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: INVUE

Report Number: G2-2108-353-4

Luminaire Tested: **LXS-VA1-AMB-U-SYM-A**

Test Date: 9/20/2021

Report Generated By 670246001

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | G2-2108-353-4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Test Date: | 9/20/2021 |
| Issue Date: | 9/20/2021 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | INVUE |
| Catalog Number: | LXS-VA1-AMB-U-SYM-A |
| Description: | LUXESCAPE OUTDOOR ARCHITECTURAL LUMINAIRE<br>NARROW BAND AMBER LEDS AND TYPE V OPTIC, ARM MOUNT |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 1773.4 lumens |
| Efficiency: | N/A |
| Efficacy: | 27.0 lumens/watt |
| Luminous Opening: | Circular (Dia: 1.67' x H: 0') |
| IES Classification: | Type V - Short |
| BUG Rating: | B1 - U0 - G1 |

| | |
|---|---|
| Input Watts (W): | 65.6 |
| Input Voltage (V): | NR |
| 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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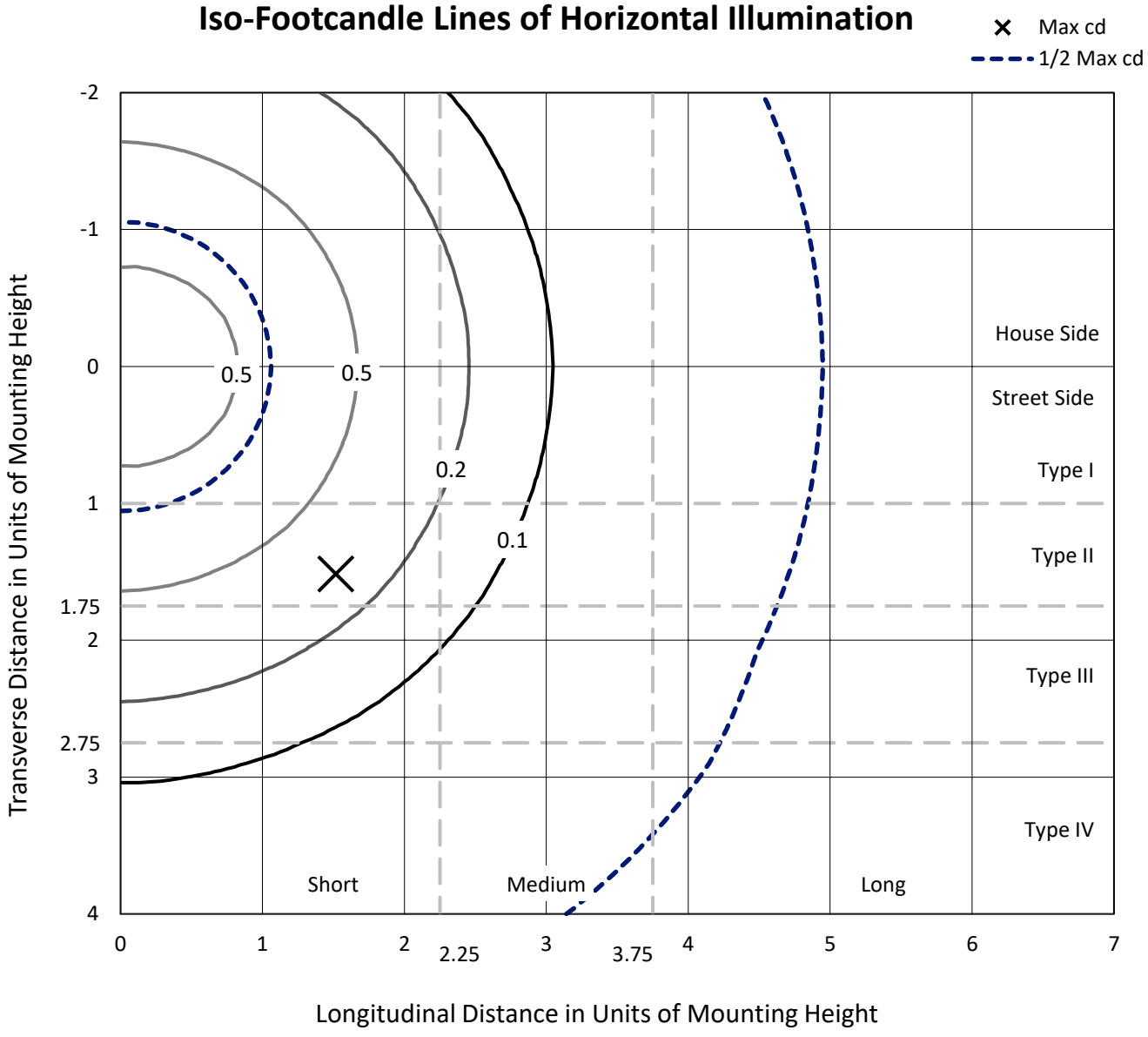
Scaled Data Report

REPORT NUMBER: G2-2108-353-4
CATALOG NUMBER: LXS-VA1-AMB-U-SYM-A

## Iso-Footcandle Lines of Horizontal Illumination




Based on 12 foot mounting height. Maximum calculated value = 0.7 fc
Type V - Short - N/A

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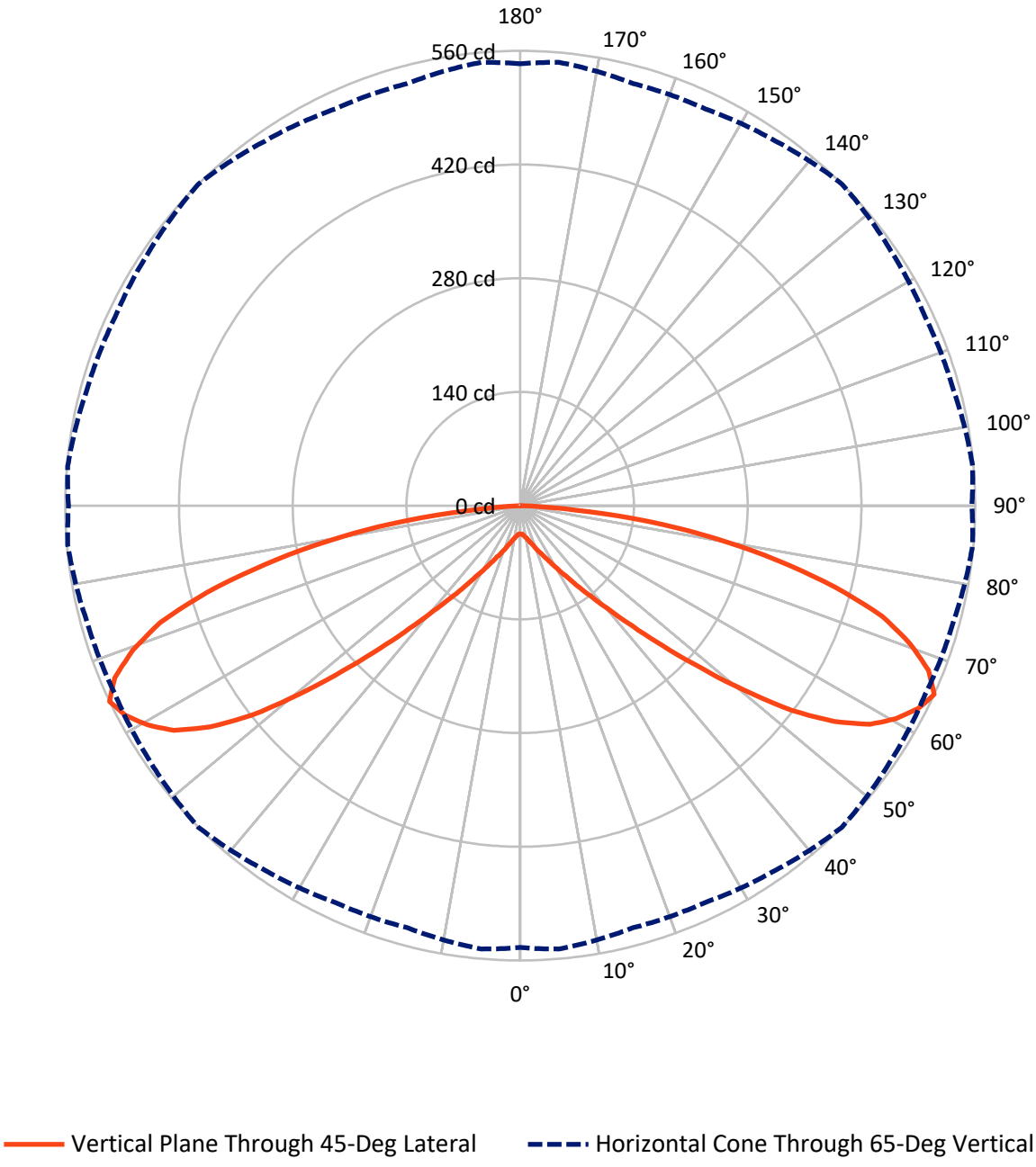
REPORT NUMBER: G2-2108-353-4
CATALOG NUMBER: LXS-VA1-AMB-U-SYM-A

