

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P436740

Luminaire Tested: **TT-D1-750-U-5MQ-PM-HSS**

Issue Date: 12/2/2020

### Test Information

Test Method: LM-79-08  
Report Number: P436740  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TT-D1-750-U-5MQ-PM-HSS  
Description: TOPTIER LED SITE LUMINAIRE  
5000K, 70 CRI LEDS AND MEDIUM DISTRIBUTION WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

### Summary

Lumens per Lamp: N/A  
Luminaire Lumens: 3448 lumens  
Efficiency: N/A  
Efficacy: 123.1 lumens/watt  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U1 - G2

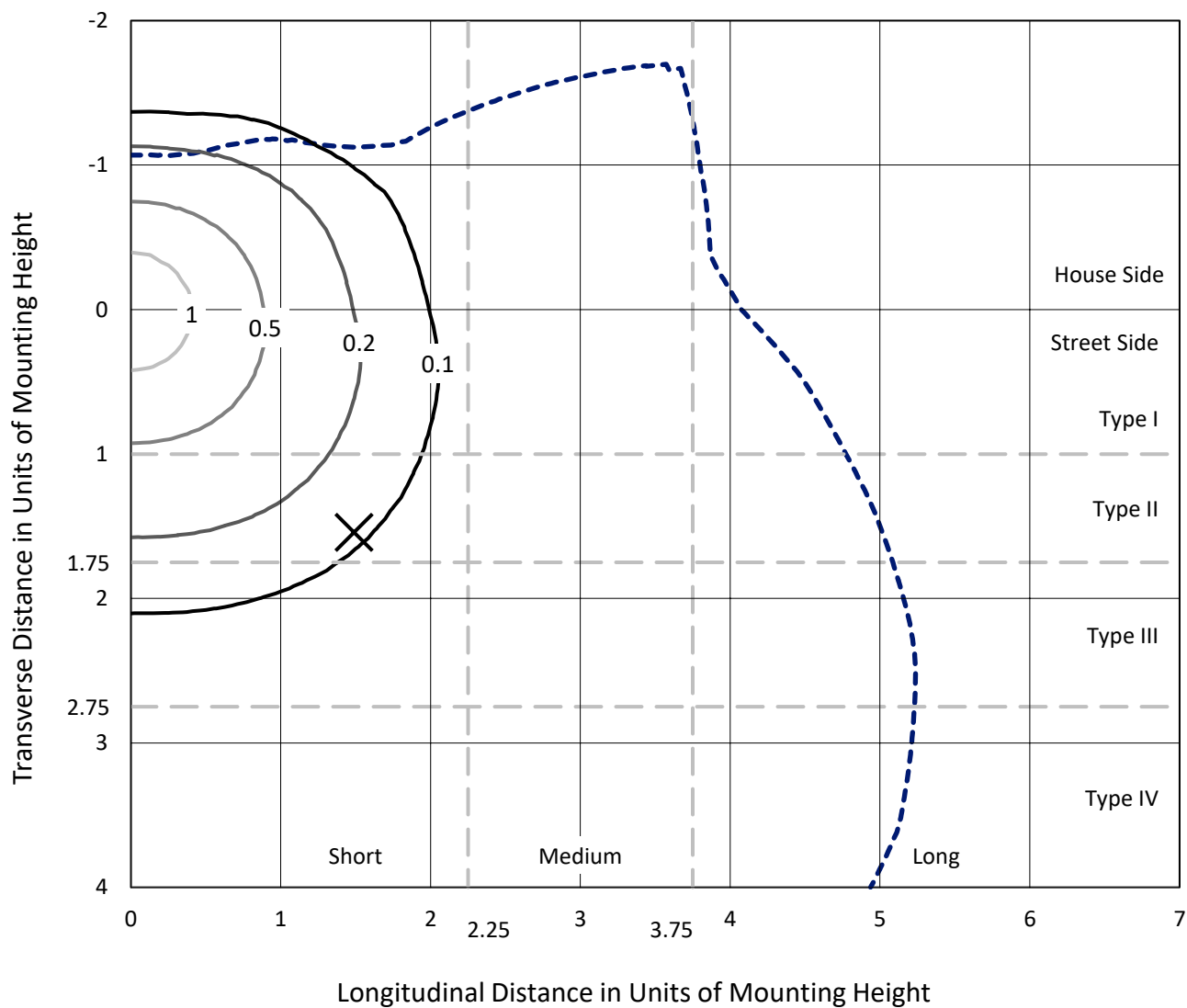
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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 CATALOG NUMBER: TT-D1-750-U-5MQ-PM-HSS

## Iso-Footcandle Lines of Horizontal Illumination

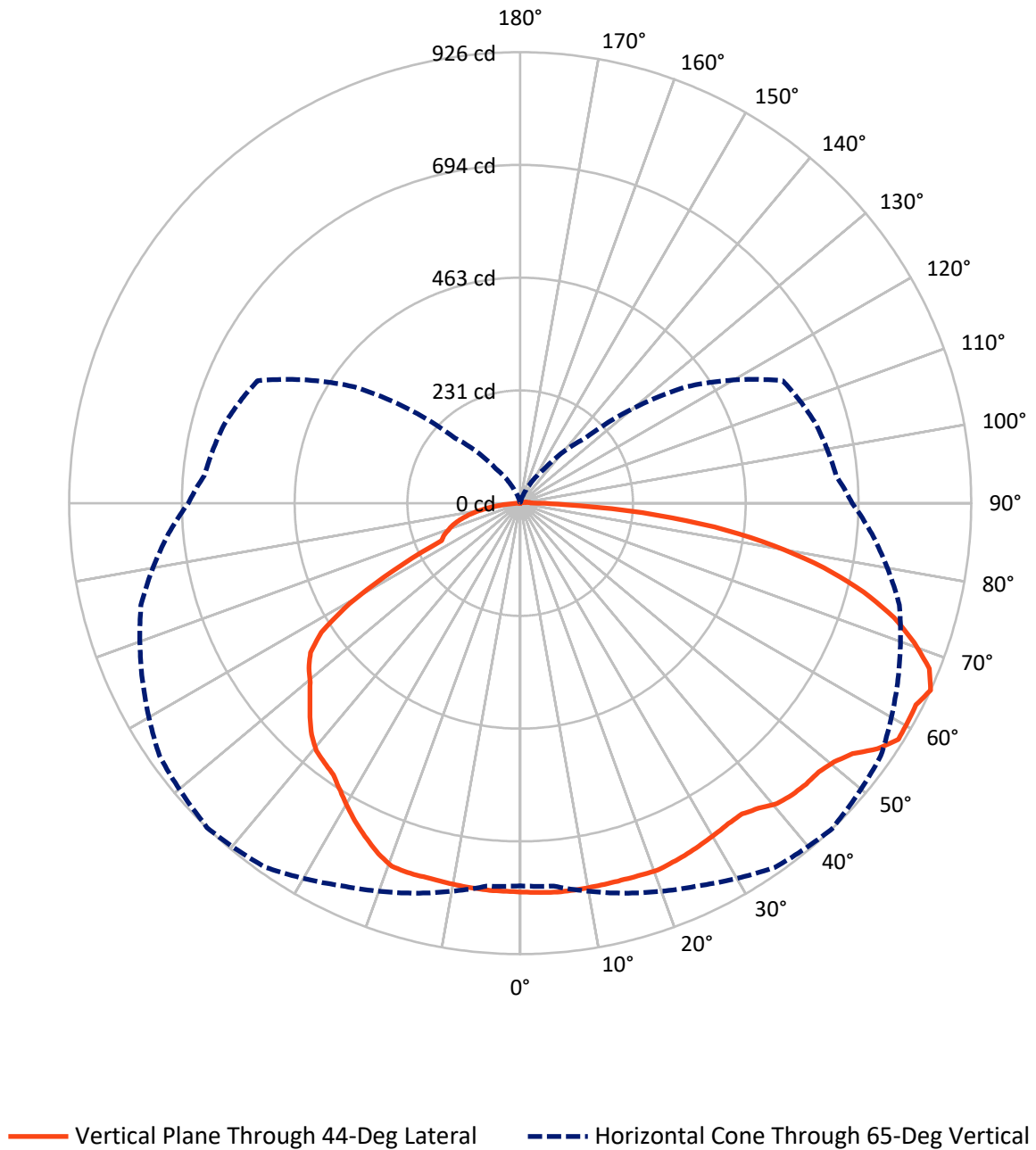
✕ Max cd  
 --- 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.3 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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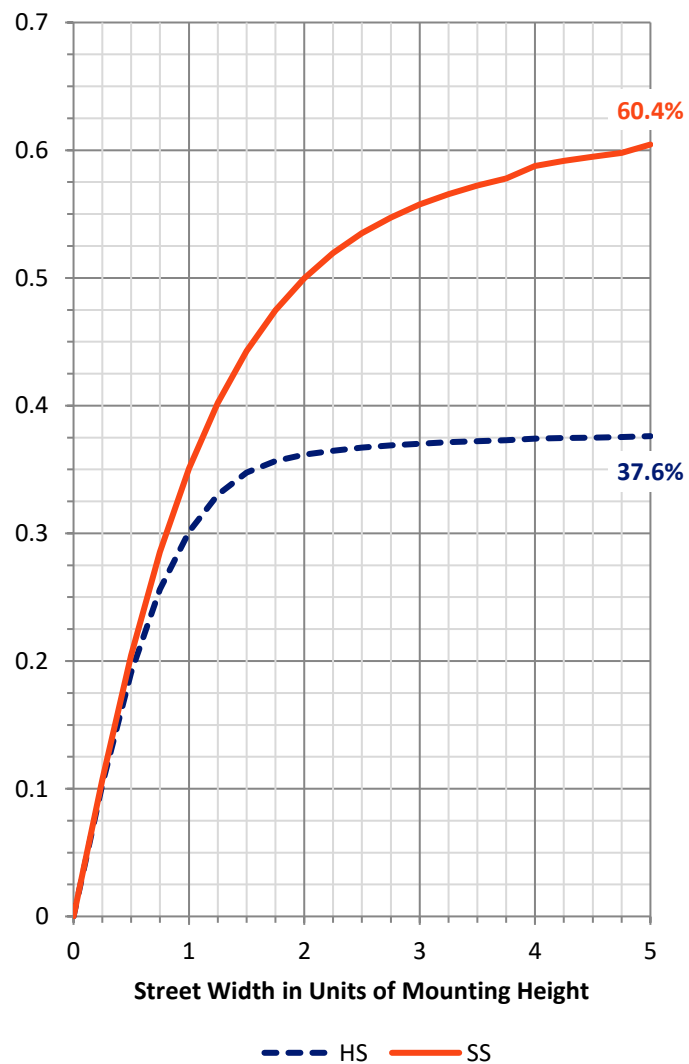
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1305.6   | 0.9    | 1306.5 |
|                    | % Fixture | 37.9     | 0.0    | 37.9   |
| <b>Street Side</b> | Lumens    | 2129.8   | 11.7   | 2141.5 |
|                    | % Fixture | 61.8     | 0.3    | 62.1   |
| <b>Total</b>       | Lumens    | 3435.4   | 12.6   | 3448.0 |
|                    | % Fixture | 99.6     | 0.4    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 76.2   | 2.2       |
| 10°-20°   | 225.6  | 6.5       |
| 20°-30°   | 359.1  | 10.4      |
| 30°-40°   | 460.0  | 13.3      |
| 40°-50°   | 545.0  | 15.8      |
| 50°-60°   | 596.9  | 17.3      |
| 60°-70°   | 567.4  | 16.5      |
| 70°-80°   | 451.7  | 13.1      |
| 80°-90°   | 153.5  | 4.5       |
| 90°-100°  | 8.1    | 0.2       |
| 100°-110° | 2.7    | 0.1       |
| 110°-120° | 0.6    | 0.0       |
| 120°-130° | 0.4    | 0.0       |
| 130°-140° | 0.3    | 0.0       |
| 140°-150° | 0.3    | 0.0       |
| 150°-160° | 0.2    | 0.0       |
| 160°-170° | 0.1    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 3435.4 | 99.6      |
| 0°-180°   | 3448.0 | 100.0     |

