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: METALUX

Report Number: P976985

Luminaire Tested: 24SR-LD2-C-29-UNV-L950-CD1-SO-U

Issue Date: 03/18/2025

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P976985 |
| Test Lab: | INNOVATION CENTER(P3) |
| Issue Date: | 03/18/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 24SR-LD2-C-29-UNV-L950-CD1-SO-U |
| Description: | METALUX SKYRIDGE 2x4 2900LM PACKAGE 90CRI 5000K TROFFER with Storaro Orange SKYTR |
| Light Source: | 5000K CCT, 90+ CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 1969.0 lumens |
| Efficiency: | N/A |
| Efficacy: | 99.4 lumens/watt |
| Spacing Criteria (0/90/45): | 1.17 / 1.85 / 1.72 |
| Luminous Opening: | Rectangular (W 2' x L: 4' x H: 0') |
| CIE Type: | Direct |

| | |
|---|---|
| Input Watts (W): | 19.8 |
| 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: | 28.75 FT |

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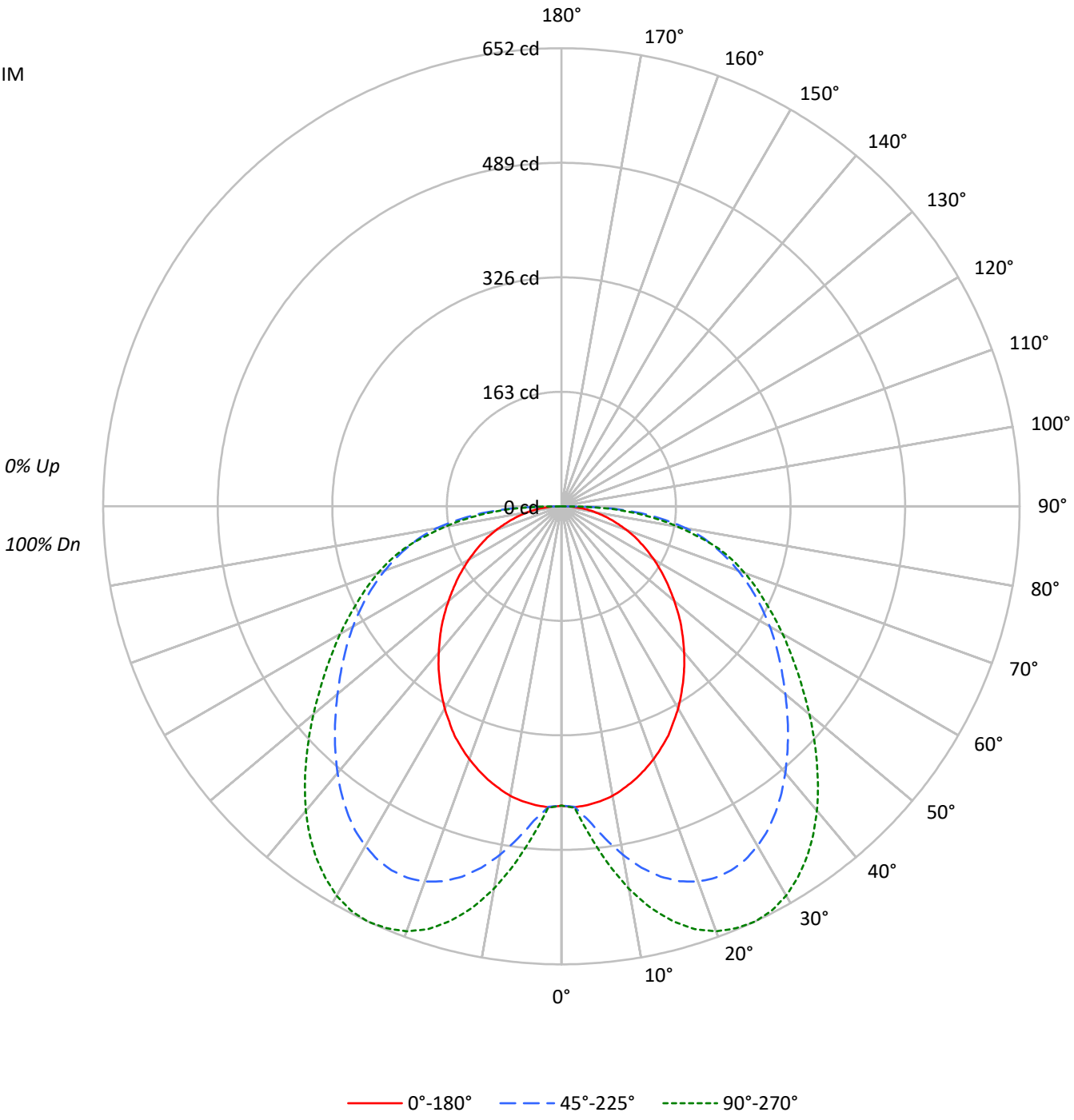
Scaled Data Report

TEST NUMBER: P976985
CATALOG NUMBER: 24SR-LD2-C-29-UNV-L950-CD1-SO-U

## Luminous Intensity Polar Plot



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TEST NUMBER: P976985
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## 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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 107 | 101 | 96 | 91 | 104 | 99 | 94 | 90 | 94 | 90 | 87 | 90 | 87 | 84 | 87 | 84 | 82 | 79 |
| 2 | 96 | 87 | 79 | 72 | 93 | 85 | 77 | 71 | 81 | 75 | 70 | 78 | 73 | 68 | 74 | 70 | 66 | 64 |
| 3 | 87 | 75 | 66 | 59 | 84 | 74 | 65 | 58 | 70 | 63 | 57 | 68 | 61 | 56 | 65 | 60 | 55 | 53 |
| 4 | 79 | 66 | 56 | 49 | 77 | 65 | 56 | 49 | 62 | 54 | 48 | 60 | 53 | 47 | 57 | 52 | 47 | 44 |
| 5 | 72 | 59 | 49 | 42 | 70 | 57 | 48 | 42 | 55 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 40 | 38 |
| 6 | 67 | 53 | 43 | 36 | 65 | 52 | 43 | 36 | 50 | 42 | 36 | 48 | 41 | 35 | 46 | 40 | 35 | 33 |
| 7 | 62 | 47 | 38 | 32 | 60 | 47 | 38 | 32 | 45 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 29 |
| 8 | 57 | 43 | 34 | 28 | 56 | 42 | 34 | 28 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 32 | 27 | 25 |
| 9 | 53 | 39 | 31 | 25 | 52 | 39 | 31 | 25 | 38 | 30 | 25 | 37 | 30 | 25 | 35 | 29 | 24 | 23 |
| 10 | 50 | 36 | 28 | 23 | 49 | 36 | 28 | 22 | 35 | 27 | 22 | 34 | 27 | 22 | 33 | 27 | 22 | 20 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|---|---|---|---|
| 0° | 573 | 573 | 573 |
| 5° | 576 | 607 | 637 |
| 10° | 572 | 688 | 755 |
| 15° | 561 | 760 | 851 |
| 20° | 549 | 814 | 922 |
| 25° | 534 | 849 | 968 |
| 30° | 516 | 867 | 994 |
| 35° | 496 | 873 | 1000 |
| 40° | 477 | 870 | 993 |
| 45° | 459 | 868 | 978 |
| 50° | 439 | 871 | 964 |
| 55° | 423 | 888 | 961 |
| 60° | 410 | 921 | 978 |
| 65° | 399 | 973 | 1016 |
| 70° | 388 | 1052 | 1092 |
| 75° | 378 | 1182 | 1203 |
| 80° | 380 | 1397 | 1308 |
| 85° | 420 | 1755 | 1587 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
Vertical Angle: 87.5°
Luminance: 2227 cd/sqm

