

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: PrentaLux

Report Number: P879165

Luminaire Tested: PRLX-210-930-LL2-C-U-S-X-X-WHHR-BR-X

Issue Date: 9/24/2024

Test Information

Test Method: LM-79-2019
Report Number: P879165
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2405-094-3)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/24/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: Pentalux
Catalog Number: PRLX-210-930-LL2-C-U-S-X-X-WHHR-BR-X
Description: Pentalux 200 SERIES 3D PRINTED LUMINAIRE, 210 SHADE, CLEAR LENS.
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

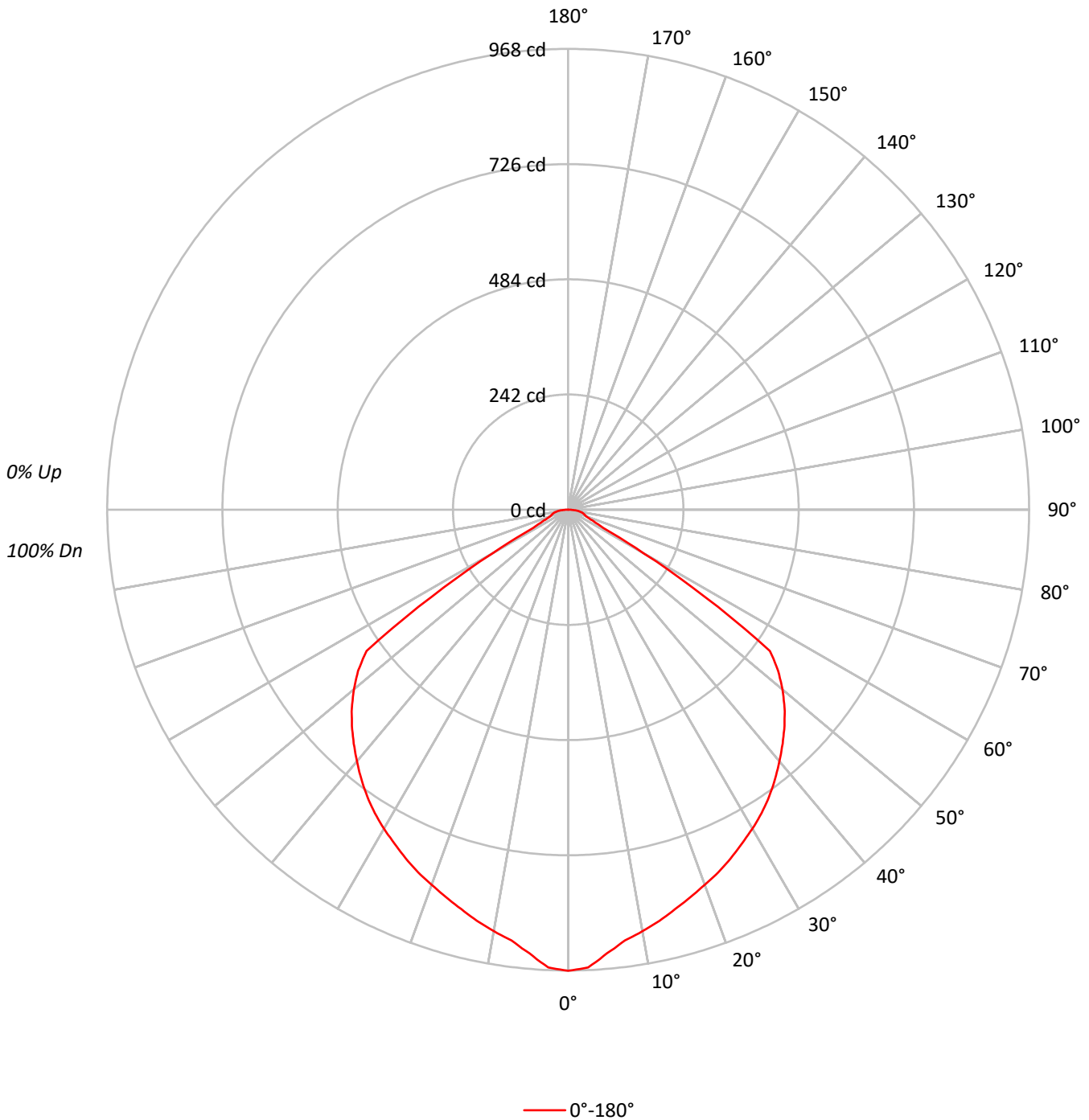
Lumens per Lamp: N/A
Luminaire Lumens: 2186.7 lumens
Efficiency: N/A
Efficacy: 169.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.2 / 1.37
Luminous Opening: Circular (Dia: 1.42' x H: 0')
CIE Type: Direct

Input Watts (W): 12.9
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: 0.5 HR
Operation Time: 3 HR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P879165