**Coefficient of Utilization**



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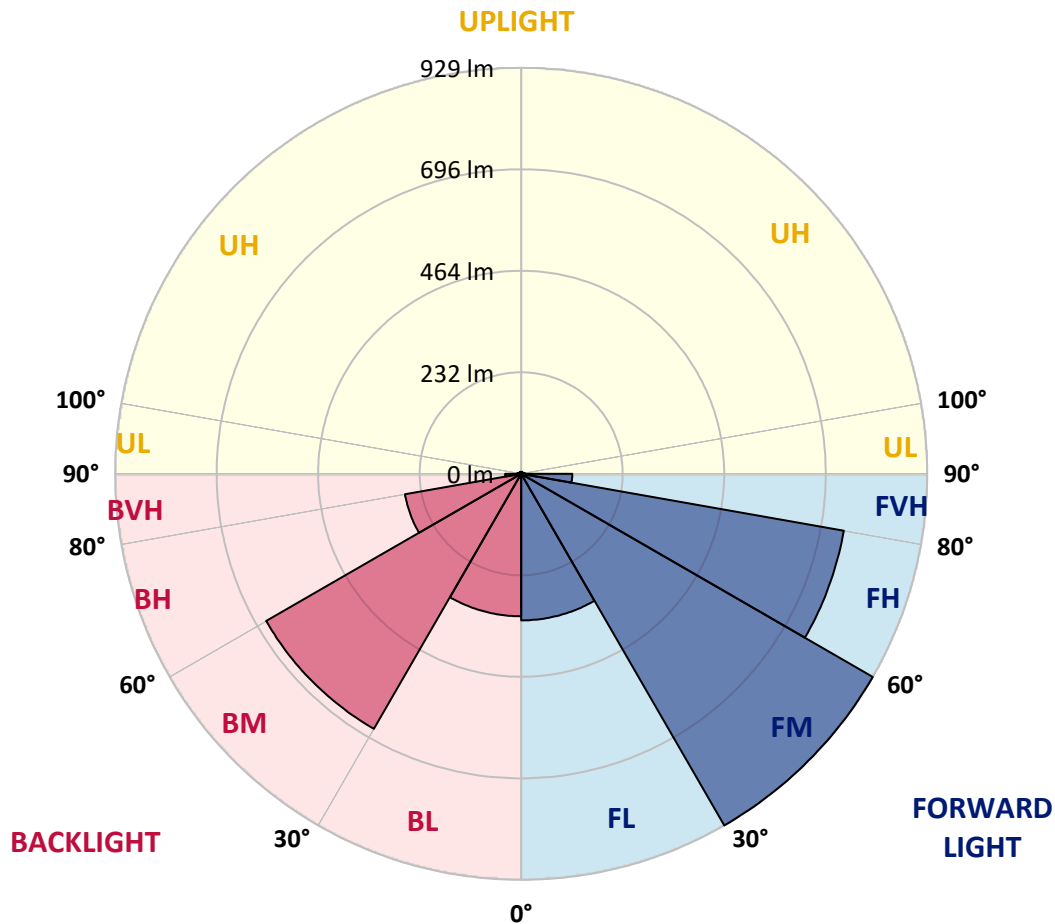
CATALOG NUMBER: TT-D1-750-U-5MQ-PM-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |       |         |
|------|-------------|--------|-----------|-------------------------|-------|---------|
|      |             |        |           | B                       | U     | G       |
| FL   | (0°-30°)    | 335.1  | 9.7       |                         |       |         |
| FM   | (30°-60°)   | 928.5  | 26.9      |                         |       |         |
| FH   | (60°-80°)   | 749.3  | 21.7      |                         |       | G1/1800 |
| FVH  | (80°-90°)   | 116.9  | 3.4       |                         |       | G2/225  |
| BL   | (0°-30°)    | 325.8  | 9.4       | B1/500                  |       |         |
| BM   | (30°-60°)   | 673.4  | 19.5      | B1/1000                 |       |         |
| BH   | (60°-80°)   | 269.8  | 7.8       | B1/500                  |       | G1/500  |
| BVH  | (80°-90°)   | 36.6   | 1.1       |                         |       | G1/100  |
| UL   | (90°-100°)  | 8.1    | 0.2       |                         | U1/10 |         |
| UH   | (100°-180°) | 4.5    | 0.1       |                         | U1/10 |         |

