

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: P77888

Luminaire Tested: **DFN2DIP-RG2F0-040D020US940-FLL-FLL-1DUDD-W**

Issue Date: 02/20/2024



Test Information

Test Method: LM-79-08
Report Number: P77888
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2401-290-9&G3-2401-290-4)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: DFN2DIP-RG2F0-040D020US940-FLL-FLL-1DUDD-W
Description: Define Geo Ring 2ft Diameter Direct/Indirect Fixture w/ Frosted Lens
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

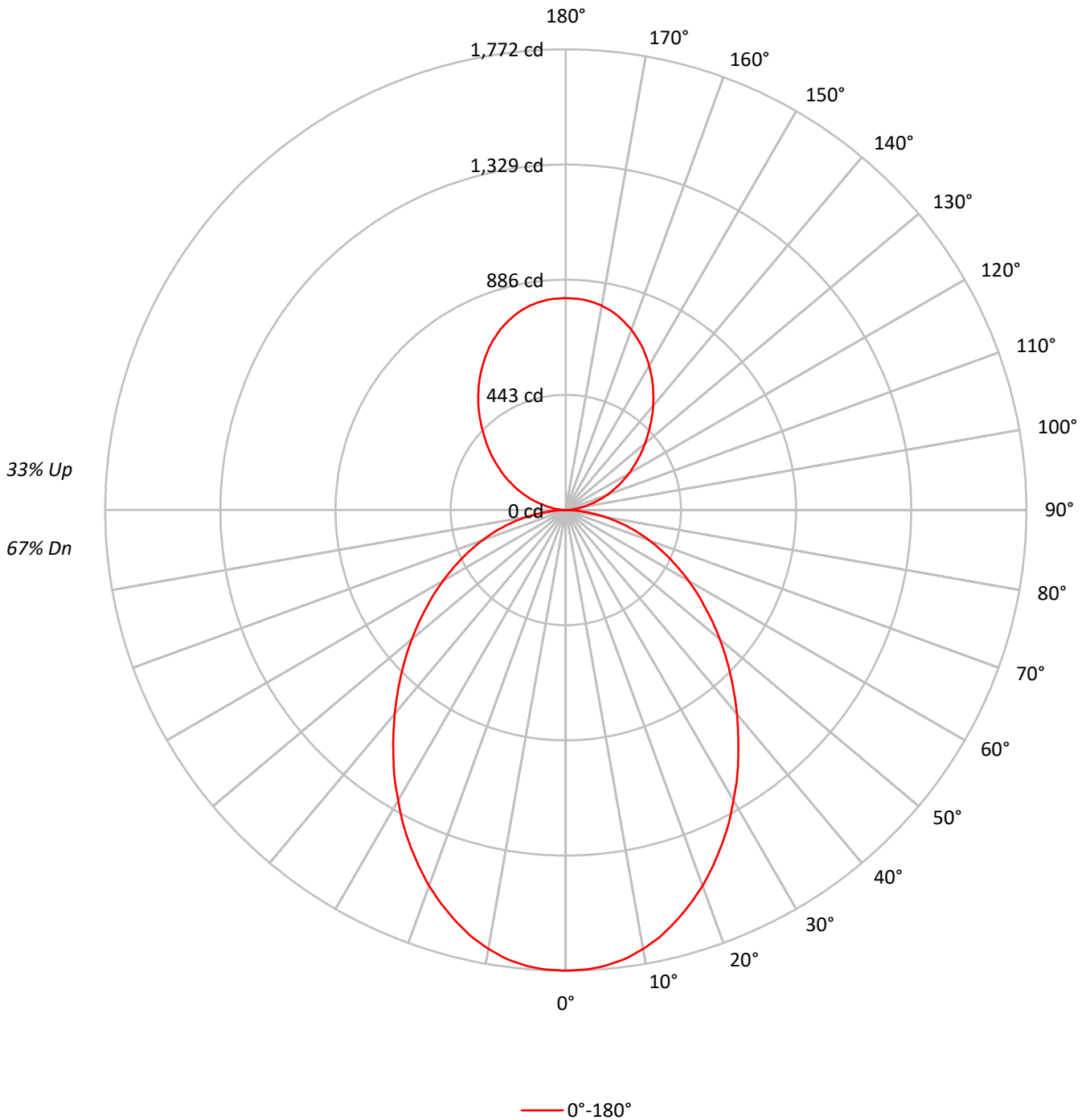
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6059.9 lumens
Efficiency: N/A
Efficacy: 81.2 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1.1 / 1.21
Luminous Opening: Circular (Dia: 2' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 74.6
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: P77888
CATALOG NUMBER: DFN2DIP-RG2F0-040D020US940-FLL-FLL-1DUDD-W

