

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: IRiS

Report Number: P1258338

Luminaire Tested: P3A20R709040D010 E3LSWW1H

Issue Date: 1/29/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1258338  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2509-551-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/29/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A20R709040D010 E3LSWW1H  
Description: 3in Adjustable LED luminaire with, R70 optic, 4000K CCT AND, 90CRI , E3LSWW1H TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

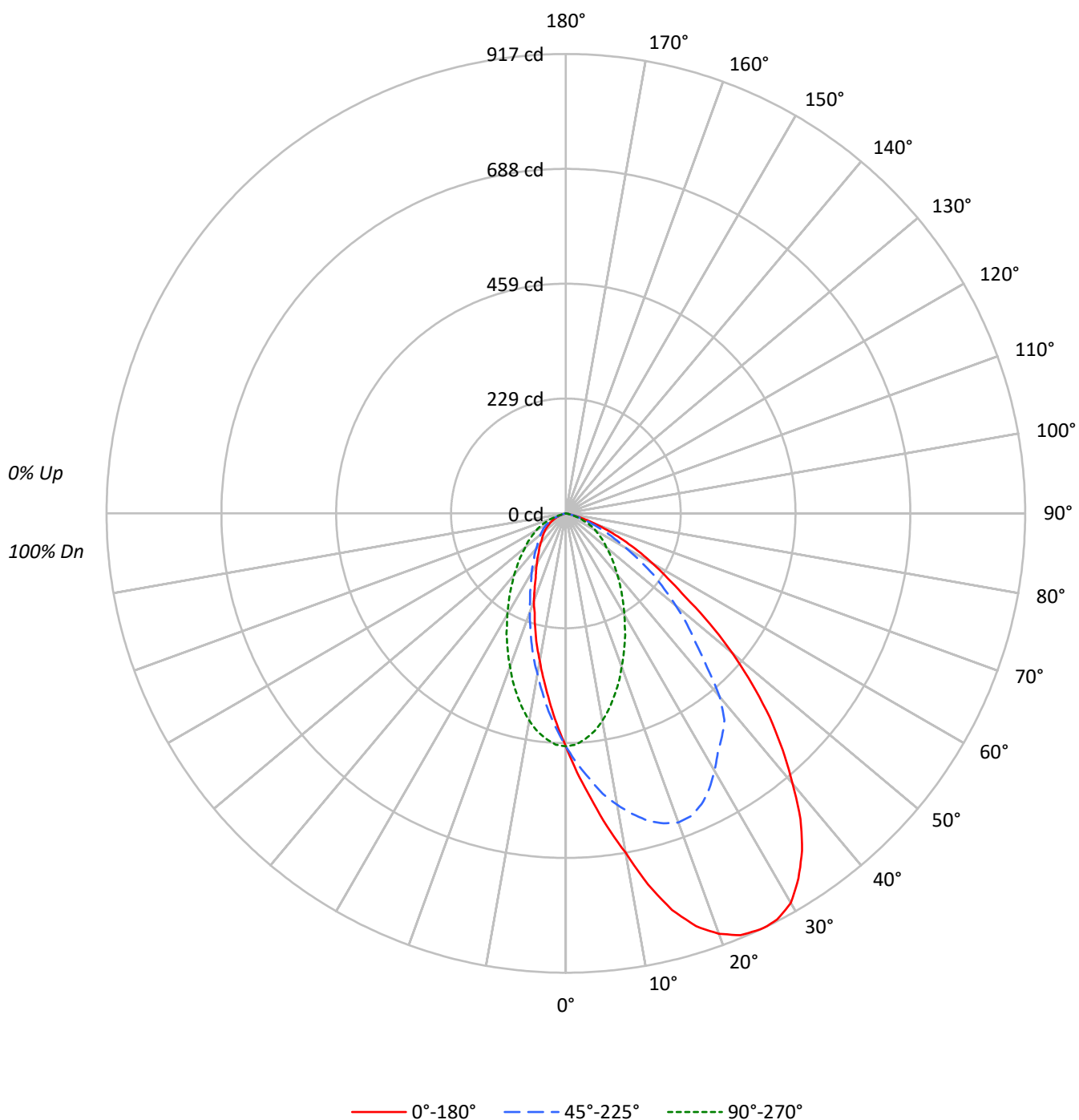
Lumens per Lamp: N/A  
Luminaire Lumens: 926.0 lumens  
Efficiency: N/A  
Efficacy: 32.2 lumens/watt  
Spacing Criteria (0/90/45): 1.47 / 0.85 / 1.23  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 28.8  
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: 24 FT

