

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: P543175

Luminaire Tested: **TT-D8-750-U-MQ**

Issue Date: 6/22/2021

Test Information

Test Method: LM-79-08
Report Number: P543175
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2012-100-9)
Test Lab: INNOVATION CENTER
Issue Date: 6/22/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: TT-D8-750-U-MQ
Description: TOPTIER LED PARKING GARAGE LUMINAIRE
5000K, 70 CRI LEDS AND MEDIUM DISTRIBUTION
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18279 lumens
Efficiency: N/A
Efficacy: 122.9 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G3

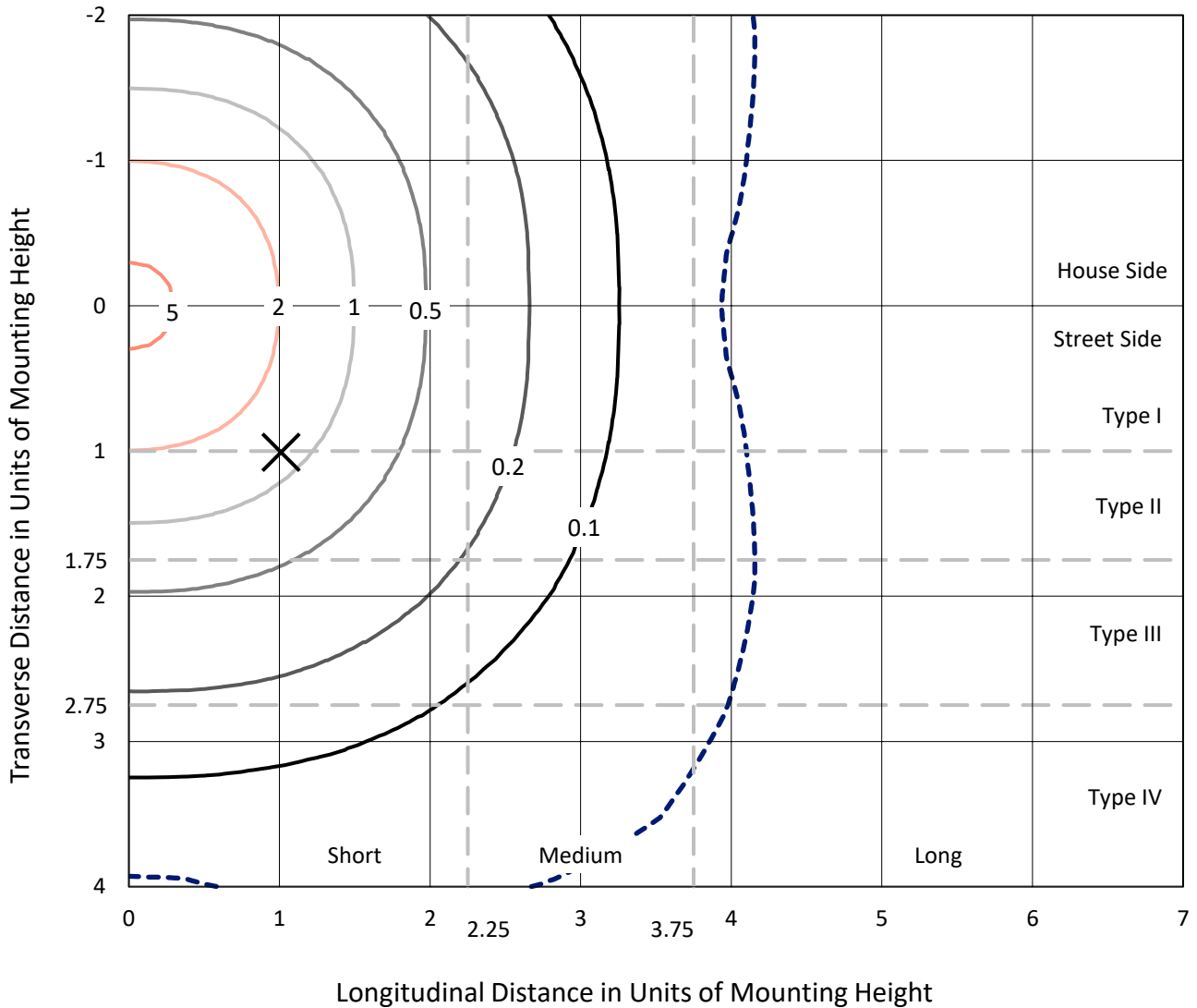
Input Watts (W): 148.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P543175
 CATALOG NUMBER: TT-D8-750-U-MQ