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Scaled Data Report

TEST NUMBER: P976985
CATALOG NUMBER: 24SR-LD2-C-29-UNV-L950-CD1-SO-U

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 44.2 | 2.2 |
| 10°-20° | 148.9 | 7.6 |
| 20°-30° | 249.3 | 12.7 |
| 30°-40° | 312.1 | 15.9 |
| 40°-50° | 327.5 | 16.6 |
| 50°-60° | 309.4 | 15.7 |
| 60°-70° | 270.9 | 13.8 |
| 70°-80° | 209.2 | 10.6 |
| 80°-90° | 97.6 | 5.0 |
| 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° | 442.4 | 22.5 |
| 0°-40° | 754.5 | 38.3 |
| 0°-60° | 1391.4 | 70.7 |
| 0°-90° | 1969.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1969.0 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 426 | 426 | 426 | 426 | 426 | |
| 5° | 427 | 426 | 449 | 466 | 472 | 40 |
| 15° | 403 | 459 | 546 | 595 | 611 | 113 |
| 25° | 360 | 462 | 572 | 630 | 652 | 165 |
| 35° | 302 | 422 | 532 | 589 | 609 | 189 |
| 45° | 241 | 358 | 456 | 500 | 514 | 186 |
| 55° | 180 | 297 | 378 | 403 | 410 | 161 |
| 65° | 125 | 244 | 306 | 314 | 319 | 124 |
| 75° | 73 | 182 | 227 | 229 | 231 | 77 |
| 85° | 27 | 96 | 114 | 105 | 103 | 29 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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TEST NUMBER: P976985
CATALOG NUMBER: 24SR-LD2-C-29-UNV-L950-CD1-SO-U

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 |
| 2.5° | 428.8 | 428.1 | 427.4 | 426.0 | 425.4 | 425.4 | 425.4 | 425.4 | 426.0 | 428.1 | 429.4 |
| 5° | 426.8 | 426.8 | 425.4 | 424.7 | 425.4 | 427.4 | 430.8 | 436.3 | 441.7 | 449.2 | 455.3 |
| 7.5° | 423.4 | 422.6 | 422.0 | 422.6 | 428.8 | 437.7 | 446.5 | 456.7 | 466.2 | 477.1 | 485.9 |
| 10° | 418.6 | 417.9 | 418.6 | 424.0 | 436.3 | 450.6 | 463.5 | 476.4 | 489.3 | 503.6 | 515.9 |
| 12.5° | 411.1 | 411.1 | 413.8 | 426.0 | 443.1 | 460.7 | 477.8 | 494.1 | 510.5 | 526.8 | 541.1 |
| 15° | 403.0 | 403.6 | 410.4 | 428.1 | 449.2 | 469.6 | 489.3 | 508.5 | 527.5 | 545.8 | 561.5 |
| 17.5° | 393.4 | 394.7 | 406.3 | 428.1 | 452.0 | 475.8 | 498.2 | 519.3 | 539.7 | 559.5 | 575.8 |
| 20° | 383.2 | 384.6 | 401.6 | 426.8 | 453.3 | 479.2 | 503.0 | 526.1 | 547.9 | 568.4 | 585.3 |
| 22.5° | 371.6 | 373.7 | 395.4 | 422.6 | 452.0 | 479.8 | 504.3 | 528.1 | 550.6 | 572.4 | 589.4 |
| 25° | *360.0* | *362.8* | *387.9* | *417.2* | *447.8* | *476.4* | *502.3* | *526.1* | *549.9* | *571.7* | *588.7* |
| 27.5° | 345.7 | 350.5 | 379.1 | 409.0 | 441.7 | 470.3 | 496.2 | 521.4 | 545.2 | 567.0 | 583.9 |
| 30° | 332.2 | 338.3 | 368.2 | 399.5 | 432.9 | 461.5 | 487.3 | 512.5 | 536.3 | 558.1 | 575.1 |
| 32.5° | 317.1 | 324.7 | 356.0 | 388.7 | 421.3 | 449.2 | 475.8 | 501.0 | 524.8 | 546.6 | 562.9 |
| 35° | 302.2 | 311.0 | 343.1 | 376.4 | 408.4 | 436.3 | 462.1 | 487.3 | 510.5 | 531.5 | 547.2 |
| 37.5° | 287.2 | 296.7 | 328.8 | 362.8 | 393.4 | 420.6 | 446.5 | 471.0 | 494.8 | 514.5 | 530.2 |
| 40° | 271.5 | 282.4 | 314.4 | 347.1 | 377.8 | 404.2 | 430.2 | 454.0 | 476.4 | 495.5 | 510.5 |
| 42.5° | 255.9 | 268.2 | 300.1 | 332.2 | 361.4 | 387.3 | 413.1 | 436.3 | 457.4 | 475.8 | 490.1 |
| 45° | 241.0 | 253.2 | 284.5 | 316.5 | 345.1 | 370.9 | 396.1 | 418.6 | 438.9 | 456.0 | 469.6 |
| 47.5° | 225.3 | 238.9 | 270.2 | 301.5 | 328.8 | 354.6 | 379.1 | 400.2 | 419.9 | 435.6 | 448.6 |
| 50° | 209.6 | 224.6 | 255.2 | 285.8 | 313.8 | 338.9 | 362.8 | 383.2 | 401.6 | 415.9 | 428.1 |
| 52.5° | 194.6 | 210.3 | 241.6 | 271.5 | 298.8 | 324.0 | 347.1 | 366.9 | 383.9 | 396.8 | 407.7 |
| 55° | 180.3 | 196.7 | 228.0 | 257.3 | 285.2 | 309.6 | 331.4 | 350.5 | 366.1 | 378.4 | 387.9 |
| 57.5° | 166.0 | 183.8 | 215.0 | 245.0 | 271.5 | 296.1 | 317.1 | 334.8 | 349.1 | 360.7 | 368.9 |
| 60° | 152.5 | 170.8 | 202.9 | 232.1 | 258.6 | 282.4 | 302.9 | 319.2 | 332.8 | 342.3 | 348.5 |
| 62.5° | 138.2 | 157.9 | 189.8 | 219.8 | 246.4 | 268.9 | 288.6 | 304.2 | 315.8 | 324.0 | 329.4 |
| 65° | 125.2 | 145.0 | 177.7 | 207.6 | 232.8 | 254.5 | 272.9 | 287.9 | 298.8 | 305.6 | 309.0 |
| 67.5° | 112.3 | 132.7 | 165.4 | 194.6 | 219.2 | 240.2 | 257.3 | 271.5 | 281.1 | 286.6 | 289.2 |
| 70° | 98.7 | 120.4 | 152.5 | 181.1 | 204.9 | 224.6 | 241.6 | 253.9 | 262.7 | 267.5 | 268.9 |
| 72.5° | 85.1 | 107.5 | 139.6 | 167.4 | 189.8 | 209.0 | 224.6 | 236.2 | 244.3 | 247.7 | 248.5 |
| 75° | 72.8 | 94.0 | 125.2 | 151.8 | 173.5 | 191.2 | 206.9 | 217.8 | 223.9 | 227.3 | 228.0 |
| 77.5° | 60.5 | 81.0 | 110.9 | 136.1 | 155.1 | 172.2 | 187.2 | 197.4 | 203.5 | 206.2 | 206.2 |
| 80° | 49.0 | 68.0 | 95.2 | 117.8 | 136.1 | 151.8 | 165.4 | 175.6 | 181.1 | 180.3 | 177.7 |
| 82.5° | 38.1 | 55.8 | 78.9 | 98.7 | 115.0 | 129.3 | 143.0 | 149.1 | 151.1 | 149.1 | 147.0 |
| 85° | 27.2 | 41.5 | 59.9 | 76.2 | 90.5 | 101.4 | 110.3 | 115.0 | 115.7 | 113.7 | 111.6 |
| 87.5° | 15.7 | 23.2 | 34.1 | 46.2 | 53.8 | 60.5 | 68.0 | 70.8 | 70.8 | 72.2 | 68.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report