TEST NUMBER: P1258338

CATALOG NUMBER: P3A20R709040D010 E3LSWW1H

### Luminous Intensity Polar Plot



TEST NUMBER: P1258338

CATALOG NUMBER: P3A20R709040D010 E3LSWW1H

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|-----|-----|--|-----|-----|-----|
| RF  | 20  |     |     |     | 20  |     |     |     |  | 20  |     |     |  |     | 20  |     |  |     |     | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     |  | 50  |     |     |  |     | 30  |     |  |     |     | 10  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  | 30  | 10  |
| RCR |     |     |     |     |     |     |     |     |  |     |     |     |  |     |     |     |  |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 |  | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 | 102 | 102 |
| 1   | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 |  | 101 | 99  | 96  |  | 97  | 95  | 94  |  | 94  | 92  | 91  |
| 2   | 103 | 96  | 91  | 86  | 101 | 95  | 89  | 85  |  | 91  | 87  | 83  |  | 88  | 85  | 81  |  | 85  | 82  | 80  |
| 3   | 95  | 87  | 80  | 74  | 93  | 85  | 79  | 74  |  | 82  | 77  | 72  |  | 80  | 75  | 71  |  | 77  | 73  | 70  |
| 4   | 88  | 78  | 70  | 65  | 86  | 77  | 70  | 64  |  | 74  | 68  | 63  |  | 72  | 67  | 63  |  | 70  | 66  | 62  |
| 5   | 82  | 71  | 63  | 57  | 80  | 70  | 62  | 57  |  | 68  | 61  | 56  |  | 66  | 60  | 56  |  | 64  | 59  | 55  |
| 6   | 76  | 64  | 56  | 51  | 74  | 63  | 56  | 51  |  | 62  | 55  | 50  |  | 60  | 54  | 50  |  | 59  | 53  | 49  |
| 7   | 71  | 59  | 51  | 45  | 69  | 58  | 51  | 45  |  | 57  | 50  | 45  |  | 55  | 49  | 45  |  | 54  | 49  | 44  |
| 8   | 66  | 54  | 46  | 41  | 65  | 53  | 46  | 41  |  | 52  | 46  | 41  |  | 51  | 45  | 41  |  | 50  | 44  | 40  |
| 9   | 62  | 50  | 42  | 37  | 61  | 49  | 42  | 37  |  | 48  | 42  | 37  |  | 47  | 41  | 37  |  | 46  | 41  | 37  |
| 10  | 59  | 46  | 39  | 34  | 57  | 46  | 39  | 34  |  | 45  | 38  | 34  |  | 44  | 38  | 34  |  | 43  | 38  | 34  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°     | 45°    | 90°    | 135°   | 180°   |
|-----|--------|--------|--------|--------|--------|
| 0°  | 101944 | 101944 | 101944 | 101944 | 101944 |
| 5°  | 125445 | 116773 | 99427  | 87299  | 82676  |
| 10° | 153215 | 131572 | 93563  | 72521  | 66665  |
| 15° | 186017 | 144291 | 85267  | 60227  | 53667  |
| 20° | 208385 | 153220 | 76003  | 49028  | 43520  |
| 25° | 221771 | 155041 | 67359  | 40672  | 34308  |
| 30° | 227427 | 150302 | 59174  | 34588  | 29270  |
| 35° | 220070 | 145544 | 52039  | 29526  | 25297  |
| 40° | 201492 | 136828 | 45857  | 26306  | 22557  |
| 45° | 178375 | 114027 | 40717  | 24437  | 20374  |
| 50° | 147850 | 97668  | 35854  | 22413  | 18831  |
| 55° | 111442 | 81316  | 33146  | 21103  | 17051  |
| 60° | 87537  | 61048  | 29954  | 19560  | 14955  |
| 65° | 65429  | 44985  | 25891  | 16344  | 12245  |
| 70° | 42122  | 28595  | 18529  | 11797  | 6732   |
| 75° | 17792  | 15589  | 8896   | 4490   | 2203   |
| 80° | 3283   | 3283   | 0      | 0      | 0      |
| 85° | 0      | 0      | 0      | 0      | 0      |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 178375 cd/sqm

