

Classified
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: NEO-RAY

Report Number: P79047

Luminaire Tested: **DFN2DIP-RG4F0-090D080US927-FLL-FLL-1DUDD-W**

Issue Date: 02/20/2024

Test Information

Test Method: LM-79-08
Report Number: P79047
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: DFN2DIP-RG4F0-090D080US927-FLL-FLL-1DUDD-W
Description: Define Geo Ring 4ft Diameter Direct/Indirect Fixture w/ Frosted Lens
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

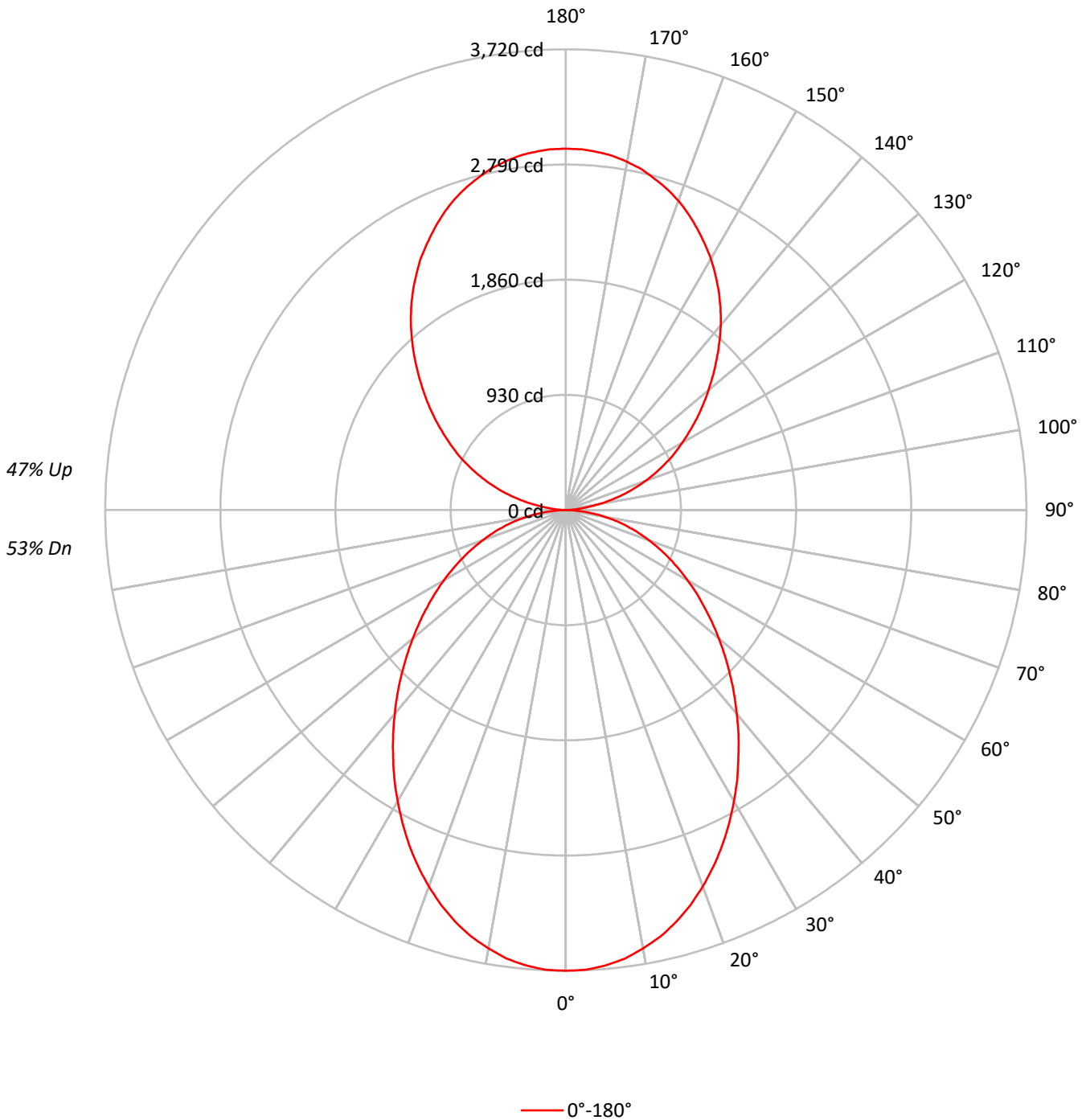
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16051.0 lumens
Efficiency: N/A
Efficacy: 71.3 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.11 / 1.21
Luminous Opening: Circular (Dia: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 225.1
Input Voltage (V): 120
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: 25 FT

TEST NUMBER: P79047
CATALOG NUMBER: DFN2DIP-RG4F0-090D080US927-FLL-FLL-1DUDD-W

Luminous Intensity Polar Plot





TEST NUMBER: P79047

CATALOG NUMBER: DFN2DIP-RG4F0-090D080US927-FLL-FLL-1DUDD-W

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | | | | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 108 | 108 | 108 | 108 | 100 | 100 | 100 | 100 | 85 | 85 | 85 | 71 | 71 | 71 | 59 | 59 | 59 | 53 | | | |
| 1 | 99 | 94 | 90 | 87 | 91 | 87 | 84 | 81 | 75 | 72 | 70 | 63 | 61 | 60 | 52 | 51 | 50 | 45 | | | |
| 2 | 90 | 82 | 76 | 71 | 83 | 77 | 71 | 67 | 66 | 62 | 58 | 55 | 53 | 50 | 46 | 44 | 42 | 38 | | | |
| 3 | 82 | 73 | 65 | 59 | 76 | 68 | 61 | 56 | 58 | 53 | 49 | 49 | 46 | 43 | 41 | 38 | 36 | 32 | | | |
| 4 | 75 | 64 | 57 | 51 | 69 | 60 | 53 | 48 | 52 | 46 | 42 | 44 | 40 | 37 | 37 | 34 | 31 | 28 | | | |
| 5 | 69 | 58 | 49 | 43 | 64 | 54 | 46 | 41 | 46 | 41 | 36 | 40 | 35 | 32 | 33 | 30 | 27 | 24 | | | |
| 6 | 64 | 52 | 44 | 38 | 59 | 48 | 41 | 36 | 42 | 36 | 32 | 36 | 31 | 28 | 30 | 27 | 24 | 21 | | | |
| 7 | 59 | 47 | 39 | 33 | 55 | 44 | 37 | 32 | 38 | 32 | 28 | 33 | 28 | 25 | 28 | 24 | 22 | 19 | | | |
| 8 | 55 | 43 | 35 | 30 | 51 | 40 | 33 | 28 | 35 | 29 | 25 | 30 | 26 | 22 | 26 | 22 | 20 | 17 | | | |
| 9 | 51 | 39 | 31 | 26 | 47 | 37 | 30 | 25 | 32 | 27 | 23 | 28 | 23 | 20 | 24 | 20 | 18 | 16 | | | |
| 10 | 48 | 36 | 29 | 24 | 44 | 34 | 27 | 23 | 30 | 24 | 21 | 26 | 21 | 18 | 22 | 19 | 16 | 14 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|------|
| | 0° |
| 0° | 3187 |
| 5° | 3174 |
| 10° | 3126 |
| 15° | 3054 |
| 20° | 2948 |
| 25° | 2825 |
| 30° | 2686 |
| 35° | 2542 |
| 40° | 2402 |
| 45° | 2271 |
| 50° | 2148 |
| 55° | 2041 |
| 60° | 1948 |
| 65° | 1866 |
| 70° | 1791 |
| 75° | 1717 |
| 80° | 1612 |
| 85° | 1324 |



