

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: P1432443

Luminaire Tested: EHBR1-42-UNV-W-L830-UPL12

Issue Date: 3/20/2026

Test Information

Test Method: LM-79-2019
Report Number: P1432443
REPORT IS A COMBINATION OF REPORTS P1431820 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-42-UNV-W-L830-UPL12
Description: Elevate Round Highbay at, 42000 lumens, 3000K 80CRI LEDs with W lens
Light Source: -
Ballast/Driver: -

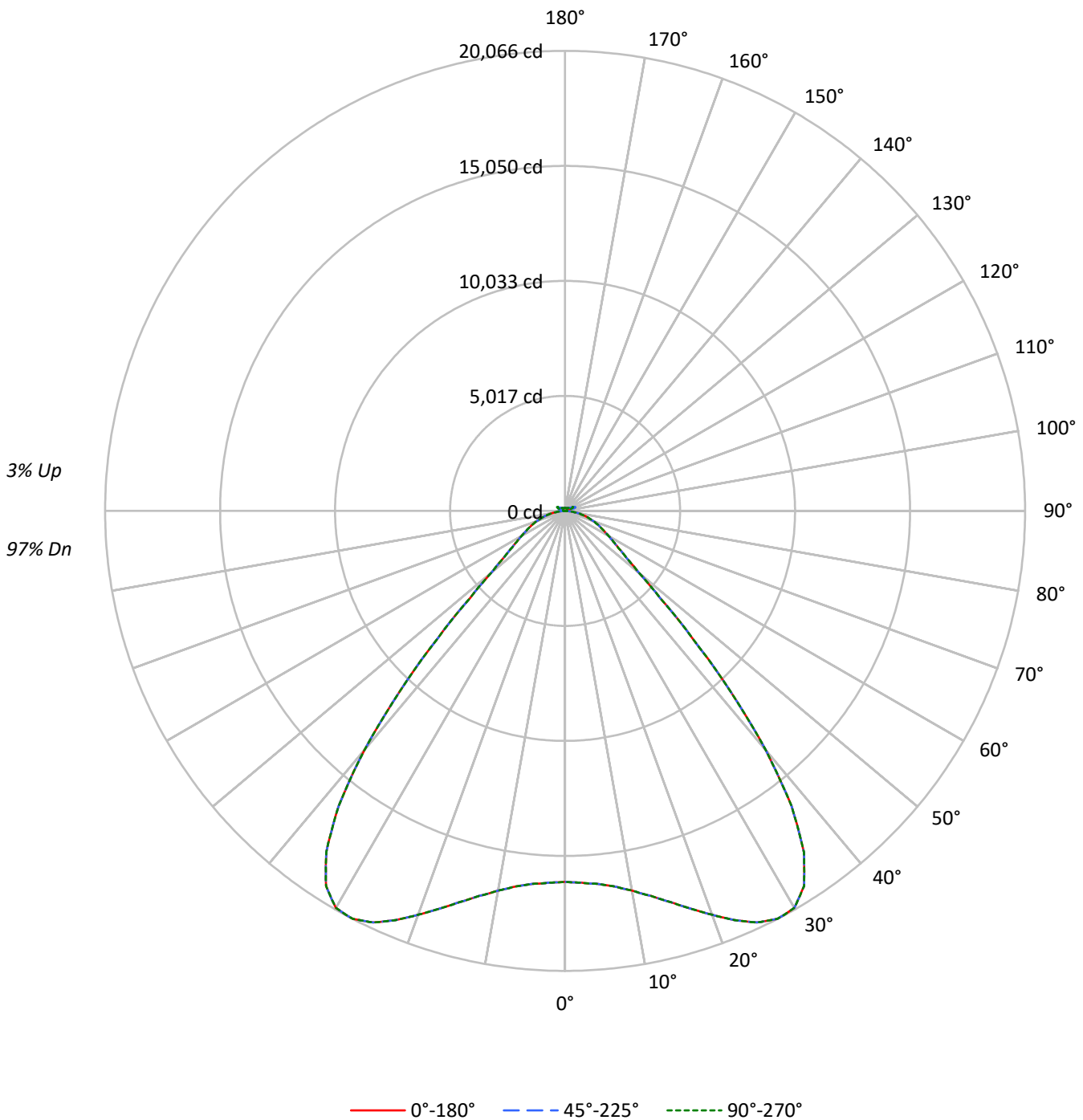
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 39800.4 lumens
Efficiency: N/A
Efficacy: 171.7 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): 231.8
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: P1432443
CATALOG NUMBER: EHBR1-42-UNV-W-L830-UPL12