CATALOG NUMBER: PRLX-210-930-LL2-C-U-S-X-X-WHHR-BR-X

Luminous Intensity Polar Plot





TEST NUMBER: P879165

CATALOG NUMBER: PRLX-210-930-LL2-C-U-S-X-X-WHHR-BR-X

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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 111 | 107 | 103 | 100 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 88 |
| 2 | 102 | 95 | 90 | 85 | 100 | 94 | 88 | 84 | 90 | 86 | 82 | 87 | 83 | 80 | 84 | 81 | 78 | 76 |
| 3 | 94 | 85 | 78 | 72 | 92 | 84 | 77 | 72 | 81 | 75 | 71 | 78 | 73 | 69 | 76 | 72 | 68 | 66 |
| 4 | 87 | 76 | 68 | 62 | 85 | 75 | 68 | 62 | 73 | 66 | 61 | 70 | 65 | 60 | 68 | 64 | 60 | 58 |
| 5 | 80 | 69 | 60 | 54 | 78 | 68 | 60 | 54 | 65 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 52 | 51 |
| 6 | 74 | 62 | 54 | 48 | 72 | 61 | 53 | 48 | 59 | 52 | 47 | 58 | 52 | 47 | 56 | 51 | 46 | 45 |
| 7 | 69 | 56 | 48 | 42 | 67 | 56 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 41 | 40 |
| 8 | 64 | 51 | 43 | 38 | 63 | 51 | 43 | 38 | 49 | 43 | 38 | 48 | 42 | 37 | 47 | 41 | 37 | 35 |
| 9 | 60 | 47 | 39 | 34 | 59 | 47 | 39 | 34 | 46 | 39 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 |
| 10 | 56 | 44 | 36 | 31 | 55 | 43 | 36 | 31 | 42 | 35 | 31 | 41 | 35 | 31 | 40 | 35 | 31 | 29 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|------|
| | 0° |
| 0° | 6614 |
| 5° | 6413 |
| 10° | 6234 |
| 15° | 6141 |
| 20° | 6093 |
| 25° | 6087 |
| 30° | 6101 |
| 35° | 6132 |
| 40° | 6150 |
| 45° | 6201 |
| 50° | 6237 |
| 55° | 6154 |
| 60° | 2506 |
| 65° | 981 |
| 70° | 791 |
| 75° | 894 |
| 80° | 1046 |
| 85° | 1191 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 50°
 Luminance: 6237 cd/sqm

TEST NUMBER: P879165

CATALOG NUMBER: PRLX-210-930-LL2-C-U-S-X-X-WHHR-BR-X

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 88.1 | 4.0 |
| 10°-20° | 245.4 | 11.2 |
| 20°-30° | 372.7 | 17.0 |
| 30°-40° | 460.2 | 21.0 |
| 40°-50° | 495.2 | 22.6 |
| 50°-60° | 399.5 | 18.3 |
| 60°-70° | 74.3 | 3.4 |
| 70°-80° | 35.5 | 1.6 |
| 80°-90° | 15.7 | 0.7 |
| 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°-30° | 706.2 | 32.3 |
| 0°-40° | 1166.4 | 53.3 |
| 0°-60° | 2061.2 | 94.3 |
| 0°-90° | 2186.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2186.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|-----|------|
| 0° | 968 | |
| 5° | 936 | 88 |
| 15° | 869 | 245 |
| 25° | 808 | 373 |
| 35° | 736 | 460 |
| 45° | 642 | 495 |
| 55° | 517 | 400 |
| 65° | 61 | 74 |
| 75° | 34 | 35 |
| 85° | 15 | 16 |
| 90° | 0 | |

TEST NUMBER: P879165

CATALOG NUMBER: PRLX-210-930-LL2-C-U-S-X-X-WHHR-BR-X

CANDELA DISTRIBUTION (FULL):

| 0° | |
|-------|-------|
| 0° | 968.5 |
| 2.5° | 962.5 |
| 5° | 935.5 |
| 7.5° | 912.6 |
| 10° | 899.1 |
| 12.5° | 884.6 |
| 15° | 868.6 |
| 17.5° | 853.4 |
| 20° | 838.4 |
| 22.5° | 824.3 |
| 25° | 807.8 |
| 27.5° | 790.4 |
| 30° | 773.7 |
| 32.5° | 755.7 |
| 35° | 735.6 |
| 37.5° | 713.6 |
| 40° | 689.9 |
| 42.5° | 666.5 |
| 45° | 642.1 |
| 47.5° | 616.4 |
| 50° | 587.1 |
| 52.5° | 555.9 |
| 55° | 516.9 |
| 57.5° | 338.9 |
| 60° | 183.5 |
| 62.5° | 83.2 |
| 65° | 60.7 |
| 67.5° | 46.9 |
| 70° | 39.6 |
| 72.5° | 36.7 |
| 75° | 33.9 |
| 77.5° | 30.6 |
| 80° | 26.6 |
| 82.5° | 21.3 |
| 85° | 15.2 |
| 87.5° | 7.9 |
| 90° | 0.0 |