Luminous Intensity Polar Plot





TEST NUMBER: P77888

CATALOG NUMBER: DFN2DIP-RG2F0-040D020US940-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 | 111 | 111 | 111 | 111 | 105 | 105 | 105 | 105 | 93 | 93 | 93 | 82 | 82 | 82 | 72 | 72 | 72 | 67 | | | 67 |
| 1 | 102 | 97 | 93 | 90 | 96 | 92 | 88 | 85 | 82 | 79 | 77 | 72 | 70 | 68 | 64 | 62 | 61 | 57 | | | 57 |
| 2 | 93 | 85 | 79 | 74 | 87 | 81 | 75 | 70 | 72 | 67 | 64 | 64 | 60 | 57 | 56 | 54 | 51 | 48 | | | 48 |
| 3 | 85 | 75 | 68 | 62 | 80 | 71 | 64 | 59 | 63 | 58 | 54 | 56 | 52 | 49 | 50 | 47 | 44 | 41 | | | 41 |
| 4 | 78 | 67 | 59 | 53 | 73 | 63 | 56 | 50 | 57 | 51 | 46 | 51 | 46 | 42 | 45 | 41 | 38 | 35 | | | 35 |
| 5 | 72 | 60 | 51 | 45 | 67 | 57 | 49 | 44 | 51 | 45 | 40 | 46 | 41 | 37 | 41 | 37 | 33 | 31 | | | 31 |
| 6 | 66 | 54 | 46 | 40 | 62 | 51 | 44 | 38 | 46 | 40 | 35 | 41 | 36 | 32 | 37 | 33 | 30 | 27 | | | 27 |
| 7 | 61 | 49 | 41 | 35 | 58 | 46 | 39 | 34 | 42 | 36 | 31 | 38 | 33 | 29 | 34 | 30 | 27 | 24 | | | 24 |
| 8 | 57 | 44 | 37 | 31 | 54 | 42 | 35 | 30 | 38 | 32 | 28 | 35 | 30 | 26 | 31 | 27 | 24 | 22 | | | 22 |
| 9 | 53 | 41 | 33 | 28 | 50 | 39 | 32 | 27 | 35 | 29 | 25 | 32 | 27 | 23 | 29 | 25 | 22 | 20 | | | 20 |
| 10 | 50 | 38 | 30 | 25 | 47 | 36 | 29 | 25 | 33 | 27 | 23 | 30 | 25 | 21 | 27 | 23 | 20 | 18 | | | 18 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|------|
| | 0° |
| 0° | 6070 |
| 5° | 6052 |
| 10° | 5964 |
| 15° | 5807 |
| 20° | 5609 |
| 25° | 5366 |
| 30° | 5100 |
| 35° | 4838 |
| 40° | 4580 |
| 45° | 4340 |
| 50° | 4120 |
| 55° | 3909 |
| 60° | 3739 |
| 65° | 3574 |
| 70° | 3426 |
| 75° | 3271 |
| 80° | 3003 |
| 85° | 2331 |