## Luminous Intensity Polar Plot



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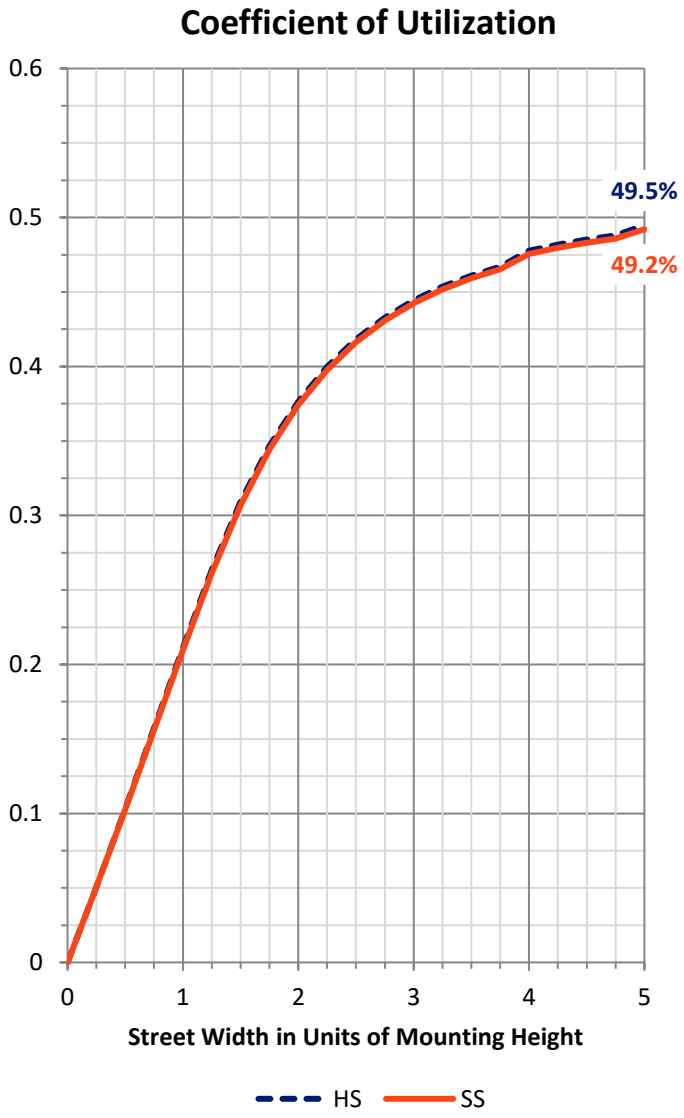
REPORT NUMBER: G2-2108-353-4
CATALOG NUMBER: LXS-VA1-AMB-U-SYM-A

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 886.7 | 0.0 | 886.7 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| **Street Side** | Lumens | 886.7 | 0.0 | 886.7 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| **Total** | Lumens | 1773.4 | 0.0 | 1773.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 3.6 | 0.2 |
| 10°-20° | 13.7 | 0.8 |
| 20°-30° | 33.3 | 1.9 |
| 30°-40° | 78.5 | 4.4 |
| 40°-50° | 197.1 | 11.1 |
| 50°-60° | 412.5 | 23.3 |
| 60°-70° | 534.1 | 30.1 |
| 70°-80° | 408.0 | 23.0 |
| 80°-90° | 92.5 | 5.2 |
| 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°-90° | 1773.4 | 100.0 |
| 0°-180° | 1773.4 | 100.0 |



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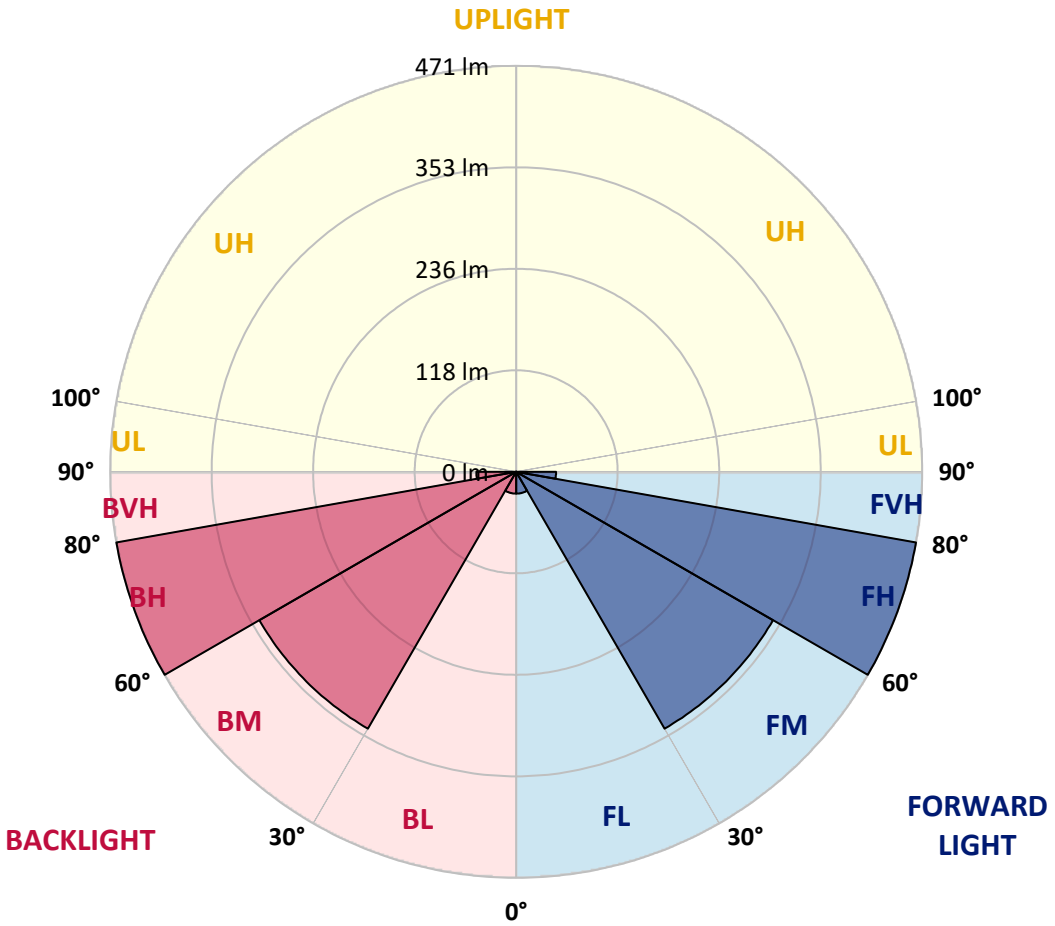
REPORT NUMBER: G2-2108-353-4
CATALOG NUMBER: LXS-VA1-AMB-U-SYM-A