TEST NUMBER: P976985
CATALOG NUMBER: 24SR-LD2-C-29-UNV-L950-CD1-SO-U

**CANDELA DISTRIBUTION (continued):**

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|
| 0° | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | *426.0* |
| 2.5° | 428.8 | 429.4 | 429.4 | 430.8 | 431.5 | 431.5 | 430.8 | *429.4* |
| 5° | 457.4 | 461.5 | 464.1 | 468.3 | 470.3 | 472.4 | 473.0 | *471.6* |
| 7.5° | 490.7 | 496.8 | 502.3 | 508.5 | 511.1 | 513.2 | 515.9 | *513.9* |
| 10° | 522.7 | 530.9 | 537.7 | 544.5 | 548.6 | 551.3 | 553.3 | *552.7* |
| 12.5° | 549.9 | 559.5 | 567.0 | 573.8 | 579.2 | 583.3 | 585.3 | *585.3* |
| 15° | 571.0 | 581.9 | 591.4 | 598.9 | 604.3 | 608.5 | 611.2 | *611.2* |
| 17.5° | 587.4 | 598.2 | 608.5 | 616.0 | 621.4 | 626.9 | 629.5 | *630.9* |
| 20° | 596.9 | 608.5 | 618.6 | 626.9 | 633.0 | 639.1 | 641.8 | *643.8* |
| 22.5° | 601.7 | 613.2 | 624.1 | 633.0 | 639.8 | 645.2 | 648.6 | *650.0* |
| 25° | *601.7* | *613.9* | *625.5* | *634.3* | *641.2* | *647.3* | *650.7* | *652.1* |
| 27.5° | 597.6 | 610.5 | 622.1 | 630.3 | 637.8 | 643.8 | 647.3 | *648.6* |
| 30° | 589.4 | 602.3 | 613.9 | 622.1 | 629.5 | 635.0 | 638.4 | *639.8* |
| 32.5° | 576.5 | 590.1 | 601.0 | 609.1 | 616.6 | 622.1 | 625.5 | *626.1* |
| 35° | 561.5 | 574.4 | 584.7 | 592.8 | 600.3 | 605.1 | 607.8 | *609.1* |
| 37.5° | 543.2 | 555.3 | 565.6 | 573.1 | 579.9 | 585.3 | 588.0 | *588.7* |
| 40° | 523.4 | 534.9 | 543.8 | 550.6 | 557.5 | 562.2 | 564.9 | *565.6* |
| 42.5° | 502.3 | 513.2 | 521.4 | 527.5 | 533.6 | 537.7 | 539.7 | *540.4* |
| 45° | 480.5 | 490.1 | 497.6 | 503.0 | 508.5 | 511.8 | 513.9 | *513.9* |
| 47.5° | 458.7 | 467.6 | 473.7 | 477.8 | 482.5 | 485.9 | 488.0 | *487.3* |
| 50° | 436.9 | 444.4 | 449.2 | 453.3 | 457.4 | 459.4 | 461.5 | *460.7* |
| 52.5° | 415.1 | 422.0 | 424.7 | 428.1 | 431.5 | 433.5 | 435.6 | *434.2* |
| 55° | 394.1 | 398.8 | 401.6 | 404.2 | 407.0 | 409.0 | 410.4 | *409.7* |
| 57.5° | 373.7 | 377.0 | 379.1 | 381.8 | 383.9 | 385.2 | 386.6 | *385.9* |
| 60° | 351.9 | 354.6 | 356.0 | 358.7 | 360.7 | 362.1 | 363.5 | *363.5* |
| 62.5° | 331.4 | 333.5 | 334.2 | 336.9 | 338.3 | 339.6 | 341.7 | *341.0* |
| 65° | 309.6 | 311.7 | 313.1 | 315.1 | 316.5 | 317.9 | 319.9 | *319.2* |
| 67.5° | 289.2 | 291.3 | 292.0 | 294.1 | 296.1 | 298.1 | 298.8 | *298.8* |
| 70° | 268.9 | 270.2 | 270.9 | 273.6 | 274.3 | 276.3 | 277.7 | *277.7* |
| 72.5° | 248.5 | 249.1 | 250.5 | 252.5 | 253.9 | 255.2 | 256.6 | *255.9* |
| 75° | 226.7 | 228.0 | 228.7 | 230.1 | 230.1 | 231.4 | 231.4 | *231.4* |
| 77.5° | 204.2 | 202.1 | 201.5 | 200.7 | 200.1 | 200.1 | 200.1 | *199.4* |
| 80° | 173.5 | 171.5 | 170.8 | 169.5 | 169.5 | 169.5 | 169.5 | *168.8* |
| 82.5° | 143.6 | 140.9 | 139.6 | 138.8 | 138.2 | 138.2 | 138.2 | *137.5* |
| 85° | 108.9 | 106.1 | 105.5 | 104.8 | 104.8 | 104.1 | 103.5 | *102.8* |
| 87.5° | 67.4 | 65.3 | 64.7 | 63.3 | 64.0 | 62.6 | 62.6 | *62.6* |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* |