TEST NUMBER: P77888
 CATALOG NUMBER: DFN2DIP-RG2F0-040D020US940-FLL-FLL-1DUDD-W

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 166.5 | 2.7 |
| 10°-20° | 460.4 | 7.6 |
| 20°-30° | 653.0 | 10.8 |
| 30°-40° | 723.6 | 11.9 |
| 40°-50° | 691.9 | 11.4 |
| 50°-60° | 587.6 | 9.7 |
| 60°-70° | 437.6 | 7.2 |
| 70°-80° | 260.7 | 4.3 |
| 80°-90° | 71.4 | 1.2 |
| 90°-100° | 30.6 | 0.5 |
| 100°-110° | 120.2 | 2.0 |
| 110°-120° | 220.9 | 3.6 |
| 120°-130° | 302.4 | 5.0 |
| 130°-140° | 354.6 | 5.9 |
| 140°-150° | 364.8 | 6.0 |
| 150°-160° | 318.9 | 5.3 |
| 160°-170° | 217.7 | 3.6 |
| 170°-180° | 77.0 | 1.3 |
| 0°-30° | 1280.0 | 21.1 |
| 0°-40° | 2003.6 | 33.1 |
| 0°-60° | 3283.1 | 54.2 |
| 0°-90° | 4052.7 | 66.9 |
| 90°-120° | 371.7 | 6.1 |
| 90°-150° | 1393.6 | 23.0 |
| 90°-180° | 2007.0 | 33.1 |
| 0°-180° | 6059.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|------|------|------|
| 0° | 1772 | |
| 5° | 1760 | 167 |
| 15° | 1637 | 460 |
| 25° | 1420 | 653 |
| 35° | 1157 | 724 |
| 45° | 896 | 692 |
| 55° | 654 | 588 |
| 65° | 441 | 438 |
| 75° | 247 | 261 |
| 85° | 59 | 68 |
| 90° | 1 | 5 |
| 95° | 26 | 29 |
| 105° | 113 | 120 |
| 115° | 223 | 221 |
| 125° | 338 | 302 |
| 135° | 459 | 355 |
| 145° | 584 | 365 |
| 155° | 694 | 319 |
| 165° | 773 | 218 |
| 175° | 812 | 77 |
| 180° | 815 | |



TEST NUMBER: P77888
CATALOG NUMBER: DFN2DIP-RG2F0-040D020US940-FLL-FLL-1DUDD-W

CANDELA DISTRIBUTION (FULL):

| 0° | |
|--------|--------|
| 0° | 1771.5 |
| 2.5° | 1769.5 |
| 5° | 1759.6 |
| 7.5° | 1741.8 |
| 10° | 1714.1 |
| 12.5° | 1680.5 |
| 15° | 1637.0 |
| 17.5° | 1589.6 |
| 20° | 1538.2 |
| 22.5° | 1480.8 |
| 25° | 1419.5 |
| 27.5° | 1358.2 |
| 30° | 1289.1 |
| 32.5° | 1225.8 |
| 35° | 1156.6 |
| 37.5° | 1089.4 |
| 40° | 1024.1 |
| 42.5° | 958.9 |
| 45° | 895.6 |
| 47.5° | 834.3 |
| 50° | 773.0 |
| 52.5° | 713.7 |
| 55° | 654.4 |
| 57.5° | 601.0 |
| 60° | 545.7 |
| 62.5° | 492.3 |
| 65° | 440.9 |
| 67.5° | 391.5 |
| 70° | 342.0 |
| 72.5° | 294.6 |
| 75° | 247.1 |
| 77.5° | 199.7 |
| 80° | 152.2 |
| 82.5° | 104.8 |
| 85° | 59.3 |
| 87.5° | 21.7 |
| 90° | 1.0 |
| 92.5° | 11.0 |
| 95° | 26.0 |
| 97.5° | 43.0 |
| 100° | 64.0 |
| 102.5° | 87.0 |
| 105° | 113.0 |
| 107.5° | 140.0 |
| 110° | 168.0 |



TEST NUMBER: P77888
CATALOG NUMBER: DFN2DIP-RG2F0-040D020US940-FLL-FLL-1DUDD-W

CANDELA DISTRIBUTION (continued):

| | 0° |
|--------|-------|
| 112.5° | 195.0 |
| 115° | 223.0 |
| 117.5° | 251.0 |
| 120° | 280.0 |
| 122.5° | 308.0 |
| 125° | 338.0 |
| 127.5° | 368.0 |
| 130° | 398.0 |
| 132.5° | 428.0 |
| 135° | 459.0 |
| 137.5° | 491.0 |
| 140° | 523.0 |
| 142.5° | 553.0 |
| 145° | 584.0 |
| 147.5° | 613.0 |
| 150° | 641.0 |
| 152.5° | 668.0 |
| 155° | 694.0 |
| 157.5° | 716.0 |
| 160° | 738.0 |
| 162.5° | 756.0 |
| 165° | 773.0 |
| 167.5° | 787.0 |
| 170° | 798.0 |
| 172.5° | 806.0 |
| 175° | 812.0 |
| 177.5° | 814.0 |
| 180° | 815.0 |