TEST NUMBER: P879165
 CATALOG NUMBER: PRLX-210-930-LL2-C-U-S-X-X-WHHR-BR-X

CIE UGR TABLE:

| Reflectances: | | | | | | | | | | | |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling | | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| Wall | | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Reference plane | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 17.00 | 18.50 | 17.36 | 18.81 | 19.13 | 17.00 | 18.50 | 17.36 | 18.81 | 19.13 |
| | 3H | 17.00 | 18.33 | 17.38 | 18.66 | 19.02 | 17.00 | 18.33 | 17.38 | 18.66 | 19.02 |
| | 4H | 17.02 | 18.26 | 17.43 | 18.61 | 18.99 | 17.02 | 18.26 | 17.43 | 18.61 | 18.99 |
| | 6H | 17.07 | 18.21 | 17.49 | 18.58 | 18.97 | 17.07 | 18.21 | 17.49 | 18.58 | 18.97 |
| | 8H | 17.10 | 18.17 | 17.52 | 18.56 | 18.97 | 17.10 | 18.17 | 17.52 | 18.56 | 18.97 |
| | 12H | 17.12 | 18.15 | 17.55 | 18.53 | 18.96 | 17.12 | 18.15 | 17.55 | 18.53 | 18.96 |
| 4H | 2H | 16.88 | 18.12 | 17.28 | 18.47 | 18.85 | 16.88 | 18.12 | 17.28 | 18.47 | 18.85 |
| | 3H | 16.94 | 17.94 | 17.35 | 18.35 | 18.75 | 16.94 | 17.94 | 17.35 | 18.35 | 18.75 |
| | 4H | 17.00 | 17.90 | 17.44 | 18.31 | 18.75 | 17.00 | 17.90 | 17.44 | 18.31 | 18.75 |
| | 6H | 17.13 | 17.90 | 17.58 | 18.34 | 18.81 | 17.13 | 17.90 | 17.58 | 18.34 | 18.81 |
| | 8H | 17.18 | 17.91 | 17.65 | 18.35 | 18.82 | 17.18 | 17.91 | 17.65 | 18.35 | 18.82 |
| | 12H | 17.24 | 17.89 | 17.72 | 18.37 | 18.84 | 17.24 | 17.89 | 17.72 | 18.37 | 18.84 |
| 8H | 4H | 16.96 | 17.69 | 17.43 | 18.13 | 18.60 | 16.96 | 17.69 | 17.43 | 18.13 | 18.60 |
| | 6H | 17.13 | 17.74 | 17.63 | 18.23 | 18.71 | 17.13 | 17.74 | 17.63 | 18.23 | 18.71 |
| | 8H | 17.23 | 17.78 | 17.75 | 18.29 | 18.78 | 17.23 | 17.78 | 17.75 | 18.29 | 18.78 |
| | 12H | 17.35 | 17.84 | 17.86 | 18.34 | 18.90 | 17.35 | 17.84 | 17.86 | 18.34 | 18.90 |
| 12H | 4H | 16.94 | 17.59 | 17.43 | 18.07 | 18.54 | 16.94 | 17.59 | 17.43 | 18.07 | 18.54 |
| | 6H | 17.11 | 17.66 | 17.63 | 18.18 | 18.66 | 17.11 | 17.66 | 17.63 | 18.18 | 18.66 |
| | 8H | 17.25 | 17.75 | 17.76 | 18.24 | 18.81 | 17.25 | 17.75 | 17.76 | 18.24 | 18.81 |

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

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

SHAPER

Report Number: SP1-2203-582-2

Test Date: 05/25/2022

Luminaire Tested: 225-90-30K-27L-UNV-STD-X-X-WHHR-SR-X
Data in this report applies to 200 Series families of products

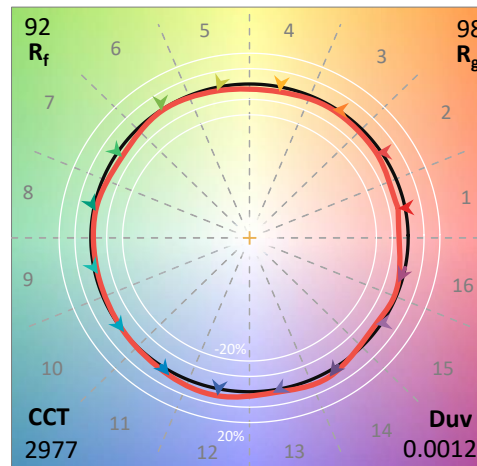
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2203-582-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 05/25/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: SHAPER
 Catalog Number: **225-90-30K-27L-UNV-STD-X-X-WHHR-SR-X**
 Description: Shaper 3D PRINTED 200 Series Pendants

Spectral Parameters

CCT (K): 2977
 CIE u': 0.2509
 CIE v': 0.5235
 Duv: 0.0012
 CIE x: 0.4402
 CIE y: 0.4082
 CIE z: 0.1515
 Peak Wavelength (nm): 622
 Dominant Wavelength (nm): 582
 Purity: 54.9
 Rf: 92.3
 Rg: 97.8

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 93.8 | | |
| R1: | 93.9 | R9: | 64.0 |
| R2: | 97.0 | R10: | 92.1 |
| R3: | 98.8 | R11: | 94.8 |
| R4: | 93.7 | R12: | 81.7 |
| R5: | 93.4 | R13: | 94.8 |
| R6: | 96.4 | R14: | 98.7 |
| R7: | 93.1 | | |
| R8: | 84.0 | | |



Test Conditions

Stabilization Time: 71M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.7/43%
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2203-582-2