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Scaled Data Report

TEST NUMBER: P976985
CATALOG NUMBER: 24SR-LD2-C-29-UNV-L950-CD1-SO-U

**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 | 9.9 | 11.6 | 10.2 | 11.9 | 12.2 | 12.5 | 14.2 | 12.8 | 14.5 | 14.8 |
| | 3H | 11.8 | 13.3 | 12.1 | 13.7 | 14.0 | 14.9 | 16.5 | 15.3 | 16.8 | 17.2 |
| | 4H | 12.5 | 14.0 | 12.9 | 14.3 | 14.7 | 16.1 | 17.6 | 16.5 | 17.9 | 18.3 |
| | 6H | 13.0 | 14.4 | 13.4 | 14.8 | 15.2 | 17.1 | 18.5 | 17.5 | 18.9 | 19.3 |
| | 8H | 13.2 | 14.6 | 13.6 | 15.0 | 15.4 | 17.5 | 18.9 | 18.0 | 19.3 | 19.7 |
| | 12H | 13.4 | 14.7 | 13.8 | 15.1 | 15.5 | 17.9 | 19.2 | 18.4 | 19.6 | 20.0 |
| 4H | 2H | 11.4 | 12.9 | 11.8 | 13.3 | 13.6 | 13.2 | 14.7 | 13.6 | 15.1 | 15.4 |
| | 3H | 13.8 | 15.1 | 14.2 | 15.5 | 15.9 | 15.9 | 17.2 | 16.3 | 17.6 | 18.0 |
| | 4H | 14.8 | 16.0 | 15.3 | 16.4 | 16.8 | 17.3 | 18.4 | 17.7 | 18.8 | 19.3 |
| | 6H | 15.7 | 16.7 | 16.1 | 17.2 | 17.6 | 18.5 | 19.5 | 18.9 | 19.9 | 20.4 |
| | 8H | 16.0 | 17.0 | 16.4 | 17.4 | 17.9 | 19.0 | 20.0 | 19.4 | 20.4 | 20.9 |
| | 12H | 16.2 | 17.1 | 16.7 | 17.6 | 18.0 | 19.5 | 20.4 | 20.0 | 20.8 | 21.3 |
| 8H | 4H | 15.9 | 16.9 | 16.3 | 17.3 | 17.8 | 17.8 | 18.8 | 18.2 | 19.2 | 19.7 |
| | 6H | 17.2 | 18.0 | 17.7 | 18.5 | 18.9 | 19.2 | 20.0 | 19.7 | 20.5 | 21.0 |
| | 8H | 17.7 | 18.5 | 18.2 | 19.0 | 19.4 | 19.9 | 20.6 | 20.4 | 21.1 | 21.6 |
| | 12H | 18.2 | 18.8 | 18.7 | 19.3 | 19.9 | 20.5 | 21.2 | 21.0 | 21.7 | 22.2 |
| 12H | 4H | 16.1 | 17.0 | 16.6 | 17.5 | 17.9 | 17.9 | 18.8 | 18.4 | 19.2 | 19.7 |
| | 6H | 17.5 | 18.3 | 18.0 | 18.7 | 19.3 | 19.4 | 20.1 | 19.9 | 20.6 | 21.1 |
| | 8H | 18.2 | 18.9 | 18.7 | 19.4 | 20.0 | 20.1 | 20.8 | 20.6 | 21.3 | 21.8 |

Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-457-8

Test Date: 07/02/2025

Luminaire Tested: 24SR-LD2-64-C-UNV-L950-CD1-U

Data in this report applies to families of products including 24SR-LD2-64-C-UNV-L950-CD1-U

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

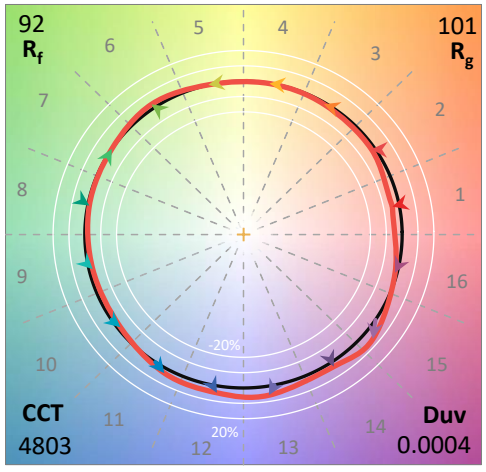
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2506-457-8 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 07/02/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Metalux |
| Catalog Number: | **24SR-LD2-64-C-UNV-L950-CD1-U** |
| Description: | 2X4 SKYRIDGE 6400LM Fixture with new LTN chip |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 4803 |
| CIE u': | 0.2133 |
| CIE v': | 0.4881 |
| Duv: | 0.0004 |
| CIE x: | 0.3510 |
| CIE y: | 0.3570 |
| CIE z: | 0.2921 |
| Peak Wavelength (nm): | 630 |
| Dominant Wavelength (nm): | 574 |
| Purity: | 12.41797 |
| Rf: | 91.5 |
| Rg: | 100.9 |

| | | | | | |
|---|---|---|---|---|---|
| CRI (Ra): | 94.6 | | | | |
| R1: | 95.9 | R9: | 74.3 | | |
| R2: | 96.0 | R10: | 88.6 | | |
| R3: | 94.0 | R11: | 95.2 | | |
| R4: | 95.8 | R12: | 71.3 | | |
| R5: | 94.6 | R13: | 96.0 | | |
| R6: | 92.9 | R14: | 96.1 | | |
| R7: | 96.3 | R15: | 94.1 | | |
| R8: | 91.2 | | | | |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 43M |
| Operation Time: | 1H 43M |
| Sphere Temperature (°C): | 24.9 |

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| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 10/22/2024 | 10/22/2025 |
| DC Power Source | AGILENT E3634A IN0208 | 10/22/2024 | 10/22/2025 |
| Sphere Thermometer | ONSET IN0085 | 10/22/2024 | 10/22/2025 |
| Room Thermometer | ONSET IN0046 | 10/22/2024 | 10/22/2025 |

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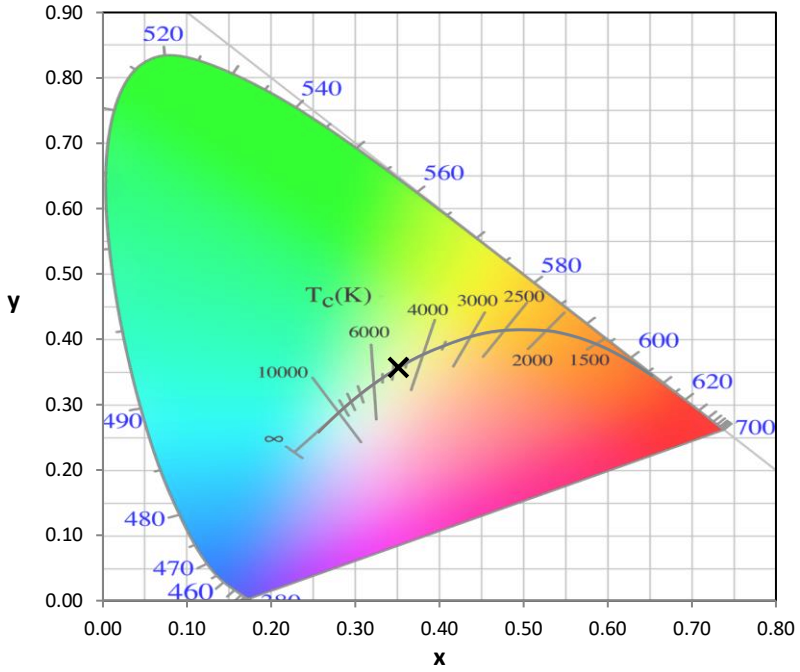
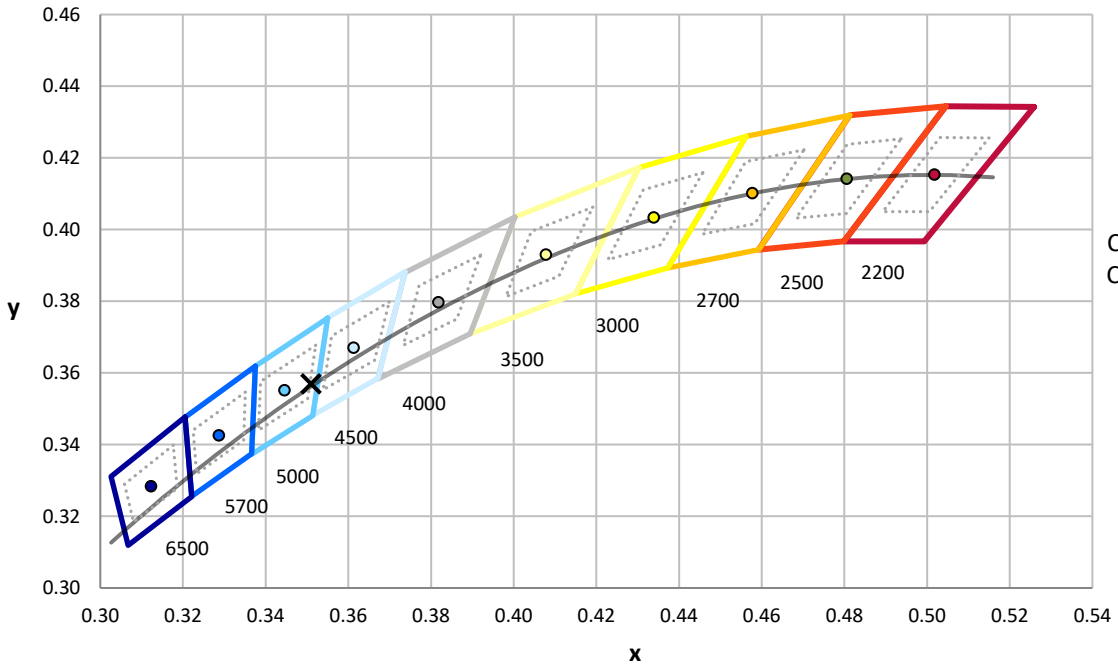
## CIE 1931 Chromaticity Diagram




