

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: P78972

Luminaire Tested: **DFN2DIP-RG4F0-090D060US940-FLL-OOB-1DUDD-W**

Issue Date: 02/20/2024

Test Information

Test Method: LM-79-08
 Report Number: P78972
 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-RG4F0-090D060US940-FLL-OOB-1DUDD-W
 Description: Define Geo Ring 4ft Diameter Direct/Indirect Fixture w/ Frosted Lens
 for Downlight and Bat-Wing Lens for UPLIGHT
 Light Source: 4000K CCT, 90 CRI LEDS
 Ballast/Driver: ELECTRONIC DRIVER

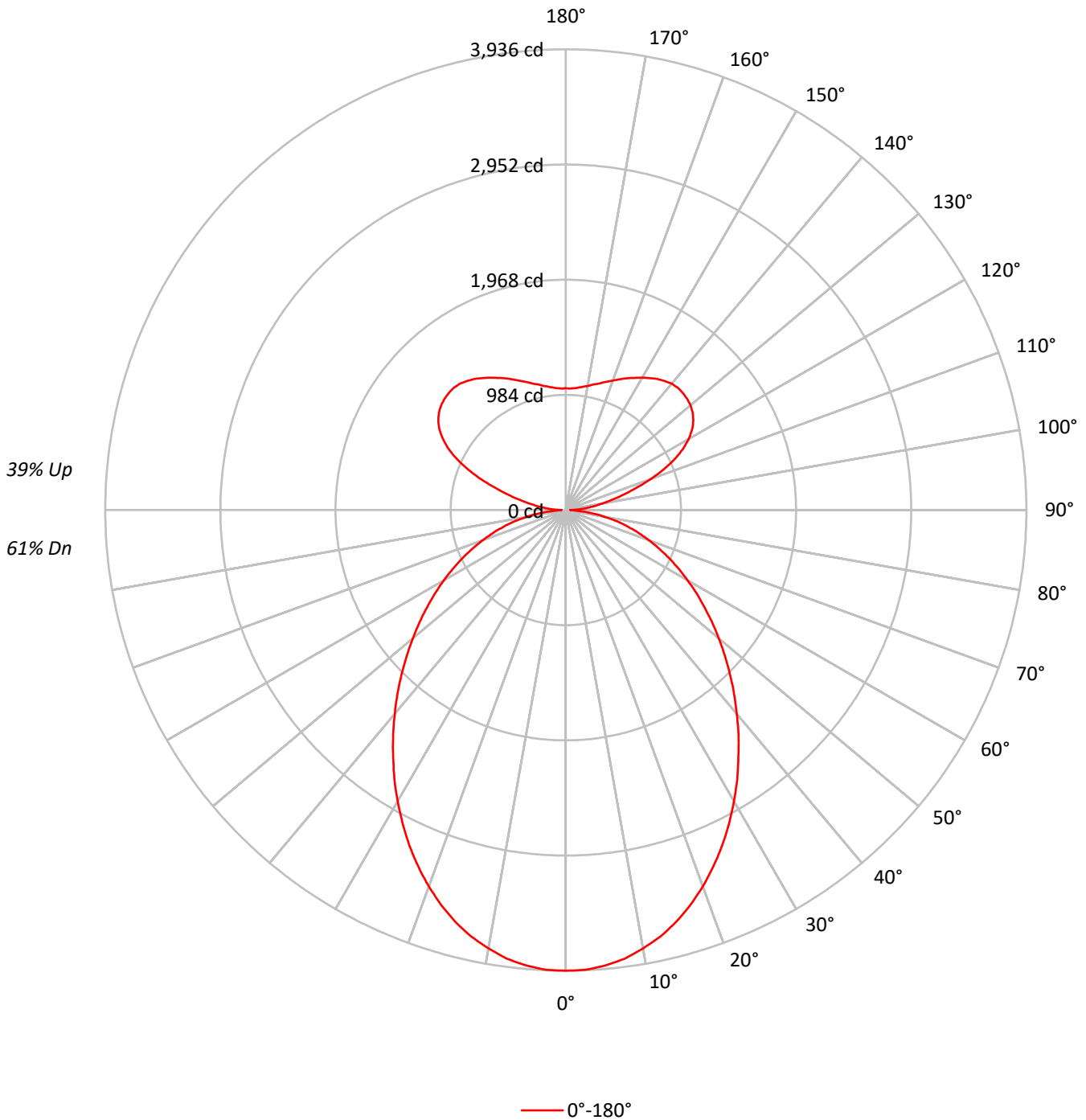
Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 14866.5 lumens
 Efficiency: N/A
 Efficacy: 73.8 lumens/watt
 Spacing Criteria (0/90/45): 1.11 / 1.11 / 1.21
 Luminous Opening: Circular (Dia: 4' x H: 0')
 CIE Type: Semi-Direct