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 2/7/2022 | 8/7/2022 |
| Power Meter | XITRON 2801 IN0071 | 11/29/2021 | 11/29/2022 |
| AC Power Source | CHROMA 61603 IN0063 | 11/29/2021 | 11/29/2022 |
| DC Power Source | AGILENT E3634A IN0208 | 11/29/2021 | 11/29/2022 |
| Sphere Thermometer | ONSET IN0085 | 11/29/2021 | 11/29/2022 |
| Room Thermometer | ONSET IN0046 | 11/29/2021 | 11/29/2022 |

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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 3000K 4-step quadrangle

REPORT NUMBER: SP1-2203-582-2

Photopic Flux vs. Wavelength

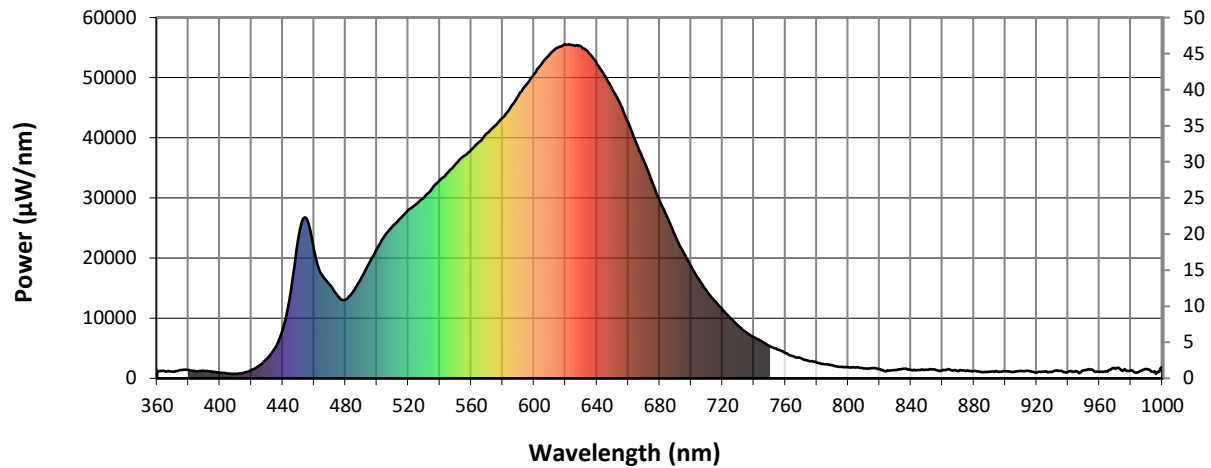


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| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 1256 | NR | 490 | 16713 | NR | 620 | 55488 | NR | 750 | 5386 | NR | 880 | 1232 | NR |
| 365 | 1189 | NR | 495 | 19116 | NR | 625 | 55411 | NR | 755 | 4806 | NR | 885 | 1083 | NR |
| 370 | 1111 | NR | 500 | 21564 | NR | 630 | 55189 | NR | 760 | 4232 | NR | 890 | 1127 | NR |
| 375 | 1400 | NR | 505 | 23751 | NR | 635 | 54062 | NR | 765 | 3663 | NR | 895 | 1144 | NR |
| 380 | 1360 | NR | 510 | 25303 | NR | 640 | 52304 | NR | 770 | 3348 | NR | 900 | 1167 | NR |
| 385 | 1156 | NR | 515 | 26615 | NR | 645 | 50301 | NR | 775 | 2859 | NR | 905 | 1078 | NR |
| 390 | 1201 | NR | 520 | 28043 | NR | 650 | 48008 | NR | 780 | 2628 | NR | 910 | 1246 | NR |
| 395 | 1115 | NR | 525 | 28969 | NR | 655 | 45500 | NR | 785 | 2352 | NR | 915 | 1219 | NR |
| 400 | 953 | NR | 530 | 30127 | NR | 660 | 42527 | NR | 790 | 2172 | NR | 920 | 941 | NR |
| 405 | 814 | NR | 535 | 31549 | NR | 665 | 39145 | NR | 795 | 1908 | NR | 925 | 1132 | NR |
| 410 | 755 | NR | 540 | 32918 | NR | 670 | 36112 | NR | 800 | 1858 | NR | 930 | 1076 | NR |
| 415 | 915 | NR | 545 | 34219 | NR | 675 | 32740 | NR | 805 | 1832 | NR | 935 | 1285 | NR |
| 420 | 1363 | NR | 550 | 35624 | NR | 680 | 29556 | NR | 810 | 1648 | NR | 940 | 1131 | NR |
| 425 | 2118 | NR | 555 | 36908 | NR | 685 | 26682 | NR | 815 | 1723 | NR | 945 | 1200 | NR |
| 430 | 3273 | NR | 560 | 38001 | NR | 690 | 23679 | NR | 820 | 1549 | NR | 950 | 1309 | NR |
| 435 | 5028 | NR | 565 | 39315 | NR | 695 | 21005 | NR | 825 | 1330 | NR | 955 | 1517 | NR |
| 440 | 8074 | NR | 570 | 40713 | NR | 700 | 18600 | NR | 830 | 1388 | NR | 960 | 1079 | NR |
| 445 | 14325 | NR | 575 | 41978 | NR | 705 | 16437 | NR | 835 | 1616 | NR | 965 | 1117 | NR |
| 450 | 23321 | NR | 580 | 43289 | NR | 710 | 14495 | NR | 840 | 1375 | NR | 970 | 1618 | NR |
| 455 | 26653 | NR | 585 | 45077 | NR | 715 | 12890 | NR | 845 | 1381 | NR | 975 | 1214 | NR |
| 460 | 21360 | NR | 590 | 47036 | NR | 720 | 11407 | NR | 850 | 1451 | NR | 980 | 1308 | NR |
| 465 | 17172 | NR | 595 | 48772 | NR | 725 | 10022 | NR | 855 | 1508 | NR | 985 | 1082 | NR |
| 470 | 15539 | NR | 600 | 50601 | NR | 730 | 8726 | NR | 860 | 1391 | NR | 990 | 1563 | NR |
| 475 | 13714 | NR | 605 | 52357 | NR | 735 | 7674 | NR | 865 | 1446 | NR | 995 | 1194 | NR |
| 480 | 13103 | NR | 610 | 53915 | NR | 740 | 6815 | NR | 870 | 1157 | NR | 1000 | 1844 | NR |
| 485 | 14477 | NR | 615 | 54990 | NR | 745 | 6153 | NR | 875 | 1251 | NR | | | |