TEST NUMBER: P79047
 CATALOG NUMBER: DFN2DIP-RG4F0-090D080US927-FLL-FLL-1DUDD-W

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 349.4 | 2.2 |
| 10°-20° | 967.9 | 6.0 |
| 20°-30° | 1374.0 | 8.6 |
| 30°-40° | 1521.3 | 9.5 |
| 40°-50° | 1447.9 | 9.0 |
| 50°-60° | 1225.3 | 7.6 |
| 60°-70° | 913.1 | 5.7 |
| 70°-80° | 549.1 | 3.4 |
| 80°-90° | 159.1 | 1.0 |
| 90°-100° | 122.2 | 0.8 |
| 100°-110° | 500.7 | 3.1 |
| 110°-120° | 876.5 | 5.5 |
| 120°-130° | 1156.0 | 7.2 |
| 130°-140° | 1330.4 | 8.3 |
| 140°-150° | 1345.8 | 8.4 |
| 150°-160° | 1155.6 | 7.2 |
| 160°-170° | 781.2 | 4.9 |
| 170°-180° | 275.6 | 1.7 |
| 0°-30° | 2691.2 | 16.8 |
| 0°-40° | 4212.5 | 26.2 |
| 0°-60° | 6885.7 | 42.9 |
| 0°-90° | 8507.0 | 53.0 |
| 90°-120° | 1499.4 | 9.3 |
| 90°-150° | 5331.6 | 33.2 |
| 90°-180° | 7544.0 | 47.0 |
| 0°-180° | 16051.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|------|------|------|
| 0° | 3720 | |
| 5° | 3692 | 349 |
| 15° | 3444 | 968 |
| 25° | 2989 | 1374 |
| 35° | 2431 | 1521 |
| 45° | 1874 | 1448 |
| 55° | 1367 | 1225 |
| 65° | 921 | 913 |
| 75° | 519 | 549 |
| 85° | 135 | 151 |
| 90° | 4 | 14 |
| 95° | 98 | 116 |
| 105° | 474 | 501 |
| 115° | 887 | 876 |
| 125° | 1292 | 1156 |
| 135° | 1724 | 1330 |
| 145° | 2154 | 1346 |
| 155° | 2509 | 1156 |
| 165° | 2770 | 781 |
| 175° | 2902 | 276 |
| 180° | 2918 | |



TEST NUMBER: P79047

CATALOG NUMBER: DFN2DIP-RG4F0-090D080US927-FLL-FLL-1DUDD-W

CANDELA DISTRIBUTION (FULL):

| 0° | |
|--------|--------|
| 0° | 3720.2 |
| 2.5° | 3715.8 |
| 5° | 3691.5 |
| 7.5° | 3654.0 |
| 10° | 3594.4 |
| 12.5° | 3528.1 |
| 15° | 3444.2 |
| 17.5° | 3344.9 |
| 20° | 3234.5 |
| 22.5° | 3115.3 |
| 25° | 2989.4 |
| 27.5° | 2854.7 |
| 30° | 2715.6 |
| 32.5° | 2576.5 |
| 35° | 2430.8 |
| 37.5° | 2291.7 |
| 40° | 2148.2 |
| 42.5° | 2011.3 |
| 45° | 1874.5 |
| 47.5° | 1742.0 |
| 50° | 1611.7 |
| 52.5° | 1488.1 |
| 55° | 1366.7 |
| 57.5° | 1251.8 |
| 60° | 1137.0 |
| 62.5° | 1026.6 |
| 65° | 920.7 |
| 67.5° | 816.9 |
| 70° | 715.3 |
| 72.5° | 618.2 |
| 75° | 518.8 |
| 77.5° | 423.9 |
| 80° | 326.8 |
| 82.5° | 231.8 |
| 85° | 134.7 |
| 87.5° | 53.0 |
| 90° | 3.8 |
| 92.5° | 40.3 |
| 95° | 97.9 |
| 97.5° | 174.7 |
| 100° | 268.7 |
| 102.5° | 370.5 |
| 105° | 474.1 |
| 107.5° | 579.7 |
| 110° | 681.4 |



TEST NUMBER: P79047
CATALOG NUMBER: DFN2DIP-RG4F0-090D080US927-FLL-FLL-1DUDD-W

CANDELA DISTRIBUTION (continued):

| | 0° |
|--------|--------|
| 112.5° | 783.2 |
| 115° | 886.8 |
| 117.5° | 988.5 |
| 120° | 1086.4 |
| 122.5° | 1186.2 |
| 125° | 1291.8 |
| 127.5° | 1397.4 |
| 130° | 1503.0 |
| 132.5° | 1612.4 |
| 135° | 1723.7 |
| 137.5° | 1835.0 |
| 140° | 1946.4 |
| 142.5° | 2051.9 |
| 145° | 2153.7 |
| 147.5° | 2249.6 |
| 150° | 2343.7 |
| 152.5° | 2426.2 |
| 155° | 2508.8 |
| 157.5° | 2587.5 |
| 160° | 2658.5 |
| 162.5° | 2718.0 |
| 165° | 2769.8 |
| 167.5° | 2819.7 |
| 170° | 2854.3 |
| 172.5° | 2885.0 |
| 175° | 2902.3 |
| 177.5° | 2915.7 |
| 180° | 2917.6 |

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



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

Report Prepared for

Cooper Lighting Solutions

NEO-RAY

Report Number: SP1-2401-290-1

Test Date: 01/18/2024

Luminaire Tested: RNG2DIP-RG2F0-020D020US927-FLL-FLL-1-D-UDD-W

Data in this report applies to families of products including RNG2DIP-RG2F0-020D020US927-FLL-FLL-1-D-UDD-W.

