CES70 = 65 | CES95 = 76 |
| CES21 = 89 | CES46 = 68 | CES71 = 64 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 88 | CES97 = 76 |
| CES23 = 92 | CES48 = 47 | CES73 = 59 | CES98 = 71 |
| CES24 = 92 | CES49 = 65 | CES74 = 85 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)