

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: P1433397

Luminaire Tested: EHBR1-60-UNV-W-L850-UPL18

Issue Date: 3/20/2026

Test Information

Test Method: LM-79-2019
Report Number: P1433397
REPORT IS A COMBINATION OF REPORTS P1431918 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-60-UNV-W-L850-UPL18
Description: Elevate Round Highbay at, 60000 lumens, 3000K 90CRI LEDs with W lens
Light Source: -
Ballast/Driver: -

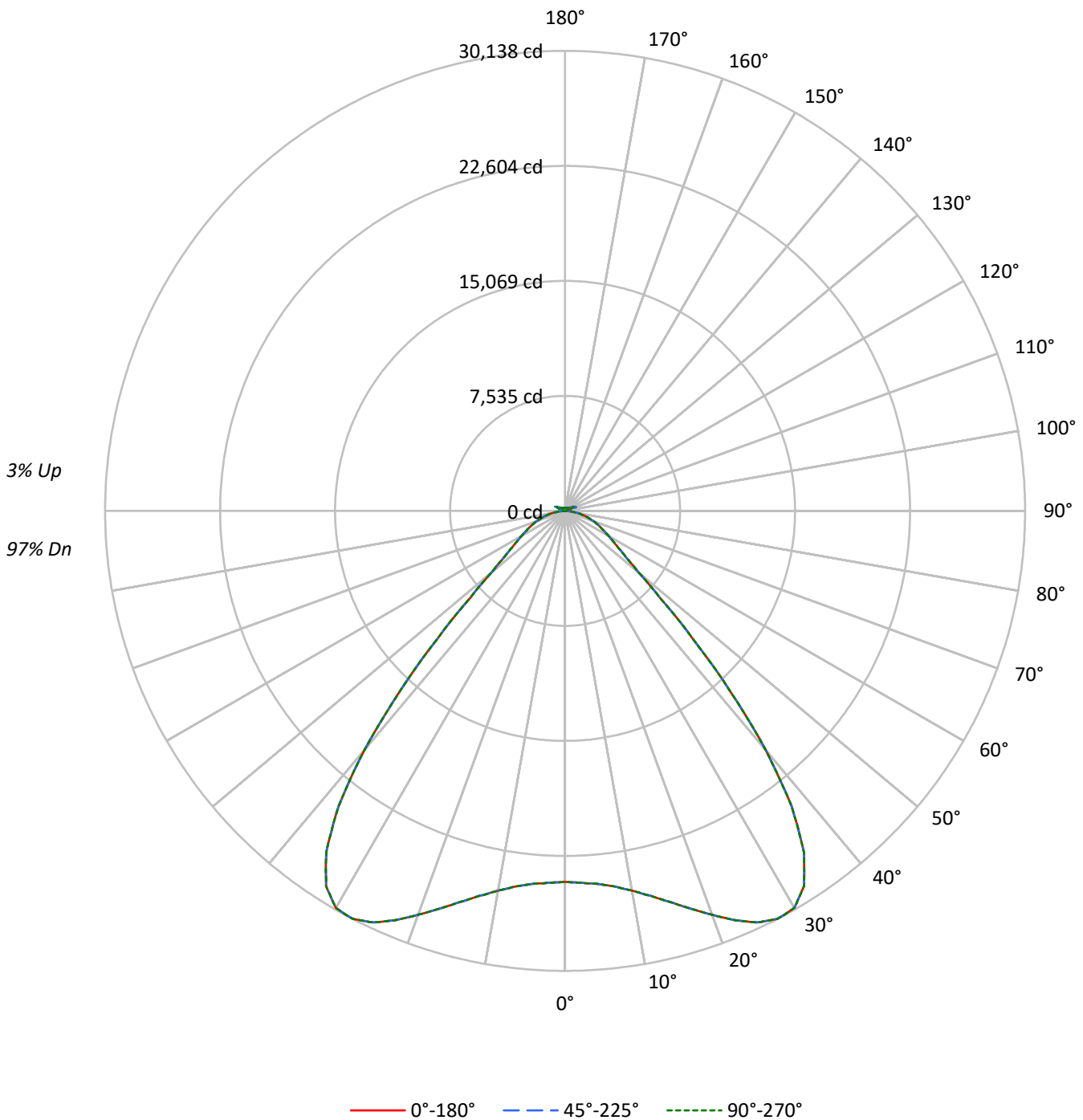
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 59884.8 lumens
Efficiency: N/A
Efficacy: 174.9 lumens/watt
Spacing Criteria (0/90/45): 1.54 / 1.54 / 1.31
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')
CIE Type: Direct