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




CCT = 4803K
CIE x = 0.3510
CIE y = 0.3570
Duv = 0.0004

Point lies inside the ANSI 5000K 7-step quadrangle

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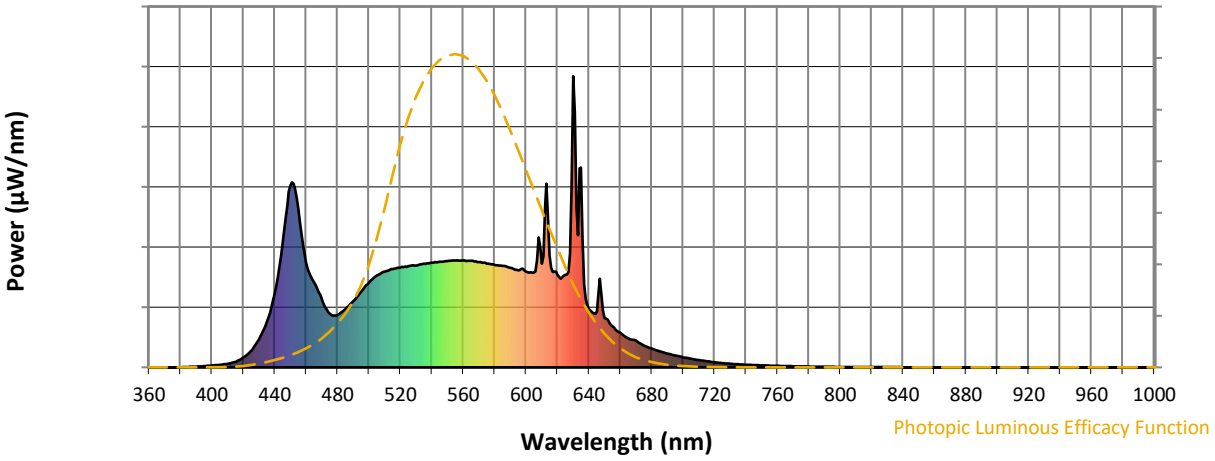
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 227 | NR | 620 | 318 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 259 | NR | 625 | 318 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 292 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 315 | NR | 635 | 686 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 329 | NR | 640 | 202 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 338 | NR | 645 | 192 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 343 | NR | 650 | 169 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 347 | NR | 655 | 141 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 350 | NR | 660 | 119 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 356 | NR | 665 | 100 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 359 | NR | 670 | 92 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 19 | NR | 545 | 363 | NR | 675 | 75 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 365 | NR | 680 | 64 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 57 | NR | 555 | 368 | NR | 685 | 55 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 96 | NR | 560 | 367 | NR | 690 | 47 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 157 | NR | 565 | 366 | NR | 695 | 41 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 252 | NR | 570 | 361 | NR | 700 | 34 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 427 | NR | 575 | 356 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 625 | NR | 580 | 352 | NR | 710 | 25 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 544 | NR | 585 | 348 | NR | 715 | 21 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 360 | NR | 590 | 342 | NR | 720 | 18 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 292 | NR | 595 | 333 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 329 | NR | 730 | 12 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 184 | NR | 605 | 325 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 180 | NR | 610 | 357 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 201 | NR | 615 | 384 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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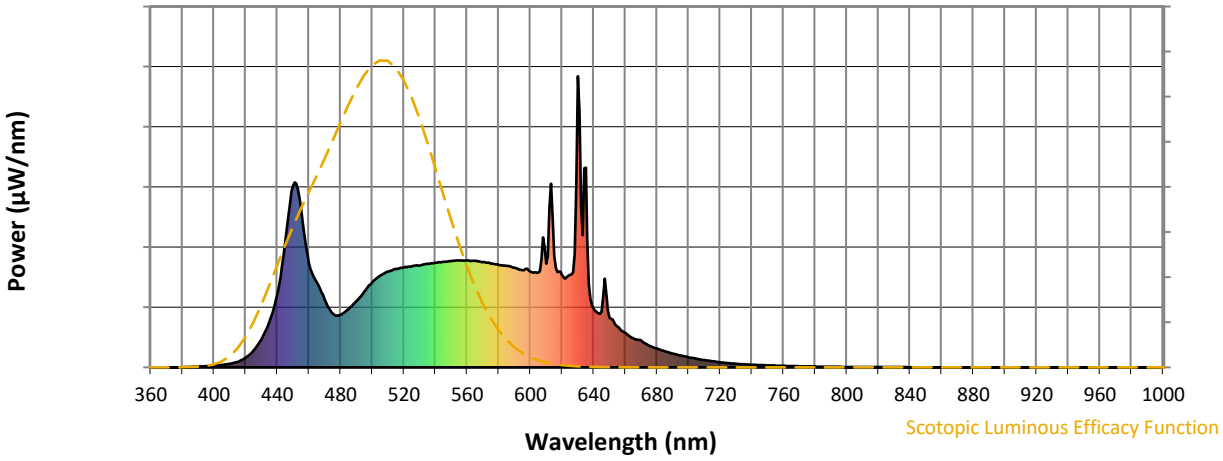
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 2.02**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 227 | NR | 620 | 318 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 259 | NR | 625 | 318 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 292 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 315 | NR | 635 | 686 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 329 | NR | 640 | 202 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 338 | NR | 645 | 192 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 343 | NR | 650 | 169 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 347 | NR | 655 | 141 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 350 | NR | 660 | 119 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 356 | NR | 665 | 100 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 359 | NR | 670 | 92 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 19 | NR | 545 | 363 | NR | 675 | 75 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 365 | NR | 680 | 64 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 57 | NR | 555 | 368 | NR | 685 | 55 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 96 | NR | 560 | 367 | NR | 690 | 47 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 157 | NR | 565 | 366 | NR | 695 | 41 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 252 | NR | 570 | 361 | NR | 700 | 34 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 427 | NR | 575 | 356 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 625 | NR | 580 | 352 | NR | 710 | 25 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 544 | NR | 585 | 348 | NR | 715 | 21 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 360 | NR | 590 | 342 | NR | 720 | 18 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 292 | NR | 595 | 333 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 329 | NR | 730 | 12 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 184 | NR | 605 | 325 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 180 | NR | 610 | 357 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 201 | NR | 615 | 384 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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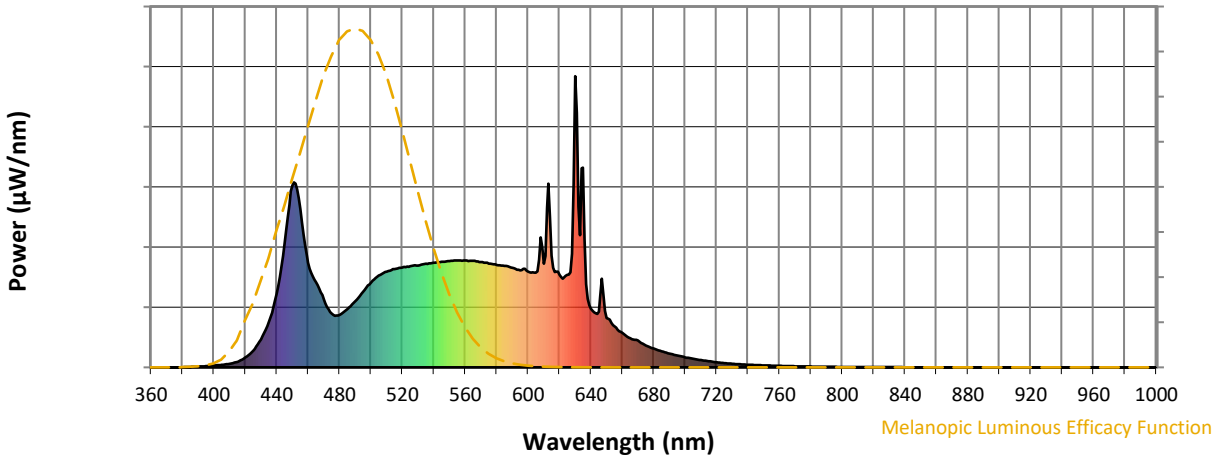
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 4.33**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 227 | NR | 620 | 318 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 259 | NR | 625 | 318 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 292 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 315 | NR | 635 | 686 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 329 | NR | 640 | 202 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 338 | NR | 645 | 192 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 343 | NR | 650 | 169 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 347 | NR | 655 | 141 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 350 | NR | 660 | 119 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 356 | NR | 665 | 100 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 359 | NR | 670 | 92 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 19 | NR | 545 | 363 | NR | 675 | 75 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 365 | NR | 680 | 64 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 57 | NR | 555 | 368 | NR | 685 | 55 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 96 | NR | 560 | 367 | NR | 690 | 47 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 157 | NR | 565 | 366 | NR | 695 | 41 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 252 | NR | 570 | 361 | NR | 700 | 34 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 427 | NR | 575 | 356 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 625 | NR | 580 | 352 | NR | 710 | 25 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 544 | NR | 585 | 348 | NR | 715 | 21 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 360 | NR | 590 | 342 | NR | 720 | 18 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 292 | NR | 595 | 333 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 329 | NR | 730 | 12 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 184 | NR | 605 | 325 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 180 | NR | 610 | 357 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 201 | NR | 615 | 384 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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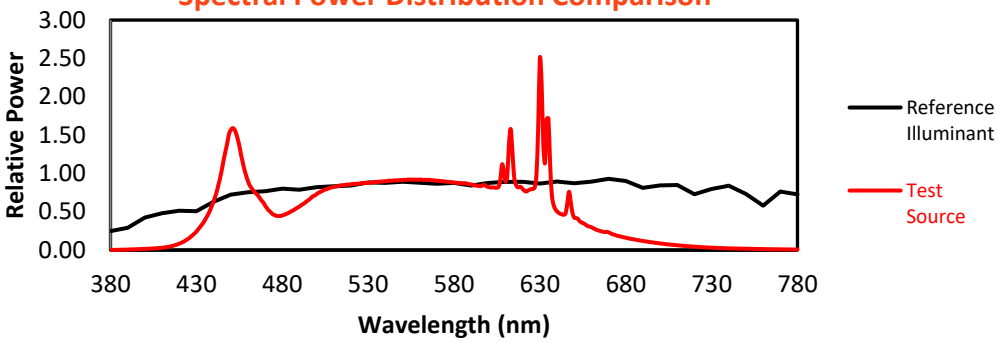
# TM-30-18