TEST NUMBER: P1258338

CATALOG NUMBER: P3A20R709040D010 E3LSWW1H

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 44.1   | 4.8       |
| 10°-20°   | 126.9  | 13.7      |
| 20°-30°   | 185.6  | 20.0      |
| 30°-40°   | 202.2  | 21.8      |
| 40°-50°   | 175.0  | 18.9      |
| 50°-60°   | 117.2  | 12.7      |
| 60°-70°   | 60.5   | 6.5       |
| 70°-80°   | 14.3   | 1.5       |
| 80°-90°   | 0.1    | 0.0       |
| 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°    | 356.6  | 38.5      |
| 0°-40°    | 558.8  | 60.3      |
| 0°-60°    | 851.0  | 91.9      |
| 0°-90°    | 926.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 926.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0°  | 465 | 465 | 465 | 465  | 465  |      |
| 5°  | 570 | 530 | 452 | 397  | 376  | 58   |
| 15° | 819 | 636 | 376 | 265  | 236  | 232  |
| 25° | 917 | 641 | 278 | 168  | 142  | 421  |
| 35° | 822 | 544 | 194 | 110  | 94   | 509  |
| 45° | 575 | 368 | 131 | 79   | 66   | 440  |
| 55° | 292 | 213 | 87  | 55   | 45   | 270  |
| 65° | 126 | 87  | 50  | 32   | 24   | 127  |
| 75° | 21  | 18  | 10  | 5    | 3    | 28   |
| 85° | 0   | 0   | 0   | 0    | 0    | 0    |
| 90° | 0   | 0   | 0   | 0    | 0    |      |

TEST NUMBER: P1258338

CATALOG NUMBER: P3A20R709040D010 E3LSWW1H

**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 5°    | 15°   | 25°   | 35°   | 45°   | 55°   | 65°   | 75°   | 85°   | 90°   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 |
| 2.5°  | 517.4 | 514.8 | 514.8 | 509.5 | 504.3 | 499.0 | 491.1 | 483.3 | 475.4 | 467.5 | 462.2 |
| 5°    | 569.9 | 572.6 | 569.9 | 559.4 | 546.3 | 530.5 | 514.8 | 496.4 | 478.0 | 462.2 | 451.7 |
| 7.5°  | 630.3 | 630.3 | 622.5 | 609.3 | 590.9 | 564.7 | 538.4 | 506.9 | 478.0 | 451.7 | 438.6 |
| 10°   | 688.1 | 688.1 | 675.0 | 654.0 | 625.1 | 590.9 | 554.2 | 512.1 | 472.7 | 436.0 | 420.2 |
| 12.5° | 759.0 | 756.4 | 740.6 | 706.5 | 664.5 | 614.6 | 564.7 | 512.1 | 464.9 | 420.2 | 399.2 |
| 15°   | 819.4 | 816.8 | 795.8 | 753.8 | 698.6 | 635.6 | 567.3 | 506.9 | 449.1 | 399.2 | 375.6 |
| 17.5° | 864.1 | 858.8 | 835.2 | 790.5 | 727.5 | 648.7 | 569.9 | 496.4 | 430.7 | 375.6 | 351.9 |
| 20°   | 893.0 | 890.3 | 864.1 | 811.6 | 743.3 | 656.6 | 567.3 | 483.3 | 412.3 | 351.9 | 325.7 |
| 22.5° | 911.4 | 906.1 | 879.8 | 822.1 | 743.3 | 654.0 | 556.8 | 464.9 | 388.7 | 328.3 | 302.0 |