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: SP1-2401-290-4

Test Date: 01/19/2024

Luminaire Tested: RNG2DIP-RG2F0-020D020US940-FLL-FLL-1-D-UDD-W

Data in this report applies to families of products including RNG2DIP-RG2F0-020D020US940-FLL-FLL-1-D-UDD-W.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2401-290-4
 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-RG2F0-020D020US940-FLL-FLL-1-D-UDD-W**
 Description: 2' RING DIRECT/INDIRECT FIXTURE WITH FROSTED LIGHT LEVEL 1

Spectral Parameters

CCT (K): 3758
 CIE u': 0.2291
 CIE v': 0.5077
 Duv: 0.0012
 CIE x: 0.3927
 CIE y: 0.3866
 CIE z: 0.2207
 Peak Wavelength (nm): 622
 Dominant Wavelength (nm): 579
 Purity: 34

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 94.5 | | |
| R1: | 96.0 | R9: | 76.6 |
| R2: | 99.4 | R10: | 97.1 |
| R3: | 98.5 | R11: | 92.7 |
| R4: | 91.3 | R12: | 73.3 |
| R5: | 93.7 | R13: | 97.5 |
| R6: | 96.5 | R14: | 99.6 |
| R7: | 92.4 | | |
| R8: | 88.3 | | |

Rf: 89
 Rg: 95.5

Test Conditions

Stabilization Time: 24M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.6/27%
 Sphere Temperature (°C): 25.0



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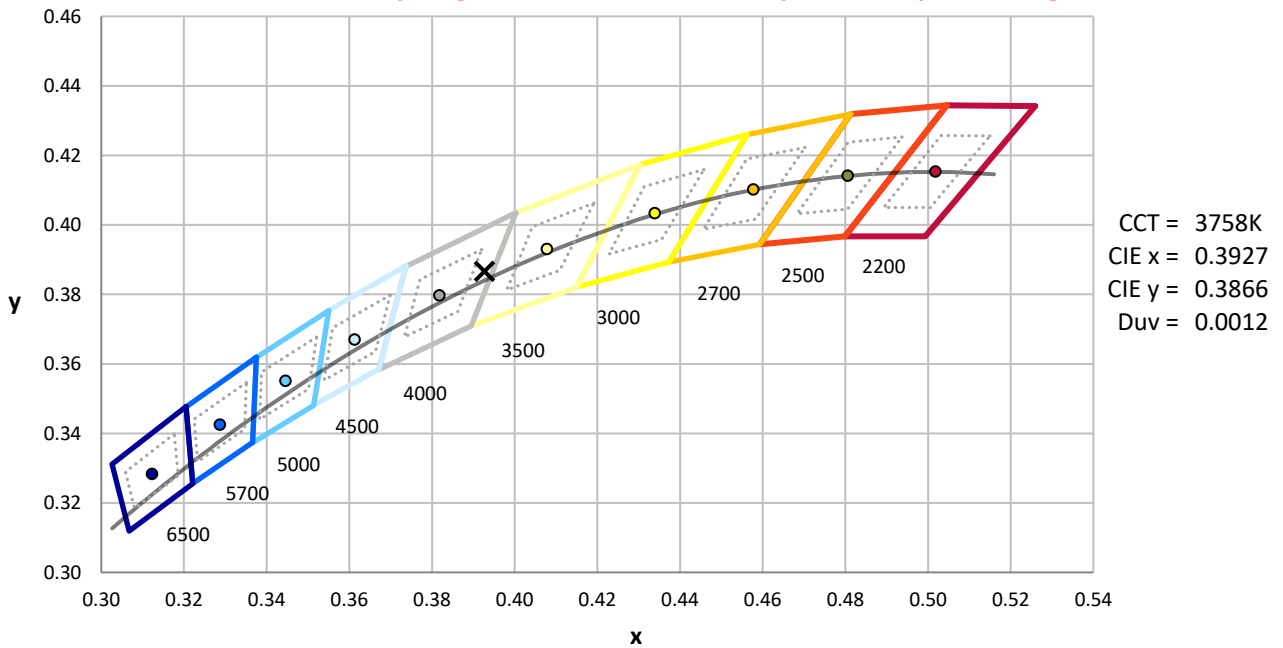
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 8/9/2023 | 2/9/2024 |
| Power Meter | XITRON 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 |