Input Watts (W): 201.5
 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: P78972
CATALOG NUMBER: DFN2DIP-RG4F0-090D060US940-FLL-OOB-1DUDD-W

Luminous Intensity Polar Plot





TEST NUMBER: P78972

CATALOG NUMBER: DFN2DIP-RG4F0-090D060US940-FLL-OOB-1DUDD-W

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RF | 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 | 110 | 110 | 110 | 110 | 103 | 103 | 103 | 103 | 89 | 89 | 89 | 77 | 77 | 77 | 66 | 66 | 66 | 66 | 66 | 66 | 61 |
| 1 | 100 | 96 | 92 | 88 | 94 | 90 | 86 | 83 | 78 | 76 | 74 | 68 | 66 | 64 | 58 | 57 | 56 | 56 | 56 | 56 | 51 |
| 2 | 91 | 84 | 78 | 72 | 85 | 79 | 73 | 69 | 69 | 65 | 61 | 60 | 57 | 54 | 52 | 49 | 47 | 47 | 47 | 47 | 43 |
| 3 | 84 | 74 | 67 | 61 | 78 | 69 | 63 | 58 | 61 | 56 | 52 | 53 | 49 | 46 | 46 | 43 | 40 | 40 | 40 | 40 | 37 |
| 4 | 77 | 66 | 58 | 52 | 71 | 62 | 55 | 49 | 54 | 49 | 44 | 48 | 43 | 40 | 41 | 38 | 35 | 35 | 35 | 35 | 32 |
| 5 | 70 | 59 | 51 | 44 | 66 | 55 | 48 | 42 | 49 | 43 | 38 | 43 | 38 | 35 | 37 | 34 | 31 | 31 | 31 | 31 | 28 |
| 6 | 65 | 53 | 45 | 39 | 61 | 50 | 42 | 37 | 44 | 38 | 34 | 39 | 34 | 30 | 34 | 30 | 27 | 27 | 27 | 27 | 25 |
| 7 | 60 | 48 | 40 | 34 | 56 | 45 | 38 | 33 | 40 | 34 | 30 | 35 | 31 | 27 | 31 | 27 | 24 | 24 | 24 | 24 | 22 |
| 8 | 56 | 44 | 36 | 30 | 52 | 41 | 34 | 29 | 37 | 31 | 27 | 33 | 28 | 24 | 29 | 25 | 22 | 22 | 22 | 22 | 20 |
| 9 | 52 | 40 | 32 | 27 | 49 | 38 | 31 | 26 | 34 | 28 | 24 | 30 | 25 | 22 | 27 | 23 | 20 | 20 | 20 | 20 | 18 |
| 10 | 49 | 37 | 29 | 25 | 46 | 35 | 28 | 24 | 31 | 26 | 22 | 28 | 23 | 20 | 25 | 21 | 18 | 18 | 18 | 18 | 16 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|------|
| | 0° |
| 0° | 3371 |
| 5° | 3358 |
| 10° | 3308 |
| 15° | 3231 |
| 20° | 3119 |
| 25° | 2989 |
| 30° | 2842 |
| 35° | 2689 |
| 40° | 2541 |
| 45° | 2402 |
| 50° | 2272 |
| 55° | 2159 |
| 60° | 2061 |
| 65° | 1974 |
| 70° | 1895 |
| 75° | 1817 |
| 80° | 1705 |
| 85° | 1400 |