| 25°   | 916.6 | 914.0 | 882.5 | 819.4 | 735.4 | 640.8 | 541.0 | 446.5 | 365.1 | 304.7 | 278.4 |
| 26°   | 916.6 | 914.0 | 882.5 | 816.8 | 730.1 | 633.0 | 533.2 | 438.6 | 357.2 | 294.2 | 270.5 |
| 27.5° | 914.0 | 911.4 | 877.2 | 808.9 | 719.6 | 619.8 | 517.4 | 422.8 | 341.4 | 281.0 | 254.8 |
| 30°   | 898.2 | 893.0 | 858.8 | 790.5 | 696.0 | 593.6 | 491.1 | 399.2 | 317.8 | 257.4 | 233.7 |
| 32.5° | 864.1 | 858.8 | 822.1 | 759.0 | 669.7 | 564.7 | 462.2 | 372.9 | 294.2 | 233.7 | 212.7 |
| 35°   | 822.1 | 816.8 | 780.0 | 719.6 | 633.0 | 543.7 | 430.7 | 344.1 | 267.9 | 215.4 | 194.4 |
| 37.5° | 769.5 | 761.6 | 730.1 | 667.1 | 588.3 | 520.0 | 404.5 | 315.2 | 244.3 | 194.4 | 176.0 |
| 40°   | 703.9 | 701.2 | 672.4 | 614.6 | 535.8 | 478.0 | 388.7 | 315.2 | 223.2 | 176.0 | 160.2 |
| 42.5° | 640.8 | 635.6 | 609.3 | 559.4 | 488.5 | 417.6 | 341.4 | 302.0 | 207.5 | 157.6 | 144.5 |
| 45°   | 575.2 | 569.9 | 546.3 | 504.3 | 438.6 | 367.7 | 367.7 | 260.0 | 178.6 | 144.5 | 131.3 |
| 47.5° | 504.3 | 499.0 | 480.6 | 449.1 | 391.3 | 328.3 | 267.9 | 212.7 | 162.8 | 128.7 | 118.2 |
| 50°   | 433.4 | 436.0 | 420.2 | 388.7 | 344.1 | 286.3 | 231.1 | 178.6 | 139.2 | 115.6 | 105.1 |
| 52.5° | 362.4 | 359.8 | 349.3 | 328.3 | 296.8 | 246.9 | 197.0 | 152.3 | 120.8 | 102.4 | 97.2  |
| 55°   | 291.5 | 294.2 | 288.9 | 275.8 | 249.5 | 212.7 | 165.5 | 131.3 | 107.7 | 91.9  | 86.7  |
| 57.5° | 241.6 | 244.3 | 233.7 | 225.9 | 204.9 | 173.3 | 136.6 | 110.3 | 91.9  | 81.4  | 76.2  |
| 60°   | 199.6 | 202.2 | 194.4 | 183.8 | 168.1 | 139.2 | 110.3 | 91.9  | 81.4  | 73.5  | 68.3  |
| 62.5° | 162.8 | 160.2 | 155.0 | 144.5 | 131.3 | 110.3 | 89.3  | 76.2  | 68.3  | 63.0  | 60.4  |
| 65°   | 126.1 | 126.1 | 120.8 | 112.9 | 102.4 | 86.7  | 70.9  | 63.0  | 57.8  | 52.5  | 49.9  |
| 67.5° | 94.5  | 94.5  | 89.3  | 84.0  | 73.5  | 63.0  | 55.2  | 49.9  | 47.3  | 42.0  | 39.4  |
| 70°   | 65.7  | 65.7  | 63.0  | 60.4  | 52.5  | 44.6  | 42.0  | 36.8  | 34.1  | 31.5  | 28.9  |
| 72.5° | 42.0  | 42.0  | 42.0  | 36.8  | 34.1  | 28.9  | 28.9  | 26.3  | 23.6  | 21.0  | 21.0  |
| 75°   | 21.0  | 23.6  | 21.0  | 21.0  | 18.4  | 18.4  | 15.8  | 15.8  | 13.1  | 13.1  | 10.5  |
| 77.5° | 7.9   | 7.9   | 7.9   | 7.9   | 7.9   | 7.9   | 5.3   | 5.3   | 5.3   | 5.3   | 5.3   |
| 80°   | 2.6   | 2.6   | 2.6   | 2.6   | 2.6   | 2.6   | 2.6   | 2.6   | 0.0   | 0.0   | 0.0   |
| 82.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