Input Watts (W): 342.3
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: P1433397
CATALOG NUMBER: EHBR1-60-UNV-W-L850-UPL18

Luminous Intensity Polar Plot





TEST NUMBER: P1433397

CATALOG NUMBER: EHBR1-60-UNV-W-L850-UPL18

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | | | | |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | | | 0 | |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 104 | 104 | 104 | 99 | 99 | 99 | 99 | 99 | 99 | 97 |
| 1 | 111 | 107 | 103 | 100 | 108 | 104 | 101 | 99 | 100 | 97 | 95 | 95 | 93 | 92 | 91 | 90 | 88 | 88 | 88 | 88 | 86 |
| 2 | 103 | 96 | 91 | 86 | 100 | 94 | 89 | 85 | 90 | 86 | 83 | 87 | 83 | 80 | 83 | 81 | 78 | 78 | 78 | 78 | 76 |
| 3 | 95 | 87 | 80 | 75 | 93 | 85 | 79 | 74 | 82 | 77 | 72 | 79 | 75 | 71 | 76 | 72 | 69 | 69 | 69 | 69 | 67 |
| 4 | 89 | 79 | 71 | 66 | 86 | 77 | 71 | 65 | 75 | 69 | 64 | 72 | 67 | 63 | 70 | 65 | 62 | 62 | 62 | 62 | 60 |
| 5 | 82 | 72 | 64 | 58 | 80 | 70 | 63 | 58 | 68 | 62 | 57 | 66 | 61 | 56 | 64 | 59 | 56 | 56 | 56 | 56 | 54 |
| 6 | 77 | 65 | 58 | 52 | 75 | 64 | 57 | 52 | 62 | 56 | 51 | 61 | 55 | 51 | 59 | 54 | 50 | 50 | 50 | 50 | 48 |
| 7 | 72 | 60 | 52 | 47 | 70 | 59 | 52 | 47 | 57 | 51 | 46 | 56 | 50 | 46 | 54 | 49 | 45 | 45 | 45 | 45 | 43 |
| 8 | 67 | 55 | 48 | 43 | 66 | 54 | 47 | 42 | 53 | 46 | 42 | 52 | 46 | 42 | 50 | 45 | 41 | 41 | 41 | 41 | 39 |
| 9 | 63 | 51 | 44 | 39 | 62 | 50 | 43 | 38 | 49 | 43 | 38 | 48 | 42 | 38 | 47 | 41 | 38 | 38 | 38 | 38 | 36 |
| 10 | 59 | 47 | 40 | 35 | 58 | 47 | 40 | 35 | 45 | 39 | 35 | 44 | 39 | 35 | 43 | 38 | 34 | 34 | 34 | 34 | 33 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 114123 | 114123 | 114123 |
| 5° | 114881 | 114881 | 114881 |
| 10° | 118873 | 118873 | 118873 |
| 15° | 126405 | 126405 | 126405 |
| 20° | 137026 | 137026 | 137026 |
| 25° | 148961 | 148961 | 148961 |
| 30° | 156136 | 156136 | 156136 |
| 35° | 148616 | 148616 | 148616 |
| 40° | 117926 | 117926 | 117926 |
| 45° | 72889 | 72889 | 72889 |
| 50° | 42207 | 42207 | 42207 |
| 55° | 31934 | 31934 | 31934 |
| 60° | 27394 | 27394 | 27394 |
| 65° | 24742 | 24742 | 24742 |
| 70° | 22760 | 22760 | 22760 |
| 75° | 20108 | 20108 | 20108 |
| 80° | 16389 | 16389 | 16389 |
| 85° | 9660 | 9660 | 9660 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 72889 cd/sqm