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2401-290-4

Photopic Flux vs. Wavelength



#####

| 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 | 1835 | NR | 490 | 33863 | NR | 620 | 68794 | NR | 750 | 6489 | NR | 880 | 1195 | NR |
| 365 | 1756 | NR | 495 | 36543 | NR | 625 | 68963 | NR | 755 | 5711 | NR | 885 | 1624 | NR |
| 370 | 1802 | NR | 500 | 39024 | NR | 630 | 68221 | NR | 760 | 5217 | NR | 890 | 1275 | NR |
| 375 | 1845 | NR | 505 | 41399 | NR | 635 | 66761 | NR | 765 | 4671 | NR | 895 | 1184 | NR |
| 380 | 1842 | NR | 510 | 43372 | NR | 640 | 65207 | NR | 770 | 4277 | NR | 900 | 1288 | NR |
| 385 | 1553 | NR | 515 | 45125 | NR | 645 | 62607 | NR | 775 | 3684 | NR | 905 | 1449 | NR |
| 390 | 1519 | NR | 520 | 46728 | NR | 650 | 59420 | NR | 780 | 3015 | NR | 910 | 1184 | NR |
| 395 | 1452 | NR | 525 | 48116 | NR | 655 | 56103 | NR | 785 | 2857 | NR | 915 | 1999 | NR |
| 400 | 1256 | NR | 530 | 49751 | NR | 660 | 52566 | NR | 790 | 2657 | NR | 920 | 1299 | NR |
| 405 | 1033 | NR | 535 | 51317 | NR | 665 | 48489 | NR | 795 | 2474 | NR | 925 | 1312 | NR |
| 410 | 1023 | NR | 540 | 52637 | NR | 670 | 44555 | NR | 800 | 2413 | NR | 930 | 1526 | NR |
| 415 | 1228 | NR | 545 | 54148 | NR | 675 | 40405 | NR | 805 | 2307 | NR | 935 | 1577 | NR |
| 420 | 1723 | NR | 550 | 55654 | NR | 680 | 36707 | NR | 810 | 1935 | NR | 940 | 1108 | NR |
| 425 | 2748 | NR | 555 | 56944 | NR | 685 | 32841 | NR | 815 | 1648 | NR | 945 | 1728 | NR |
| 430 | 4401 | NR | 560 | 57653 | NR | 690 | 29037 | NR | 820 | 1582 | NR | 950 | 1356 | NR |
| 435 | 7516 | NR | 565 | 58559 | NR | 695 | 25745 | NR | 825 | 1937 | NR | 955 | 564 | NR |
| 440 | 12984 | NR | 570 | 59300 | NR | 700 | 22850 | NR | 830 | 1558 | NR | 960 | 1914 | NR |
| 445 | 22972 | NR | 575 | 59941 | NR | 705 | 20102 | NR | 835 | 1584 | NR | 965 | 994 | NR |
| 450 | 42364 | NR | 580 | 60752 | NR | 710 | 17680 | NR | 840 | 1621 | NR | 970 | 757 | NR |
| 455 | 64528 | NR | 585 | 61417 | NR | 715 | 15746 | NR | 845 | 1333 | NR | 975 | 758 | NR |
| 460 | 65971 | NR | 590 | 62430 | NR | 720 | 13934 | NR | 850 | 1406 | NR | 980 | 1163 | NR |
| 465 | 51026 | NR | 595 | 63801 | NR | 725 | 12285 | NR | 855 | 1655 | NR | 985 | 952 | NR |
| 470 | 43331 | NR | 600 | 64806 | NR | 730 | 10834 | NR | 860 | 1737 | NR | 990 | 1604 | NR |
| 475 | 38626 | NR | 605 | 66352 | NR | 735 | 9292 | NR | 865 | 1841 | NR | 995 | 1145 | NR |
| 480 | 33315 | NR | 610 | 67770 | NR | 740 | 8312 | NR | 870 | 1490 | NR | 1000 | 0 | NR |
| 485 | 31961 | NR | 615 | 68560 | NR | 745 | 7359 | NR | 875 | 1559 | NR | | | |