TEST NUMBER: P1258338

CATALOG NUMBER: P3A20R709040D010 E3LSWW1H

**CANDELA DISTRIBUTION (continued):**

|       | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 |
| 2.5°  | 457.0 | 449.1 | 443.9 | 436.0 | 430.7 | 425.5 | 422.8 | 420.2 | 420.2 | 420.2 |
| 5°    | 443.9 | 430.7 | 417.6 | 404.5 | 396.6 | 388.7 | 380.8 | 378.2 | 375.6 | 375.6 |
| 7.5°  | 428.1 | 407.1 | 388.7 | 372.9 | 359.8 | 351.9 | 344.1 | 338.8 | 336.2 | 336.2 |
| 10°   | 407.1 | 380.8 | 359.8 | 338.8 | 325.7 | 315.2 | 309.9 | 302.0 | 302.0 | 299.4 |
| 12.5° | 383.5 | 351.9 | 328.3 | 309.9 | 296.8 | 283.6 | 275.8 | 270.5 | 267.9 | 267.9 |
| 15°   | 357.2 | 325.7 | 299.4 | 278.4 | 265.3 | 252.1 | 244.3 | 239.0 | 236.4 | 236.4 |
| 17.5° | 330.9 | 296.8 | 270.5 | 249.5 | 236.4 | 223.2 | 215.4 | 210.1 | 210.1 | 207.5 |
| 20°   | 304.7 | 270.5 | 244.3 | 223.2 | 210.1 | 199.6 | 191.7 | 186.5 | 183.8 | 186.5 |
| 22.5° | 281.0 | 246.9 | 220.6 | 202.2 | 186.5 | 176.0 | 168.1 | 165.5 | 162.8 | 162.8 |
| 25°   | 254.8 | 223.2 | 199.6 | 181.2 | 168.1 | 157.6 | 149.7 | 147.1 | 144.5 | 141.8 |
| 26°   | 246.9 | 215.4 | 191.7 | 173.3 | 160.2 | 149.7 | 144.5 | 139.2 | 136.6 | 136.6 |
| 27.5° | 236.4 | 202.2 | 181.2 | 162.8 | 149.7 | 141.8 | 133.9 | 131.3 | 128.7 | 128.7 |
| 30°   | 212.7 | 183.8 | 162.8 | 147.1 | 136.6 | 126.1 | 120.8 | 118.2 | 115.6 | 115.6 |
| 32.5° | 194.4 | 165.5 | 147.1 | 133.9 | 123.4 | 115.6 | 110.3 | 105.1 | 105.1 | 105.1 |
| 35°   | 176.0 | 149.7 | 133.9 | 120.8 | 110.3 | 102.4 | 99.8  | 97.2  | 94.5  | 94.5  |
| 37.5° | 160.2 | 136.6 | 120.8 | 110.3 | 102.4 | 94.5  | 89.3  | 86.7  | 86.7  | 86.7  |
| 40°   | 144.5 | 126.1 | 110.3 | 99.8  | 91.9  | 86.7  | 81.4  | 78.8  | 78.8  | 78.8  |
| 42.5° | 131.3 | 112.9 | 102.4 | 91.9  | 84.0  | 78.8  | 76.2  | 73.5  | 70.9  | 70.9  |
| 45°   | 120.8 | 105.1 | 91.9  | 84.0  | 78.8  | 73.5  | 68.3  | 65.7  | 65.7  | 65.7  |
| 47.5° | 107.7 | 97.2  | 84.0  | 76.2  | 70.9  | 65.7  | 63.0  | 60.4  | 60.4  | 60.4  |
| 50°   | 99.8  | 89.3  | 78.8  | 70.9  | 65.7  | 60.4  | 57.8  | 55.2  | 55.2  | 55.2  |
| 52.5° | 89.3  | 81.4  | 73.5  | 65.7  | 60.4  | 55.2  | 52.5  | 49.9  | 49.9  | 49.9  |
| 55°   | 81.4  | 73.5  | 65.7  | 60.4  | 55.2  | 49.9  | 47.3  | 44.6  | 44.6  | 44.6  |
| 57.5° | 73.5  | 65.7  | 60.4  | 55.2  | 49.9  | 47.3  | 42.0  | 42.0  | 39.4  | 39.4  |
| 60°   | 65.7  | 57.8  | 52.5  | 49.9  | 44.6  | 42.0  | 36.8  | 34.1  | 34.1  | 34.1  |
| 62.5° | 55.2  | 52.5  | 47.3  | 42.0  | 36.8  | 34.1  | 31.5  | 28.9  | 28.9  | 28.9  |
| 65°   | 47.3  | 44.6  | 39.4  | 34.1  | 31.5  | 28.9  | 26.3  | 23.6  | 23.6  | 23.6  |
| 67.5° | 39.4  | 34.1  | 31.5  | 28.9  | 26.3  | 23.6  | 21.0  | 18.4  | 15.8  | 18.4  |
| 70°   | 28.9  | 26.3  | 23.6  | 21.0  | 18.4  | 15.8  | 13.1  | 13.1  | 10.5  | 10.5  |
| 72.5° | 18.4  | 15.8  | 15.8  | 13.1  | 10.5  | 10.5  | 7.9   | 7.9   | 5.3   | 5.3   |
| 75°   | 10.5  | 10.5  | 7.9   | 7.9   | 5.3   | 5.3   | 2.6   | 2.6   | 2.6   | 2.6   |
| 77.5° | 5.3   | 2.6   | 2.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

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

Report Prepared for

Cooper Lighting Solutions

IRiS

Report Number: SP1-2504-409-14

Test Date: 05/14/2025

Luminaire Tested: LD3A05R129040D010 E3D1H

Data in this report applies to families of products including LD3A

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2504-409-14  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 05/18/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: IRiS  
 Catalog Number: **LD3A05R129040D010 E3D1H**  
 Description: 3in Adjustable LED luminaire with, R12 optic, 4000K CCT AND, 90CRI LEDS, E3D1H TRIM

### Spectral Parameters

CCT (K): 4015  
 CIE  $u'$ : 0.2239  
 CIE  $v'$ : 0.5033  
 Duv: 0.0016  
 CIE x: 0.3809  
 CIE y: 0.3805  
 CIE z: 0.2386  
 Peak Wavelength (nm): 450  
 Dominant Wavelength (nm): 578  
 Purity: 28.51686  
 R<sub>f</sub>: 91.5  
 R<sub>g</sub>: 100.3

CRI (Ra): 92.3  
 R1: 93.1  
 R2: 93.8  
 R3: 94.2  
 R4: 94.2  
 R5: 92.7  
 R6: 91.9  
 R7: 94.0  
 R8: 84.8  
 R9: 58.4  
 R10: 85.3  
 R11: 94.4  
 R12: 74.9  
 R13: 93.3  
 R14: 96.5  
 R15: 89.0



### Test Conditions

Stabilization Time: 26M  
 Operation Time: 1H 26M  
 Sphere Temperature (°C): 24.9