TEST NUMBER: P1433397
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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 2364.4 | 3.9 |
| 10°-20° | 7580.1 | 12.7 |
| 20°-30° | 13682.4 | 22.8 |
| 30°-40° | 16533.8 | 27.6 |
| 40°-50° | 9446.2 | 15.8 |
| 50°-60° | 4000.8 | 6.7 |
| 60°-70° | 2580.5 | 4.3 |
| 70°-80° | 1500.4 | 2.5 |
| 80°-90° | 400.3 | 0.7 |
| 90°-100° | 52.0 | 0.1 |
| 100°-110° | 316.4 | 0.5 |
| 110°-120° | 564.9 | 0.9 |
| 120°-130° | 333.0 | 0.6 |
| 130°-140° | 208.2 | 0.3 |
| 140°-150° | 148.1 | 0.2 |
| 150°-160° | 97.7 | 0.2 |
| 160°-170° | 56.6 | 0.1 |
| 170°-180° | 18.9 | 0.0 |
| 0°-30° | 23626.9 | 39.5 |
| 0°-40° | 40160.7 | 67.1 |
| 0°-60° | 53607.8 | 89.5 |
| 0°-90° | 58089.0 | 97.0 |
| 90°-120° | 933.3 | 1.6 |
| 90°-150° | 1622.6 | 2.7 |
| 90°-180° | 1796.0 | 3.0 |
| 0°-180° | 59884.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|-------|
| 0° | 24302 | 24302 | 24302 | 24302 | 24302 | |
| 5° | 24529 | 24529 | 24529 | 24529 | 24529 | 2364 |
| 15° | 26519 | 26519 | 26519 | 26519 | 26519 | 7580 |
| 25° | 29747 | 29747 | 29747 | 29747 | 29747 | 13682 |
| 35° | 27276 | 27276 | 27276 | 27276 | 27276 | 16534 |
| 45° | 11793 | 11793 | 11793 | 11793 | 11793 | 9446 |
| 55° | 4316 | 4316 | 4316 | 4316 | 4316 | 4001 |
| 65° | 2582 | 2582 | 2582 | 2582 | 2582 | 2581 |
| 75° | 1416 | 1416 | 1416 | 1416 | 1416 | 1500 |
| 85° | 332 | 332 | 332 | 332 | 332 | 382 |
| 90° | 15 | 23 | 38 | 25 | 15 | 21 |
| 95° | 24 | 39 | 84 | 42 | 27 | 23 |
| 105° | 112 | 218 | 555 | 241 | 147 | 149 |
| 115° | 508 | 535 | 656 | 629 | 625 | 468 |
| 125° | 368 | 344 | 353 | 358 | 402 | 336 |
| 135° | 274 | 266 | 275 | 258 | 258 | 214 |
| 145° | 231 | 228 | 241 | 238 | 237 | 146 |
| 155° | 206 | 204 | 213 | 213 | 213 | 96 |
| 165° | 196 | 196 | 201 | 201 | 200 | 56 |
| 175° | 196 | 196 | 199 | 199 | 199 | 19 |
| 180° | 199 | 199 | 199 | 199 | 199 | |