Test Information

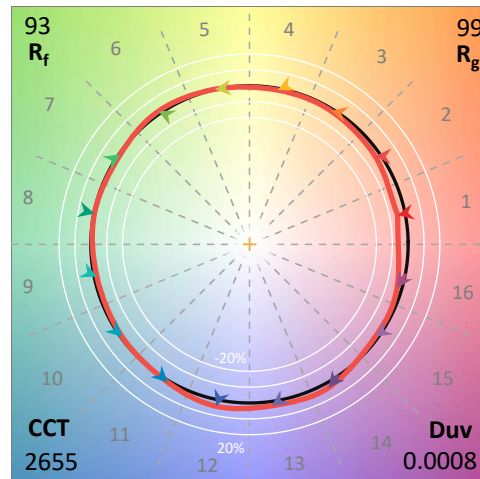
Test Method: LM-79-2019
 Report Number: SP1-2401-290-1
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 01/19/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: NEO-RAY
 Catalog Number: **RNG2DIP-RG2F0-020D020US927-FLL-FLL-1-D-UDD-W**
 Description: 2' RING DIRECT/INDIRECT FIXTURE WITH FROSTED LIGHT LEVEL 1

Spectral Parameters

CCT (K): 2655
 CIE u': 0.2643
 CIE v': 0.5293
 Duv: 0.0008
 CIE x: 0.4648
 CIE y: 0.4137
 CIE z: 0.1215
 Peak Wavelength (nm): 625
 Dominant Wavelength (nm): 584
 Purity: 63.9

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 93.4 | | |
| R1: | 93.4 | R9: | 59.7 |
| R2: | 96.8 | R10: | 92.1 |
| R3: | 99.2 | R11: | 95.8 |
| R4: | 94.0 | R12: | 87.6 |
| R5: | 93.5 | R13: | 94.3 |
| R6: | 97.2 | R14: | 98.8 |
| R7: | 91.9 | | |
| R8: | 81.5 | | |

Rf: 93.2
 Rg: 98.9



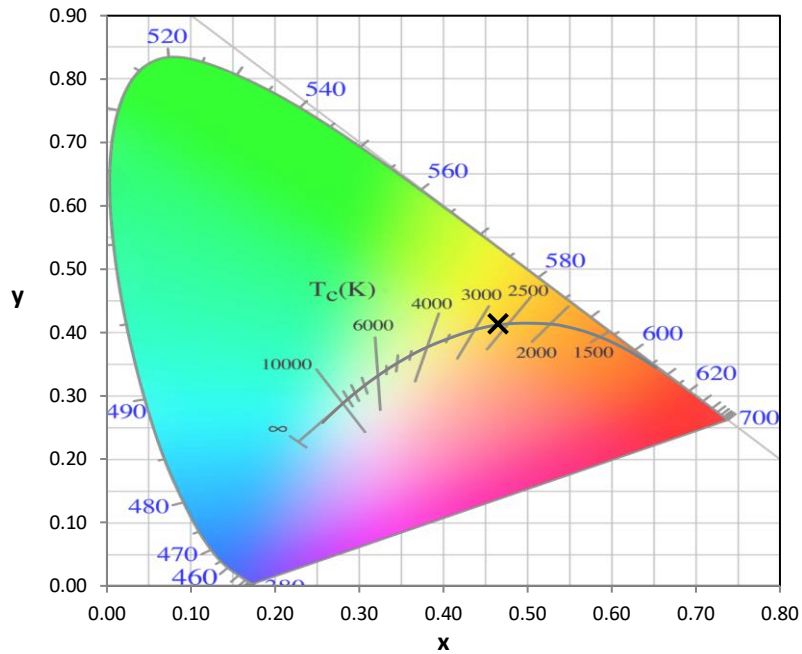
Test Conditions
 Stabilization Time: 23M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.6/15%
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2401-290-1

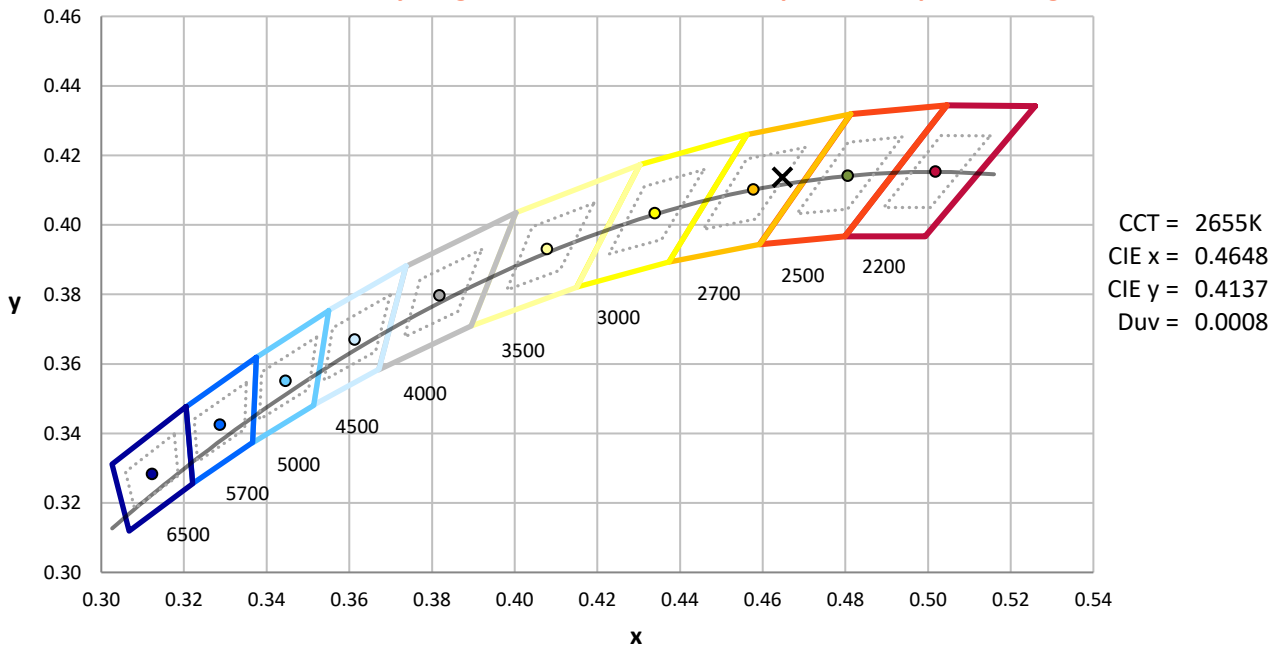
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 8/9/2023 | 2/9/2024 |
| Power Meter | XITRON 2801 IN0071 | 10/23/2023 | 10/23/2024 |
| AC Power Source | CHROMA 61603 IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | AGILENT E3634A IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | ONSET IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | ONSET IN0046 | 10/24/2023 | 10/24/2024 |