REPORT NUMBER: SP1-2401-290-4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 7174.5

S/P: 1.77

| 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 | 1835 | NR | 490 | 33863 | NR | 620 | 68794 | NR | 750 | 6489 | NR | 880 | 1195 | NR |
| 365 | 1756 | NR | 495 | 36543 | NR | 625 | 68963 | NR | 755 | 5711 | NR | 885 | 1624 | NR |
| 370 | 1802 | NR | 500 | 39024 | NR | 630 | 68221 | NR | 760 | 5217 | NR | 890 | 1275 | NR |
| 375 | 1845 | NR | 505 | 41399 | NR | 635 | 66761 | NR | 765 | 4671 | NR | 895 | 1184 | NR |
| 380 | 1842 | NR | 510 | 43372 | NR | 640 | 65207 | NR | 770 | 4277 | NR | 900 | 1288 | NR |
| 385 | 1553 | NR | 515 | 45125 | NR | 645 | 62607 | NR | 775 | 3684 | NR | 905 | 1449 | NR |
| 390 | 1519 | NR | 520 | 46728 | NR | 650 | 59420 | NR | 780 | 3015 | NR | 910 | 1184 | NR |
| 395 | 1452 | NR | 525 | 48116 | NR | 655 | 56103 | NR | 785 | 2857 | NR | 915 | 1999 | NR |
| 400 | 1256 | NR | 530 | 49751 | NR | 660 | 52566 | NR | 790 | 2657 | NR | 920 | 1299 | NR |
| 405 | 1033 | NR | 535 | 51317 | NR | 665 | 48489 | NR | 795 | 2474 | NR | 925 | 1312 | NR |
| 410 | 1023 | NR | 540 | 52637 | NR | 670 | 44555 | NR | 800 | 2413 | NR | 930 | 1526 | NR |
| 415 | 1228 | NR | 545 | 54148 | NR | 675 | 40405 | NR | 805 | 2307 | NR | 935 | 1577 | NR |
| 420 | 1723 | NR | 550 | 55654 | NR | 680 | 36707 | NR | 810 | 1935 | NR | 940 | 1108 | NR |
| 425 | 2748 | NR | 555 | 56944 | NR | 685 | 32841 | NR | 815 | 1648 | NR | 945 | 1728 | NR |
| 430 | 4401 | NR | 560 | 57653 | NR | 690 | 29037 | NR | 820 | 1582 | NR | 950 | 1356 | NR |
| 435 | 7516 | NR | 565 | 58559 | NR | 695 | 25745 | NR | 825 | 1937 | NR | 955 | 564 | NR |
| 440 | 12984 | NR | 570 | 59300 | NR | 700 | 22850 | NR | 830 | 1558 | NR | 960 | 1914 | NR |
| 445 | 22972 | NR | 575 | 59941 | NR | 705 | 20102 | NR | 835 | 1584 | NR | 965 | 994 | NR |
| 450 | 42364 | NR | 580 | 60752 | NR | 710 | 17680 | NR | 840 | 1621 | NR | 970 | 757 | NR |
| 455 | 64528 | NR | 585 | 61417 | NR | 715 | 15746 | NR | 845 | 1333 | NR | 975 | 758 | NR |
| 460 | 65971 | NR | 590 | 62430 | NR | 720 | 13934 | NR | 850 | 1406 | NR | 980 | 1163 | NR |
| 465 | 51026 | NR | 595 | 63801 | NR | 725 | 12285 | NR | 855 | 1655 | NR | 985 | 952 | NR |
| 470 | 43331 | NR | 600 | 64806 | NR | 730 | 10834 | NR | 860 | 1737 | NR | 990 | 1604 | NR |
| 475 | 38626 | NR | 605 | 66352 | NR | 735 | 9292 | NR | 865 | 1841 | NR | 995 | 1145 | NR |
| 480 | 33315 | NR | 610 | 67770 | NR | 740 | 8312 | NR | 870 | 1490 | NR | 1000 | 0 | NR |
| 485 | 31961 | NR | 615 | 68560 | NR | 745 | 7359 | NR | 875 | 1559 | NR | | | |