Iso-Footcandle Lines of Horizontal Illumination

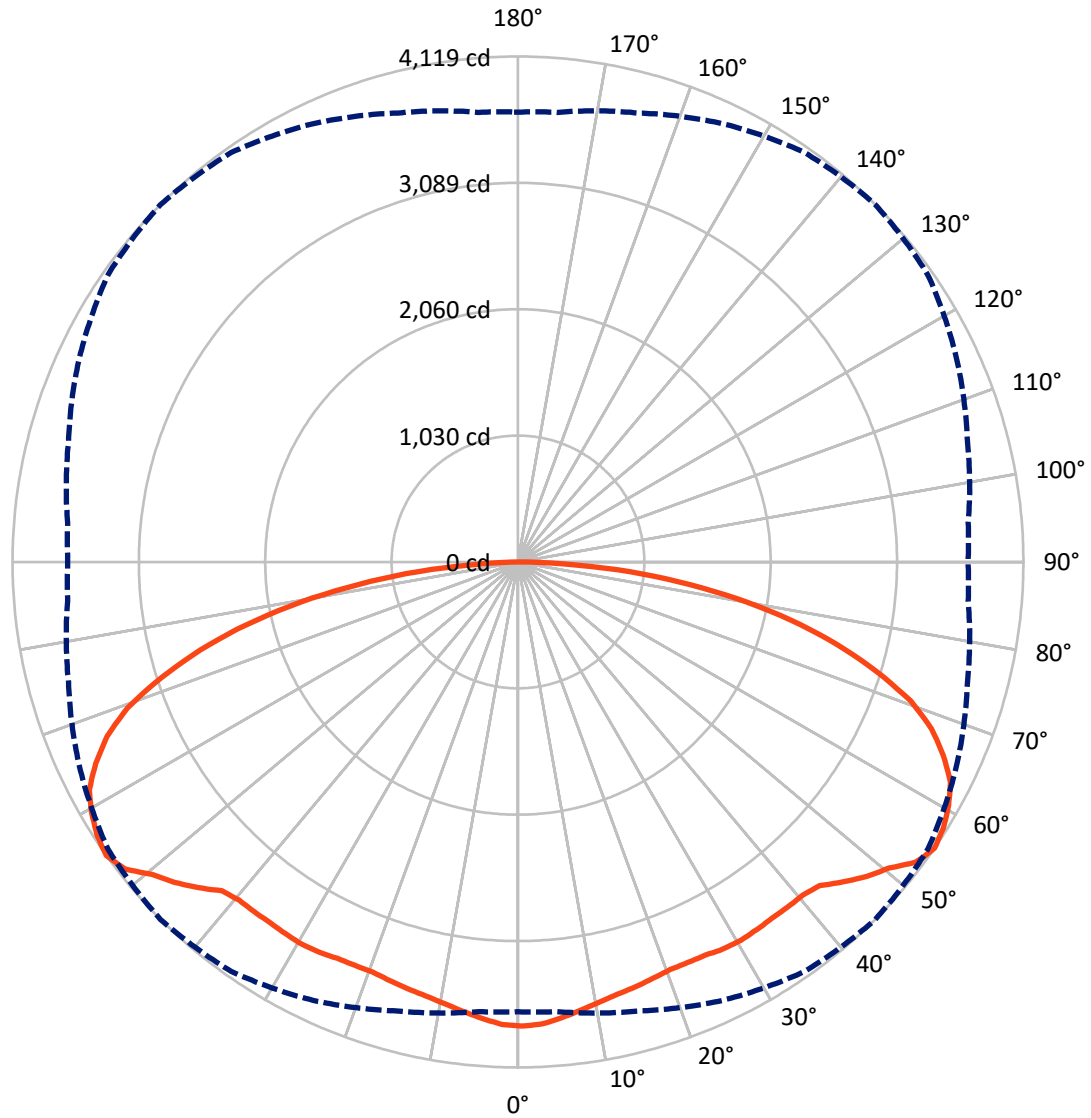
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.1 fc
 Type V - Short - N/A