REPORT NUMBER: SP1-2401-290-1

CIE 1931 Chromaticity Diagram



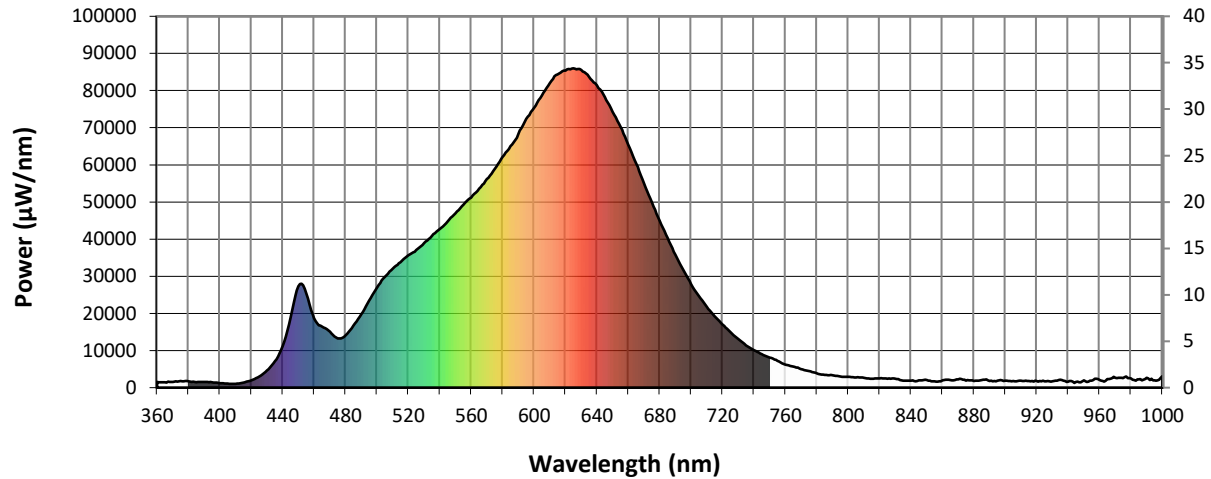
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2401-290-1

Photopic Flux vs. Wavelength

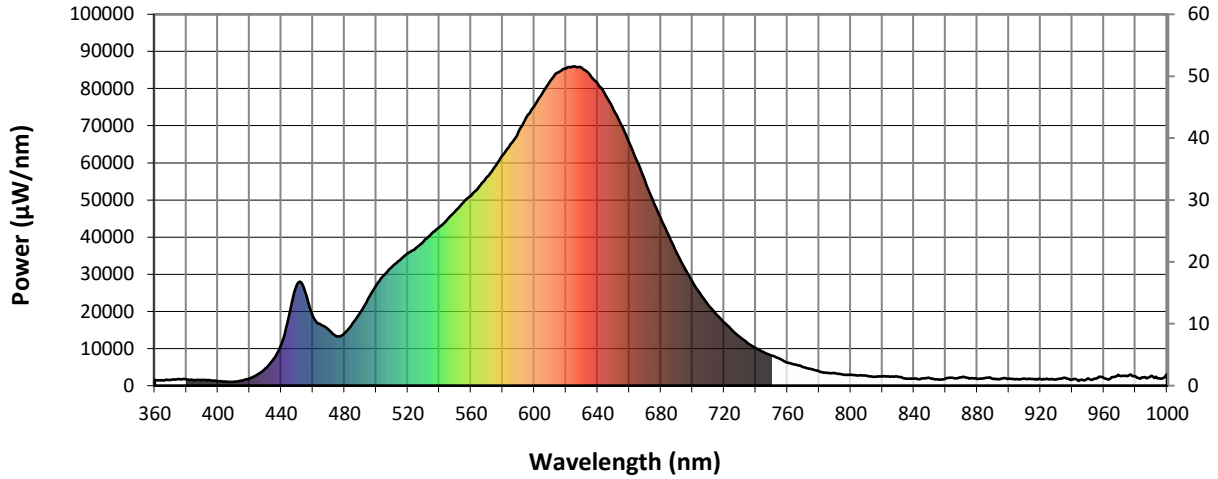


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| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 1543 | NR | 490 | 19797 | NR | 620 | 85353 | NR | 750 | 8090 | NR | 880 | 1792 | NR |
| 365 | 1414 | NR | 495 | 23402 | NR | 625 | 85989 | NR | 755 | 7198 | NR | 885 | 2020 | NR |
| 370 | 1551 | NR | 500 | 26949 | NR | 630 | 85515 | NR | 760 | 6225 | NR | 890 | 1828 | NR |
| 375 | 1796 | NR | 505 | 29825 | NR | 635 | 83747 | NR | 765 | 5688 | NR | 895 | 1860 | NR |
| 380 | 1726 | NR | 510 | 32000 | NR | 640 | 81402 | NR | 770 | 5021 | NR | 900 | 1911 | NR |
| 385 | 1466 | NR | 515 | 33805 | NR | 645 | 78259 | NR | 775 | 4504 | NR | 905 | 1780 | NR |
| 390 | 1558 | NR | 520 | 35652 | NR | 650 | 74273 | NR | 780 | 3834 | NR | 910 | 1898 | NR |
| 395 | 1442 | NR | 525 | 37021 | NR | 655 | 70182 | NR | 785 | 3465 | NR | 915 | 1803 | NR |
| 400 | 1203 | NR | 530 | 38939 | NR | 660 | 65368 | NR | 790 | 3329 | NR | 920 | 1835 | NR |
| 405 | 1067 | NR | 535 | 40941 | NR | 665 | 60328 | NR | 795 | 2970 | NR | 925 | 1737 | NR |
| 410 | 1017 | NR | 540 | 42696 | NR | 670 | 55011 | NR | 800 | 2874 | NR | 930 | 1738 | NR |
| 415 | 1324 | NR | 545 | 44809 | NR | 675 | 49838 | NR | 805 | 2736 | NR | 935 | 2125 | NR |
| 420 | 1972 | NR | 550 | 46959 | NR | 680 | 44927 | NR | 810 | 2648 | NR | 940 | 1637 | NR |
| 425 | 3033 | NR | 555 | 49260 | NR | 685 | 40277 | NR | 815 | 2400 | NR | 945 | 1569 | NR |
| 430 | 4609 | NR | 560 | 51165 | NR | 690 | 35795 | NR | 820 | 2470 | NR | 950 | 1938 | NR |
| 435 | 7105 | NR | 565 | 53562 | NR | 695 | 31683 | NR | 825 | 2425 | NR | 955 | 1864 | NR |
| 440 | 11197 | NR | 570 | 56177 | NR | 700 | 27880 | NR | 830 | 2392 | NR | 960 | 2093 | NR |
| 445 | 18973 | NR | 575 | 58898 | NR | 705 | 24664 | NR | 835 | 1867 | NR | 965 | 2277 | NR |
| 450 | 27311 | NR | 580 | 62115 | NR | 710 | 21670 | NR | 840 | 1912 | NR | 970 | 2629 | NR |
| 455 | 25348 | NR | 585 | 65028 | NR | 715 | 19241 | NR | 845 | 1927 | NR | 975 | 2541 | NR |
| 460 | 18677 | NR | 590 | 68395 | NR | 720 | 16927 | NR | 850 | 2066 | NR | 980 | 2508 | NR |
| 465 | 16400 | NR | 595 | 72374 | NR | 725 | 14936 | NR | 855 | 1671 | NR | 985 | 2238 | NR |
| 470 | 15032 | NR | 600 | 75401 | NR | 730 | 13104 | NR | 860 | 1946 | NR | 990 | 2619 | NR |
| 475 | 13281 | NR | 605 | 78653 | NR | 735 | 11394 | NR | 865 | 2045 | NR | 995 | 1965 | NR |
| 480 | 14079 | NR | 610 | 81994 | NR | 740 | 10108 | NR | 870 | 2206 | NR | 1000 | 3108 | NR |
| 485 | 16672 | NR | 615 | 84326 | NR | 745 | 9008 | NR | 875 | 1893 | NR | | | |