TEST NUMBER: P1433397

CATALOG NUMBER: EHBR1-60-UNV-W-L850-UPL18

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 24301.7 | 24301.7 | 24301.7 | 24301.7 | 24301.7 |
| 2.5° | 24383.2 | 24383.2 | 24383.2 | 24383.2 | 24383.2 |
| 5° | 24528.9 | 24528.9 | 24528.9 | 24528.9 | 24528.9 |
| 7.5° | 24815.3 | 24815.3 | 24815.3 | 24815.3 | 24815.3 |
| 10° | 25256.1 | 25256.1 | 25256.1 | 25256.1 | 25256.1 |
| 12.5° | 25828.9 | 25828.9 | 25828.9 | 25828.9 | 25828.9 |
| 15° | 26519.2 | 26519.2 | 26519.2 | 26519.2 | 26519.2 |
| 17.5° | 27309.4 | 27309.4 | 27309.4 | 27309.4 | 27309.4 |
| 20° | 28162.8 | 28162.8 | 28162.8 | 28162.8 | 28162.8 |
| 22.5° | 29022.1 | 29022.1 | 29022.1 | 29022.1 | 29022.1 |
| 25° | 29747.3 | 29747.3 | 29747.3 | 29747.3 | 29747.3 |
| 27.5° | 30137.6 | 30137.6 | 30137.6 | 30137.6 | 30137.6 |
| 30° | 30032.7 | 30032.7 | 30032.7 | 30032.7 | 30032.7 |
| 32.5° | 29142.5 | 29142.5 | 29142.5 | 29142.5 | 29142.5 |
| 35° | 27276.4 | 27276.4 | 27276.4 | 27276.4 | 27276.4 |
| 37.5° | 24366.7 | 24366.7 | 24366.7 | 24366.7 | 24366.7 |
| 40° | 20439.6 | 20439.6 | 20439.6 | 20439.6 | 20439.6 |
| 42.5° | 15997.9 | 15997.9 | 15997.9 | 15997.9 | 15997.9 |
| 45° | 11793.1 | 11793.1 | 11793.1 | 11793.1 | 11793.1 |
| 47.5° | 8429.0 | 8429.0 | 8429.0 | 8429.0 | 8429.0 |
| 50° | 6290.3 | 6290.3 | 6290.3 | 6290.3 | 6290.3 |
| 52.5° | 5093.1 | 5093.1 | 5093.1 | 5093.1 | 5093.1 |
| 55° | 4315.5 | 4315.5 | 4315.5 | 4315.5 | 4315.5 |
| 57.5° | 3747.6 | 3747.6 | 3747.6 | 3747.6 | 3747.6 |
| 60° | 3293.2 | 3293.2 | 3293.2 | 3293.2 | 3293.2 |
| 62.5° | 2914.6 | 2914.6 | 2914.6 | 2914.6 | 2914.6 |
| 65° | 2582.5 | 2582.5 | 2582.5 | 2582.5 | 2582.5 |
| 67.5° | 2289.3 | 2289.3 | 2289.3 | 2289.3 | 2289.3 |
| 70° | 1997.1 | 1997.1 | 1997.1 | 1997.1 | 1997.1 |
| 72.5° | 1705.8 | 1705.8 | 1705.8 | 1705.8 | 1705.8 |
| 75° | 1416.5 | 1416.5 | 1416.5 | 1416.5 | 1416.5 |
| 77.5° | 1137.9 | 1137.9 | 1137.9 | 1137.9 | 1137.9 |
| 80° | 862.2 | 862.2 | 862.2 | 862.2 | 862.2 |
| 82.5° | 591.2 | 591.2 | 591.2 | 591.2 | 591.2 |
| 85° | 332.0 | 332.0 | 332.0 | 332.0 | 332.0 |
| 87.5° | 104.8 | 104.8 | 104.8 | 104.8 | 104.8 |
| 90° | 15.0 | 23.1 | 38.2 | 25.1 | 15.0 |
| 92.5° | 20.1 | 33.2 | 59.3 | 31.1 | 18.1 |
| 95° | 24.1 | 39.2 | 83.5 | 42.2 | 27.1 |
| 97.5° | 30.2 | 43.2 | 95.6 | 51.3 | 41.3 |
| 100° | 39.2 | 50.3 | 147.9 | 62.4 | 54.3 |
| 102.5° | 65.4 | 104.6 | 312.1 | 115.7 | 81.5 |
| 105° | 111.7 | 218.5 | 554.7 | 240.6 | 147.0 |
| 107.5° | 192.2 | 389.6 | 730.8 | 424.8 | 276.8 |
| 110° | 358.3 | 517.4 | 767.1 | 583.9 | 442.9 |