**BUG Rating: B1-U1-G2**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 5°    | 15°   | 25°   | 35°   | 44°   | 45°   | 55°   | 65°   | 75°   | 85°   |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°     | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 |
| 2.5°   | 801.2 | 800.6 | 800.6 | 800.6 | 800.6 | 800.0 | 800.6 | 799.4 | 800.0 | 798.2 | 798.2 |
| 5°     | 803.1 | 801.8 | 802.5 | 802.5 | 802.5 | 801.8 | 802.5 | 800.6 | 801.2 | 798.8 | 798.2 |
| 7.5°   | 803.7 | 803.1 | 803.1 | 803.1 | 803.1 | 801.8 | 802.5 | 801.2 | 800.6 | 798.8 | 797.6 |
| 10°    | 803.7 | 803.1 | 803.1 | 803.1 | 802.5 | 801.2 | 801.8 | 800.0 | 800.0 | 797.6 | 796.4 |
| 12.5°  | 803.7 | 803.1 | 803.7 | 802.5 | 802.5 | 801.2 | 801.2 | 799.4 | 799.4 | 796.4 | 795.1 |
| 15°    | 803.1 | 802.5 | 802.5 | 803.1 | 802.5 | 801.2 | 801.2 | 799.4 | 798.8 | 795.1 | 793.9 |
| 17.5°  | 802.5 | 801.8 | 802.5 | 803.1 | 803.7 | 802.5 | 803.1 | 800.0 | 798.8 | 795.1 | 793.3 |
| 20°    | 803.1 | 802.5 | 803.1 | 804.3 | 804.3 | 804.3 | 804.3 | 801.2 | 798.8 | 795.1 | 792.1 |
| 22.5°  | 801.2 | 801.2 | 801.2 | 801.2 | 802.5 | 800.6 | 800.6 | 798.8 | 795.8 | 792.7 | 789.7 |
| 25°    | 797.0 | 797.0 | 797.6 | 798.2 | 798.2 | 797.0 | 796.4 | 794.5 | 792.1 | 788.4 | 784.8 |
| 27.5°  | 792.1 | 792.1 | 792.7 | 792.7 | 793.9 | 792.7 | 792.1 | 789.7 | 787.2 | 783.0 | 778.7 |
| 30°    | 786.6 | 786.6 | 786.6 | 787.8 | 788.4 | 788.4 | 787.8 | 784.8 | 781.7 | 776.9 | 771.4 |
| 32.5°  | 780.5 | 780.5 | 782.3 | 783.6 | 784.2 | 784.2 | 784.2 | 780.5 | 776.9 | 770.8 | 762.8 |
| 35°    | 775.6 | 775.6 | 778.1 | 782.3 | 784.8 | 783.6 | 783.0 | 780.5 | 775.0 | 768.3 | 755.5 |
| 37.5°  | 778.7 | 778.7 | 784.2 | 790.3 | 795.8 | 794.5 | 794.5 | 790.3 | 783.0 | 772.0 | 756.1 |
| 40°    | 786.0 | 786.6 | 795.1 | 803.1 | 809.8 | 811.0 | 811.0 | 806.1 | 795.1 | 781.1 | 759.2 |
| 42.5°  | 787.8 | 789.0 | 797.6 | 809.2 | 815.2 | 818.3 | 818.3 | 811.6 | 800.0 | 783.6 | 758.0 |
| 45°    | 787.8 | 788.4 | 798.2 | 810.4 | 820.1 | 822.6 | 822.6 | 815.2 | 800.6 | 784.8 | 753.7 |
| 47.5°  | 787.8 | 787.2 | 795.8 | 812.8 | 822.6 | 824.4 | 824.4 | 816.5 | 802.5 | 782.3 | 747.6 |
| 50°    | 786.0 | 789.0 | 801.8 | 815.2 | 832.3 | 834.7 | 834.1 | 825.6 | 806.1 | 785.4 | 742.7 |
| 52.5°  | 790.3 | 789.7 | 806.7 | 833.5 | 848.8 | 854.2 | 854.9 | 843.9 | 823.8 | 793.9 | 739.7 |
| 55°    | 807.9 | 808.5 | 825.0 | 856.1 | 879.2 | 889.6 | 888.4 | 874.4 | 845.7 | 811.0 | 748.2 |
| 57.5°  | 814.0 | 820.1 | 843.9 | 870.7 | 906.0 | 915.2 | 915.2 | 898.1 | 863.4 | 824.4 | 754.3 |
| 60°    | 801.8 | 804.3 | 833.5 | 879.2 | 911.5 | 913.3 | 914.0 | 901.8 | 865.2 | 817.1 | 742.1 |
| 62.5°  | 798.8 | 803.7 | 826.2 | 877.4 | 898.1 | 911.5 | 910.9 | 894.5 | 863.4 | 811.6 | 737.9 |
| 65°    | 785.4 | 789.0 | 828.7 | 866.4 | 912.1 | 925.5 | 922.5 | 903.6 | 855.5 | 805.5 | 724.5 |
| 67.5°  | 758.0 | 761.6 | 798.2 | 851.2 | 892.6 | 905.4 | 908.5 | 886.5 | 836.6 | 776.9 | 695.8 |
| 70°    | 712.3 | 717.8 | 754.9 | 806.7 | 850.6 | 857.9 | 856.7 | 843.3 | 793.3 | 729.3 | 653.8 |
| 72.5°  | 648.3 | 656.8 | 703.7 | 753.1 | 790.9 | 801.8 | 797.0 | 781.7 | 740.9 | 672.1 | 596.5 |
| 75°    | 580.7 | 588.6 | 625.8 | 681.2 | 720.8 | 728.1 | 724.5 | 706.2 | 664.8 | 597.1 | 528.9 |
| 77.5°  | 506.9 | 513.6 | 545.3 | 602.0 | 631.2 | 637.3 | 639.2 | 614.8 | 575.8 | 514.9 | 453.9 |
| 80°    | 407.6 | 410.7 | 453.3 | 490.5 | 516.1 | 528.3 | 527.0 | 508.8 | 469.8 | 419.2 | 358.3 |
| 82.5°  | 301.0 | 303.4 | 336.3 | 368.0 | 391.2 | 402.1 | 396.0 | 377.8 | 346.7 | 303.4 | 257.1 |
| 85°    | 184.6 | 180.4 | 207.2 | 230.9 | 244.9 | 252.3 | 246.2 | 235.8 | 208.4 | 174.3 | 142.0 |
| 87.5°  | 66.4  | 62.8  | 74.9  | 78.6  | 94.4  | 92.0  | 97.5  | 78.6  | 63.4  | 45.1  | 31.7  |
| 90°    | 29.2  | 29.2  | 28.6  | 27.4  | 25.0  | 22.5  | 21.9  | 18.3  | 13.4  | 8.5   | 3.0   |
| 92.5°  | 26.8  | 26.8  | 26.2  | 25.0  | 22.5  | 20.1  | 20.1  | 16.5  | 12.2  | 7.9   | 3.0   |
| 95°    | 22.5  | 22.5  | 21.9  | 20.7  | 18.9  | 17.1  | 17.1  | 13.4  | 10.4  | 6.7   | 2.4   |
| 97.5°  | 17.7  | 17.7  | 17.1  | 16.5  | 14.6  | 13.4  | 13.4  | 11.0  | 7.9   | 4.9   | 1.8   |
| 100°   | 13.4  | 13.4  | 12.8  | 12.2  | 11.6  | 10.4  | 9.7   | 7.9   | 6.1   | 3.7   | 1.2   |
| 102.5° | 9.7   | 9.7   | 9.7   | 9.1   | 7.9   | 7.3   | 7.3   | 6.1   | 4.3   | 3.0   | 1.2   |
| 105°   | 6.7   | 6.7   | 6.7   | 6.1   | 5.5   | 4.9   | 4.9   | 4.3   | 3.0   | 1.8   | 0.6   |
| 107.5° | 4.3   | 4.3   | 4.3   | 4.3   | 3.7   | 3.0   | 3.0   | 2.4   | 1.8   | 1.2   | 0.6   |
| 110°   | 2.4   | 1.8   | 2.4   | 2.4   | 2.4   | 1.8   | 1.8   | 1.2   | 1.2   | 0.6   | 0.6   |

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CATALOG NUMBER: TT-D1-750-U-5MQ-PM-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 5°  | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 112.5° | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 0.6 | 0.6 | 0.6 | 0.6 |
| 115°   | 0.6 | 0.6 | 0.6 | 1.2 | 1.2 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 117.5° | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 120°   | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 122.5° | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 125°   | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 127.5° | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 130°   | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 135°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 140°   | 0.0 | 0.6 | 0.6 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 142.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 145°   | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 147.5° | 0.6 | 0.6 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 150°   | 0.6 | 0.6 | 0.6 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 152.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 155°   | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 157.5° | 0.6 | 0.6 | 0.6 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 160°   | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 162.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 165°   | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 167.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 170°   | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 172.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 175°   | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 177.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 180°   | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |

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**CANDELA DISTRIBUTION (continued):**

|        | 90°   | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°     | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 | 798.2 |
| 2.5°   | 798.2 | 797.6 | 797.0 | 797.6 | 797.0 | 797.0 | 796.4 | 796.4 | 795.8 | 795.8 | 795.1 |
| 5°     | 798.2 | 797.6 | 797.0 | 797.6 | 796.4 | 797.0 | 797.0 | 796.4 | 795.8 | 795.1 | 794.5 |
| 7.5°   | 797.6 | 797.6 | 796.4 | 797.0 | 795.8 | 795.8 | 795.1 | 795.1 | 794.5 | 794.5 | 793.9 |
| 10°    | 796.4 | 795.8 | 795.8 | 795.8 | 794.5 | 794.5 | 793.9 | 793.3 | 793.3 | 792.7 | 792.1 |
| 12.5°  | 795.1 | 794.5 | 793.9 | 793.9 | 793.3 | 792.7 | 792.1 | 792.1 | 791.5 | 790.9 | 790.3 |
| 15°    | 793.3 | 792.7 | 792.7 | 792.7 | 792.1 | 792.1 | 791.5 | 790.9 | 789.7 | 789.0 | 788.4 |
| 17.5°  | 792.7 | 792.1 | 792.7 | 792.7 | 792.1 | 792.7 | 791.5 | 790.3 | 789.0 | 788.4 | 787.8 |
| 20°    | 792.1 | 792.1 | 792.1 | 791.5 | 790.9 | 790.3 | 789.7 | 789.0 | 788.4 | 787.8 | 787.2 |
| 22.5°  | 789.0 | 788.4 | 787.2 | 783.6 | 779.3 | 776.3 | 775.6 | 776.9 | 776.9 | 776.9 | 775.0 |
| 25°    | 783.6 | 781.7 | 776.9 | 770.2 | 762.8 | 758.0 | 754.9 | 754.9 | 754.3 | 753.1 | 752.5 |
| 27.5°  | 776.9 | 773.2 | 764.7 | 756.1 | 745.8 | 739.7 | 732.4 | 728.1 | 726.3 | 725.7 | 724.5 |
| 30°    | 767.7 | 762.2 | 751.3 | 740.3 | 727.5 | 719.0 | 707.4 | 700.1 | 695.8 | 694.0 | 692.8 |
| 32.5°  | 756.8 | 751.3 | 738.5 | 725.1 | 709.8 | 697.7 | 683.0 | 671.5 | 663.5 | 659.9 | 658.0 |
| 35°    | 749.4 | 741.5 | 726.9 | 711.1 | 695.8 | 678.2 | 660.5 | 644.6 | 632.5 | 628.2 | 625.8 |
| 37.5°  | 746.4 | 739.1 | 723.2 | 707.4 | 690.3 | 669.0 | 648.3 | 625.8 | 609.3 | 602.0 | 599.6 |
| 40°    | 748.2 | 739.1 | 721.4 | 704.4 | 684.2 | 660.5 | 633.1 | 605.0 | 583.7 | 573.4 | 570.9 |
| 42.5°  | 744.0 | 733.6 | 712.9 | 694.6 | 669.6 | 642.8 | 609.3 | 577.0 | 548.4 | 539.8 | 536.2 |
| 45°    | 736.6 | 723.9 | 701.3 | 678.2 | 652.0 | 619.1 | 584.3 | 542.9 | 508.8 | 498.4 | 495.4 |
| 47.5°  | 729.3 | 711.7 | 684.9 | 663.5 | 631.8 | 593.5 | 552.6 | 506.3 | 463.7 | 453.3 | 451.5 |
| 50°    | 718.4 | 701.9 | 673.3 | 648.3 | 616.0 | 571.5 | 525.2 | 467.3 | 419.2 | 401.5 | 396.7 |
| 52.5°  | 713.5 | 692.2 | 664.8 | 645.3 | 606.3 | 555.7 | 497.2 | 435.0 | 365.6 | 343.6 | 338.8 |
| 55°    | 718.4 | 691.6 | 662.3 | 643.4 | 598.3 | 535.6 | 463.7 | 384.5 | 304.0 | 280.9 | 274.2 |
| 57.5°  | 709.8 | 686.7 | 657.4 | 636.1 | 577.6 | 494.1 | 414.9 | 313.2 | 229.7 | 199.9 | 197.4 |
| 60°    | 698.9 | 666.0 | 638.6 | 619.1 | 534.4 | 416.2 | 322.9 | 223.0 | 138.3 | 112.7 | 107.8 |
| 62.5°  | 694.6 | 660.5 | 628.8 | 605.0 | 476.5 | 305.9 | 196.8 | 112.7 | 57.3  | 40.2  | 36.6  |
| 65°    | 681.2 | 650.7 | 628.2 | 594.7 | 416.2 | 188.9 | 84.7  | 33.5  | 2.4   | 1.8   | 1.8   |
| 67.5°  | 655.6 | 624.5 | 609.3 | 589.8 | 410.1 | 180.4 | 76.8  | 30.5  | 1.2   | 0.0   | 0.0   |
| 70°    | 611.7 | 587.4 | 577.0 | 566.7 | 392.4 | 166.9 | 70.1  | 27.4  | 0.6   | 0.0   | 0.0   |
| 72.5°  | 553.9 | 537.4 | 535.6 | 534.4 | 366.8 | 154.2 | 62.8  | 24.4  | 0.6   | 0.0   | 0.0   |
| 75°    | 496.0 | 475.9 | 478.9 | 486.2 | 335.1 | 136.5 | 54.2  | 21.3  | 0.6   | 0.0   | 0.0   |
| 77.5°  | 422.9 | 408.2 | 415.5 | 427.7 | 293.7 | 115.8 | 44.5  | 17.1  | 0.6   | 0.0   | 0.0   |
| 80°    | 332.7 | 322.9 | 339.4 | 350.3 | 240.1 | 92.0  | 33.5  | 12.2  | 0.0   | 0.0   | 0.0   |
| 82.5°  | 236.4 | 230.9 | 246.2 | 260.2 | 178.5 | 65.2  | 23.2  | 7.9   | 0.0   | 0.0   | 0.0   |
| 85°    | 127.3 | 124.3 | 138.9 | 154.2 | 107.2 | 37.2  | 11.6  | 3.7   | 0.0   | 0.0   | 0.0   |
| 87.5°  | 31.7  | 29.2  | 29.9  | 35.9  | 26.2  | 7.9   | 1.8   | 0.6   | 0.0   | 0.0   | 0.0   |
| 90°    | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 92.5°  | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 95°    | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 97.5°  | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 100°   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 102.5° | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 105°   | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 107.5° | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 110°   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