REPORT NUMBER: SP1-2401-290-1

Scotopic Flux vs. Wavelength



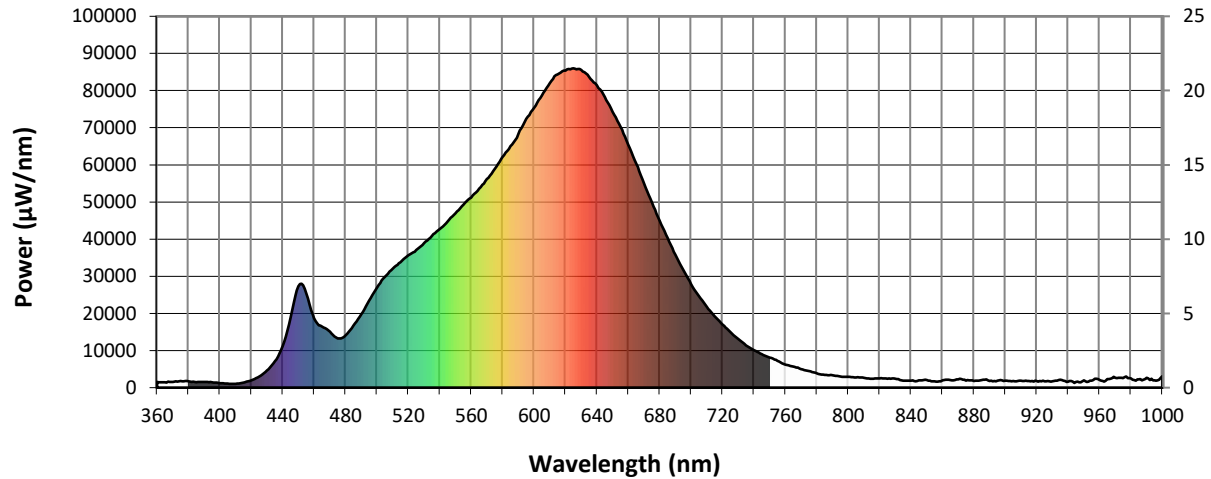
Scotopic Lumens: 4864.8

S/P: 1.26

| 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 | 1543 | NR | 490 | 19797 | NR | 620 | 85353 | NR | 750 | 8090 | NR | 880 | 1792 | NR |
| 365 | 1414 | NR | 495 | 23402 | NR | 625 | 85989 | NR | 755 | 7198 | NR | 885 | 2020 | NR |
| 370 | 1551 | NR | 500 | 26949 | NR | 630 | 85515 | NR | 760 | 6225 | NR | 890 | 1828 | NR |
| 375 | 1796 | NR | 505 | 29825 | NR | 635 | 83747 | NR | 765 | 5688 | NR | 895 | 1860 | NR |
| 380 | 1726 | NR | 510 | 32000 | NR | 640 | 81402 | NR | 770 | 5021 | NR | 900 | 1911 | NR |
| 385 | 1466 | NR | 515 | 33805 | NR | 645 | 78259 | NR | 775 | 4504 | NR | 905 | 1780 | NR |
| 390 | 1558 | NR | 520 | 35652 | NR | 650 | 74273 | NR | 780 | 3834 | NR | 910 | 1898 | NR |
| 395 | 1442 | NR | 525 | 37021 | NR | 655 | 70182 | NR | 785 | 3465 | NR | 915 | 1803 | NR |
| 400 | 1203 | NR | 530 | 38939 | NR | 660 | 65368 | NR | 790 | 3329 | NR | 920 | 1835 | NR |
| 405 | 1067 | NR | 535 | 40941 | NR | 665 | 60328 | NR | 795 | 2970 | NR | 925 | 1737 | NR |
| 410 | 1017 | NR | 540 | 42696 | NR | 670 | 55011 | NR | 800 | 2874 | NR | 930 | 1738 | NR |
| 415 | 1324 | NR | 545 | 44809 | NR | 675 | 49838 | NR | 805 | 2736 | NR | 935 | 2125 | NR |
| 420 | 1972 | NR | 550 | 46959 | NR | 680 | 44927 | NR | 810 | 2648 | NR | 940 | 1637 | NR |
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| 480 | 14079 | NR | 610 | 81994 | NR | 740 | 10108 | NR | 870 | 2206 | NR | 1000 | 3108 | NR |
| 485 | 16672 | NR | 615 | 84326 | NR | 745 | 9008 | NR | 875 | 1893 | NR | | | |