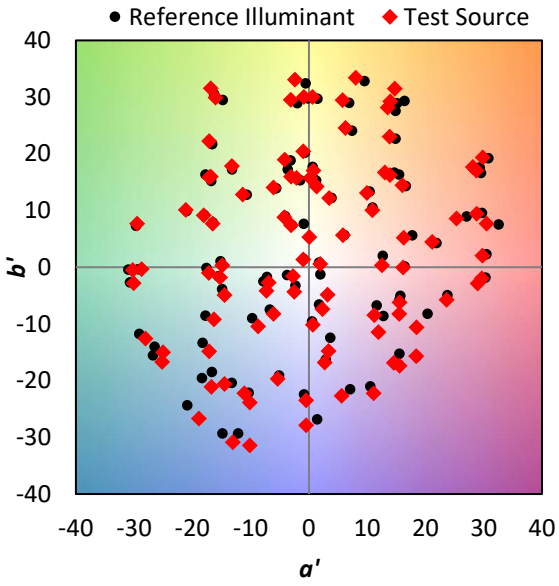
## Summary

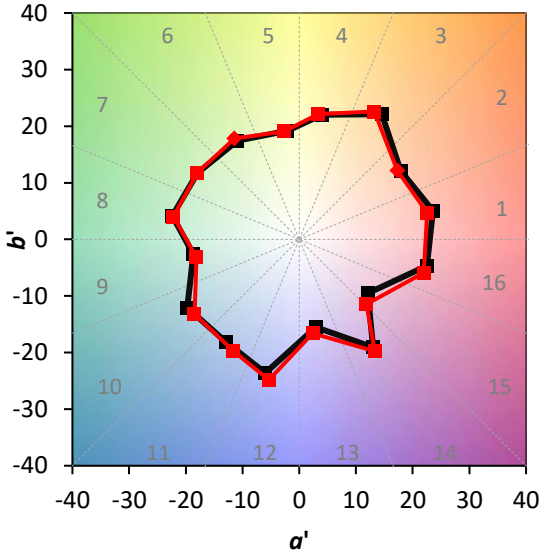
$R_f$ = 91.5
$R_g$ = 100.9
CIE $R_a$ = 94.6
$R_9$ = 74.3