REPORT NUMBER: SP1-2401-290-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 2971.3 M/P: 0.73

| 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 | 1835 | NR | 490 | 33863 | NR | 620 | 68794 | NR | 750 | 6489 | NR | 880 | 1195 | NR |
| 365 | 1756 | NR | 495 | 36543 | NR | 625 | 68963 | NR | 755 | 5711 | NR | 885 | 1624 | NR |
| 370 | 1802 | NR | 500 | 39024 | NR | 630 | 68221 | NR | 760 | 5217 | NR | 890 | 1275 | NR |
| 375 | 1845 | NR | 505 | 41399 | NR | 635 | 66761 | NR | 765 | 4671 | NR | 895 | 1184 | NR |
| 380 | 1842 | NR | 510 | 43372 | NR | 640 | 65207 | NR | 770 | 4277 | NR | 900 | 1288 | NR |
| 385 | 1553 | NR | 515 | 45125 | NR | 645 | 62607 | NR | 775 | 3684 | NR | 905 | 1449 | NR |
| 390 | 1519 | NR | 520 | 46728 | NR | 650 | 59420 | NR | 780 | 3015 | NR | 910 | 1184 | NR |
| 395 | 1452 | NR | 525 | 48116 | NR | 655 | 56103 | NR | 785 | 2857 | NR | 915 | 1999 | NR |
| 400 | 1256 | NR | 530 | 49751 | NR | 660 | 52566 | NR | 790 | 2657 | NR | 920 | 1299 | NR |
| 405 | 1033 | NR | 535 | 51317 | NR | 665 | 48489 | NR | 795 | 2474 | NR | 925 | 1312 | NR |
| 410 | 1023 | NR | 540 | 52637 | NR | 670 | 44555 | NR | 800 | 2413 | NR | 930 | 1526 | NR |
| 415 | 1228 | NR | 545 | 54148 | NR | 675 | 40405 | NR | 805 | 2307 | NR | 935 | 1577 | NR |
| 420 | 1723 | NR | 550 | 55654 | NR | 680 | 36707 | NR | 810 | 1935 | NR | 940 | 1108 | NR |
| 425 | 2748 | NR | 555 | 56944 | NR | 685 | 32841 | NR | 815 | 1648 | NR | 945 | 1728 | NR |
| 430 | 4401 | NR | 560 | 57653 | NR | 690 | 29037 | NR | 820 | 1582 | NR | 950 | 1356 | NR |
| 435 | 7516 | NR | 565 | 58559 | NR | 695 | 25745 | NR | 825 | 1937 | NR | 955 | 564 | NR |
| 440 | 12984 | NR | 570 | 59300 | NR | 700 | 22850 | NR | 830 | 1558 | NR | 960 | 1914 | NR |
| 445 | 22972 | NR | 575 | 59941 | NR | 705 | 20102 | NR | 835 | 1584 | NR | 965 | 994 | NR |
| 450 | 42364 | NR | 580 | 60752 | NR | 710 | 17680 | NR | 840 | 1621 | NR | 970 | 757 | NR |
| 455 | 64528 | NR | 585 | 61417 | NR | 715 | 15746 | NR | 845 | 1333 | NR | 975 | 758 | NR |
| 460 | 65971 | NR | 590 | 62430 | NR | 720 | 13934 | NR | 850 | 1406 | NR | 980 | 1163 | NR |
| 465 | 51026 | NR | 595 | 63801 | NR | 725 | 12285 | NR | 855 | 1655 | NR | 985 | 952 | NR |
| 470 | 43331 | NR | 600 | 64806 | NR | 730 | 10834 | NR | 860 | 1737 | NR | 990 | 1604 | NR |
| 475 | 38626 | NR | 605 | 66352 | NR | 735 | 9292 | NR | 865 | 1841 | NR | 995 | 1145 | NR |
| 480 | 33315 | NR | 610 | 67770 | NR | 740 | 8312 | NR | 870 | 1490 | NR | 1000 | 0 | NR |
| 485 | 31961 | NR | 615 | 68560 | NR | 745 | 7359 | NR | 875 | 1559 | NR | | | |