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 1804.6 M/P: 0.47

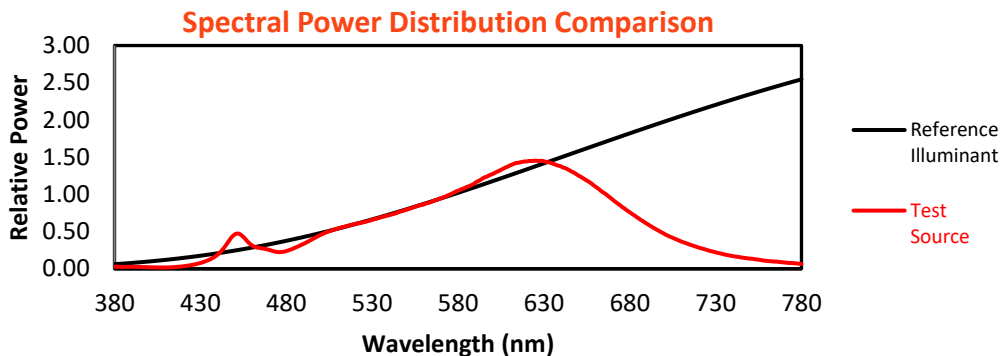
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 1543 | NR | 490 | 19797 | NR | 620 | 85353 | NR | 750 | 8090 | NR | 880 | 1792 | NR |
| 365 | 1414 | NR | 495 | 23402 | NR | 625 | 85989 | NR | 755 | 7198 | NR | 885 | 2020 | NR |
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| 375 | 1796 | NR | 505 | 29825 | NR | 635 | 83747 | NR | 765 | 5688 | NR | 895 | 1860 | NR |
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| 390 | 1558 | NR | 520 | 35652 | NR | 650 | 74273 | NR | 780 | 3834 | NR | 910 | 1898 | NR |
| 395 | 1442 | NR | 525 | 37021 | NR | 655 | 70182 | NR | 785 | 3465 | NR | 915 | 1803 | NR |
| 400 | 1203 | NR | 530 | 38939 | NR | 660 | 65368 | NR | 790 | 3329 | NR | 920 | 1835 | NR |
| 405 | 1067 | NR | 535 | 40941 | NR | 665 | 60328 | NR | 795 | 2970 | NR | 925 | 1737 | NR |
| 410 | 1017 | NR | 540 | 42696 | NR | 670 | 55011 | NR | 800 | 2874 | NR | 930 | 1738 | NR |
| 415 | 1324 | NR | 545 | 44809 | NR | 675 | 49838 | NR | 805 | 2736 | NR | 935 | 2125 | NR |
| 420 | 1972 | NR | 550 | 46959 | NR | 680 | 44927 | NR | 810 | 2648 | NR | 940 | 1637 | NR |
| 425 | 3033 | NR | 555 | 49260 | NR | 685 | 40277 | NR | 815 | 2400 | NR | 945 | 1569 | NR |
| 430 | 4609 | NR | 560 | 51165 | NR | 690 | 35795 | NR | 820 | 2470 | NR | 950 | 1938 | NR |
| 435 | 7105 | NR | 565 | 53562 | NR | 695 | 31683 | NR | 825 | 2425 | NR | 955 | 1864 | NR |
| 440 | 11197 | NR | 570 | 56177 | NR | 700 | 27880 | NR | 830 | 2392 | NR | 960 | 2093 | NR |
| 445 | 18973 | NR | 575 | 58898 | NR | 705 | 24664 | NR | 835 | 1867 | NR | 965 | 2277 | NR |
| 450 | 27311 | NR | 580 | 62115 | NR | 710 | 21670 | NR | 840 | 1912 | NR | 970 | 2629 | NR |
| 455 | 25348 | NR | 585 | 65028 | NR | 715 | 19241 | NR | 845 | 1927 | NR | 975 | 2541 | NR |
| 460 | 18677 | NR | 590 | 68395 | NR | 720 | 16927 | NR | 850 | 2066 | NR | 980 | 2508 | NR |
| 465 | 16400 | NR | 595 | 72374 | NR | 725 | 14936 | NR | 855 | 1671 | NR | 985 | 2238 | NR |
| 470 | 15032 | NR | 600 | 75401 | NR | 730 | 13104 | NR | 860 | 1946 | NR | 990 | 2619 | NR |
| 475 | 13281 | NR | 605 | 78653 | NR | 735 | 11394 | NR | 865 | 2045 | NR | 995 | 1965 | NR |
| 480 | 14079 | NR | 610 | 81994 | NR | 740 | 10108 | NR | 870 | 2206 | NR | 1000 | 3108 | NR |
| 485 | 16672 | NR | 615 | 84326 | NR | 745 | 9008 | NR | 875 | 1893 | NR | | | |

REPORT NUMBER: SP1-2401-290-1

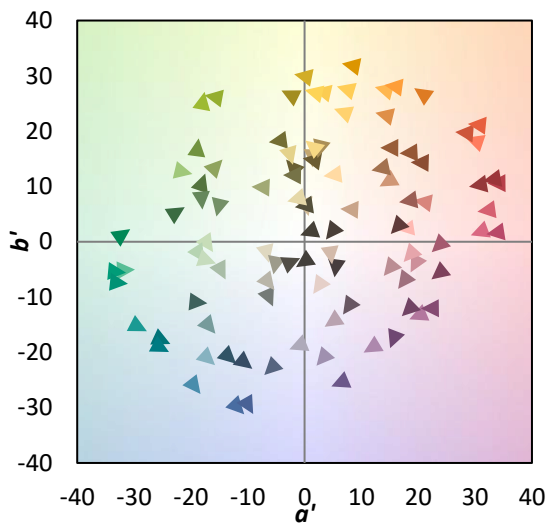
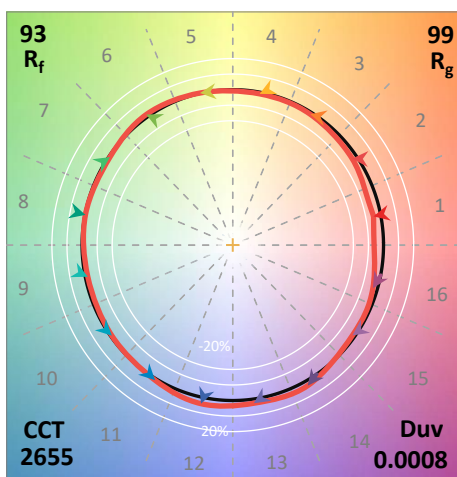
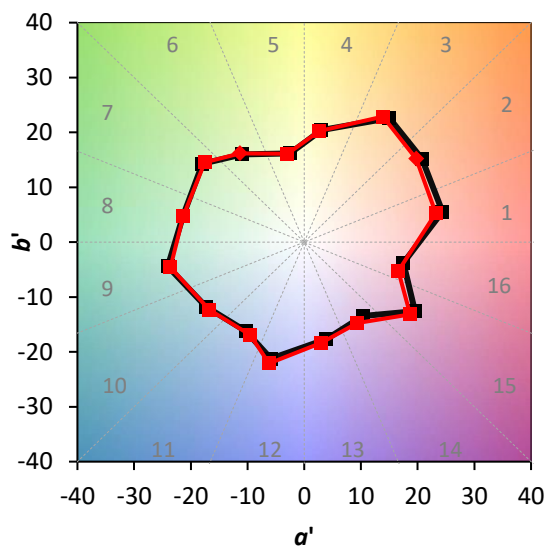
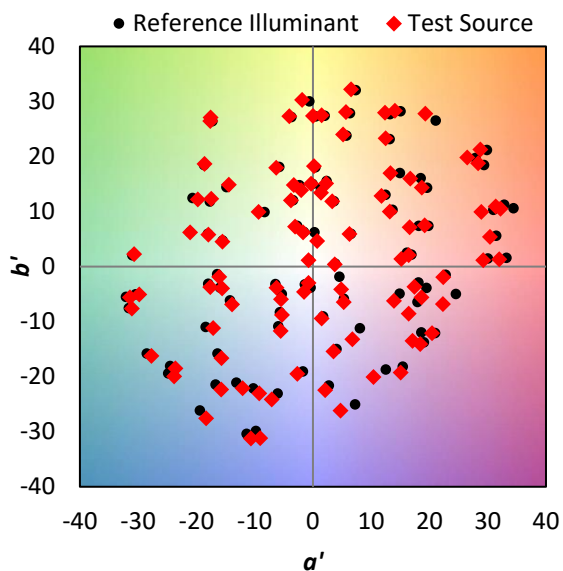
TM-30-18