REPORT NUMBER: SP1-2203-582-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 3917.4

S/P: 1.42

| 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 | 1256 | NR | 490 | 16713 | NR | 620 | 55488 | NR | 750 | 5386 | NR | 880 | 1232 | NR |
| 365 | 1189 | NR | 495 | 19116 | NR | 625 | 55411 | NR | 755 | 4806 | NR | 885 | 1083 | NR |
| 370 | 1111 | NR | 500 | 21564 | NR | 630 | 55189 | NR | 760 | 4232 | NR | 890 | 1127 | NR |
| 375 | 1400 | NR | 505 | 23751 | NR | 635 | 54062 | NR | 765 | 3663 | NR | 895 | 1144 | NR |
| 380 | 1360 | NR | 510 | 25303 | NR | 640 | 52304 | NR | 770 | 3348 | NR | 900 | 1167 | NR |
| 385 | 1156 | NR | 515 | 26615 | NR | 645 | 50301 | NR | 775 | 2859 | NR | 905 | 1078 | NR |
| 390 | 1201 | NR | 520 | 28043 | NR | 650 | 48008 | NR | 780 | 2628 | NR | 910 | 1246 | NR |
| 395 | 1115 | NR | 525 | 28969 | NR | 655 | 45500 | NR | 785 | 2352 | NR | 915 | 1219 | NR |
| 400 | 953 | NR | 530 | 30127 | NR | 660 | 42527 | NR | 790 | 2172 | NR | 920 | 941 | NR |
| 405 | 814 | NR | 535 | 31549 | NR | 665 | 39145 | NR | 795 | 1908 | NR | 925 | 1132 | NR |
| 410 | 755 | NR | 540 | 32918 | NR | 670 | 36112 | NR | 800 | 1858 | NR | 930 | 1076 | NR |
| 415 | 915 | NR | 545 | 34219 | NR | 675 | 32740 | NR | 805 | 1832 | NR | 935 | 1285 | NR |
| 420 | 1363 | NR | 550 | 35624 | NR | 680 | 29556 | NR | 810 | 1648 | NR | 940 | 1131 | NR |
| 425 | 2118 | NR | 555 | 36908 | NR | 685 | 26682 | NR | 815 | 1723 | NR | 945 | 1200 | NR |
| 430 | 3273 | NR | 560 | 38001 | NR | 690 | 23679 | NR | 820 | 1549 | NR | 950 | 1309 | NR |
| 435 | 5028 | NR | 565 | 39315 | NR | 695 | 21005 | NR | 825 | 1330 | NR | 955 | 1517 | NR |
| 440 | 8074 | NR | 570 | 40713 | NR | 700 | 18600 | NR | 830 | 1388 | NR | 960 | 1079 | NR |
| 445 | 14325 | NR | 575 | 41978 | NR | 705 | 16437 | NR | 835 | 1616 | NR | 965 | 1117 | NR |
| 450 | 23321 | NR | 580 | 43289 | NR | 710 | 14495 | NR | 840 | 1375 | NR | 970 | 1618 | NR |
| 455 | 26653 | NR | 585 | 45077 | NR | 715 | 12890 | NR | 845 | 1381 | NR | 975 | 1214 | NR |
| 460 | 21360 | NR | 590 | 47036 | NR | 720 | 11407 | NR | 850 | 1451 | NR | 980 | 1308 | NR |
| 465 | 17172 | NR | 595 | 48772 | NR | 725 | 10022 | NR | 855 | 1508 | NR | 985 | 1082 | NR |
| 470 | 15539 | NR | 600 | 50601 | NR | 730 | 8726 | NR | 860 | 1391 | NR | 990 | 1563 | NR |
| 475 | 13714 | NR | 605 | 52357 | NR | 735 | 7674 | NR | 865 | 1446 | NR | 995 | 1194 | NR |
| 480 | 13103 | NR | 610 | 53915 | NR | 740 | 6815 | NR | 870 | 1157 | NR | 1000 | 1844 | NR |
| 485 | 14477 | NR | 615 | 54990 | NR | 745 | 6153 | NR | 875 | 1251 | NR | | | |