REPORT NUMBER: P543175
CATALOG NUMBER: TT-D8-750-U-MQ

Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

REPORT NUMBER: P543175
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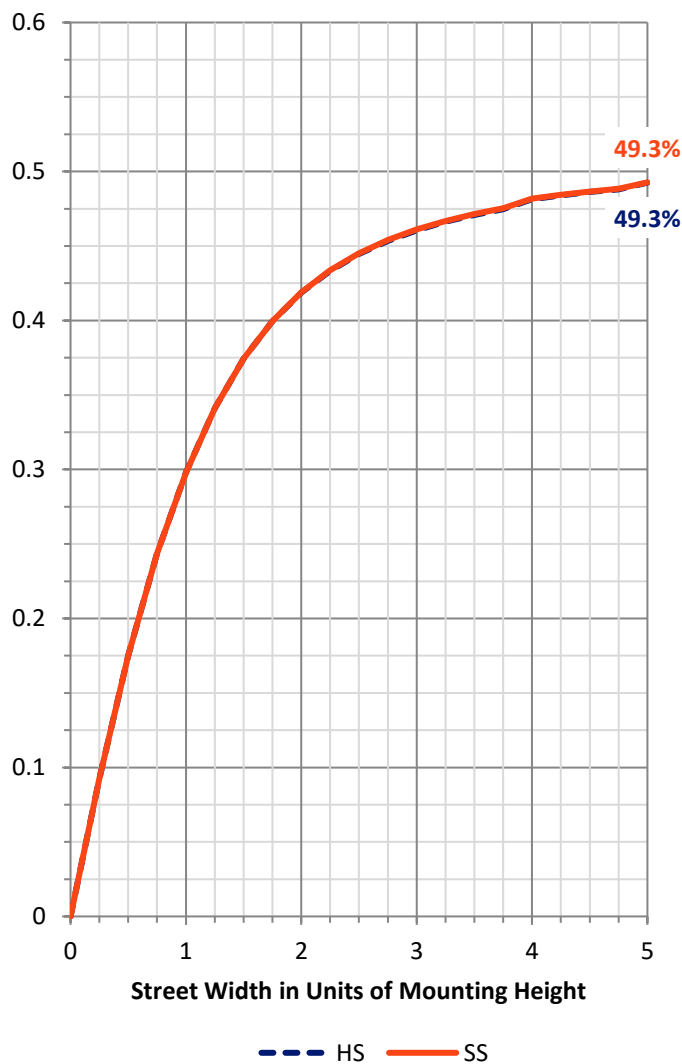
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9139.5 | 0.0 | 9139.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 9139.5 | 0.0 | 9139.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 18279.0 | 0.0 | 18279.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 353.1 | 1.9 |
| 10°-20° | 1014.1 | 5.5 |
| 20°-30° | 1634.2 | 8.9 |
| 30°-40° | 2214.6 | 12.1 |
| 40°-50° | 2807.3 | 15.4 |
| 50°-60° | 3453.7 | 18.9 |
| 60°-70° | 3478.7 | 19.0 |
| 70°-80° | 2546.0 | 13.9 |
| 80°-90° | 777.2 | 4.3 |
| 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° | 18279.0 | 100.0 |
| 0°-180° | 18279.0 | 100.0 |