REPORT NUMBER: SP1-2504-409-14

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



REPORT NUMBER: SP1-2504-409-14

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 385                                  | NR                             | 620               | 871                                  | NR                             | 750               | 49                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 468                                  | NR                             | 625               | 849                                  | NR                             | 755               | 42                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 547                                  | NR                             | 630               | 819                                  | NR                             | 760               | 36                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 609                                  | NR                             | 635               | 784                                  | NR                             | 765               | 31                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 652                                  | NR                             | 640               | 744                                  | NR                             | 770               | 27                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 1                                    | NR                             | 515               | 684                                  | NR                             | 645               | 697                                  | NR                             | 775               | 23                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 2                                    | NR                             | 520               | 702                                  | NR                             | 650               | 645                                  | NR                             | 780               | 20                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 710                                  | NR                             | 655               | 594                                  | NR                             | 785               | 17                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 6                                    | NR                             | 530               | 718                                  | NR                             | 660               | 541                                  | NR                             | 790               | 14                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 9                                    | NR                             | 535               | 723                                  | NR                             | 665               | 491                                  | NR                             | 795               | 12                                   | NR                             | 925               | 0                                    | NR                             |
| 410               | 15                                   | NR                             | 540               | 729                                  | NR                             | 670               | 441                                  | NR                             | 800               | 11                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 26                                   | NR                             | 545               | 731                                  | NR                             | 675               | 395                                  | NR                             | 805               | 9                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 49                                   | NR                             | 550               | 731                                  | NR                             | 680               | 352                                  | NR                             | 810               | 8                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 95                                   | NR                             | 555               | 736                                  | NR                             | 685               | 312                                  | NR                             | 815               | 7                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 173                                  | NR                             | 560               | 740                                  | NR                             | 690               | 275                                  | NR                             | 820               | 6                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 305                                  | NR                             | 565               | 746                                  | NR                             | 695               | 241                                  | NR                             | 825               | 5                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 511                                  | NR                             | 570               | 757                                  | NR                             | 700               | 210                                  | NR                             | 830               | 4                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 811                                  | NR                             | 575               | 768                                  | NR                             | 705               | 184                                  | NR                             | 835               | 4                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 1000                                 | NR                             | 580               | 785                                  | NR                             | 710               | 159                                  | NR                             | 840               | 3                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 760                                  | NR                             | 585               | 803                                  | NR                             | 715               | 139                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 496                                  | NR                             | 590               | 826                                  | NR                             | 720               | 120                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 392                                  | NR                             | 595               | 848                                  | NR                             | 725               | 104                                  | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 302                                  | NR                             | 600               | 865                                  | NR                             | 730               | 89                                   | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 253                                  | NR                             | 605               | 879                                  | NR                             | 735               | 76                                   | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 269                                  | NR                             | 610               | 882                                  | NR                             | 740               | 65                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 319                                  | NR                             | 615               | 881                                  | NR                             | 745               | 55                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2504-409-14

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.77

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 385                         | NR               | 620       | 871                         | NR               | 750       | 49                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 468                         | NR               | 625       | 849                         | NR               | 755       | 42                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 547                         | NR               | 630       | 819                         | NR               | 760       | 36                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 609                         | NR               | 635       | 784                         | NR               | 765       | 31                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 652                         | NR               | 640       | 744                         | NR               | 770       | 27                          | NR               | 900       | 1                           | NR               |
| 385       | 1                           | NR               | 515       | 684                         | NR               | 645       | 697                         | NR               | 775       | 23                          | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 702                         | NR               | 650       | 645                         | NR               | 780       | 20                          | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 710                         | NR               | 655       | 594                         | NR               | 785       | 17                          | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 718                         | NR               | 660       | 541                         | NR               | 790       | 14                          | NR               | 920       | 0                           | NR               |
| 405       | 9                           | NR               | 535       | 723                         | NR               | 665       | 491                         | NR               | 795       | 12                          | NR               | 925       | 0                           | NR               |
| 410       | 15                          | NR               | 540       | 729                         | NR               | 670       | 441                         | NR               | 800       | 11                          | NR               | 930       | 0                           | NR               |
| 415       | 26                          | NR               | 545       | 731                         | NR               | 675       | 395                         | NR               | 805       | 9                           | NR               | 935       | 0                           | NR               |
| 420       | 49                          | NR               | 550       | 731                         | NR               | 680       | 352                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 95                          | NR               | 555       | 736                         | NR               | 685       | 312                         | NR               | 815       | 7                           | NR               | 945       | 0                           | NR               |
| 430       | 173                         | NR               | 560       | 740                         | NR               | 690       | 275                         | NR               | 820       | 6                           | NR               | 950       | 0                           | NR               |
| 435       | 305                         | NR               | 565       | 746                         | NR               | 695       | 241                         | NR               | 825       | 5                           | NR               | 955       | 0                           | NR               |
| 440       | 511                         | NR               | 570       | 757                         | NR               | 700       | 210                         | NR               | 830       | 4                           | NR               | 960       | 0                           | NR               |
| 445       | 811                         | NR               | 575       | 768                         | NR               | 705       | 184                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 1000                        | NR               | 580       | 785                         | NR               | 710       | 159                         | NR               | 840       | 3                           | NR               | 970       | 0                           | NR               |
| 455       | 760                         | NR               | 585       | 803                         | NR               | 715       | 139                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 496                         | NR               | 590       | 826                         | NR               | 720       | 120                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 392                         | NR               | 595       | 848                         | NR               | 725       | 104                         | NR               | 855       | 2                           | NR               | 985       | 0                           | NR               |
| 470       | 302                         | NR               | 600       | 865                         | NR               | 730       | 89                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 253                         | NR               | 605       | 879                         | NR               | 735       | 76                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 269                         | NR               | 610       | 882                         | NR               | 740       | 65                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 319                         | NR               | 615       | 881                         | NR               | 745       | 55                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2504-409-14