REPORT NUMBER: SP1-2203-582-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 1507.9 S/P: 0.55

| 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 | 1256 | NR | 490 | 16713 | NR | 620 | 55488 | NR | 750 | 5386 | NR | 880 | 1232 | NR |
| 365 | 1189 | NR | 495 | 19116 | NR | 625 | 55411 | NR | 755 | 4806 | NR | 885 | 1083 | NR |
| 370 | 1111 | NR | 500 | 21564 | NR | 630 | 55189 | NR | 760 | 4232 | NR | 890 | 1127 | NR |
| 375 | 1400 | NR | 505 | 23751 | NR | 635 | 54062 | NR | 765 | 3663 | NR | 895 | 1144 | NR |
| 380 | 1360 | NR | 510 | 25303 | NR | 640 | 52304 | NR | 770 | 3348 | NR | 900 | 1167 | NR |
| 385 | 1156 | NR | 515 | 26615 | NR | 645 | 50301 | NR | 775 | 2859 | NR | 905 | 1078 | NR |
| 390 | 1201 | NR | 520 | 28043 | NR | 650 | 48008 | NR | 780 | 2628 | NR | 910 | 1246 | NR |
| 395 | 1115 | NR | 525 | 28969 | NR | 655 | 45500 | NR | 785 | 2352 | NR | 915 | 1219 | NR |
| 400 | 953 | NR | 530 | 30127 | NR | 660 | 42527 | NR | 790 | 2172 | NR | 920 | 941 | NR |
| 405 | 814 | NR | 535 | 31549 | NR | 665 | 39145 | NR | 795 | 1908 | NR | 925 | 1132 | NR |
| 410 | 755 | NR | 540 | 32918 | NR | 670 | 36112 | NR | 800 | 1858 | NR | 930 | 1076 | NR |
| 415 | 915 | NR | 545 | 34219 | NR | 675 | 32740 | NR | 805 | 1832 | NR | 935 | 1285 | NR |
| 420 | 1363 | NR | 550 | 35624 | NR | 680 | 29556 | NR | 810 | 1648 | NR | 940 | 1131 | NR |
| 425 | 2118 | NR | 555 | 36908 | NR | 685 | 26682 | NR | 815 | 1723 | NR | 945 | 1200 | NR |
| 430 | 3273 | NR | 560 | 38001 | NR | 690 | 23679 | NR | 820 | 1549 | NR | 950 | 1309 | NR |
| 435 | 5028 | NR | 565 | 39315 | NR | 695 | 21005 | NR | 825 | 1330 | NR | 955 | 1517 | NR |
| 440 | 8074 | NR | 570 | 40713 | NR | 700 | 18600 | NR | 830 | 1388 | NR | 960 | 1079 | NR |
| 445 | 14325 | NR | 575 | 41978 | NR | 705 | 16437 | NR | 835 | 1616 | NR | 965 | 1117 | NR |
| 450 | 23321 | NR | 580 | 43289 | NR | 710 | 14495 | NR | 840 | 1375 | NR | 970 | 1618 | NR |
| 455 | 26653 | NR | 585 | 45077 | NR | 715 | 12890 | NR | 845 | 1381 | NR | 975 | 1214 | NR |
| 460 | 21360 | NR | 590 | 47036 | NR | 720 | 11407 | NR | 850 | 1451 | NR | 980 | 1308 | NR |
| 465 | 17172 | NR | 595 | 48772 | NR | 725 | 10022 | NR | 855 | 1508 | NR | 985 | 1082 | NR |
| 470 | 15539 | NR | 600 | 50601 | NR | 730 | 8726 | NR | 860 | 1391 | NR | 990 | 1563 | NR |
| 475 | 13714 | NR | 605 | 52357 | NR | 735 | 7674 | NR | 865 | 1446 | NR | 995 | 1194 | NR |
| 480 | 13103 | NR | 610 | 53915 | NR | 740 | 6815 | NR | 870 | 1157 | NR | 1000 | 1844 | NR |
| 485 | 14477 | NR | 615 | 54990 | NR | 745 | 6153 | NR | 875 | 1251 | NR | | | |