Coefficient of Utilization

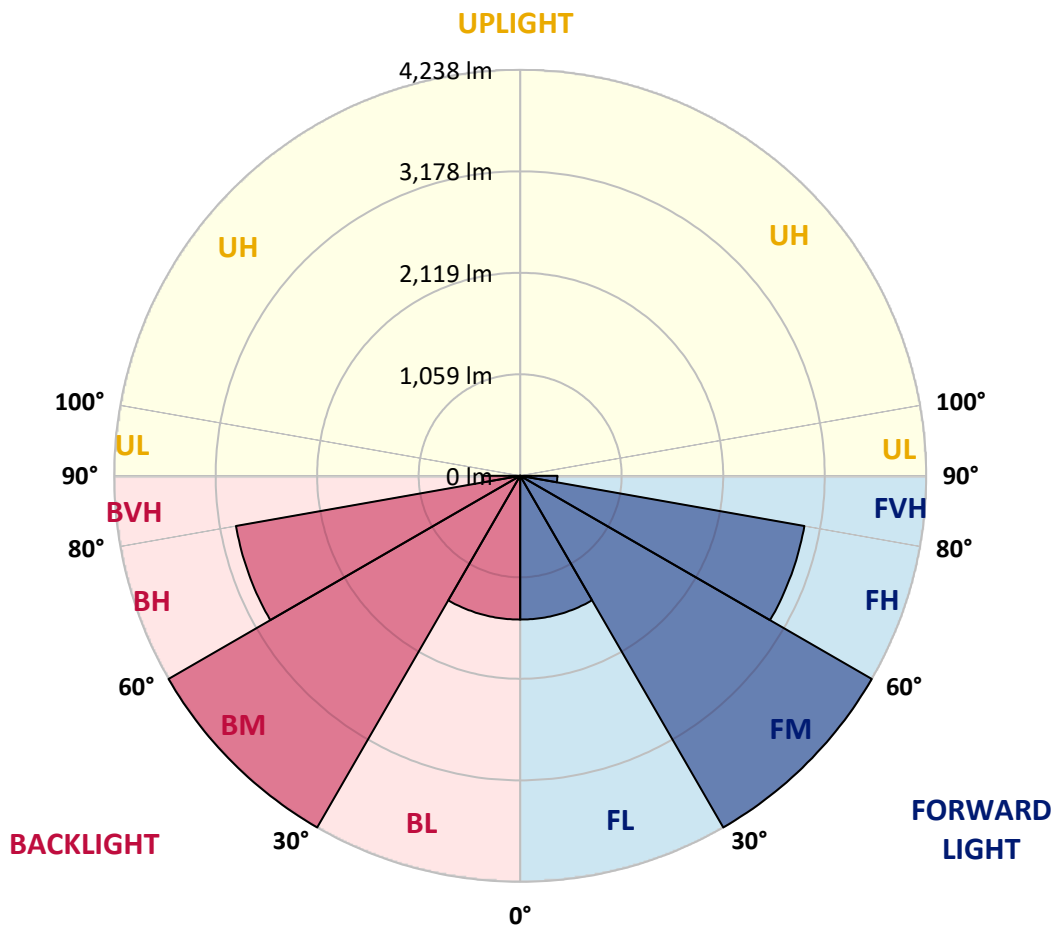


REPORT NUMBER: P543175
 CATALOG NUMBER: TT-D8-750-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1500.7 | 8.2 | | | |
| FM (30°-60°) | 4237.8 | 23.2 | | | |
| FH (60°-80°) | 3012.3 | 16.5 | | | G2/5000 |
| FVH (80°-90°) | 388.6 | 2.1 | | | G3/500 |
| BL (0°-30°) | 1500.7 | 8.2 | B3/2500 | | |
| BM (30°-60°) | 4237.8 | 23.2 | B3/5000 | | |
| BH (60°-80°) | 3012.3 | 16.5 | B4/5000 | | G2/5000 |
| BVH (80°-90°) | 388.6 | 2.1 | | | G3/500 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G3
 Type V Short