TEST NUMBER: P78972
 CATALOG NUMBER: DFN2DIP-RG4F0-090D060US940-FLL-OOB-1DUDD-W

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 369.6 | 2.5 |
| 10°-20° | 1024.0 | 6.9 |
| 20°-30° | 1453.6 | 9.8 |
| 30°-40° | 1609.5 | 10.8 |
| 40°-50° | 1531.9 | 10.3 |
| 50°-60° | 1296.3 | 8.7 |
| 60°-70° | 966.1 | 6.5 |
| 70°-80° | 581.0 | 3.9 |
| 80°-90° | 173.1 | 1.2 |
| 90°-100° | 180.7 | 1.2 |
| 100°-110° | 551.6 | 3.7 |
| 110°-120° | 1001.6 | 6.7 |
| 120°-130° | 1182.4 | 8.0 |
| 130°-140° | 1091.0 | 7.3 |
| 140°-150° | 856.9 | 5.8 |
| 150°-160° | 576.4 | 3.9 |
| 160°-170° | 319.9 | 2.2 |
| 170°-180° | 100.9 | 0.7 |
| 0°-30° | 2847.3 | 19.2 |
| 0°-40° | 4456.8 | 30.0 |
| 0°-60° | 7285.0 | 49.0 |
| 0°-90° | 9005.1 | 60.6 |
| 90°-120° | 1733.9 | 11.7 |
| 90°-150° | 4864.3 | 32.7 |
| 90°-180° | 5861.0 | 39.4 |
| 0°-180° | 14866.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|------|------|------|
| 0° | 3936 | |
| 5° | 3906 | 370 |
| 15° | 3644 | 1024 |
| 25° | 3163 | 1454 |
| 35° | 2572 | 1610 |
| 45° | 1983 | 1532 |
| 55° | 1446 | 1296 |
| 65° | 974 | 966 |
| 75° | 549 | 581 |
| 85° | 142 | 160 |
| 90° | 39 | 32 |
| 95° | 161 | 162 |
| 105° | 513 | 552 |
| 115° | 1025 | 1002 |
| 125° | 1330 | 1182 |
| 135° | 1414 | 1091 |
| 145° | 1366 | 857 |
| 155° | 1242 | 576 |
| 165° | 1120 | 320 |
| 175° | 1046 | 101 |
| 180° | 1039 | |



TEST NUMBER: P78972
CATALOG NUMBER: DFN2DIP-RG4F0-090D060US940-FLL-OOB-1DUDD-W

CANDELA DISTRIBUTION (FULL):

| 0° | |
|--------|--------|
| 0° | 3935.9 |
| 2.5° | 3931.2 |
| 5° | 3905.5 |
| 7.5° | 3865.8 |
| 10° | 3802.8 |
| 12.5° | 3732.7 |
| 15° | 3643.9 |
| 17.5° | 3538.8 |
| 20° | 3422.0 |
| 22.5° | 3295.9 |
| 25° | 3162.7 |
| 27.5° | 3020.2 |
| 30° | 2873.1 |
| 32.5° | 2725.9 |
| 35° | 2571.8 |
| 37.5° | 2424.6 |
| 40° | 2272.8 |
| 42.5° | 2128.0 |
| 45° | 1983.1 |
| 47.5° | 1843.0 |
| 50° | 1705.2 |
| 52.5° | 1574.4 |
| 55° | 1445.9 |
| 57.5° | 1324.4 |
| 60° | 1203.0 |
| 62.5° | 1086.2 |
| 65° | 974.0 |
| 67.5° | 864.3 |
| 70° | 756.8 |
| 72.5° | 654.0 |
| 75° | 548.9 |
| 77.5° | 448.5 |
| 80° | 345.7 |
| 82.5° | 245.3 |
| 85° | 142.5 |
| 87.5° | 56.1 |
| 90° | 38.9 |
| 92.5° | 96.6 |
| 95° | 161.4 |
| 97.5° | 230.6 |
| 100° | 311.4 |
| 102.5° | 403.6 |
| 105° | 513.2 |
| 107.5° | 635.7 |
| 110° | 768.3 |



TEST NUMBER: P78972
CATALOG NUMBER: DFN2DIP-RG4F0-090D060US940-FLL-OOB-1DUDD-W

CANDELA DISTRIBUTION (continued):

| | 0° |
|--------|--------|
| 112.5° | 903.8 |
| 115° | 1024.9 |
| 117.5° | 1128.7 |
| 120° | 1212.3 |
| 122.5° | 1280.0 |
| 125° | 1330.5 |
| 127.5° | 1366.5 |
| 130° | 1391.0 |
| 132.5° | 1405.4 |
| 135° | 1414.1 |
| 137.5° | 1417.0 |
| 140° | 1408.3 |
| 142.5° | 1388.1 |
| 145° | 1366.5 |
| 147.5° | 1336.2 |
| 150° | 1306.0 |
| 152.5° | 1272.8 |
| 155° | 1242.5 |
| 157.5° | 1209.4 |
| 160° | 1176.2 |
| 162.5° | 1148.9 |
| 165° | 1120.0 |
| 167.5° | 1098.4 |
| 170° | 1076.8 |
| 172.5° | 1060.9 |
| 175° | 1046.5 |
| 177.5° | 1039.3 |
| 180° | 1039.3 |

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

REPORT NUMBER: SP1-2401-290-4

| 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 ($\mu\text{W}/\text{nm}$) | 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 | 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 ($\mu\text{W}/\text{nm}$) | 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 | 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 | | | |

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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)