REPORT NUMBER: SP1-2401-290-4

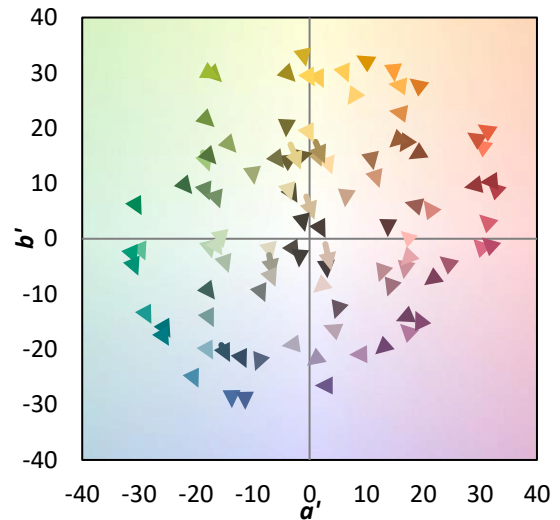
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Summary

$R_f = 89$
 $R_g = 95.5$
 CIE $R_a = 94.5$
 $R_9 = 76.6$



Color Vector Graphics



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

| | | | |
|------------|-------------|------------|------------|
| CES01 = 86 | CES26 = 95 | CES51 = 89 | CES76 = 94 |
| CES02 = 62 | CES27 = 84 | CES52 = 94 | CES77 = 90 |
| CES03 = 31 | CES28 = 100 | CES53 = 89 | CES78 = 91 |
| CES04 = 69 | CES29 = 83 | CES54 = 85 | CES79 = 94 |
| CES05 = 49 | CES30 = 71 | CES55 = 82 | CES80 = 93 |
| CES06 = 51 | CES31 = 85 | CES56 = 84 | CES81 = 84 |
| CES07 = 42 | CES32 = 93 | CES57 = 81 | CES82 = 97 |
| CES08 = 41 | CES33 = 82 | CES58 = 82 | CES83 = 93 |
| CES09 = 29 | CES34 = 97 | CES59 = 95 | CES84 = 94 |
| CES10 = 74 | CES35 = 99 | CES60 = 87 | CES85 = 82 |
| CES11 = 57 | CES36 = 70 | CES61 = 89 | CES86 = 87 |
| CES12 = 63 | CES37 = 97 | CES62 = 72 | CES87 = 93 |
| CES13 = 43 | CES38 = 67 | CES63 = 86 | CES88 = 92 |
| CES14 = 74 | CES39 = 95 | CES64 = 82 | CES89 = 89 |
| CES15 = 71 | CES40 = 94 | CES65 = 86 | CES90 = 87 |
| CES16 = 47 | CES41 = 87 | CES66 = 80 | CES91 = 67 |
| CES17 = 49 | CES42 = 96 | CES67 = 80 | CES92 = 81 |
| CES18 = 56 | CES43 = 93 | CES68 = 86 | CES93 = 87 |
| CES19 = 71 | CES44 = 99 | CES69 = 87 | CES94 = 86 |
| CES20 = 66 | CES45 = 93 | CES70 = 87 | CES95 = 84 |
| CES21 = 85 | CES46 = 90 | CES71 = 77 | CES96 = 95 |
| CES22 = 78 | CES47 = 84 | CES72 = 93 | CES97 = 94 |
| CES23 = 91 | CES48 = 76 | CES73 = 85 | CES98 = 91 |
| CES24 = 90 | CES49 = 92 | CES74 = 87 | CES99 = 90 |
| CES25 = 71 | CES50 = 90 | CES75 = 82 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)