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 25.3 | 1.4 | | | |
| FM | (30°-60°) | 344.1 | 19.4 | | | |
| FH | (60°-80°) | 471.1 | 26.6 | | | G0/660 |
| FVH | (80°-90°) | 46.2 | 2.6 | | | G1/100 |
| BL | (0°-30°) | 25.3 | 1.4 | B0/110 | | |
| BM | (30°-60°) | 344.1 | 19.4 | B1/1000 | | |
| BH | (60°-80°) | 471.1 | 26.6 | B1/500 | | G0/660 |
| BVH | (80°-90°) | 46.2 | 2.6 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G1**
Type V Short



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REPORT NUMBER: G2-2108-353-4
CATALOG NUMBER: LXS-VA1-AMB-U-SYM-A

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| 2.5° | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| 5° | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| 7.5° | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| 10° | 41 | 41 | 41 | 41 | 41 | 40 | 40 | 40 | 40 | 40 | 40 |
| 12.5° | 44 | 44 | 44 | 44 | 44 | 43 | 43 | 43 | 43 | 43 | 43 |
| 15° | 48 | 48 | 48 | 48 | 47 | 47 | 47 | 46 | 46 | 46 | 46 |
| 17.5° | 53 | 53 | 53 | 53 | 52 | 51 | 51 | 50 | 50 | 50 | 50 |
| 20° | 59 | 59 | 59 | 58 | 57 | 57 | 56 | 55 | 54 | 54 | 54 |
| 22.5° | 66 | 66 | 65 | 65 | 64 | 63 | 62 | 60 | 60 | 59 | 59 |
| 25° | 74 | 74 | 73 | 73 | 71 | 70 | 69 | 67 | 66 | 66 | 66 |
| 27.5° | 84 | 83 | 83 | 82 | 80 | 79 | 77 | 75 | 74 | 74 | 74 |
| 30° | 96 | 95 | 95 | 94 | 91 | 90 | 87 | 86 | 85 | 84 | 84 |
| 32.5° | 110 | 110 | 109 | 108 | 105 | 103 | 101 | 99 | 98 | 97 | 97 |
| 35° | 128 | 127 | 127 | 126 | 123 | 121 | 118 | 116 | 114 | 113 | 113 |
| 37.5° | 149 | 148 | 147 | 146 | 144 | 142 | 139 | 137 | 135 | 134 | 134 |
| 40° | 174 | 173 | 173 | 172 | 170 | 168 | 166 | 164 | 163 | 161 | 161 |
| 42.5° | 207 | 206 | 206 | 205 | 204 | 203 | 202 | 199 | 199 | 197 | 198 |
| 45° | 249 | 248 | 247 | 247 | 246 | 246 | 245 | 244 | 245 | 243 | 242 |
| 47.5° | 298 | 298 | 297 | 297 | 297 | 297 | 298 | 298 | 299 | 297 | 296 |
| 50° | 353 | 352 | 353 | 355 | 355 | 357 | 358 | 359 | 361 | 360 | 359 |
| 52.5° | 414 | 412 | 413 | 411 | 414 | 419 | 419 | 420 | 422 | 422 | 421 |
| 55° | 465 | 463 | 462 | 463 | 465 | 469 | 472 | 471 | 473 | 474 | 475 |
| 57.5° | 499 | 498 | 496 | 496 | 500 | 508 | 507 | 507 | 511 | 512 | 512 |
| 60° | 525 | 523 | 522 | 522 | 526 | 532 | 534 | 537 | 539 | 540 | 541 |
| 62.5° | 537 | 542 | 542 | 541 | 550 | 550 | 558 | 552 | 555 | 558 | 552 |
| 65° | 544 | 548 | 538 | 539 | 548 | 560 | 554 | 550 | 552 | 559 | 556 |
| 67.5° | 538 | 531 | 528 | 530 | 533 | 542 | 539 | 535 | 536 | 542 | 539 |
| 70° | 503 | 505 | 504 | 502 | 509 | 509 | 513 | 507 | 505 | 508 | 508 |
| 72.5° | 459 | 460 | 452 | 453 | 463 | 466 | 464 | 456 | 458 | 458 | 461 |
| 75° | 402 | 394 | 391 | 392 | 398 | 400 | 398 | 389 | 392 | 392 | 395 |
| 77.5° | 325 | 322 | 326 | 319 | 326 | 323 | 324 | 314 | 316 | 316 | 316 |
| 80° | 241 | 246 | 241 | 239 | 242 | 243 | 240 | 233 | 231 | 230 | 231 |
| 82.5° | 162 | 161 | 157 | 160 | 158 | 160 | 155 | 149 | 146 | 146 | 144 |
| 85° | 82 | 74 | 71 | 68 | 70 | 67 | 65 | 59 | 57 | 55 | 57 |
| 87.5° | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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Peachtree City, GA 30269

# LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

INVUE

Report Number: SP1-2201-507-1

Luminaire Tested: ARB-B1-LED-D1-T2-AMB

Test Date: 01/21/2022

Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.09

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

## Test Information

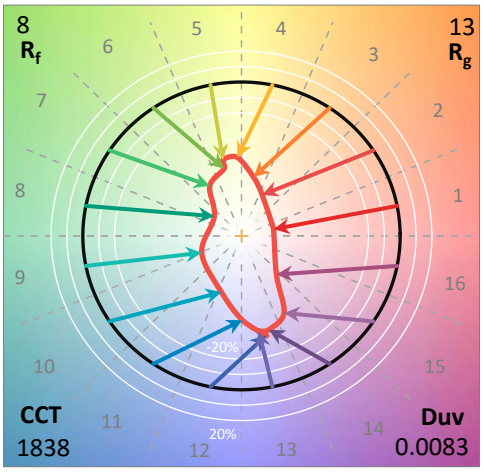
| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | SP1-2201-507-1 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 |
| Measurement Geometry: | 4π |
| Issue Date: | 01/21/2022 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | INVUE |
| Catalog Number: | **ARB-B1-LED-D1-T2-AMB** |
| Description: | INVUE ARBOR AMBER |

TESTED IN SITU. ARBOR OUTDOOR ARCHITECTURAL POST TOP. NARROW BAND AMBER LEDS AND TYPE II OPTIC, GRAPHITE METALLIC PAINTED FINISH. EACH LED BOARD AT 500MA.

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 1838 | CRI (Ra): | -25.2 | | |
| CIE u': | 0.3190 | R1: | -44.1 | R9: | -415.1 |
| CIE v': | 0.5510 | R2: | 45.5 | R10: | 16.1 |
| Duv: | 0.0083 | R3: | 23.9 | R11: | -105.6 |
| CIE x: | 0.5632 | R4: | -72.5 | R12: | -27.5 |
| CIE y: | 0.4323 | R5: | -46.4 | R13: | -25.8 |
| CIE z: | 0.0045 | R6: | 27.4 | R14: | 48.6 |
| Peak Wavelength (nm): | 591 | R7: | -2.2 | | |
| Dominant Wavelength (nm): | 588 | R8: | -133.0 | | |
| Purity: | 99.4 | | | | |

| | |
|---|---|
| Rf: | 8 |
| Rg: | 12.7 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 164M |
| Operation Time: | 12H |
| Room Temperature (°C) / RH%: | 24.2/26% |
| Sphere Temperature (°C): | 24.6 |