TEST NUMBER: P1433397
 CATALOG NUMBER: EHBR1-60-UNV-W-L850-UPL18

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 483.2 | 555.7 | 734.9 | 644.3 | 575.8 |
| 115° | 508.3 | 534.6 | 656.4 | 629.2 | 625.1 |
| 117.5° | 491.2 | 488.2 | 557.7 | 565.7 | 604.0 |
| 120° | 455.0 | 434.9 | 466.1 | 494.3 | 545.6 |
| 122.5° | 409.7 | 385.6 | 399.6 | 420.7 | 472.1 |
| 125° | 368.4 | 344.2 | 353.2 | 358.3 | 401.6 |
| 127.5° | 331.1 | 315.0 | 320.0 | 314.0 | 341.2 |
| 130° | 306.9 | 292.7 | 299.8 | 285.8 | 298.8 |
| 132.5° | 287.7 | 278.6 | 286.6 | 269.5 | 273.6 |
| 135° | 273.6 | 265.5 | 274.6 | 258.4 | 257.5 |
| 137.5° | 261.5 | 254.4 | 263.5 | 251.4 | 248.3 |
| 140° | 251.4 | 245.3 | 255.4 | 246.3 | 244.3 |
| 142.5° | 239.2 | 235.2 | 247.2 | 241.3 | 239.2 |
| 145° | 231.0 | 228.0 | 241.2 | 238.1 | 237.1 |
| 147.5° | 224.0 | 222.0 | 234.1 | 233.0 | 233.0 |
| 150° | 216.9 | 214.9 | 227.0 | 226.0 | 227.0 |
| 152.5° | 209.9 | 207.9 | 219.0 | 218.0 | 219.0 |
| 155° | 205.8 | 203.8 | 212.9 | 212.9 | 212.9 |
| 157.5° | 201.8 | 200.8 | 207.9 | 207.9 | 207.9 |
| 160° | 199.8 | 198.7 | 204.8 | 204.8 | 203.8 |
| 162.5° | 197.7 | 196.8 | 203.7 | 202.7 | 202.7 |
| 165° | 195.7 | 195.7 | 200.8 | 200.8 | 199.7 |
| 167.5° | 195.7 | 194.7 | 199.7 | 199.7 | 198.7 |
| 170° | 194.7 | 194.7 | 198.7 | 197.7 | 196.8 |
| 172.5° | 195.7 | 195.7 | 199.7 | 198.7 | 197.7 |
| 175° | 195.7 | 195.7 | 198.7 | 198.7 | 198.7 |
| 177.5° | 196.7 | 196.7 | 198.7 | 198.7 | 197.6 |
| 180° | 198.6 | 198.6 | 198.6 | 198.6 | 198.6 |



TEST NUMBER: P1433397
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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 | 20.71 | 21.96 | 21.12 | 22.34 | 22.73 | 20.71 | 21.96 | 21.12 | 22.34 | 22.73 |
| | 3H | 22.21 | 23.33 | 22.64 | 23.72 | 24.16 | 22.21 | 23.33 | 22.64 | 23.72 | 24.16 |
| | 4H | 22.77 | 23.81 | 23.23 | 24.23 | 24.68 | 22.77 | 23.81 | 23.23 | 24.23 | 24.68 |
| | 6H | 23.16 | 24.12 | 23.63 | 24.55 | 25.02 | 23.16 | 24.12 | 23.63 | 24.55 | 25.02 |
| | 8H | 23.26 | 24.17 | 23.74 | 24.62 | 25.10 | 23.26 | 24.17 | 23.74 | 24.62 | 25.10 |
| | 12H | 23.30 | 24.16 | 23.78 | 24.61 | 25.11 | 23.30 | 24.16 | 23.78 | 24.61 | 25.11 |
| 4H | 2H | 21.15 | 22.20 | 21.61 | 22.61 | 23.07 | 21.15 | 22.20 | 21.61 | 22.61 | 23.07 |
| | 3H | 22.88 | 23.73 | 23.35 | 24.20 | 24.68 | 22.88 | 23.73 | 23.35 | 24.20 | 24.68 |
| | 4H | 23.56 | 24.33 | 24.05 | 24.80 | 25.32 | 23.56 | 24.33 | 24.05 | 24.80 | 25.32 |
| | 6H | 24.06 | 24.72 | 24.57 | 25.22 | 25.76 | 24.06 | 24.72 | 24.57 | 25.22 | 25.76 |
| | 8H | 24.19 | 24.81 | 24.71 | 25.31 | 25.85 | 24.19 | 24.81 | 24.71 | 25.31 | 25.85 |
| | 12H | 24.25 | 24.80 | 24.79 | 25.34 | 25.88 | 24.25 | 24.80 | 24.79 | 25.34 | 25.88 |
| 8H | 4H | 23.76 | 24.38 | 24.28 | 24.89 | 25.43 | 23.76 | 24.38 | 24.28 | 24.89 | 25.43 |
| | 6H | 24.36 | 24.87 | 24.91 | 25.42 | 25.97 | 24.36 | 24.87 | 24.91 | 25.42 | 25.97 |
| | 8H | 24.55 | 25.00 | 25.12 | 25.57 | 26.13 | 24.55 | 25.00 | 25.12 | 25.57 | 26.13 |
| | 12H | 24.66 | 25.06 | 25.22 | 25.60 | 26.24 | 24.66 | 25.06 | 25.22 | 25.60 | 26.24 |
| 12H | 4H | 23.76 | 24.31 | 24.30 | 24.85 | 25.39 | 23.76 | 24.31 | 24.30 | 24.85 | 25.39 |
| | 6H | 24.38 | 24.83 | 24.95 | 25.40 | 25.96 | 24.38 | 24.83 | 24.95 | 25.40 | 25.96 |
| | 8H | 24.60 | 25.00 | 25.17 | 25.55 | 26.19 | 24.60 | 25.00 | 25.17 | 25.55 | 26.19 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-5