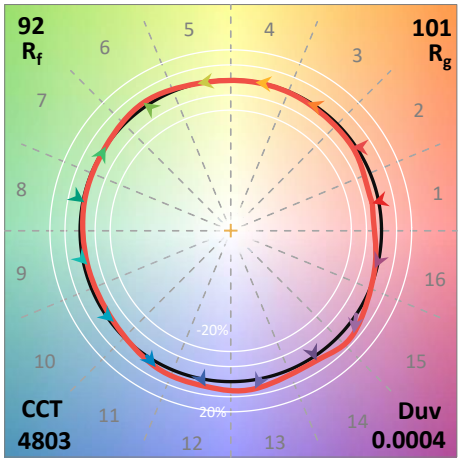
## Spectral Power Distribution Comparison

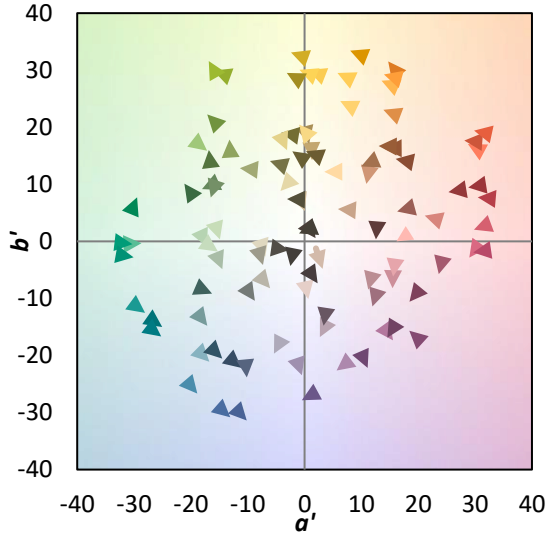



## Color Vector Graphics



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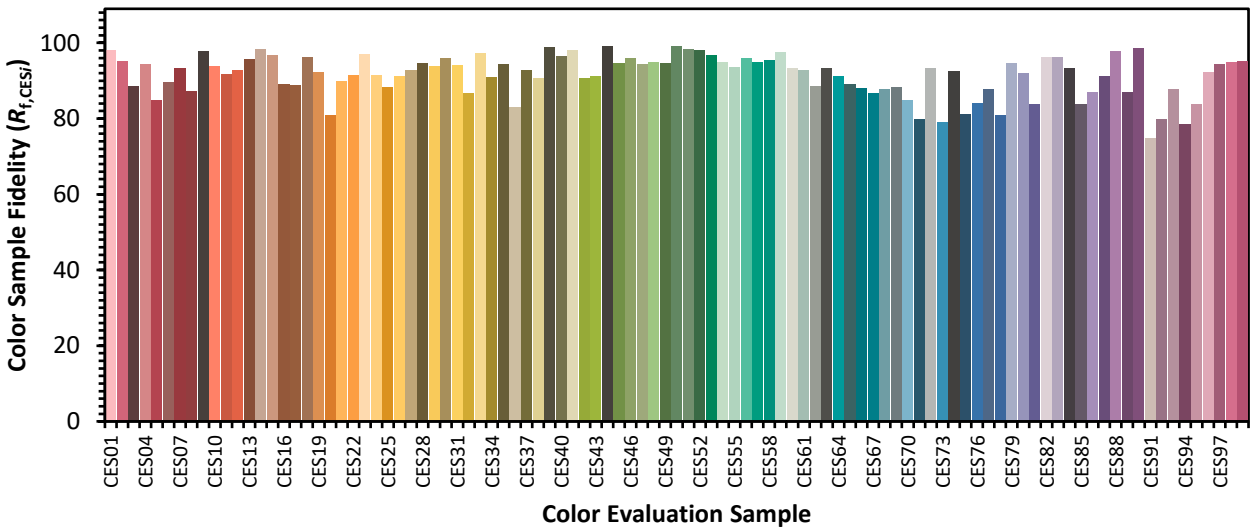
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 91 | CES51 = 98 | CES76 = 84 |
| CES02 = 61 | CES27 = 93 | CES52 = 98 | CES77 = 88 |
| CES03 = 31 | CES28 = 95 | CES53 = 97 | CES78 = 81 |
| CES04 = 69 | CES29 = 94 | CES54 = 95 | CES79 = 95 |
| CES05 = 48 | CES30 = 96 | CES55 = 94 | CES80 = 92 |
| CES06 = 50 | CES31 = 94 | CES56 = 96 | CES81 = 84 |
| CES07 = 41 | CES32 = 87 | CES57 = 95 | CES82 = 96 |
| CES08 = 40 | CES33 = 97 | CES58 = 95 | CES83 = 96 |
| CES09 = 29 | CES34 = 91 | CES59 = 98 | CES84 = 93 |
| CES10 = 73 | CES35 = 94 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 83 | CES61 = 93 | CES86 = 87 |
| CES12 = 62 | CES37 = 93 | CES62 = 89 | CES87 = 91 |
| CES13 = 43 | CES38 = 91 | CES63 = 93 | CES88 = 98 |
| CES14 = 74 | CES39 = 99 | CES64 = 91 | CES89 = 87 |
| CES15 = 71 | CES40 = 97 | CES65 = 89 | CES90 = 99 |
| CES16 = 47 | CES41 = 98 | CES66 = 88 | CES91 = 75 |
| CES17 = 48 | CES42 = 91 | CES67 = 87 | CES92 = 80 |
| CES18 = 56 | CES43 = 91 | CES68 = 88 | CES93 = 88 |
| CES19 = 70 | CES44 = 99 | CES69 = 88 | CES94 = 79 |
| CES20 = 65 | CES45 = 95 | CES70 = 85 | CES95 = 84 |
| CES21 = 85 | CES46 = 96 | CES71 = 80 | CES96 = 92 |
| CES22 = 77 | CES47 = 94 | CES72 = 93 | CES97 = 94 |
| CES23 = 91 | CES48 = 95 | CES73 = 79 | CES98 = 95 |
| CES24 = 90 | CES49 = 95 | CES74 = 93 | CES99 = 95 |
| CES25 = 70 | CES50 = 99 | CES75 = 81 | |