REPORT NUMBER: P436740

CATALOG NUMBER: TT-D1-750-U-5MQ-PM-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-----|-----|------|------|------|------|------|------|------|------|------|
| 112.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 115°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 117.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 120°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 122.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 125°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 127.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 130°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 132.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 135°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 137.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 140°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 142.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 145°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 147.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 150°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 152.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 155°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 157.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 160°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 162.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 165°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 167.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 170°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 172.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 175°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 177.5° | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 180°   | 0.6 | 0.6 | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  | 0.6  |

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

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

McGRAW-EDISON

Report Number: SP1-2006-844-1

Luminaire Tested: TT-D4-750-U-WQ

Data valid for TT-D\* and TTN families of products

Test Date: 11/06/2020

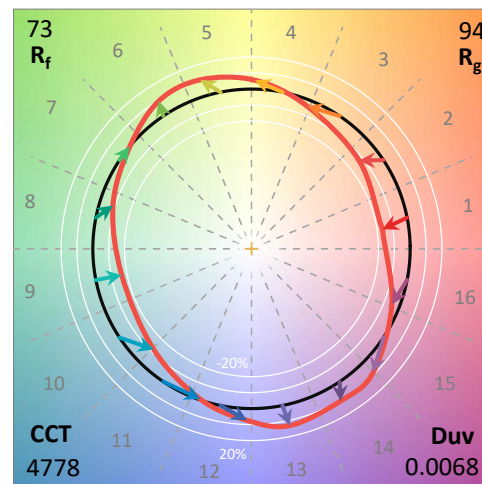
### Test Information

Test Method: LM-79-08  
 Report Number: SP1-2006-844-1  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry:  $4\pi$   
 Issue Date: 11/06/2020  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **TT-D4-750-U-WQ**  
 Description: MCGRAW EDISON

### DISTRIBUTION

### Spectral Parameters

|                           |        |           |      |      |       |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K):                  | 4778   | CRI (Ra): | 71.0 |      |       |
| CIE u':                   | 0.2092 | R1:       | 67.7 | R9:  | -28.7 |
| CIE v':                   | 0.4955 | R2:       | 75.2 | R10: | 41.2  |
| Duv:                      | 0.0068 | R3:       | 80.8 | R11: | 67.2  |
| CIE x:                    | 0.3535 | R4:       | 71.5 | R12: | 35.9  |
| CIE y:                    | 0.3721 | R5:       | 67.8 | R13: | 68.5  |
| CIE z:                    | 0.2744 | R6:       | 65.6 | R14: | 89.2  |
| Peak Wavelength (nm):     | 449    | R7:       | 82.2 |      |       |
| Dominant Wavelength (nm): | 570    | R8:       | 57.2 |      |       |
| Purity:                   | 17.8   |           |      |      |       |
| Rf:                       | 73.3   |           |      |      |       |
| Rg:                       | 94.5   |           |      |      |       |



### Test Conditions

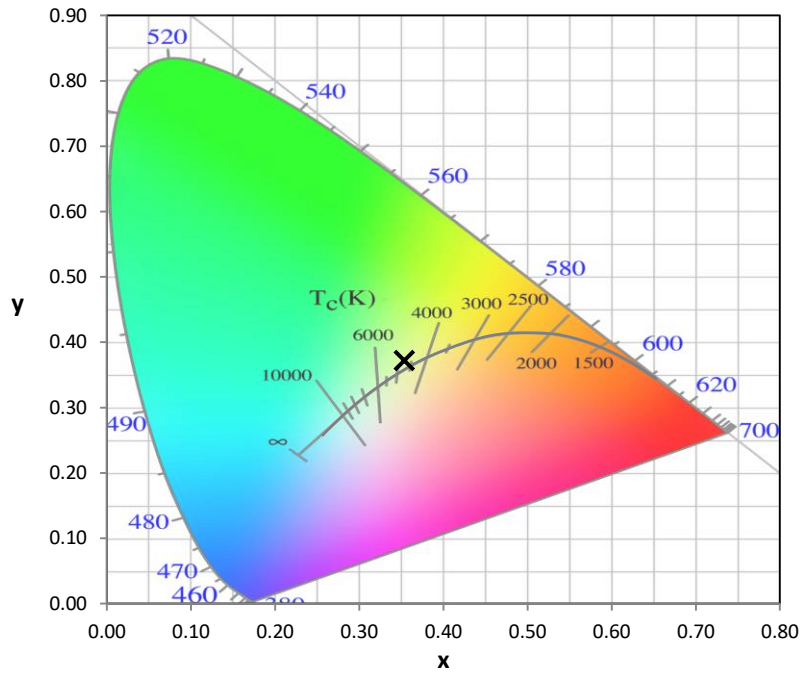
Stabilization Time: 62M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.6/45%  
 Sphere Temperature (°C): 24.7

REPORT NUMBER: SP1-2006-844-1

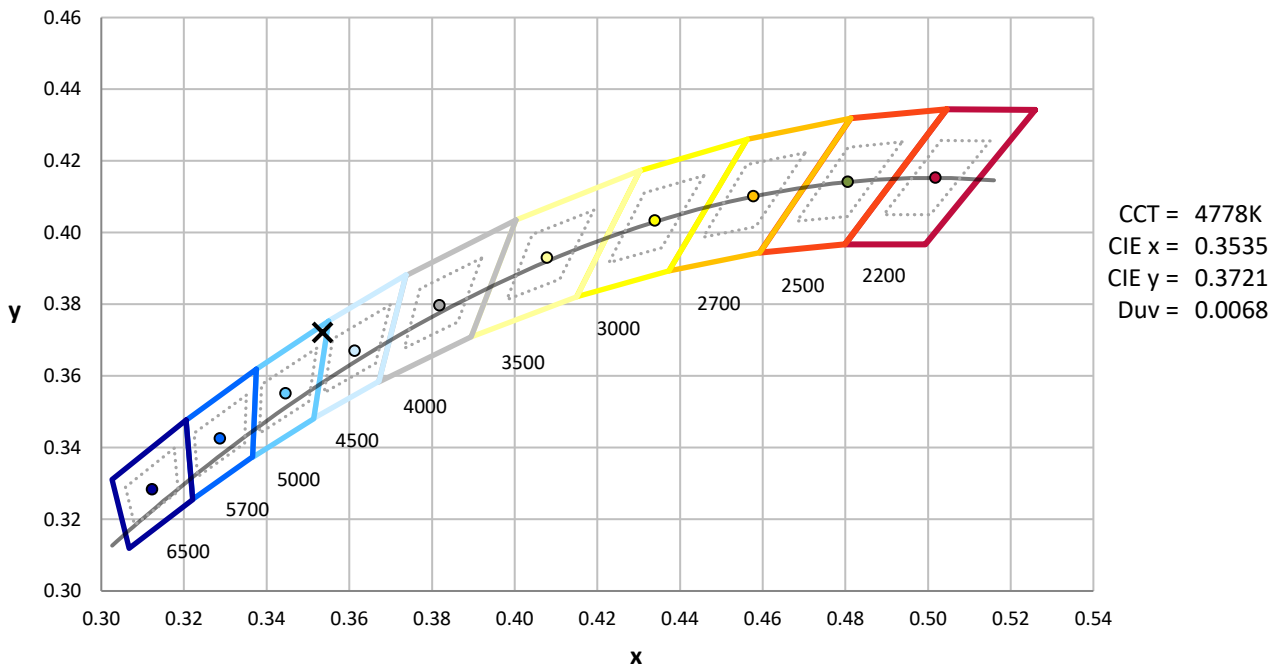
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 7/29/2020        | 1/29/2021            |
| Power Meter                    | IN0071                | 12/3/2019        | 12/3/2020            |
| AC Power Source                | IN0063                | 12/3/2019        | 12/3/2020            |
| DC Power Source                | IN0208                | 12/3/2019        | 12/3/2020            |
| Sphere Thermometer             | IN0085                | 12/3/2019        | 12/3/2020            |
| Room Thermometer               | IN0046                | 12/3/2019        | 12/3/2020            |