Test Date: 08/01/2025

Luminaire Tested: EHBR-60-L930-N

Data in this report applies to families of products including EHBR-60-L930-N

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-5
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/05/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Metalux
 Catalog Number: **EHBR-60-L930-N**
 Description: Elevate Round Highbay at, 60000 lumens, 3000K 90CRI LEDs with N lens

Spectral Parameters

CCT (K): 2996
 CIE u': 0.2519
 CIE v': 0.5169
 Duv: -0.0033
 CIE x: 0.4325
 CIE y: 0.3945
 CIE z: 0.1730
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 584
 Purity: 48.21818
 Rf: 91.3
 Rg: 102

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 94.4 | | |
| R1: | 96.8 | R9: | 61.4 |
| R2: | 98.1 | R10: | 94.4 |
| R3: | 97.8 | R11: | 95.7 |
| R4: | 95.6 | R12: | 88.5 |
| R5: | 96.9 | R13: | 97.3 |
| R6: | 95.7 | R14: | 97.8 |
| R7: | 90.9 | R15: | 92.3 |
| R8: | 83.0 | | |



Test Conditions

Stabilization Time: 40M
 Operation Time: 1H 40M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-5

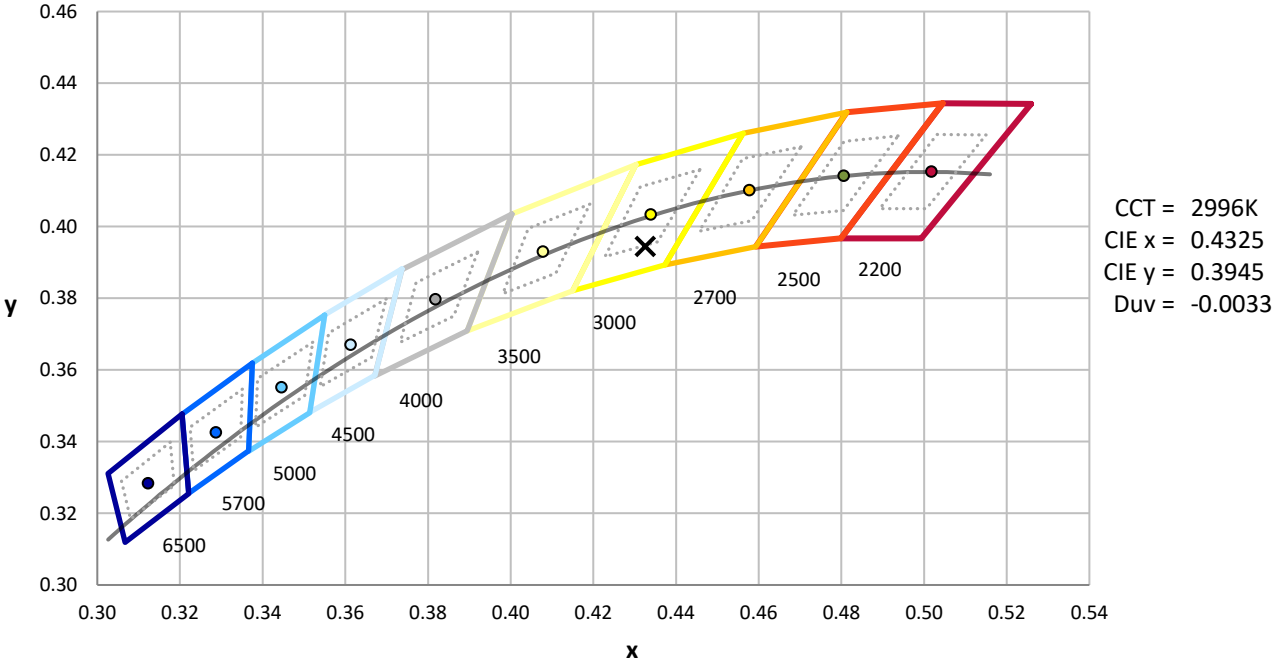
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | 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