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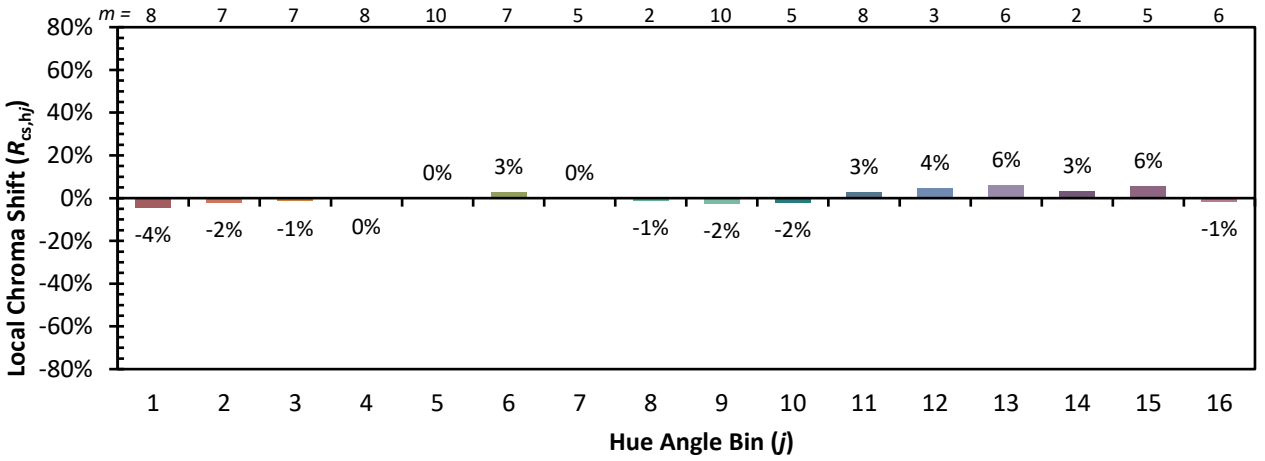
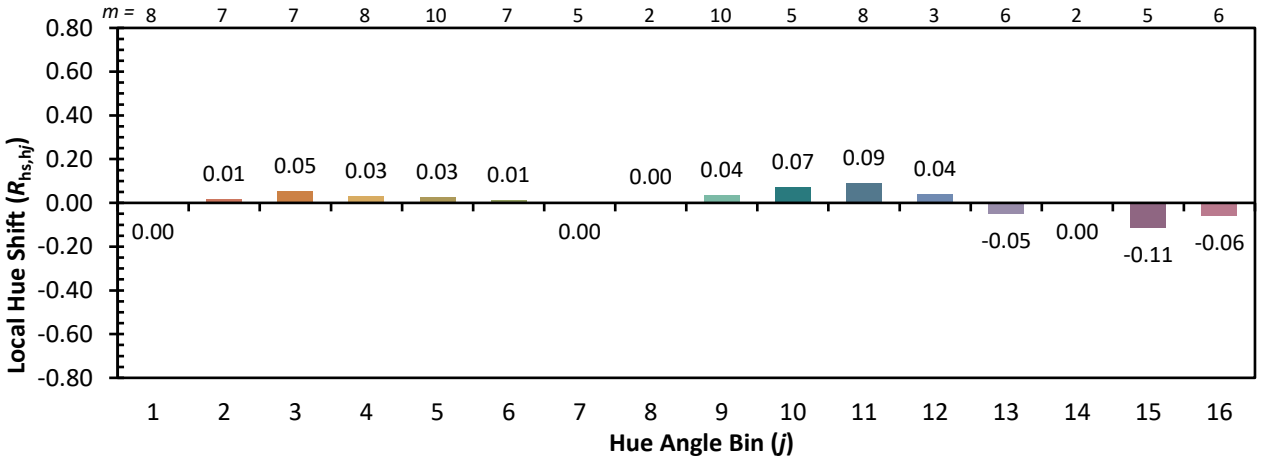
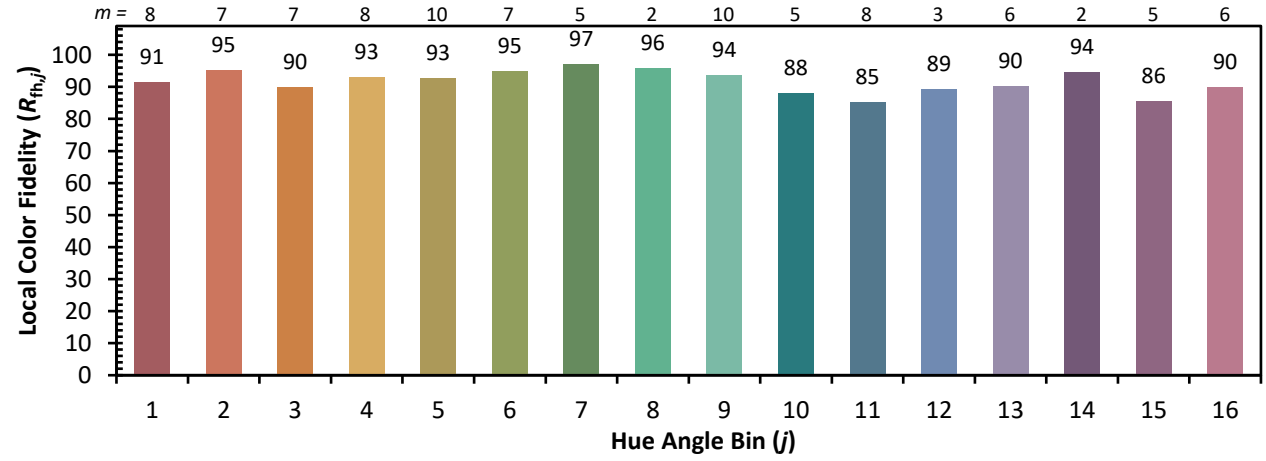
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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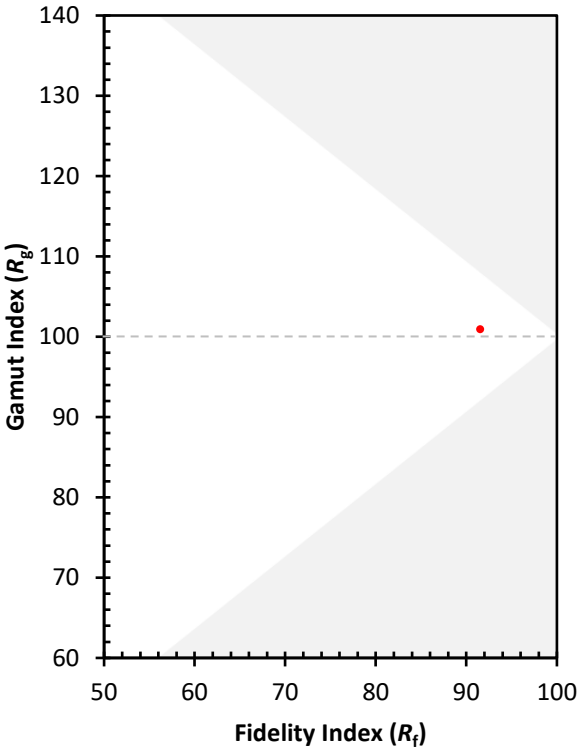
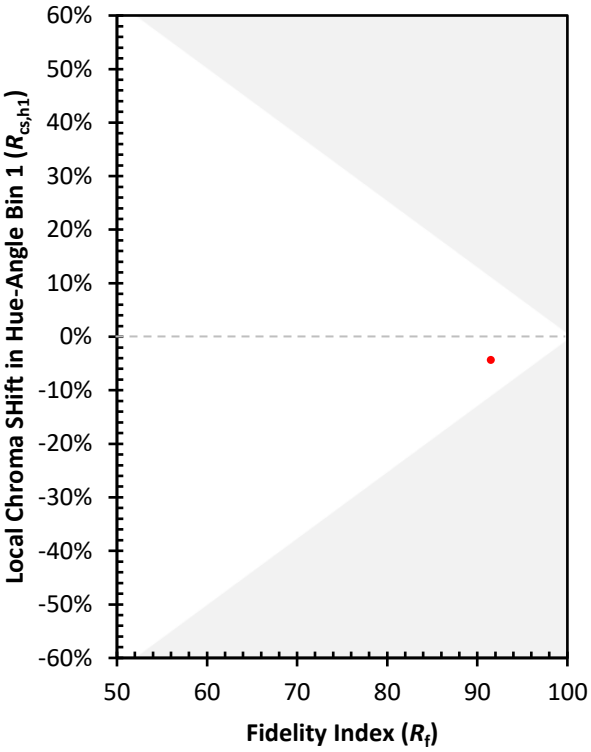
## Measure Comparisons




(END OF REPORT)