REPORT NUMBER: SP1-2006-844-1

**CIE 1931 Chromaticity Diagram**



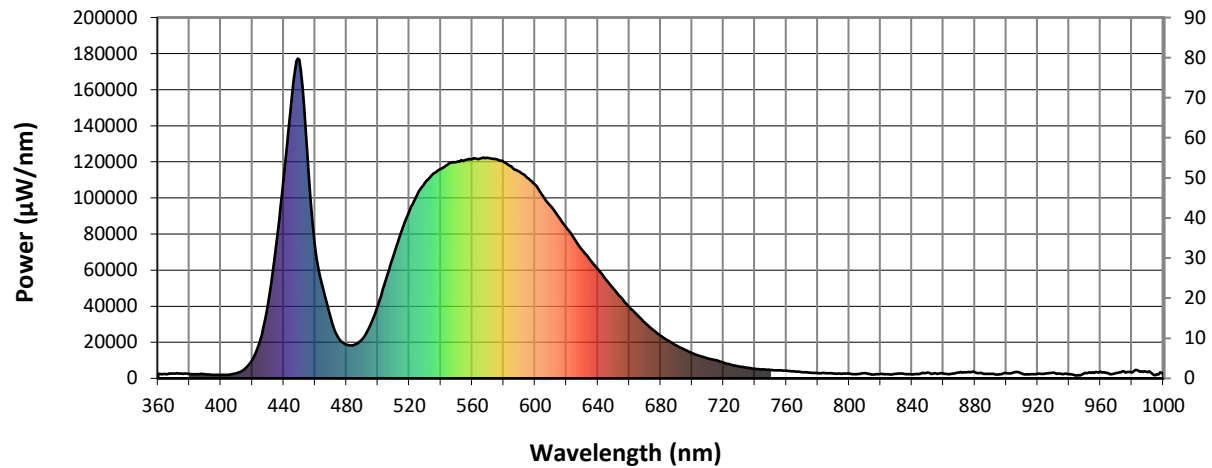
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5000K 7-step quadrangle

REPORT NUMBER: SP1-2006-844-1

### Photopic Flux vs. Wavelength

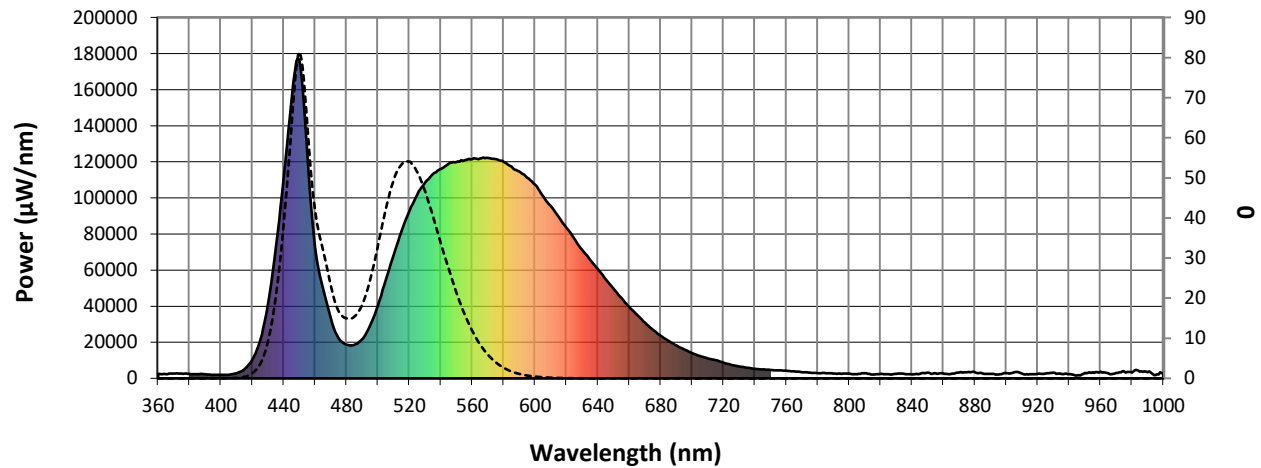


#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2529             | 0.0              | 490       | 21819            | 3.1              | 620       | 83437            | 21.7             | 750       | 4608             | 0.0              | 880       | 3335             | 0.0              |
| 365       | 2361             | 0.0              | 495       | 29270            | 5.3              | 625       | 77569            | 17.1             | 755       | 4412             | 0.0              | 885       | 2653             | 0.0              |
| 370       | 2648             | 0.0              | 500       | 40589            | 9.0              | 630       | 71183            | 12.9             | 760       | 4227             | 0.0              | 890       | 2411             | 0.0              |
| 375       | 2655             | 0.0              | 505       | 54498            | 15.2             | 635       | 65734            | 9.9              | 765       | 3922             | 0.0              | 895       | 2118             | 0.0              |
| 380       | 2428             | 0.0              | 510       | 68399            | 23.5             | 640       | 60418            | 7.2              | 770       | 3461             | 0.0              | 900       | 2873             | 0.0              |
| 385       | 2334             | 0.0              | 515       | 81428            | 33.7             | 645       | 54736            | 5.3              | 775       | 3226             | 0.0              | 905       | 3367             | 0.0              |
| 390       | 2269             | 0.0              | 520       | 92826            | 45.0             | 650       | 49620            | 3.6              | 780       | 2883             | 0.0              | 910       | 2749             | 0.0              |
| 395       | 2020             | 0.0              | 525       | 101684           | 54.6             | 655       | 44517            | 2.6              | 785       | 2864             | 0.0              | 915       | 2283             | 0.0              |
| 400       | 1873             | 0.0              | 530       | 108580           | 63.9             | 660       | 39493            | 1.6              | 790       | 2715             | 0.0              | 920       | 2425             | 0.0              |
| 405       | 2015             | 0.0              | 535       | 113290           | 70.3             | 665       | 35066            | 1.1              | 795       | 2547             | 0.0              | 925       | 2705             | 0.0              |
| 410       | 2831             | 0.0              | 540       | 116042           | 75.6             | 670       | 30825            | 0.7              | 800       | 2585             | 0.0              | 930       | 3144             | 0.0              |
| 415       | 5121             | 0.0              | 545       | 118948           | 79.2             | 675       | 27031            | 0.5              | 805       | 2308             | 0.0              | 935       | 2539             | 0.0              |
| 420       | 10348            | 0.0              | 550       | 119916           | 81.5             | 680       | 23555            | 0.3              | 810       | 2796             | 0.0              | 940       | 2288             | 0.0              |
| 425       | 21288            | 0.1              | 555       | 120734           | 82.5             | 685       | 20841            | 0.2              | 815       | 2196             | 0.0              | 945       | 1604             | 0.0              |
| 430       | 41173            | 0.3              | 560       | 121523           | 82.6             | 690       | 18232            | 0.1              | 820       | 2415             | 0.0              | 950       | 3031             | 0.0              |
| 435       | 73003            | 0.9              | 565       | 121859           | 81.0             | 695       | 16035            | 0.1              | 825       | 2281             | 0.0              | 955       | 3356             | 0.0              |
| 440       | 111013           | 1.7              | 570       | 122246           | 79.5             | 700       | 14010            | 0.0              | 830       | 2524             | 0.0              | 960       | 3704             | 0.0              |
| 445       | 154787           | 3.2              | 575       | 121449           | 75.6             | 705       | 12408            | 0.0              | 835       | 2461             | 0.0              | 965       | 2847             | 0.0              |
| 450       | 176733           | 4.6              | 580       | 120111           | 71.4             | 710       | 11063            | 0.0              | 840       | 2195             | 0.0              | 970       | 2985             | 0.0              |
| 455       | 124334           | 4.2              | 585       | 117354           | 65.2             | 715       | 10136            | 0.0              | 845       | 2487             | 0.0              | 975       | 3963             | 0.0              |
| 460       | 72664            | 3.0              | 590       | 114565           | 59.2             | 720       | 8693             | 0.0              | 850       | 3144             | 0.0              | 980       | 3221             | 0.0              |
| 465       | 49806            | 2.6              | 595       | 111127           | 52.7             | 725       | 7522             | 0.0              | 855       | 2809             | 0.0              | 985       | 3794             | 0.0              |
| 470       | 32995            | 2.1              | 600       | 107253           | 46.2             | 730       | 6612             | 0.0              | 860       | 2621             | 0.0              | 990       | 3296             | 0.0              |
| 475       | 22184            | 1.7              | 605       | 101156           | 39.2             | 735       | 5947             | 0.0              | 865       | 2410             | 0.0              | 995       | 1779             | 0.0              |
| 480       | 18691            | 1.8              | 610       | 95370            | 32.8             | 740       | 5253             | 0.0              | 870       | 3143             | 0.0              | 1000      | 2977             | 0.0              |
| 485       | 18593            | 2.2              | 615       | 89556            | 27.0             | 745       | 5032             | 0.0              | 875       | 3421             | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2006-844-1