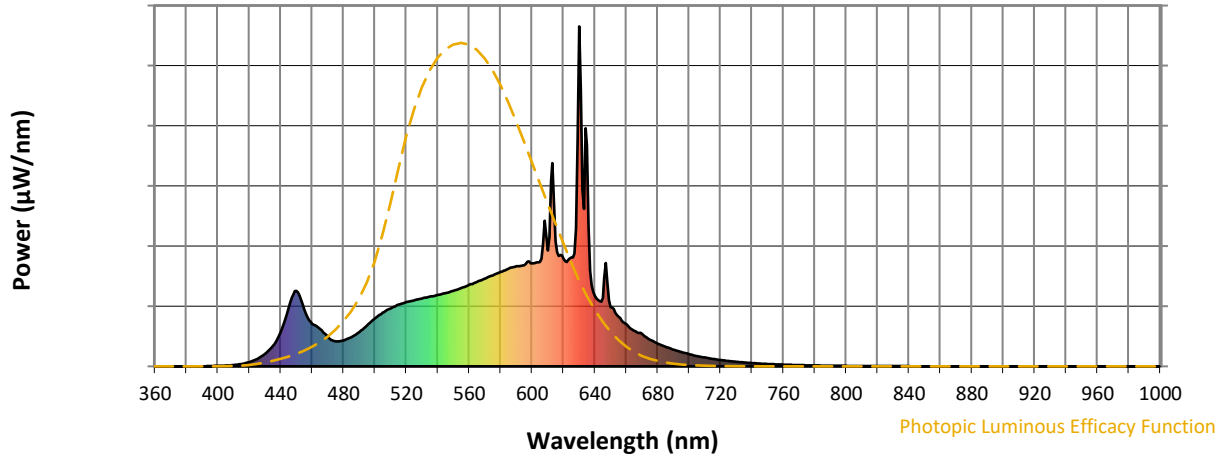


CCT = 2996K
 CIE x = 0.4325
 CIE y = 0.3945
 Duv = -0.0033

Point lies inside the ANSI 3000K 7-step quadrangle

REPORT NUMBER: SP1-2506-472-5

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 | 101 | NR | 620 | 317 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 320 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 141 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 158 | NR | 635 | 651 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 171 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 182 | NR | 645 | 201 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 189 | NR | 650 | 174 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 194 | NR | 655 | 146 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 199 | NR | 660 | 124 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 205 | NR | 665 | 105 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 210 | NR | 670 | 96 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 216 | NR | 675 | 79 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 13 | NR | 550 | 222 | NR | 680 | 67 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 22 | NR | 555 | 230 | NR | 685 | 58 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 37 | NR | 560 | 240 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 60 | NR | 565 | 248 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 101 | NR | 570 | 258 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 172 | NR | 575 | 268 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 223 | NR | 580 | 278 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 167 | NR | 585 | 287 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 126 | NR | 590 | 295 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 111 | NR | 595 | 298 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 86 | NR | 600 | 303 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 74 | NR | 605 | 307 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 341 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 86 | NR | 615 | 368 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-5