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REPORT NUMBER: SP1-2201-507-1
CATALOG NUMBER: ARB-B1-LED-D1-T2-AMB

| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 8/3/2021 | 2/3/2022 |
| 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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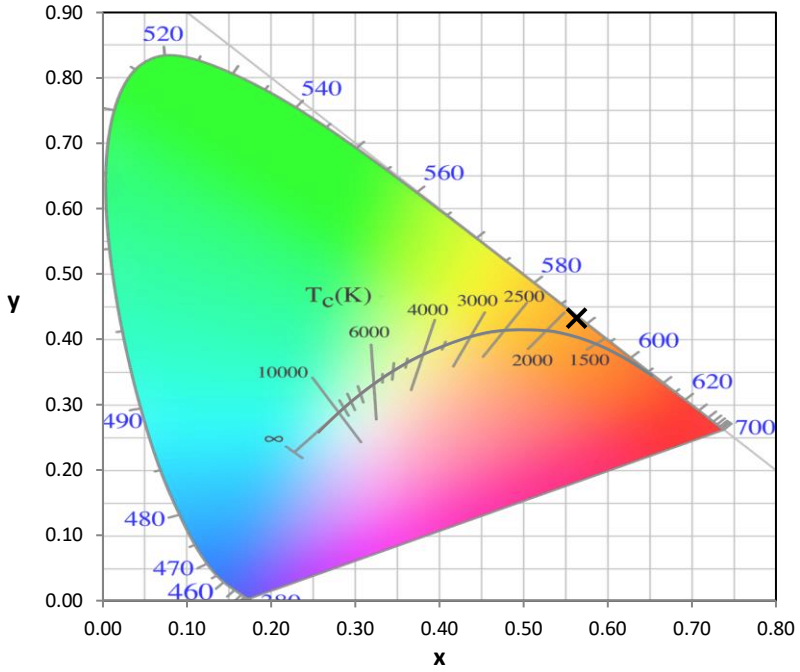
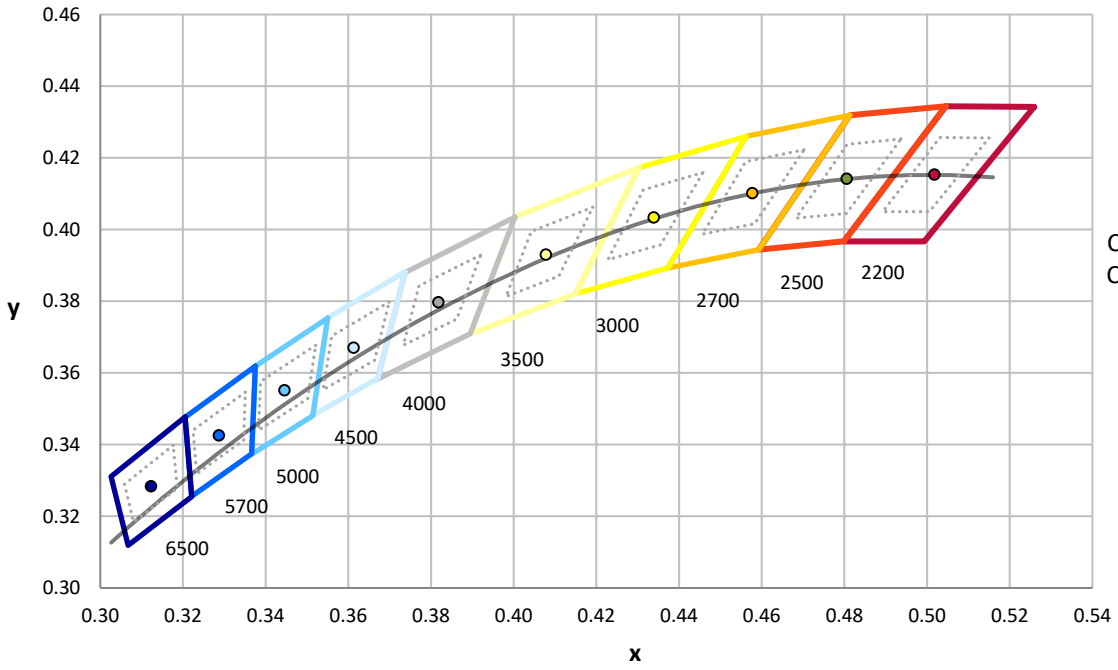
REPORT NUMBER: SP1-2201-507-1

## CIE 1931 Chromaticity Diagram




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




CCT = 1838K
CIE x = 0.5632
CIE y = 0.4323
Duv = 0.0083

Point lies outside the range

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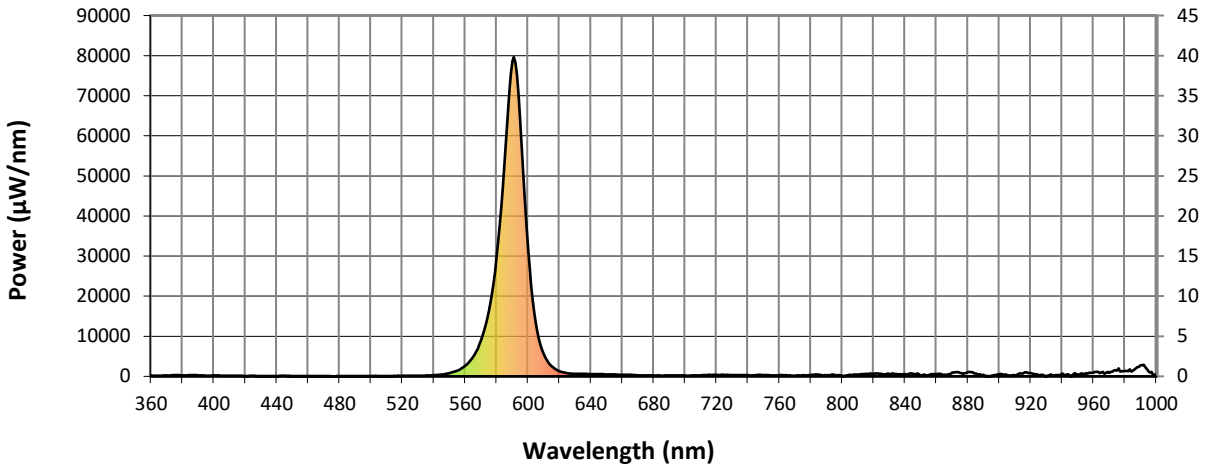
## Photopic Flux vs. Wavelength