### Scotopic Flux vs. Wavelength



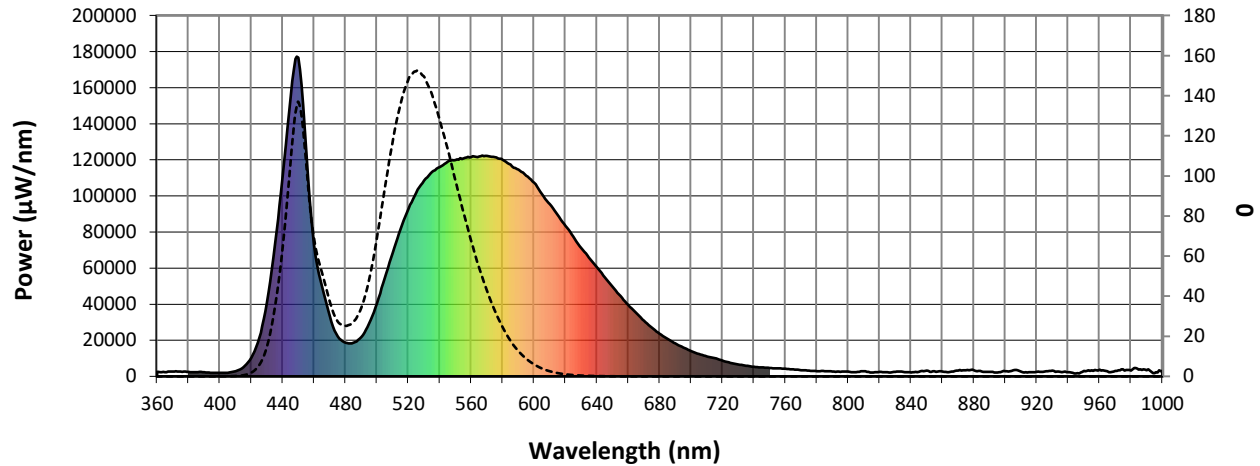
Scotopic Lumens: 4867.6

S/P: 0.66

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2529             | 0.0              | 490       | 21819            | 33.6             | 620       | 83437            | 1.0              | 750       | 4608             | 0.0              | 880       | 3335             | 0.0              |
| 365       | 2361             | 0.0              | 495       | 29270            | 47.3             | 625       | 77569            | 0.7              | 755       | 4412             | 0.0              | 885       | 2653             | 0.0              |
| 370       | 2648             | 0.0              | 500       | 40589            | 67.9             | 630       | 71183            | 0.4              | 760       | 4227             | 0.0              | 890       | 2411             | 0.0              |
| 375       | 2655             | 0.0              | 505       | 54498            | 92.6             | 635       | 65734            | 0.2              | 765       | 3922             | 0.0              | 895       | 2118             | 0.0              |
| 380       | 2428             | 0.0              | 510       | 68399            | 115.9            | 640       | 60418            | 0.2              | 770       | 3461             | 0.0              | 900       | 2873             | 0.0              |
| 385       | 2334             | 0.0              | 515       | 81428            | 135.0            | 645       | 54736            | 0.1              | 775       | 3226             | 0.0              | 905       | 3367             | 0.0              |
| 390       | 2269             | 0.0              | 520       | 92826            | 147.5            | 650       | 49620            | 0.1              | 780       | 2883             | 0.0              | 910       | 2749             | 0.0              |
| 395       | 2020             | 0.0              | 525       | 101684           | 152.1            | 655       | 44517            | 0.0              | 785       | 2864             | 0.0              | 915       | 2283             | 0.0              |
| 400       | 1873             | 0.0              | 530       | 108580           | 149.7            | 660       | 39493            | 0.0              | 790       | 2715             | 0.0              | 920       | 2425             | 0.0              |
| 405       | 2015             | 0.1              | 535       | 113290           | 141.2            | 665       | 35066            | 0.0              | 795       | 2547             | 0.0              | 925       | 2705             | 0.0              |
| 410       | 2831             | 0.2              | 540       | 116042           | 128.2            | 670       | 30825            | 0.0              | 800       | 2585             | 0.0              | 930       | 3144             | 0.0              |
| 415       | 5121             | 0.5              | 545       | 118948           | 114.0            | 675       | 27031            | 0.0              | 805       | 2308             | 0.0              | 935       | 2539             | 0.0              |
| 420       | 10348            | 1.7              | 550       | 119916           | 98.1             | 680       | 23555            | 0.0              | 810       | 2796             | 0.0              | 940       | 2288             | 0.0              |
| 425       | 21288            | 5.2              | 555       | 120734           | 82.5             | 685       | 20841            | 0.0              | 815       | 2196             | 0.0              | 945       | 1604             | 0.0              |
| 430       | 41173            | 14.0             | 560       | 121523           | 67.9             | 690       | 18232            | 0.0              | 820       | 2415             | 0.0              | 950       | 3031             | 0.0              |
| 435       | 73003            | 32.6             | 565       | 121859           | 54.7             | 695       | 16035            | 0.0              | 825       | 2281             | 0.0              | 955       | 3356             | 0.0              |
| 440       | 111013           | 62.0             | 570       | 122246           | 43.1             | 700       | 14010            | 0.0              | 830       | 2524             | 0.0              | 960       | 3704             | 0.0              |
| 445       | 154787           | 103.6            | 575       | 121449           | 33.1             | 705       | 12408            | 0.0              | 835       | 2461             | 0.0              | 965       | 2847             | 0.0              |
| 450       | 176733           | 137.0            | 580       | 120111           | 24.7             | 710       | 11063            | 0.0              | 840       | 2195             | 0.0              | 970       | 2985             | 0.0              |
| 455       | 124334           | 108.6            | 585       | 117354           | 17.9             | 715       | 10136            | 0.0              | 845       | 2487             | 0.0              | 975       | 3963             | 0.0              |
| 460       | 72664            | 70.2             | 590       | 114565           | 12.8             | 720       | 8693             | 0.0              | 850       | 3144             | 0.0              | 980       | 3221             | 0.0              |
| 465       | 49806            | 52.6             | 595       | 111127           | 8.9              | 725       | 7522             | 0.0              | 855       | 2809             | 0.0              | 985       | 3794             | 0.0              |
| 470       | 32995            | 38.0             | 600       | 107253           | 6.0              | 730       | 6612             | 0.0              | 860       | 2621             | 0.0              | 990       | 3296             | 0.0              |
| 475       | 22184            | 27.7             | 605       | 101156           | 4.0              | 735       | 5947             | 0.0              | 865       | 2410             | 0.0              | 995       | 1779             | 0.0              |
| 480       | 18691            | 25.2             | 610       | 95370            | 2.6              | 740       | 5253             | 0.0              | 870       | 3143             | 0.0              | 1000      | 2977             | 0.0              |
| 485       | 18593            | 27.0             | 615       | 89556            | 1.7              | 745       | 5032             | 0.0              | 875       | 3421             | 0.0              |           |                  |                  |

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### Melanopic Flux vs. Wavelength