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.44

| 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 | 101 | NR | 620 | 317 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 320 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 141 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 158 | NR | 635 | 651 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 171 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 182 | NR | 645 | 201 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 189 | NR | 650 | 174 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 194 | NR | 655 | 146 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 199 | NR | 660 | 124 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 205 | NR | 665 | 105 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 210 | NR | 670 | 96 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 216 | NR | 675 | 79 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 13 | NR | 550 | 222 | NR | 680 | 67 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 22 | NR | 555 | 230 | NR | 685 | 58 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 37 | NR | 560 | 240 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 60 | NR | 565 | 248 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 101 | NR | 570 | 258 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 172 | NR | 575 | 268 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 223 | NR | 580 | 278 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 167 | NR | 585 | 287 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 126 | NR | 590 | 295 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 111 | NR | 595 | 298 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 86 | NR | 600 | 303 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 74 | NR | 605 | 307 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 341 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 86 | NR | 615 | 368 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-5

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.85

| 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 | 101 | NR | 620 | 317 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 320 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 141 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 158 | NR | 635 | 651 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 171 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 182 | NR | 645 | 201 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 189 | NR | 650 | 174 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 194 | NR | 655 | 146 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 199 | NR | 660 | 124 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 205 | NR | 665 | 105 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 210 | NR | 670 | 96 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 216 | NR | 675 | 79 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 13 | NR | 550 | 222 | NR | 680 | 67 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 22 | NR | 555 | 230 | NR | 685 | 58 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 37 | NR | 560 | 240 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 60 | NR | 565 | 248 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 101 | NR | 570 | 258 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 172 | NR | 575 | 268 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 223 | NR | 580 | 278 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 167 | NR | 585 | 287 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 126 | NR | 590 | 295 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 111 | NR | 595 | 298 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 86 | NR | 600 | 303 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 74 | NR | 605 | 307 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 341 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 86 | NR | 615 | 368 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 91.3$
 $R_g = 102$
 $CIE R_a = 94.4$
 $R_9 = 61.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 91 | CES51 = 96 | CES76 = 89 |
| CES02 = 63 | CES27 = 96 | CES52 = 95 | CES77 = 85 |
| CES03 = 32 | CES28 = 96 | CES53 = 93 | CES78 = 86 |
| CES04 = 70 | CES29 = 90 | CES54 = 98 | CES79 = 89 |
| CES05 = 51 | CES30 = 96 | CES55 = 98 | CES80 = 91 |
| CES06 = 51 | CES31 = 90 | CES56 = 95 | CES81 = 72 |
| CES07 = 44 | CES32 = 84 | CES57 = 95 | CES82 = 95 |
| CES08 = 42 | CES33 = 91 | CES58 = 95 | CES83 = 93 |
| CES09 = 29 | CES34 = 92 | CES59 = 99 | CES84 = 96 |
| CES10 = 76 | CES35 = 96 | CES60 = 96 | CES85 = 80 |
| CES11 = 59 | CES36 = 90 | CES61 = 96 | CES86 = 77 |
| CES12 = 65 | CES37 = 94 | CES62 = 95 | CES87 = 91 |
| CES13 = 44 | CES38 = 99 | CES63 = 94 | CES88 = 96 |
| CES14 = 74 | CES39 = 97 | CES64 = 96 | CES89 = 82 |
| CES15 = 72 | CES40 = 94 | CES65 = 92 | CES90 = 97 |
| CES16 = 48 | CES41 = 94 | CES66 = 95 | CES91 = 82 |
| CES17 = 50 | CES42 = 91 | CES67 = 94 | CES92 = 78 |
| CES18 = 57 | CES43 = 88 | CES68 = 93 | CES93 = 87 |
| CES19 = 72 | CES44 = 99 | CES69 = 94 | CES94 = 73 |
| CES20 = 67 | CES45 = 93 | CES70 = 90 | CES95 = 85 |
| CES21 = 86 | CES46 = 93 | CES71 = 90 | CES96 = 92 |
| CES22 = 79 | CES47 = 86 | CES72 = 96 | CES97 = 93 |
| CES23 = 92 | CES48 = 95 | CES73 = 85 | CES98 = 94 |
| CES24 = 91 | CES49 = 91 | CES74 = 90 | CES99 = 93 |
| CES25 = 72 | CES50 = 96 | CES75 = 90 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)