REPORT NUMBER: P543175

CATALOG NUMBER: TT-D8-750-U-MQ

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3782.1 | 3782.1 | 3782.1 | 3782.1 | 3782.1 | 3782.1 | 3782.1 | 3782.1 | 3782.1 | 3782.1 | 3782.1 |
| 2.5° | 3765.3 | 3767.7 | 3766.9 | 3768.5 | 3768.5 | 3770.1 | 3768.5 | 3770.1 | 3767.7 | 3768.5 | 3768.5 |
| 5° | 3724.4 | 3727.6 | 3725.2 | 3729.2 | 3730.0 | 3730.8 | 3728.4 | 3728.4 | 3726.0 | 3726.0 | 3726.8 |
| 7.5° | 3680.4 | 3682.0 | 3682.0 | 3686.0 | 3688.4 | 3688.4 | 3686.0 | 3682.8 | 3681.2 | 3678.8 | 3678.8 |
| 10° | 3638.0 | 3640.4 | 3639.6 | 3643.6 | 3646.8 | 3647.6 | 3644.4 | 3638.8 | 3636.4 | 3634.8 | 3634.8 |
| 12.5° | 3601.1 | 3603.5 | 3605.1 | 3609.9 | 3614.8 | 3614.8 | 3613.2 | 3606.7 | 3602.7 | 3600.3 | 3599.5 |
| 15° | 3573.9 | 3576.3 | 3577.1 | 3584.3 | 3589.1 | 3591.5 | 3588.3 | 3581.9 | 3577.1 | 3573.9 | 3572.3 |
| 17.5° | 3546.7 | 3548.3 | 3552.3 | 3558.7 | 3563.5 | 3566.7 | 3563.5 | 3557.1 | 3550.7 | 3545.1 | 3543.5 |
| 20° | 3520.3 | 3521.1 | 3526.7 | 3535.5 | 3541.9 | 3545.1 | 3541.9 | 3532.3 | 3522.7 | 3517.9 | 3517.1 |
| 22.5° | 3508.3 | 3509.9 | 3517.1 | 3529.9 | 3538.7 | 3545.1 | 3537.1 | 3525.1 | 3513.9 | 3505.9 | 3505.1 |
| 25° | 3500.3 | 3501.1 | 3510.7 | 3528.3 | 3544.3 | 3549.1 | 3543.5 | 3526.7 | 3509.1 | 3498.7 | 3497.9 |
| 27.5° | 3507.5 | 3510.7 | 3523.5 | 3541.1 | 3561.9 | 3569.9 | 3564.3 | 3540.3 | 3521.1 | 3509.1 | 3506.7 |
| 30° | 3505.9 | 3508.3 | 3522.7 | 3542.7 | 3561.9 | 3577.9 | 3566.7 | 3541.1 | 3518.7 | 3506.7 | 3505.1 |
| 32.5° | 3501.1 | 3504.3 | 3517.1 | 3533.9 | 3561.1 | 3572.3 | 3561.9 | 3532.3 | 3513.1 | 3504.3 | 3501.1 |
| 35° | 3481.0 | 3486.7 | 3505.1 | 3529.9 | 3554.7 | 3565.9 | 3553.9 | 3529.1 | 3502.7 | 3488.3 | 3486.7 |
| 37.5° | 3473.0 | 3477.0 | 3495.5 | 3524.3 | 3557.1 | 3569.1 | 3553.1 | 3523.5 | 3493.9 | 3477.8 | 3473.8 |
| 40° | 3460.2 | 3466.6 | 3489.1 | 3522.7 | 3560.3 | 3571.5 | 3558.7 | 3524.3 | 3490.7 | 3464.2 | 3457.0 |
| 42.5° | 3460.2 | 3465.8 | 3497.1 | 3543.5 | 3585.1 | 3605.1 | 3585.1 | 3545.9 | 3498.7 | 3461.8 | 3456.2 |