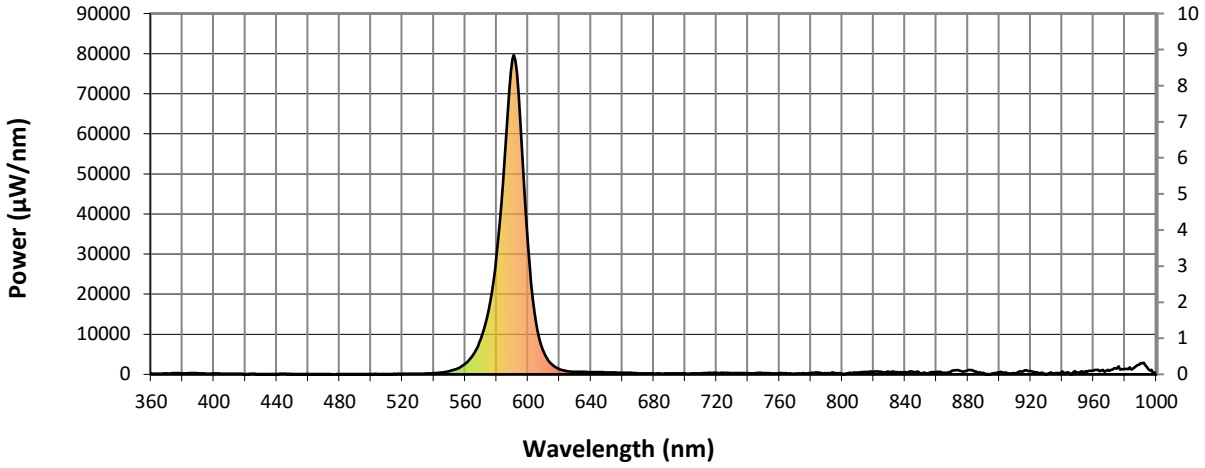

######

| 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 | 232 | NR | 490 | 102 | NR | 620 | 1285 | NR | 750 | 361 | NR | 880 | 1054 | NR |
| 365 | 141 | NR | 495 | 91 | NR | 625 | 794 | NR | 755 | 226 | NR | 885 | 743 | NR |
| 370 | 221 | NR | 500 | 109 | NR | 630 | 604 | NR | 760 | 303 | NR | 890 | 375 | NR |
| 375 | 314 | NR | 505 | 95 | NR | 635 | 625 | NR | 765 | 277 | NR | 895 | 132 | NR |
| 380 | 237 | NR | 510 | 92 | NR | 640 | 568 | NR | 770 | 149 | NR | 900 | 509 | NR |
| 385 | 296 | NR | 515 | 131 | NR | 645 | 573 | NR | 775 | 286 | NR | 905 | 284 | NR |
| 390 | 260 | NR | 520 | 132 | NR | 650 | 495 | NR | 780 | 359 | NR | 910 | 225 | NR |
| 395 | 190 | NR | 525 | 133 | NR | 655 | 464 | NR | 785 | 390 | NR | 915 | 726 | NR |
| 400 | 227 | NR | 530 | 175 | NR | 660 | 397 | NR | 790 | 276 | NR | 920 | 800 | NR |
| 405 | 169 | NR | 535 | 205 | NR | 665 | 409 | NR | 795 | 342 | NR | 925 | 345 | NR |
| 410 | 152 | NR | 540 | 294 | NR | 670 | 281 | NR | 800 | 177 | NR | 930 | 77 | NR |
| 415 | 171 | NR | 545 | 475 | NR | 675 | 262 | NR | 805 | 373 | NR | 935 | 233 | NR |
| 420 | 121 | NR | 550 | 833 | NR | 680 | 208 | NR | 810 | 500 | NR | 940 | 730 | NR |
| 425 | 135 | NR | 555 | 1466 | NR | 685 | 193 | NR | 815 | 602 | NR | 945 | 259 | NR |
| 430 | 90 | NR | 560 | 2623 | NR | 690 | 213 | NR | 820 | 681 | NR | 950 | 510 | NR |
| 435 | 92 | NR | 565 | 4872 | NR | 695 | 267 | NR | 825 | 615 | NR | 955 | 800 | NR |
| 440 | 87 | NR | 570 | 8896 | NR | 700 | 218 | NR | 830 | 529 | NR | 960 | 959 | NR |
| 445 | 129 | NR | 575 | 16191 | NR | 705 | 234 | NR | 835 | 526 | NR | 965 | 925 | NR |
| 450 | 75 | NR | 580 | 29728 | NR | 710 | 280 | NR | 840 | 531 | NR | 970 | 863 | NR |
| 455 | 88 | NR | 585 | 53245 | NR | 715 | 393 | NR | 845 | 627 | NR | 975 | 1444 | NR |
| 460 | 76 | NR | 590 | 78694 | NR | 720 | 370 | NR | 850 | 248 | NR | 980 | 1342 | NR |
| 465 | 74 | NR | 595 | 63659 | NR | 725 | 376 | NR | 855 | 262 | NR | 985 | 1396 | NR |
| 470 | 87 | NR | 600 | 31696 | NR | 730 | 324 | NR | 860 | 579 | NR | 990 | 2816 | NR |
| 475 | 37 | NR | 605 | 13208 | NR | 735 | 359 | NR | 865 | 439 | NR | 995 | 1223 | NR |
| 480 | 77 | NR | 610 | 5473 | NR | 740 | 294 | NR | 870 | 923 | NR | 1000 | 487 | NR |
| 485 | 97 | NR | 615 | 2571 | NR | 745 | 300 | NR | 875 | 874 | NR | | | |

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

REPORT NUMBER: SP1-2201-507-1

## Scotopic Flux vs. Wavelength




**Scotopic Lumens: 236** **S/P: 0.29**

| 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 | 232 | NR | 490 | 102 | NR | 620 | 1285 | NR | 750 | 361 | NR | 880 | 1054 | NR |
| 365 | 141 | NR | 495 | 91 | NR | 625 | 794 | NR | 755 | 226 | NR | 885 | 743 | NR |
| 370 | 221 | NR | 500 | 109 | NR | 630 | 604 | NR | 760 | 303 | NR | 890 | 375 | NR |
| 375 | 314 | NR | 505 | 95 | NR | 635 | 625 | NR | 765 | 277 | NR | 895 | 132 | NR |
| 380 | 237 | NR | 510 | 92 | NR | 640 | 568 | NR | 770 | 149 | NR | 900 | 509 | NR |
| 385 | 296 | NR | 515 | 131 | NR | 645 | 573 | NR | 775 | 286 | NR | 905 | 284 | NR |
| 390 | 260 | NR | 520 | 132 | NR | 650 | 495 | NR | 780 | 359 | NR | 910 | 225 | NR |
| 395 | 190 | NR | 525 | 133 | NR | 655 | 464 | NR | 785 | 390 | NR | 915 | 726 | NR |
| 400 | 227 | NR | 530 | 175 | NR | 660 | 397 | NR | 790 | 276 | NR | 920 | 800 | NR |
| 405 | 169 | NR | 535 | 205 | NR | 665 | 409 | NR | 795 | 342 | NR | 925 | 345 | NR |
| 410 | 152 | NR | 540 | 294 | NR | 670 | 281 | NR | 800 | 177 | NR | 930 | 77 | NR |
| 415 | 171 | NR | 545 | 475 | NR | 675 | 262 | NR | 805 | 373 | NR | 935 | 233 | NR |
| 420 | 121 | NR | 550 | 833 | NR | 680 | 208 | NR | 810 | 500 | NR | 940 | 730 | NR |
| 425 | 135 | NR | 555 | 1466 | NR | 685 | 193 | NR | 815 | 602 | NR | 945 | 259 | NR |
| 430 | 90 | NR | 560 | 2623 | NR | 690 | 213 | NR | 820 | 681 | NR | 950 | 510 | NR |
| 435 | 92 | NR | 565 | 4872 | NR | 695 | 267 | NR | 825 | 615 | NR | 955 | 800 | NR |
| 440 | 87 | NR | 570 | 8896 | NR | 700 | 218 | NR | 830 | 529 | NR | 960 | 959 | NR |
| 445 | 129 | NR | 575 | 16191 | NR | 705 | 234 | NR | 835 | 526 | NR | 965 | 925 | NR |
| 450 | 75 | NR | 580 | 29728 | NR | 710 | 280 | NR | 840 | 531 | NR | 970 | 863 | NR |
| 455 | 88 | NR | 585 | 53245 | NR | 715 | 393 | NR | 845 | 627 | NR | 975 | 1444 | NR |
| 460 | 76 | NR | 590 | 78694 | NR | 720 | 370 | NR | 850 | 248 | NR | 980 | 1342 | NR |
| 465 | 74 | NR | 595 | 63659 | NR | 725 | 376 | NR | 855 | 262 | NR | 985 | 1396 | NR |
| 470 | 87 | NR | 600 | 31696 | NR | 730 | 324 | NR | 860 | 579 | NR | 990 | 2816 | NR |
| 475 | 37 | NR | 605 | 13208 | NR | 735 | 359 | NR | 865 | 439 | NR | 995 | 1223 | NR |
| 480 | 77 | NR | 610 | 5473 | NR | 740 | 294 | NR | 870 | 923 | NR | 1000 | 487 | NR |
| 485 | 97 | NR | 615 | 2571 | NR | 745 | 300 | NR | 875 | 874 | NR | | | |