### Melanopic Flux vs. Wavelength



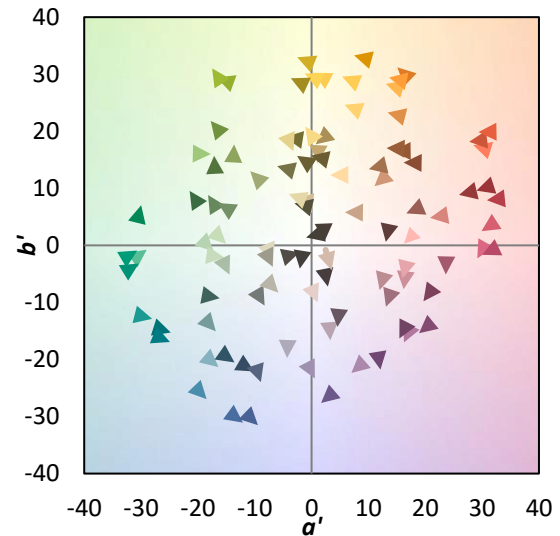
Melanopic Lumens: NR

M/P: 3.62

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 385                         | NR               | 620       | 871                         | NR               | 750       | 49                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 468                         | NR               | 625       | 849                         | NR               | 755       | 42                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 547                         | NR               | 630       | 819                         | NR               | 760       | 36                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 609                         | NR               | 635       | 784                         | NR               | 765       | 31                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 652                         | NR               | 640       | 744                         | NR               | 770       | 27                          | NR               | 900       | 1                           | NR               |
| 385       | 1                           | NR               | 515       | 684                         | NR               | 645       | 697                         | NR               | 775       | 23                          | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 702                         | NR               | 650       | 645                         | NR               | 780       | 20                          | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 710                         | NR               | 655       | 594                         | NR               | 785       | 17                          | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 718                         | NR               | 660       | 541                         | NR               | 790       | 14                          | NR               | 920       | 0                           | NR               |
| 405       | 9                           | NR               | 535       | 723                         | NR               | 665       | 491                         | NR               | 795       | 12                          | NR               | 925       | 0                           | NR               |
| 410       | 15                          | NR               | 540       | 729                         | NR               | 670       | 441                         | NR               | 800       | 11                          | NR               | 930       | 0                           | NR               |
| 415       | 26                          | NR               | 545       | 731                         | NR               | 675       | 395                         | NR               | 805       | 9                           | NR               | 935       | 0                           | NR               |
| 420       | 49                          | NR               | 550       | 731                         | NR               | 680       | 352                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 95                          | NR               | 555       | 736                         | NR               | 685       | 312                         | NR               | 815       | 7                           | NR               | 945       | 0                           | NR               |
| 430       | 173                         | NR               | 560       | 740                         | NR               | 690       | 275                         | NR               | 820       | 6                           | NR               | 950       | 0                           | NR               |
| 435       | 305                         | NR               | 565       | 746                         | NR               | 695       | 241                         | NR               | 825       | 5                           | NR               | 955       | 0                           | NR               |
| 440       | 511                         | NR               | 570       | 757                         | NR               | 700       | 210                         | NR               | 830       | 4                           | NR               | 960       | 0                           | NR               |
| 445       | 811                         | NR               | 575       | 768                         | NR               | 705       | 184                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 1000                        | NR               | 580       | 785                         | NR               | 710       | 159                         | NR               | 840       | 3                           | NR               | 970       | 0                           | NR               |
| 455       | 760                         | NR               | 585       | 803                         | NR               | 715       | 139                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 496                         | NR               | 590       | 826                         | NR               | 720       | 120                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 392                         | NR               | 595       | 848                         | NR               | 725       | 104                         | NR               | 855       | 2                           | NR               | 985       | 0                           | NR               |
| 470       | 302                         | NR               | 600       | 865                         | NR               | 730       | 89                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 253                         | NR               | 605       | 879                         | NR               | 735       | 76                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 269                         | NR               | 610       | 882                         | NR               | 740       | 65                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 319                         | NR               | 615       | 881                         | NR               | 745       | 55                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2504-409-14