| 45° | 3515.5 | 3522.7 | 3561.9 | 3630.8 | 3695.6 | 3719.6 | 3694.8 | 3634.8 | 3563.5 | 3521.1 | 3509.9 |
| 47.5° | 3562.7 | 3573.1 | 3632.4 | 3719.6 | 3800.5 | 3827.7 | 3798.1 | 3721.2 | 3633.2 | 3573.1 | 3562.7 |
| 50° | 3597.9 | 3609.9 | 3686.8 | 3797.3 | 3883.8 | 3920.6 | 3887.0 | 3799.7 | 3688.4 | 3611.5 | 3599.5 |
| 52.5° | 3661.2 | 3679.6 | 3770.9 | 3895.8 | 4016.7 | 4063.1 | 4016.7 | 3899.8 | 3770.9 | 3682.0 | 3661.2 |
| 55° | 3666.0 | 3678.0 | 3787.7 | 3942.2 | 4073.5 | 4119.1 | 4079.1 | 3943.0 | 3791.7 | 3683.6 | 3668.4 |
| 57.5° | 3610.7 | 3624.4 | 3740.4 | 3918.2 | 4048.7 | 4088.7 | 4049.5 | 3920.6 | 3750.9 | 3632.4 | 3618.8 |
| 60° | 3511.5 | 3525.1 | 3646.0 | 3830.9 | 3971.0 | 4031.9 | 3974.2 | 3834.9 | 3658.0 | 3534.7 | 3519.5 |
| 62.5° | 3403.4 | 3429.0 | 3568.3 | 3752.5 | 3891.8 | 3955.8 | 3898.2 | 3755.7 | 3576.3 | 3438.6 | 3415.4 |
| 65° | 3232.9 | 3244.1 | 3393.8 | 3593.1 | 3764.5 | 3810.9 | 3765.3 | 3598.7 | 3419.4 | 3253.7 | 3244.9 |
| 67.5° | 3059.9 | 3080.7 | 3204.8 | 3427.4 | 3593.1 | 3637.2 | 3592.3 | 3426.6 | 3220.9 | 3087.1 | 3071.9 |
| 70° | 2772.5 | 2796.5 | 2971.1 | 3162.4 | 3319.3 | 3396.2 | 3324.1 | 3164.8 | 2998.3 | 2806.1 | 2793.3 |
| 72.5° | 2506.7 | 2531.5 | 2651.6 | 2867.0 | 3026.3 | 3059.1 | 3036.7 | 2871.0 | 2676.4 | 2549.1 | 2531.5 |
| 75° | 2159.2 | 2168.1 | 2322.6 | 2505.1 | 2652.4 | 2687.6 | 2659.6 | 2502.7 | 2351.4 | 2188.1 | 2162.4 |
| 77.5° | 1798.2 | 1815.8 | 1924.7 | 2080.8 | 2208.1 | 2271.3 | 2206.5 | 2089.6 | 1935.9 | 1816.6 | 1799.0 |
| 80° | 1385.1 | 1404.3 | 1517.2 | 1658.9 | 1757.3 | 1807.8 | 1759.7 | 1654.9 | 1527.6 | 1405.9 | 1397.1 |
| 82.5° | 976.7 | 977.5 | 1089.6 | 1182.5 | 1281.0 | 1309.8 | 1282.6 | 1201.7 | 1097.6 | 986.4 | 988.0 |
| 85° | 553.2 | 558.8 | 635.7 | 720.5 | 777.4 | 815.8 | 785.4 | 725.4 | 643.7 | 566.0 | 558.8 |
| 87.5° | 125.7 | 124.9 | 164.9 | 213.8 | 277.0 | 276.2 | 270.6 | 221.0 | 169.7 | 123.3 | 121.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