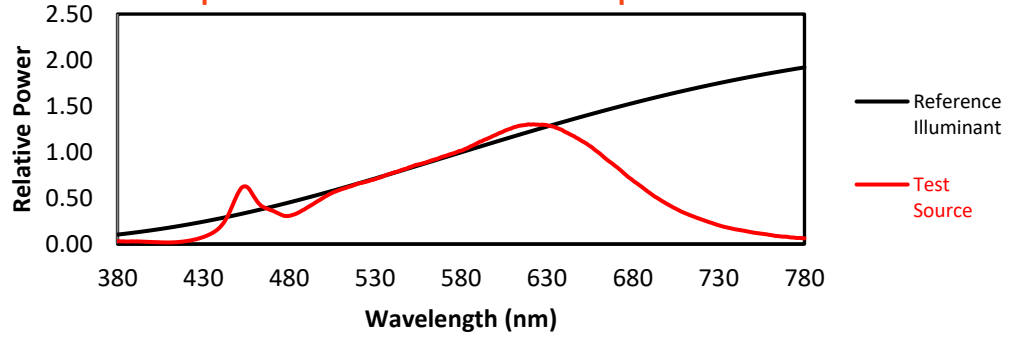
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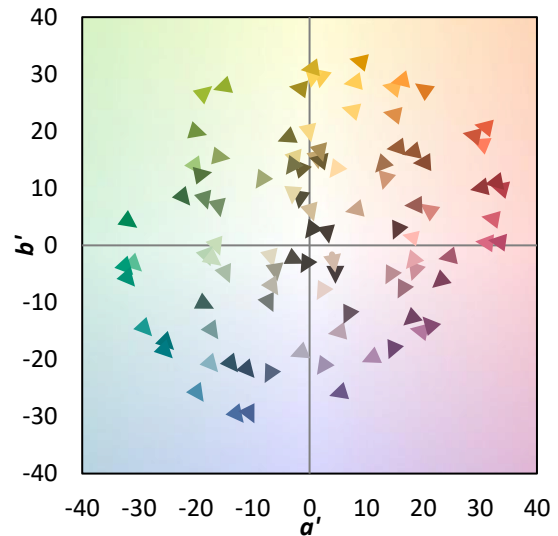
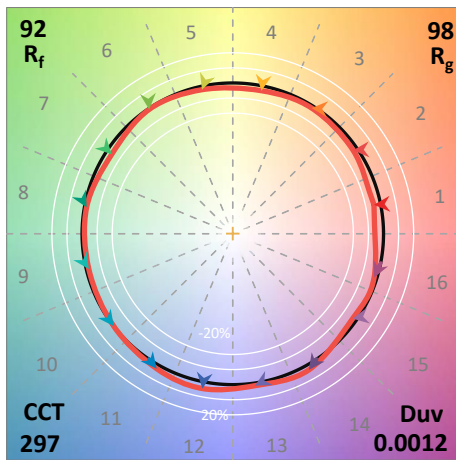
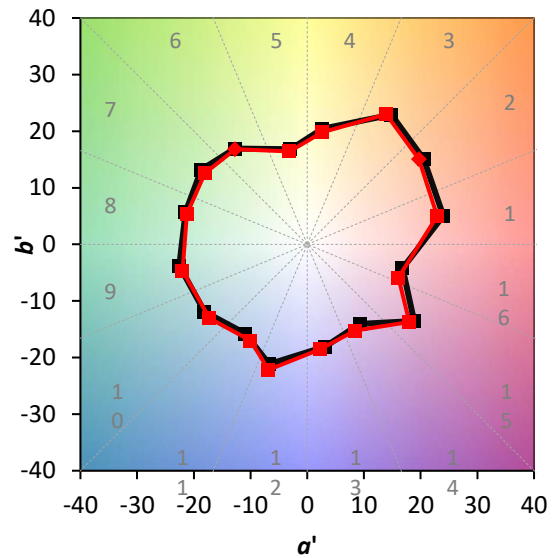
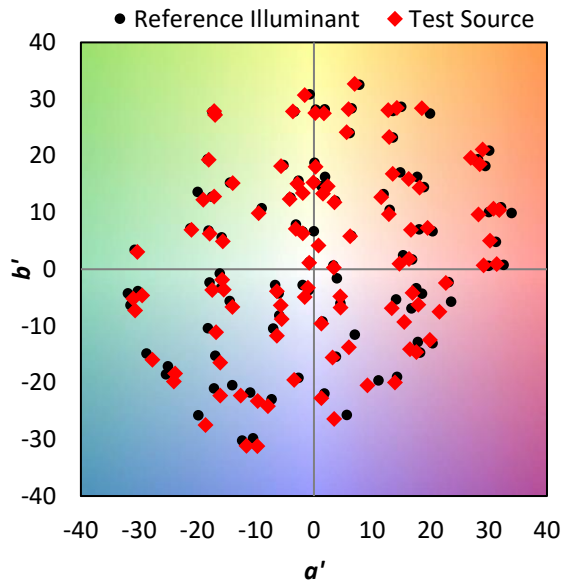
Summary