**TM-30-18**
**Summary**
 $R_f = 91.5$   
 $R_g = 100.3$   
 CIE  $R_a = 92.3$   
 $R_9 = 58.4$ 

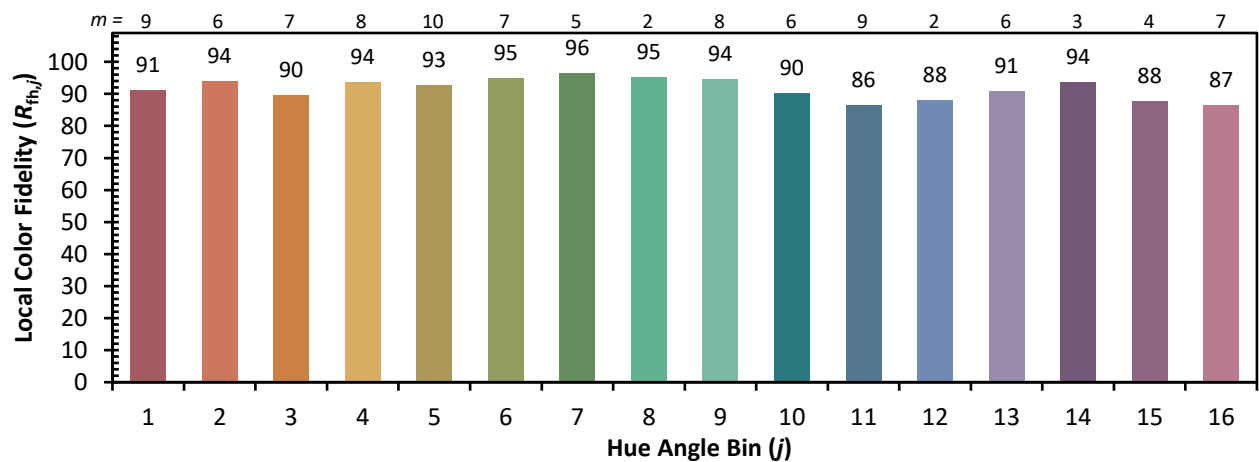
**Color Vector Graphics**


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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 91 | CES51 = 99 | CES76 = 84 |
| CES02 = 61 | CES27 = 93 | CES52 = 97 | CES77 = 88 |
| CES03 = 31 | CES28 = 95 | CES53 = 95 | CES78 = 80 |
| CES04 = 69 | CES29 = 92 | CES54 = 96 | CES79 = 96 |
| CES05 = 49 | CES30 = 99 | CES55 = 95 | CES80 = 92 |
| CES06 = 50 | CES31 = 93 | CES56 = 94 | CES81 = 89 |
| CES07 = 42 | CES32 = 88 | CES57 = 94 | CES82 = 96 |
| CES08 = 41 | CES33 = 95 | CES58 = 94 | CES83 = 97 |
| CES09 = 29 | CES34 = 92 | CES59 = 98 | CES84 = 94 |
| CES10 = 74 | CES35 = 95 | CES60 = 94 | CES85 = 84 |
| CES11 = 57 | CES36 = 85 | CES61 = 94 | CES86 = 87 |
| CES12 = 63 | CES37 = 94 | CES62 = 92 | CES87 = 91 |
| CES13 = 43 | CES38 = 94 | CES63 = 92 | CES88 = 96 |
| CES14 = 74 | CES39 = 98 | CES64 = 93 | CES89 = 87 |
| CES15 = 71 | CES40 = 94 | CES65 = 88 | CES90 = 97 |
| CES16 = 47 | CES41 = 99 | CES66 = 90 | CES91 = 75 |
| CES17 = 49 | CES42 = 91 | CES67 = 89 | CES92 = 79 |
| CES18 = 56 | CES43 = 91 | CES68 = 89 | CES93 = 88 |
| CES19 = 71 | CES44 = 99 | CES69 = 91 | CES94 = 80 |
| CES20 = 66 | CES45 = 94 | CES70 = 86 | CES95 = 83 |
| CES21 = 85 | CES46 = 95 | CES71 = 81 | CES96 = 91 |
| CES22 = 78 | CES47 = 95 | CES72 = 94 | CES97 = 93 |
| CES23 = 91 | CES48 = 95 | CES73 = 79 | CES98 = 93 |
| CES24 = 90 | CES49 = 93 | CES74 = 94 | CES99 = 91 |
| CES25 = 71 | CES50 = 99 | CES75 = 81 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)