LM-79-08: 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

Test Date: 11/06/2020

Data applicable to product families TT-x-750 and TTN-x-750

Test Information

Test Method: LM-79-08
 Report Number: SP1-2006-844-1
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 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
 CIE u': 0.2092
 CIE v': 0.4955
 Duv: 0.0068
 CIE x: 0.3535
 CIE y: 0.3721
 CIE z: 0.2744
 Peak Wavelength (nm): 449
 Dominant Wavelength (nm): 570
 Purity: 17.8
 Rf: 73.3
 Rg: 94.5

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.0 | | |
| R1: | 67.7 | R9: | -28.7 |
| R2: | 75.2 | R10: | 41.2 |
| R3: | 80.8 | R11: | 67.2 |
| R4: | 71.5 | R12: | 35.9 |
| R5: | 67.8 | R13: | 68.5 |
| R6: | 65.6 | R14: | 89.2 |
| R7: | 82.2 | | |
| R8: | 57.2 | | |

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

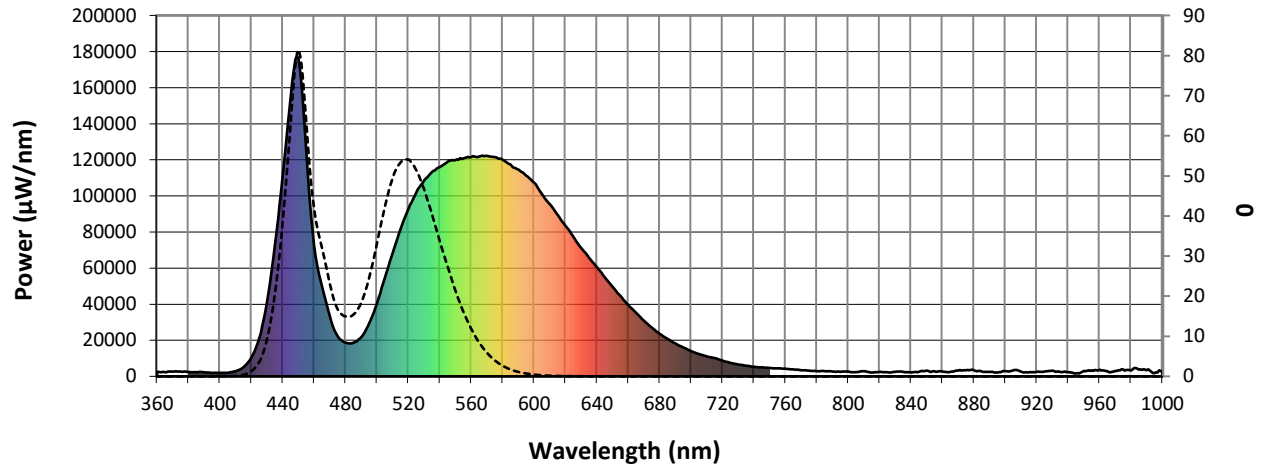


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| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 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 (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (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 | | | |

REPORT NUMBER: SP1-2006-844-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: 12457.9 S/P: 1.7

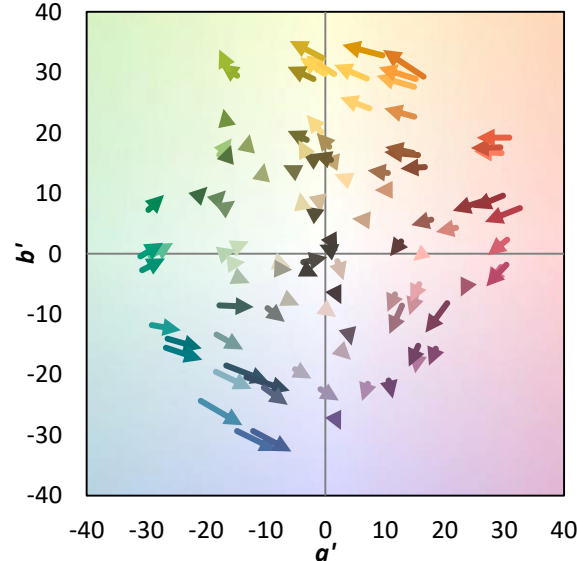
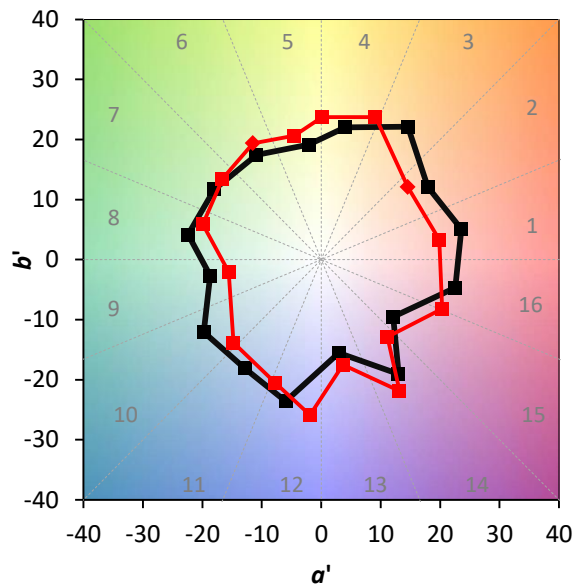
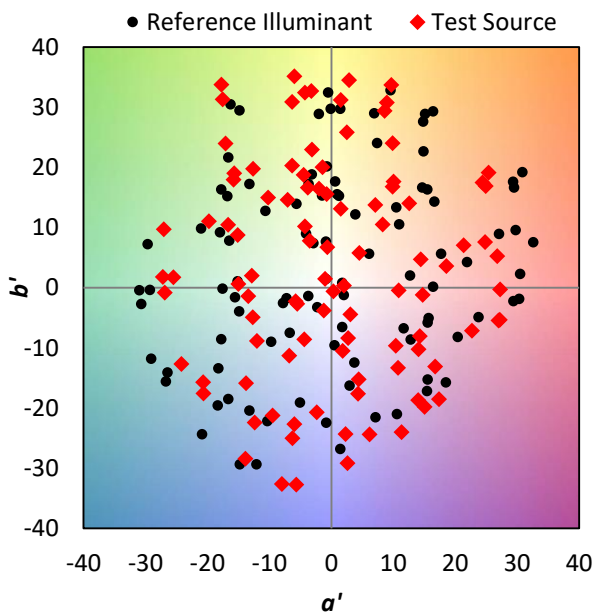
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 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 $R_a = 71.0$
 $R_g = -28.7$