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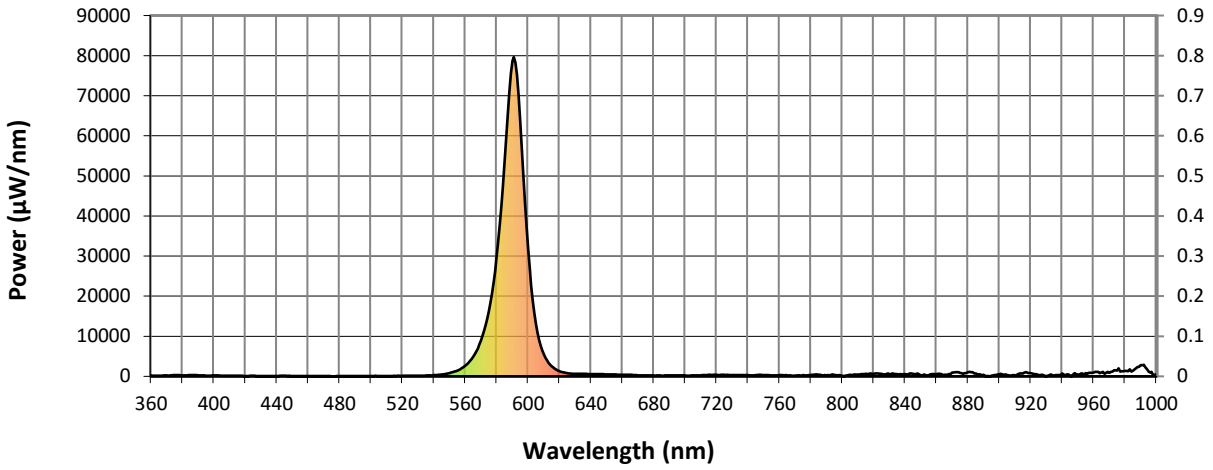
Peachtree City, GA 30269

REPORT NUMBER: SP1-2201-507-1

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: 31.6** **S/P: 0.04**

| 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 | 232 | NR | 490 | 102 | NR | 620 | 1285 | NR | 750 | 361 | NR | 880 | 1054 | NR |
| 365 | 141 | NR | 495 | 91 | NR | 625 | 794 | NR | 755 | 226 | NR | 885 | 743 | NR |
| 370 | 221 | NR | 500 | 109 | NR | 630 | 604 | NR | 760 | 303 | NR | 890 | 375 | NR |
| 375 | 314 | NR | 505 | 95 | NR | 635 | 625 | NR | 765 | 277 | NR | 895 | 132 | NR |
| 380 | 237 | NR | 510 | 92 | NR | 640 | 568 | NR | 770 | 149 | NR | 900 | 509 | NR |
| 385 | 296 | NR | 515 | 131 | NR | 645 | 573 | NR | 775 | 286 | NR | 905 | 284 | NR |
| 390 | 260 | NR | 520 | 132 | NR | 650 | 495 | NR | 780 | 359 | NR | 910 | 225 | NR |
| 395 | 190 | NR | 525 | 133 | NR | 655 | 464 | NR | 785 | 390 | NR | 915 | 726 | NR |
| 400 | 227 | NR | 530 | 175 | NR | 660 | 397 | NR | 790 | 276 | NR | 920 | 800 | NR |
| 405 | 169 | NR | 535 | 205 | NR | 665 | 409 | NR | 795 | 342 | NR | 925 | 345 | NR |
| 410 | 152 | NR | 540 | 294 | NR | 670 | 281 | NR | 800 | 177 | NR | 930 | 77 | NR |
| 415 | 171 | NR | 545 | 475 | NR | 675 | 262 | NR | 805 | 373 | NR | 935 | 233 | NR |
| 420 | 121 | NR | 550 | 833 | NR | 680 | 208 | NR | 810 | 500 | NR | 940 | 730 | NR |
| 425 | 135 | NR | 555 | 1466 | NR | 685 | 193 | NR | 815 | 602 | NR | 945 | 259 | NR |
| 430 | 90 | NR | 560 | 2623 | NR | 690 | 213 | NR | 820 | 681 | NR | 950 | 510 | NR |
| 435 | 92 | NR | 565 | 4872 | NR | 695 | 267 | NR | 825 | 615 | NR | 955 | 800 | NR |
| 440 | 87 | NR | 570 | 8896 | NR | 700 | 218 | NR | 830 | 529 | NR | 960 | 959 | NR |
| 445 | 129 | NR | 575 | 16191 | NR | 705 | 234 | NR | 835 | 526 | NR | 965 | 925 | NR |
| 450 | 75 | NR | 580 | 29728 | NR | 710 | 280 | NR | 840 | 531 | NR | 970 | 863 | NR |
| 455 | 88 | NR | 585 | 53245 | NR | 715 | 393 | NR | 845 | 627 | NR | 975 | 1444 | NR |
| 460 | 76 | NR | 590 | 78694 | NR | 720 | 370 | NR | 850 | 248 | NR | 980 | 1342 | NR |
| 465 | 74 | NR | 595 | 63659 | NR | 725 | 376 | NR | 855 | 262 | NR | 985 | 1396 | NR |
| 470 | 87 | NR | 600 | 31696 | NR | 730 | 324 | NR | 860 | 579 | NR | 990 | 2816 | NR |
| 475 | 37 | NR | 605 | 13208 | NR | 735 | 359 | NR | 865 | 439 | NR | 995 | 1223 | NR |
| 480 | 77 | NR | 610 | 5473 | NR | 740 | 294 | NR | 870 | 923 | NR | 1000 | 487 | NR |
| 485 | 97 | NR | 615 | 2571 | NR | 745 | 300 | NR | 875 | 874 | NR | | | |

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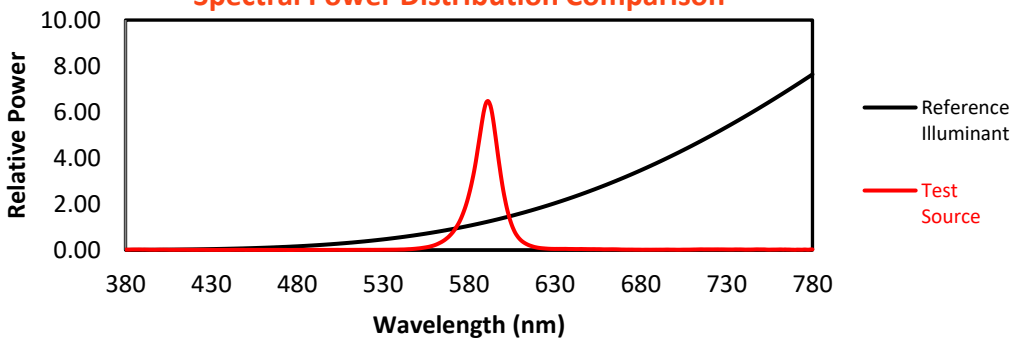
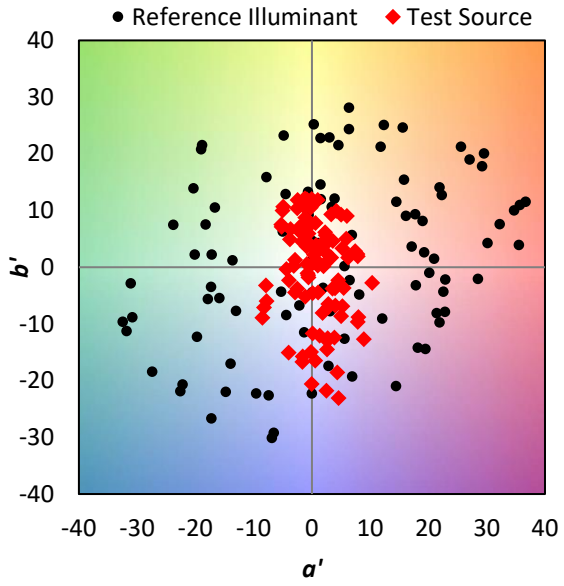
## Summary