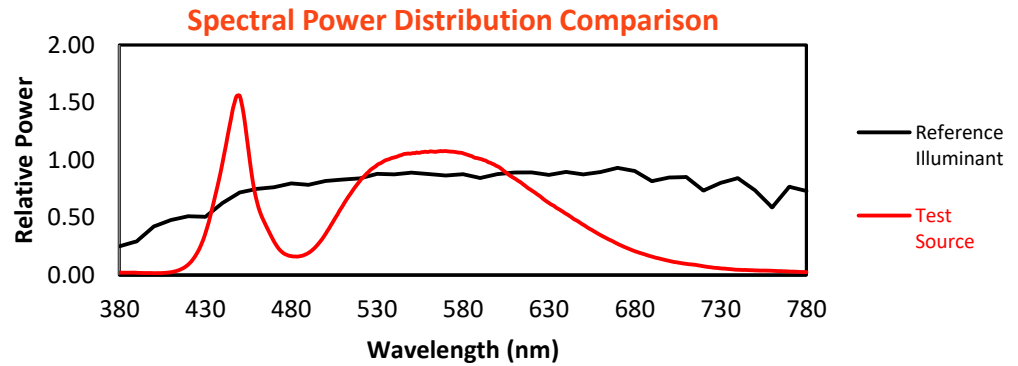


Melanopic Lumens: 12457.9 S/P: 1.7

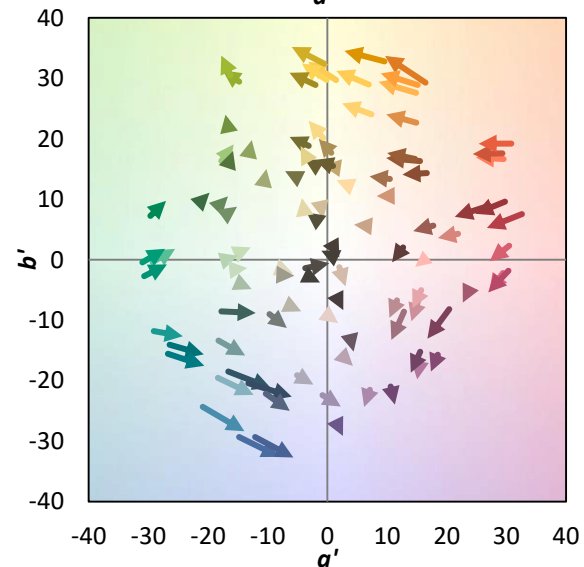
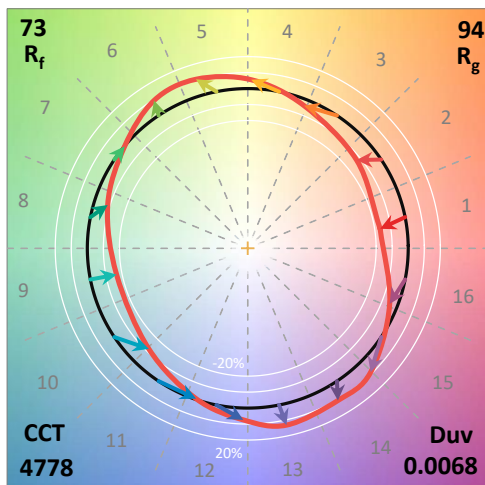
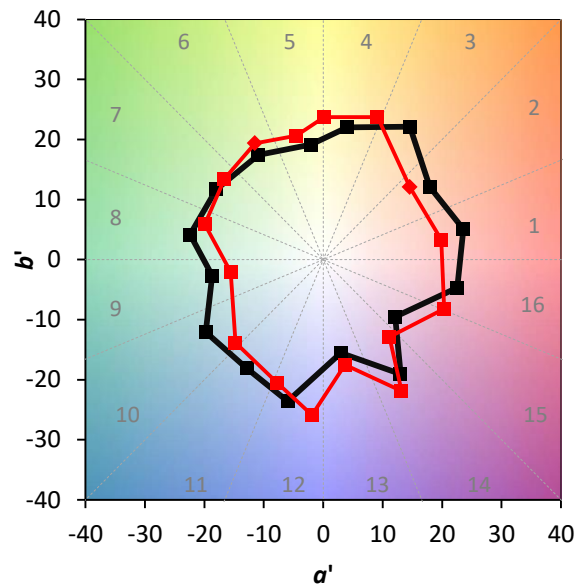
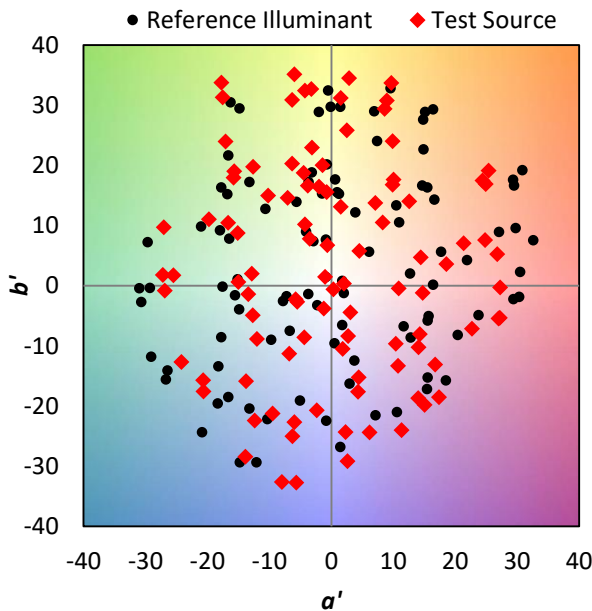
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2529             | 0.0              | 490       | 21819            | 18.2             | 620       | 83437            | 0.1              | 750       | 4608             | 0.0              | 880       | 3335             | 0.0              |
| 365       | 2361             | 0.0              | 495       | 29270            | 24.2             | 625       | 77569            | 0.0              | 755       | 4412             | 0.0              | 885       | 2653             | 0.0              |
| 370       | 2648             | 0.0              | 500       | 40589            | 32.6             | 630       | 71183            | 0.0              | 760       | 4227             | 0.0              | 890       | 2411             | 0.0              |
| 375       | 2655             | 0.0              | 505       | 54498            | 41.8             | 635       | 65734            | 0.0              | 765       | 3922             | 0.0              | 895       | 2118             | 0.0              |
| 380       | 2428             | 0.0              | 510       | 68399            | 49.1             | 640       | 60418            | 0.0              | 770       | 3461             | 0.0              | 900       | 2873             | 0.0              |
| 385       | 2334             | 0.0              | 515       | 81428            | 53.2             | 645       | 54736            | 0.0              | 775       | 3226             | 0.0              | 905       | 3367             | 0.0              |
| 390       | 2269             | 0.0              | 520       | 92826            | 54.0             | 650       | 49620            | 0.0              | 780       | 2883             | 0.0              | 910       | 2749             | 0.0              |
| 395       | 2020             | 0.0              | 525       | 101684           | 51.6             | 655       | 44517            | 0.0              | 785       | 2864             | 0.0              | 915       | 2283             | 0.0              |
| 400       | 1873             | 0.0              | 530       | 108580           | 46.9             | 660       | 39493            | 0.0              | 790       | 2715             | 0.0              | 920       | 2425             | 0.0              |
| 405       | 2015             | 0.0              | 535       | 113290           | 40.8             | 665       | 35066            | 0.0              | 795       | 2547             | 0.0              | 925       | 2705             | 0.0              |
| 410       | 2831             | 0.1              | 540       | 116042           | 34.0             | 670       | 30825            | 0.0              | 800       | 2585             | 0.0              | 930       | 3144             | 0.0              |
| 415       | 5121             | 0.3              | 545       | 118948           | 27.6             | 675       | 27031            | 0.0              | 805       | 2308             | 0.0              | 935       | 2539             | 0.0              |
| 420       | 10348            | 1.2              | 550       | 119916           | 21.5             | 680       | 23555            | 0.0              | 810       | 2796             | 0.0              | 940       | 2288             | 0.0              |
| 425       | 21288            | 3.3              | 555       | 120734           | 16.3             | 685       | 20841            | 0.0              | 815       | 2196             | 0.0              | 945       | 1604             | 0.0              |
| 430       | 41173            | 8.7              | 560       | 121523           | 12.0             | 690       | 18232            | 0.0              | 820       | 2415             | 0.0              | 950       | 3031             | 0.0              |
| 435       | 73003            | 19.5             | 565       | 121859           | 8.6              | 695       | 16035            | 0.0              | 825       | 2281             | 0.0              | 955       | 3356             | 0.0              |
| 440       | 111013           | 37.1             | 570       | 122246           | 6.0              | 700       | 14010            | 0.0              | 830       | 2524             | 0.0              | 960       | 3704             | 0.0              |
| 445       | 154787           | 61.1             | 575       | 121449           | 4.0              | 705       | 12408            | 0.0              | 835       | 2461             | 0.0              | 965       | 2847             | 0.0              |
| 450       | 176733           | 81.4             | 580       | 120111           | 2.7              | 710       | 11063            | 0.0              | 840       | 2195             | 0.0              | 970       | 2985             | 0.0              |
| 455       | 124334           | 65.1             | 585       | 117354           | 1.7              | 715       | 10136            | 0.0              | 845       | 2487             | 0.0              | 975       | 3963             | 0.0              |
| 460       | 72664            | 42.8             | 590       | 114565           | 1.1              | 720       | 8693             | 0.0              | 850       | 3144             | 0.0              | 980       | 3221             | 0.0              |
| 465       | 49806            | 32.5             | 595       | 111127           | 0.7              | 725       | 7522             | 0.0              | 855       | 2809             | 0.0              | 985       | 3794             | 0.0              |
| 470       | 32995            | 23.6             | 600       | 107253           | 0.5              | 730       | 6612             | 0.0              | 860       | 2621             | 0.0              | 990       | 3296             | 0.0              |
| 475       | 22184            | 16.9             | 605       | 101156           | 0.3              | 735       | 5947             | 0.0              | 865       | 2410             | 0.0              | 995       | 1779             | 0.0              |
| 480       | 18691            | 15.0             | 610       | 95370            | 0.2              | 740       | 5253             | 0.0              | 870       | 3143             | 0.0              | 1000      | 2977             | 0.0              |
| 485       | 18593            | 15.3             | 615       | 89556            | 0.1              | 745       | 5032             | 0.0              | 875       | 3421             | 0.0              |           |                  |                  |