Summary

$R_f = 93.2$
 $R_g = 98.9$
 CIE $R_a = 93.4$
 $R_9 = 59.7$



Color Vector Graphics

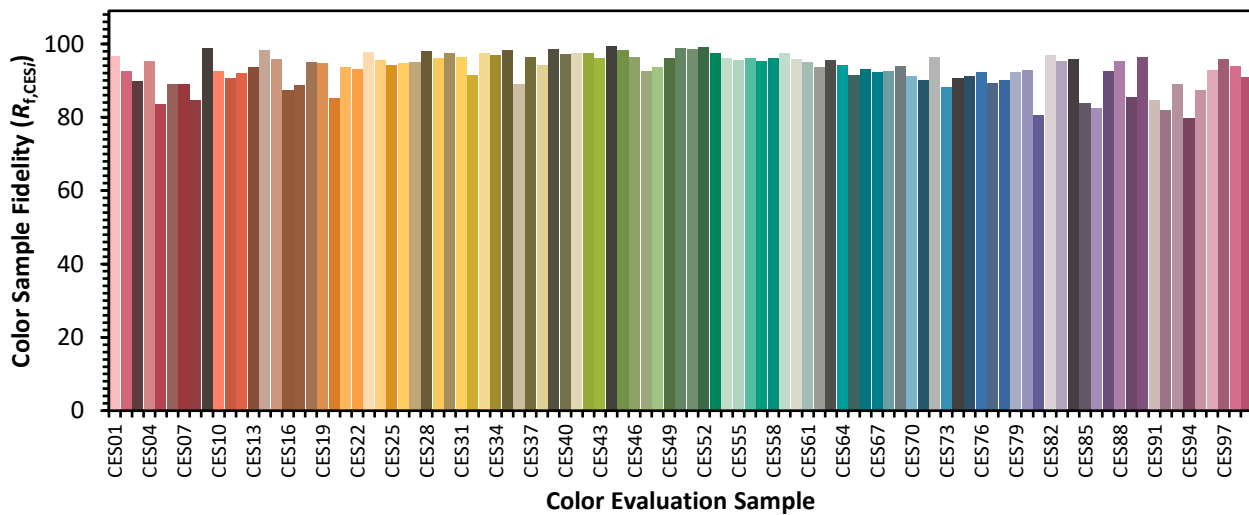


REPORT NUMBER: SP1-2401-290-1

TM-30-18

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

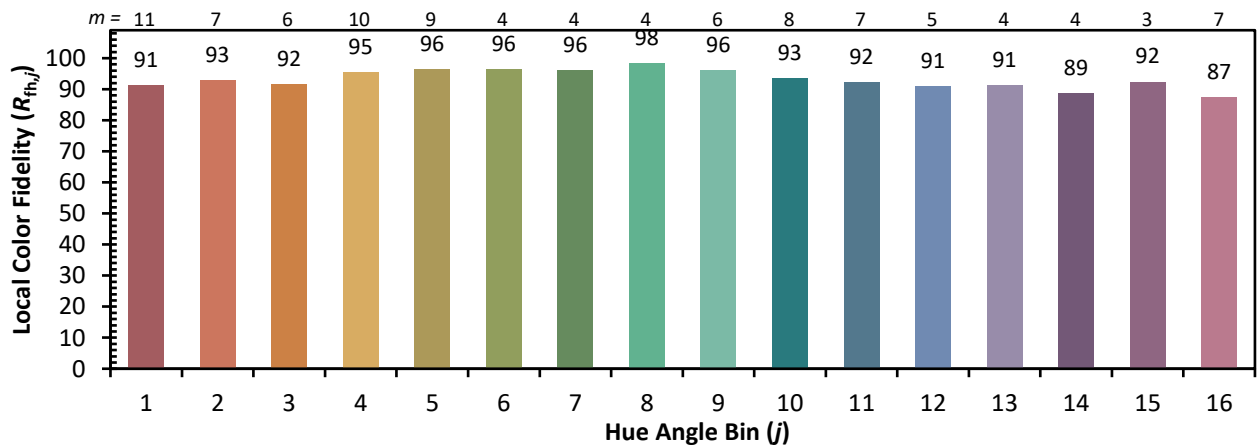
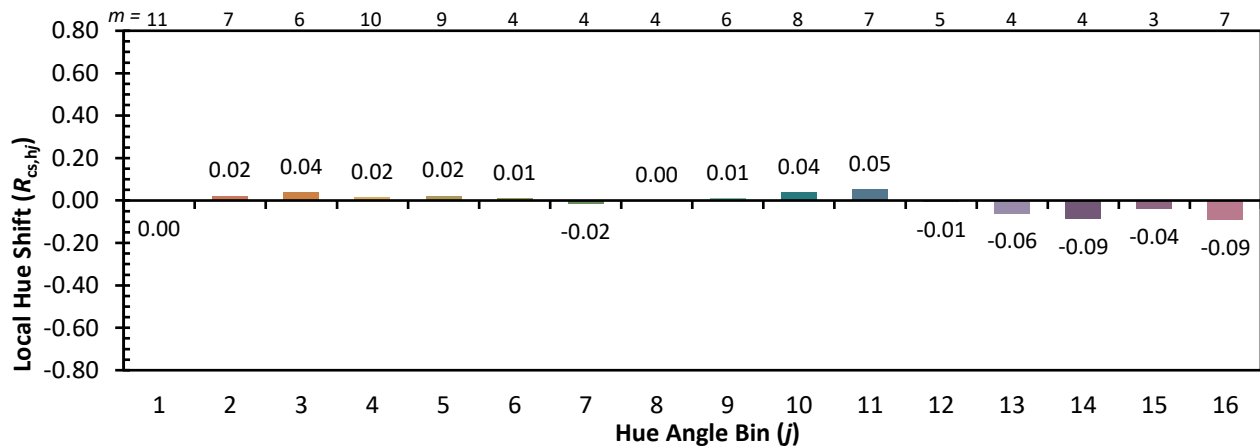
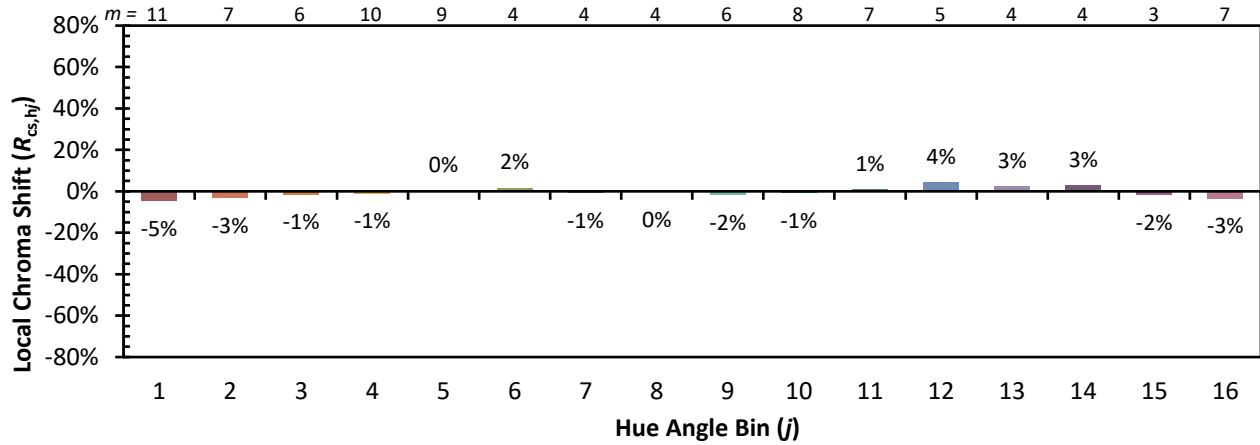
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 95 | CES51 = 98 | CES76 = 92 |
| CES02 = 64 | CES27 = 95 | CES52 = 99 | CES77 = 89 |
| CES03 = 32 | CES28 = 98 | CES53 = 97 | CES78 = 90 |
| CES04 = 71 | CES29 = 96 | CES54 = 96 | CES79 = 92 |
| CES05 = 52 | CES30 = 97 | CES55 = 95 | CES80 = 93 |
| CES06 = 52 | CES31 = 96 | CES56 = 96 | CES81 = 81 |
| CES07 = 44 | CES32 = 91 | CES57 = 95 | CES82 = 97 |
| CES08 = 43 | CES33 = 98 | CES58 = 96 | CES83 = 95 |
| CES09 = 29 | CES34 = 97 | CES59 = 97 | CES84 = 96 |
| CES10 = 77 | CES35 = 98 | CES60 = 96 | CES85 = 84 |
| CES11 = 60 | CES36 = 89 | CES61 = 95 | CES86 = 83 |
| CES12 = 66 | CES37 = 96 | CES62 = 94 | CES87 = 93 |
| CES13 = 44 | CES38 = 94 | CES63 = 95 | CES88 = 95 |
| CES14 = 74 | CES39 = 99 | CES64 = 94 | CES89 = 85 |
| CES15 = 72 | CES40 = 97 | CES65 = 91 | CES90 = 96 |
| CES16 = 49 | CES41 = 97 | CES66 = 93 | CES91 = 85 |
| CES17 = 50 | CES42 = 97 | CES67 = 92 | CES92 = 82 |
| CES18 = 57 | CES43 = 96 | CES68 = 93 | CES93 = 89 |
| CES19 = 72 | CES44 = 99 | CES69 = 94 | CES94 = 80 |
| CES20 = 68 | CES45 = 98 | CES70 = 91 | CES95 = 87 |
| CES21 = 87 | CES46 = 96 | CES71 = 90 | CES96 = 93 |
| CES22 = 79 | CES47 = 93 | CES72 = 96 | CES97 = 96 |
| CES23 = 92 | CES48 = 94 | CES73 = 88 | CES98 = 94 |
| CES24 = 91 | CES49 = 96 | CES74 = 91 | CES99 = 91 |
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REPORT NUMBER: SP1-2401-290-1