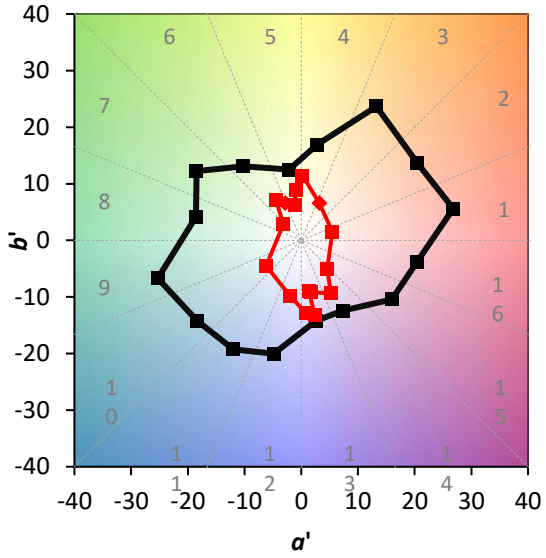
$R_f$ = 8
$R_g$ = 12.7
CIE $R_a$ = -25.2
$R_9$ = -415.1

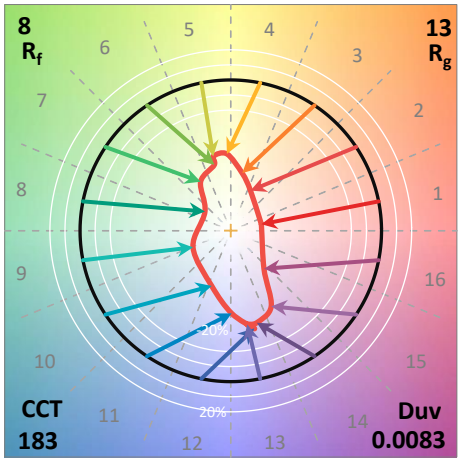
## Spectral Power Distribution Comparison

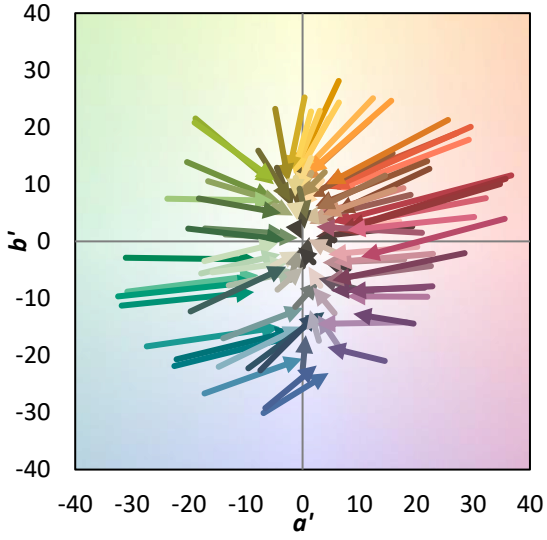



## Color Vector Graphics



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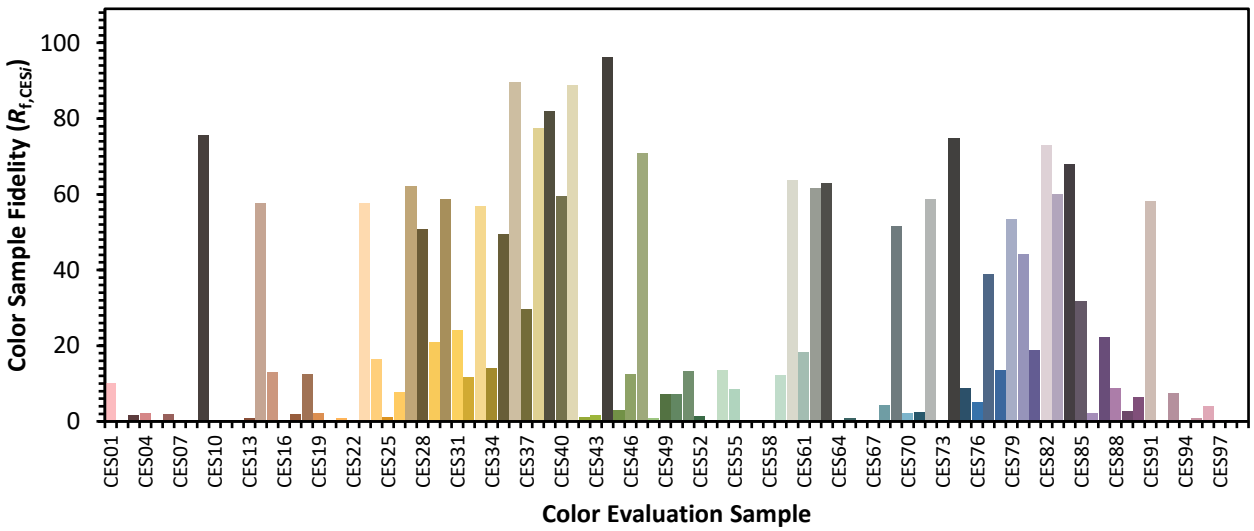
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 89 | CES26 = 8 | CES51 = 13 | CES76 = 5 |
| CES02 = 66 | CES27 = 62 | CES52 = 1 | CES77 = 39 |
| CES03 = 30 | CES28 = 51 | CES53 = 0 | CES78 = 14 |
| CES04 = 76 | CES29 = 21 | CES54 = 14 | CES79 = 53 |
| CES05 = 50 | CES30 = 59 | CES55 = 9 | CES80 = 44 |
| CES06 = 55 | CES31 = 24 | CES56 = 0 | CES81 = 19 |
| CES07 = 37 | CES32 = 12 | CES57 = 0 | CES82 = 73 |
| CES08 = 36 | CES33 = 57 | CES58 = 0 | CES83 = 60 |
| CES09 = 29 | CES34 = 14 | CES59 = 12 | CES84 = 68 |
| CES10 = 84 | CES35 = 49 | CES60 = 64 | CES85 = 32 |
| CES11 = 68 | CES36 = 90 | CES61 = 18 | CES86 = 2 |
| CES12 = 72 | CES37 = 30 | CES62 = 62 | CES87 = 22 |
| CES13 = 43 | CES38 = 78 | CES63 = 63 | CES88 = 9 |
| CES14 = 76 | CES39 = 82 | CES64 = 0 | CES89 = 3 |
| CES15 = 72 | CES40 = 60 | CES65 = 1 | CES90 = 7 |
| CES16 = 47 | CES41 = 89 | CES66 = 0 | CES91 = 58 |
| CES17 = 55 | CES42 = 1 | CES67 = 0 | CES92 = 0 |
| CES18 = 58 | CES43 = 2 | CES68 = 4 | CES93 = 7 |
| CES19 = 79 | CES44 = 96 | CES69 = 52 | CES94 = 0 |
| CES20 = 68 | CES45 = 3 | CES70 = 2 | CES95 = 1 |
| CES21 = 93 | CES46 = 13 | CES71 = 2 | CES96 = 4 |
| CES22 = 85 | CES47 = 71 | CES72 = 59 | CES97 = 0 |
| CES23 = 93 | CES48 = 1 | CES73 = 0 | CES98 = 0 |
| CES24 = 95 | CES49 = 7 | CES74 = 75 | CES99 = 0 |
| CES25 = 78 | CES50 = 7 | CES75 = 9 | |