### Summary

$R_f = 73.3$   
 $R_g = 94.5$   
 CIE  $R_a = 71.0$   
 $R_g = -28.7$

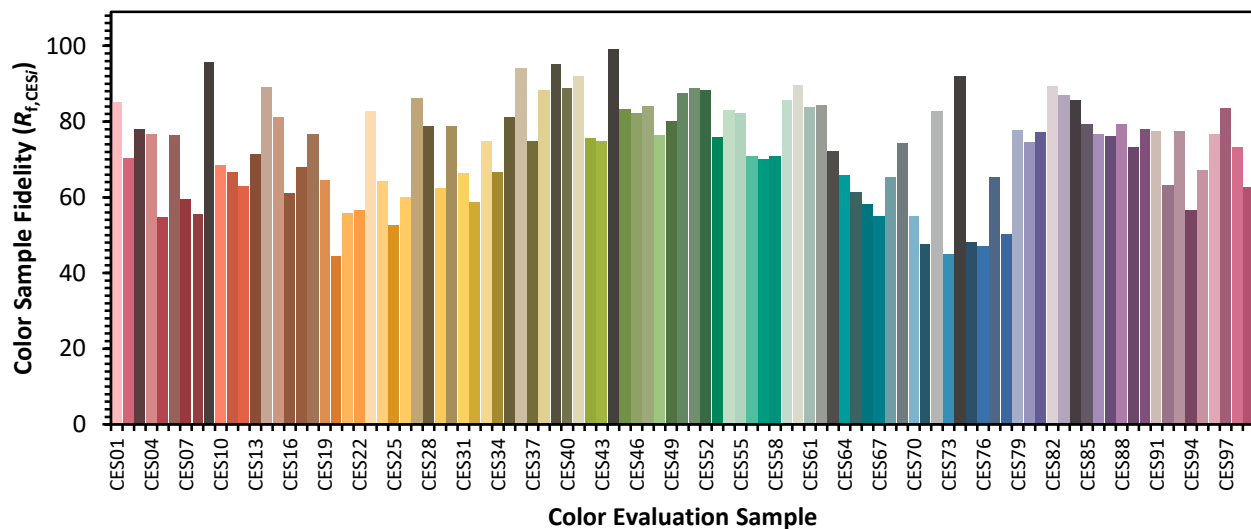


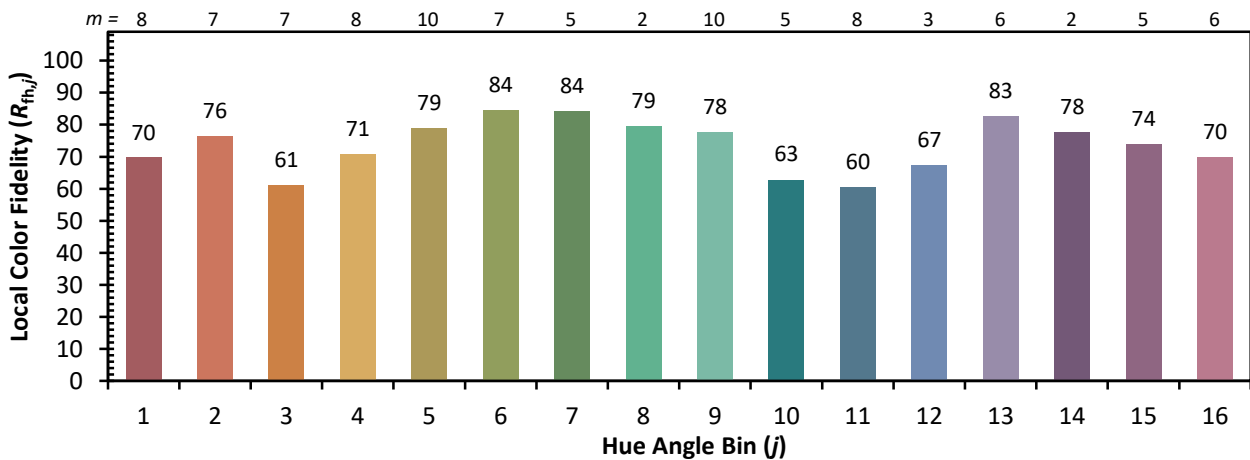
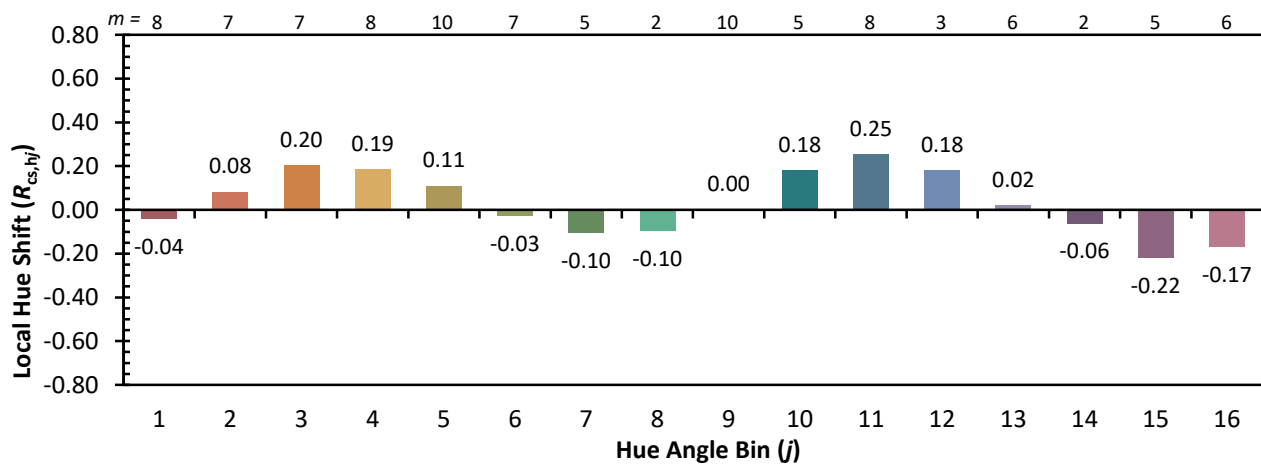
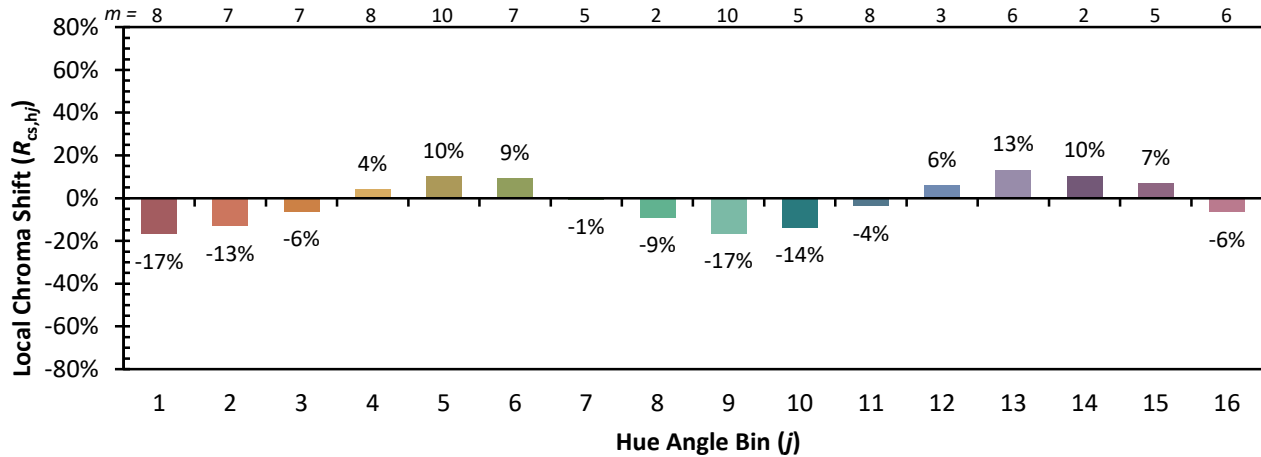
### Color Vector Graphics



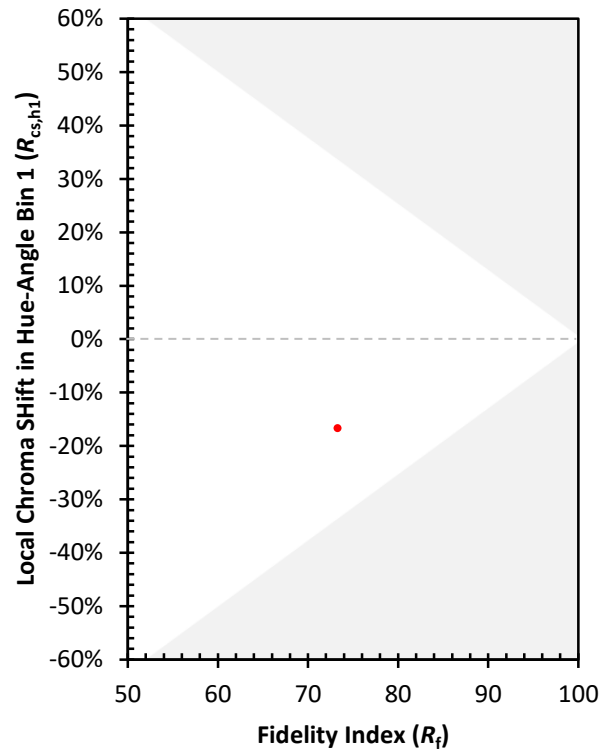
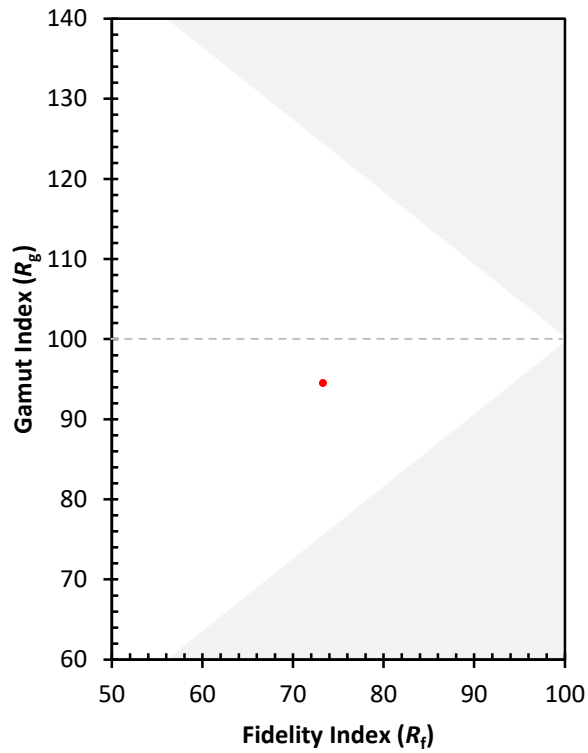
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 60 | CES51 = 89 | CES76 = 47 |
| CES02 = 59 | CES27 = 86 | CES52 = 88 | CES77 = 65 |
| CES03 = 30 | CES28 = 79 | CES53 = 76 | CES78 = 50 |
| CES04 = 69 | CES29 = 62 | CES54 = 83 | CES79 = 78 |
| CES05 = 46 | CES30 = 79 | CES55 = 82 | CES80 = 74 |
| CES06 = 50 | CES31 = 66 | CES56 = 71 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 70 | CES82 = 89 |
| CES08 = 38 | CES33 = 75 | CES58 = 71 | CES83 = 87 |
| CES09 = 29 | CES34 = 67 | CES59 = 86 | CES84 = 86 |
| CES10 = 72 | CES35 = 81 | CES60 = 90 | CES85 = 79 |
| CES11 = 56 | CES36 = 94 | CES61 = 84 | CES86 = 77 |
| CES12 = 61 | CES37 = 75 | CES62 = 84 | CES87 = 76 |
| CES13 = 41 | CES38 = 88 | CES63 = 72 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 66 | CES89 = 73 |
| CES15 = 70 | CES40 = 89 | CES65 = 61 | CES90 = 78 |
| CES16 = 46 | CES41 = 92 | CES66 = 58 | CES91 = 77 |
| CES17 = 49 | CES42 = 75 | CES67 = 55 | CES92 = 63 |
| CES18 = 55 | CES43 = 75 | CES68 = 65 | CES93 = 78 |
| CES19 = 71 | CES44 = 99 | CES69 = 74 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 55 | CES95 = 67 |
| CES21 = 85 | CES46 = 82 | CES71 = 48 | CES96 = 77 |
| CES22 = 77 | CES47 = 84 | CES72 = 83 | CES97 = 84 |
| CES23 = 91 | CES48 = 76 | CES73 = 45 | CES98 = 73 |
| CES24 = 90 | CES49 = 80 | CES74 = 92 | CES99 = 63 |
| CES25 = 71 | CES50 = 88 | CES75 = 48 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)