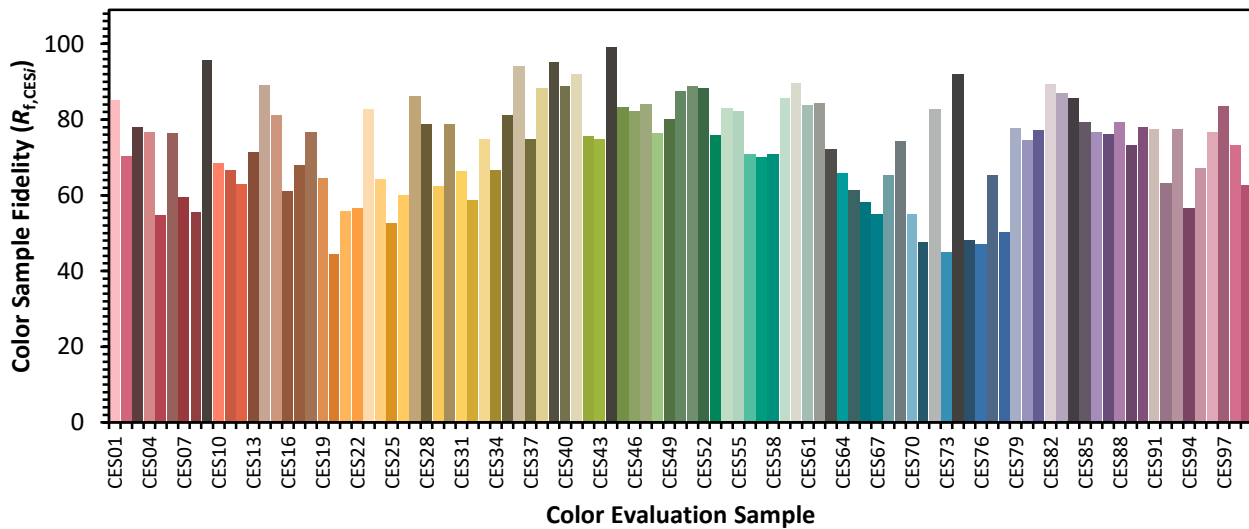


Color Vector Graphics



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

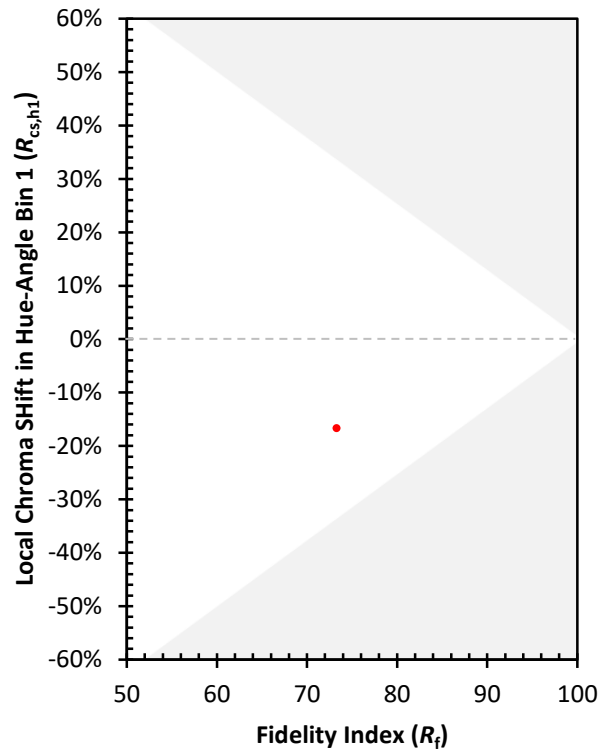
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 60 | CES51 = 89 | CES76 = 47 |
| CES02 = 59 | CES27 = 86 | CES52 = 88 | CES77 = 65 |
| CES03 = 30 | CES28 = 79 | CES53 = 76 | CES78 = 50 |
| CES04 = 69 | CES29 = 62 | CES54 = 83 | CES79 = 78 |
| CES05 = 46 | CES30 = 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)