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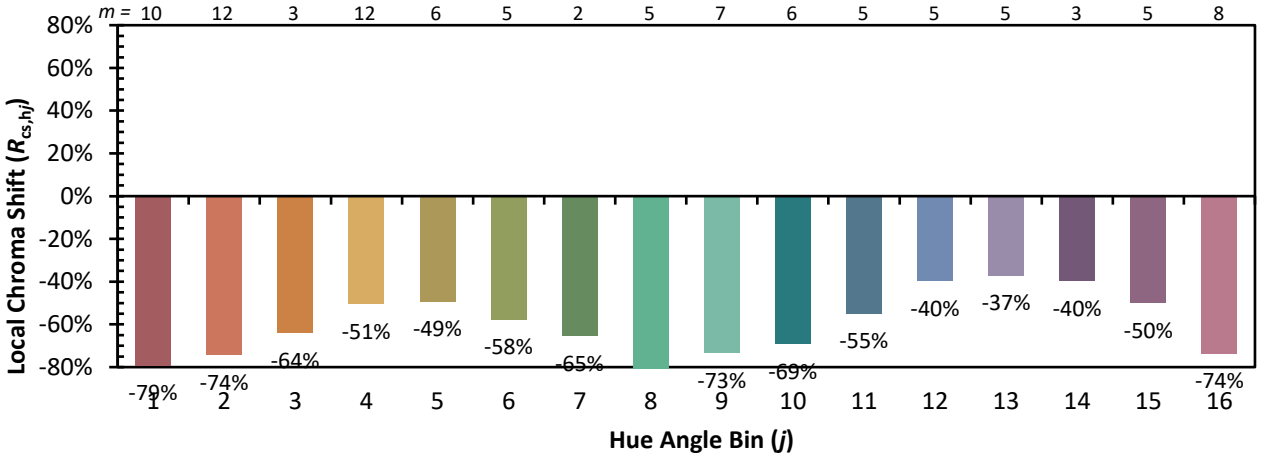
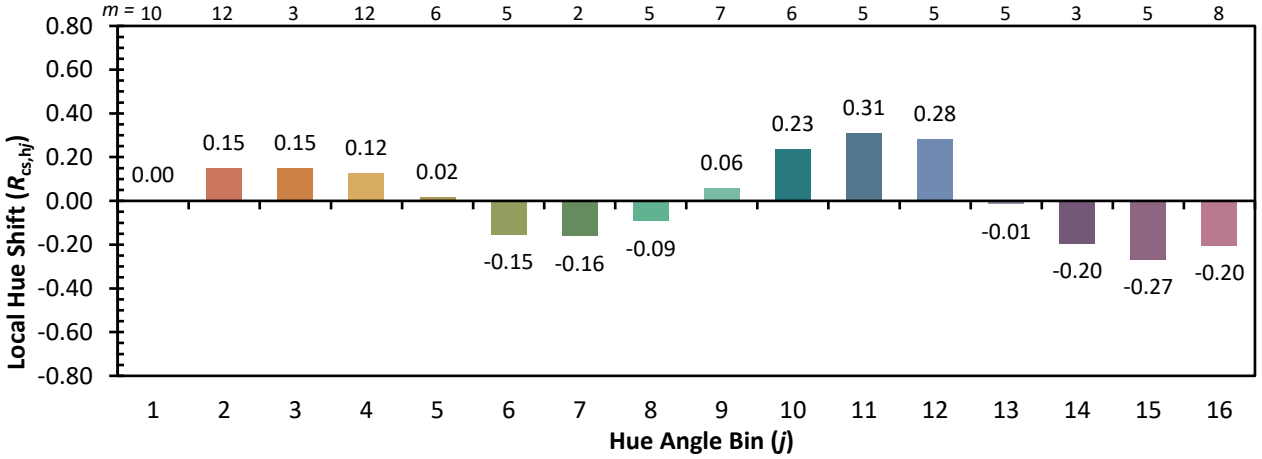
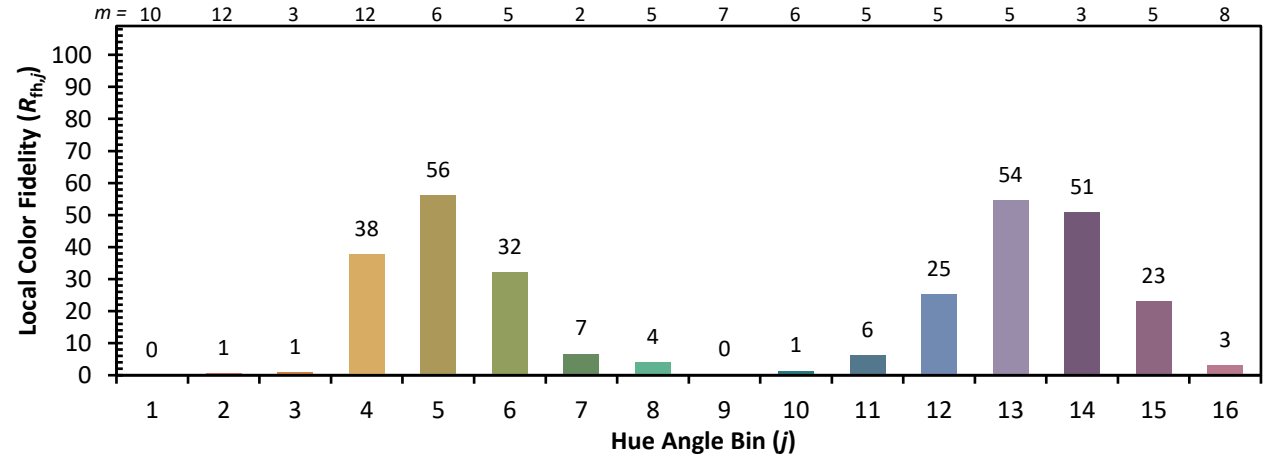
## Color Rendition by Hue-Angle Bin



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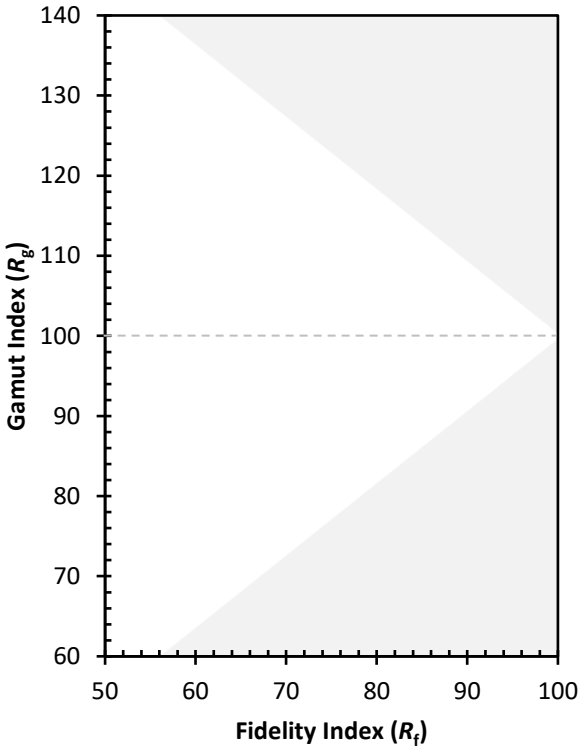
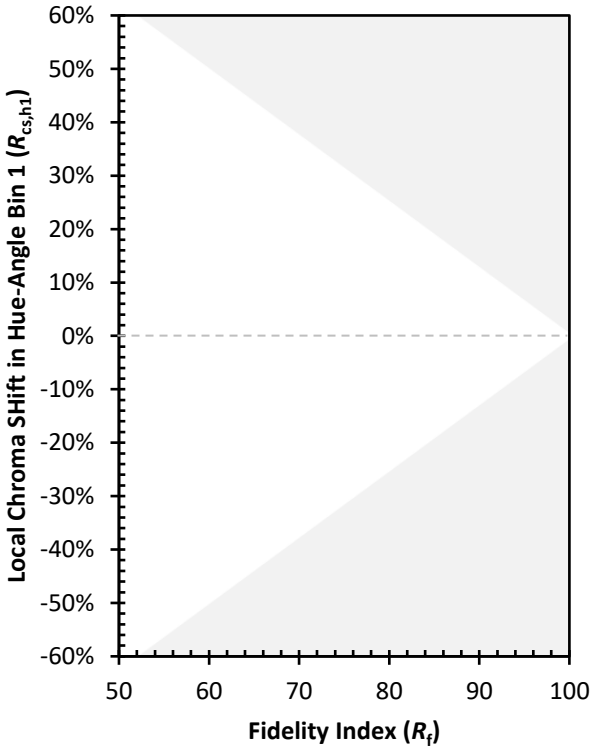
### Measure Comparisons




(END OF REPORT)