$R_f = 92.3$
 $R_g = 97.8$
 CIE $R_a = 93.8$
 $R_9 = 64.0$

Spectral Power Distribution Comparison



Color Vector Graphics



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

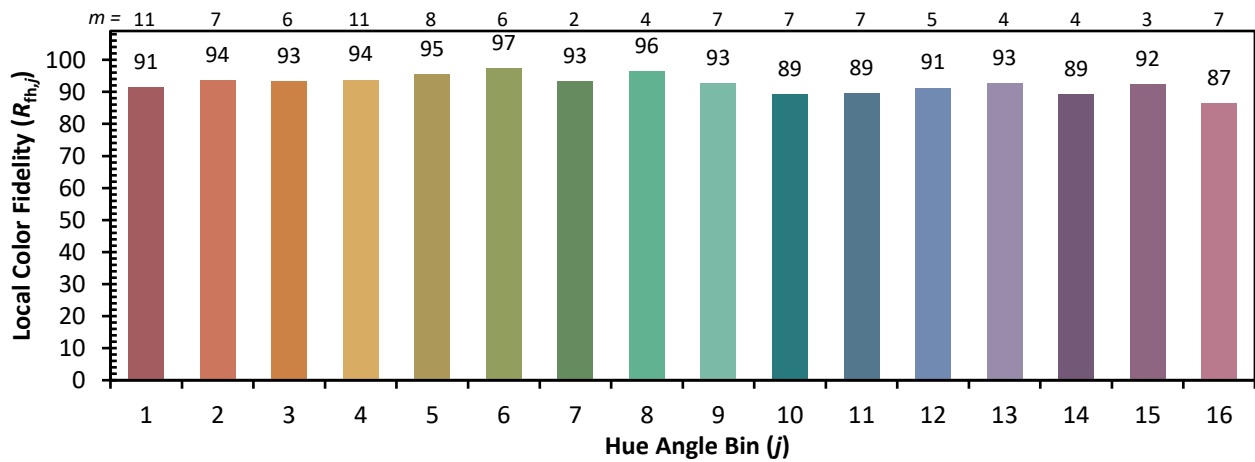
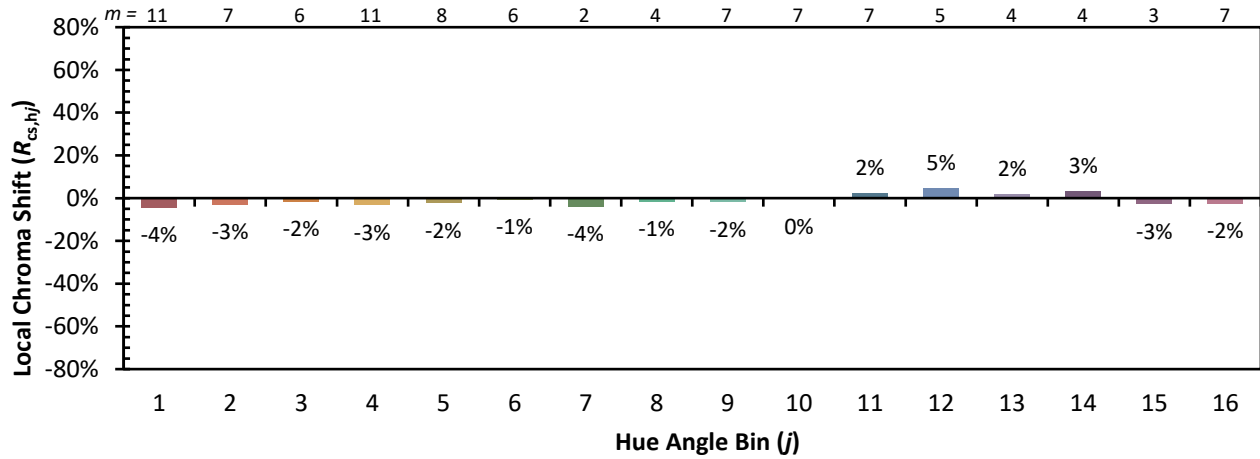
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 96 | CES51 = 95 | CES76 = 92 |
| CES02 = 63 | CES27 = 91 | CES52 = 98 | CES77 = 90 |
| CES03 = 32 | CES28 = 98 | CES53 = 96 | CES78 = 90 |
| CES04 = 70 | CES29 = 95 | CES54 = 92 | CES79 = 94 |
| CES05 = 51 | CES30 = 89 | CES55 = 91 | CES80 = 93 |
| CES06 = 51 | CES31 = 96 | CES56 = 93 | CES81 = 84 |
| CES07 = 43 | CES32 = 94 | CES57 = 91 | CES82 = 97 |
| CES08 = 42 | CES33 = 95 | CES58 = 92 | CES83 = 96 |
| CES09 = 29 | CES34 = 98 | CES59 = 97 | CES84 = 95 |
| CES10 = 76 | CES35 = 98 | CES60 = 93 | CES85 = 83 |
| CES11 = 59 | CES36 = 82 | CES61 = 93 | CES86 = 85 |
| CES12 = 65 | CES37 = 97 | CES62 = 86 | CES87 = 93 |
| CES13 = 44 | CES38 = 85 | CES63 = 93 | CES88 = 96 |
| CES14 = 74 | CES39 = 98 | CES64 = 90 | CES89 = 87 |
| CES15 = 72 | CES40 = 98 | CES65 = 90 | CES90 = 94 |
| CES16 = 48 | CES41 = 95 | CES66 = 88 | CES91 = 78 |
| CES17 = 50 | CES42 = 98 | CES67 = 88 | CES92 = 81 |
| CES18 = 57 | CES43 = 98 | CES68 = 90 | CES93 = 88 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 82 |
| CES20 = 67 | CES45 = 99 | CES70 = 89 | CES95 = 86 |
| CES21 = 86 | CES46 = 97 | CES71 = 85 | CES96 = 93 |
| CES22 = 79 | CES47 = 93 | CES72 = 95 | CES97 = 97 |
| CES23 = 92 | CES48 = 89 | CES73 = 86 | CES98 = 94 |
| CES24 = 91 | CES49 = 98 | CES74 = 91 | CES99 = 91 |
| CES25 = 72 | CES50 = 96 | CES75 = 87 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)