TM-30-18

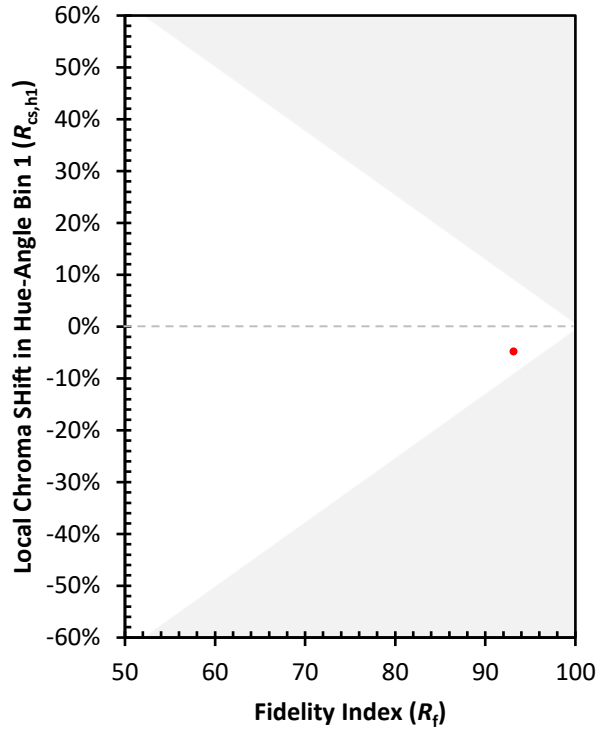
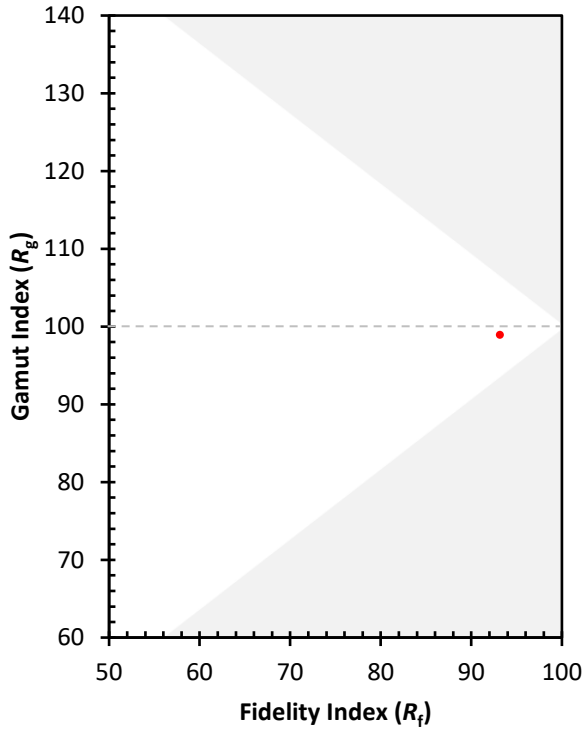
Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-2401-290-1

TM-30-18

Measure Comparisons



(END OF REPORT)