Luminous Intensity Polar Plot





TEST NUMBER: P1432443
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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 | 110 | 110 | 110 | 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 | 73 | 79 | 75 | 71 | 76 | 73 | 70 | 70 | 70 | 70 | 68 |
| 4 | 89 | 79 | 71 | 66 | 86 | 77 | 71 | 65 | 75 | 69 | 64 | 72 | 67 | 63 | 70 | 66 | 62 | 62 | 62 | 62 | 60 |
| 5 | 83 | 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 | 44 |
| 8 | 67 | 55 | 48 | 43 | 66 | 54 | 47 | 42 | 53 | 47 | 42 | 52 | 46 | 42 | 50 | 45 | 41 | 41 | 41 | 41 | 39 |
| 9 | 63 | 51 | 44 | 39 | 62 | 50 | 43 | 39 | 49 | 43 | 38 | 48 | 42 | 38 | 47 | 41 | 38 | 38 | 38 | 38 | 36 |
| 10 | 59 | 47 | 40 | 35 | 58 | 47 | 40 | 35 | 46 | 39 | 35 | 44 | 39 | 35 | 43 | 38 | 34 | 34 | 34 | 34 | 33 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 75985 | 75985 | 75985 |
| 5° | 76490 | 76490 | 76490 |
| 10° | 79148 | 79148 | 79148 |
| 15° | 84163 | 84163 | 84163 |
| 20° | 91234 | 91234 | 91234 |
| 25° | 99181 | 99181 | 99181 |
| 30° | 103959 | 103959 | 103959 |
| 35° | 98952 | 98952 | 98952 |
| 40° | 78518 | 78518 | 78518 |
| 45° | 48531 | 48531 | 48531 |
| 50° | 28101 | 28101 | 28101 |
| 55° | 21262 | 21262 | 21262 |
| 60° | 18239 | 18239 | 18239 |
| 65° | 16474 | 16474 | 16474 |
| 70° | 15154 | 15154 | 15154 |
| 75° | 13389 | 13389 | 13389 |
| 80° | 10911 | 10911 | 10911 |
| 85° | 6433 | 6433 | 6433 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 48531 cd/sqm



TEST NUMBER: P1432443
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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 1574.3 | 4.0 |
| 10°-20° | 5047.0 | 12.7 |
| 20°-30° | 9110.0 | 22.9 |
| 30°-40° | 11008.5 | 27.7 |
| 40°-50° | 6289.5 | 15.8 |
| 50°-60° | 2663.8 | 6.7 |
| 60°-70° | 1718.2 | 4.3 |
| 70°-80° | 999.0 | 2.5 |
| 80°-90° | 266.4 | 0.7 |
| 90°-100° | 32.6 | 0.1 |
| 100°-110° | 197.8 | 0.5 |
| 110°-120° | 353.1 | 0.9 |
| 120°-130° | 208.2 | 0.5 |
| 130°-140° | 130.3 | 0.3 |
| 140°-150° | 92.9 | 0.2 |
| 150°-160° | 61.4 | 0.2 |
| 160°-170° | 35.5 | 0.1 |
| 170°-180° | 11.8 | 0.0 |
| 0°-30° | 15731.3 | 39.5 |
| 0°-40° | 26739.8 | 67.2 |
| 0°-60° | 35693.1 | 89.7 |
| 0°-90° | 38676.7 | 97.2 |
| 90°-120° | 583.5 | 1.5 |
| 90°-150° | 1014.9 | 2.6 |
| 90°-180° | 1124.0 | 2.8 |
| 0°-180° | 39800.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|-------|
| 0° | 16180 | 16180 | 16180 | 16180 | 16180 | |
| 5° | 16332 | 16332 | 16332 | 16332 | 16332 | 1574 |
| 15° | 17657 | 17657 | 17657 | 17657 | 17657 | 5047 |
| 25° | 19806 | 19806 | 19806 | 19806 | 19806 | 9110 |
| 35° | 18161 | 18161 | 18161 | 18161 | 18161 | 11009 |
| 45° | 7852 | 7852 | 7852 | 7852 | 7852 | 6289 |
| 55° | 2873 | 2873 | 2873 | 2873 | 2873 | 2664 |
| 65° | 1720 | 1720 | 1720 | 1720 | 1720 | 1718 |
| 75° | 943 | 943 | 943 | 943 | 943 | 999 |
| 85° | 221 | 221 | 221 | 221 | 221 | 255 |
| 90° | 10 | 14 | 24 | 16 | 10 | 14 |
| 95° | 15 | 24 | 52 | 26 | 17 | 14 |
| 105° | 70 | 137 | 347 | 150 | 92 | 93 |
| 115° | 318 | 334 | 410 | 393 | 391 | 293 |
| 125° | 230 | 215 | 221 | 224 | 251 | 210 |
| 135° | 171 | 166 | 172 | 162 | 161 | 134 |
| 145° | 145 | 143 | 151 | 149 | 149 | 92 |
| 155° | 129 | 128 | 134 | 134 | 134 | 60 |
| 165° | 123 | 123 | 126 | 126 | 125 | 35 |
| 175° | 123 | 123 | 125 | 125 | 125 | 12 |
| 180° | 125 | 125 | 125 | 125 | 125 | |



TEST NUMBER: P1432443

CATALOG NUMBER: EHBR1-42-UNV-W-L830-UPL12

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 16180.5 | 16180.5 | 16180.5 | 16180.5 | 16180.5 |
| 2.5° | 16234.9 | 16234.9 | 16234.9 | 16234.9 | 16234.9 |
| 5° | 16331.8 | 16331.8 | 16331.8 | 16331.8 | 16331.8 |
| 7.5° | 16522.5 | 16522.5 | 16522.5 | 16522.5 | 16522.5 |
| 10° | 16816.0 | 16816.0 | 16816.0 | 16816.0 | 16816.0 |
| 12.5° | 17197.3 | 17197.3 | 17197.3 | 17197.3 | 17197.3 |
| 15° | 17657.0 | 17657.0 | 17657.0 | 17657.0 | 17657.0 |
| 17.5° | 18183.1 | 18183.1 | 18183.1 | 18183.1 | 18183.1 |
| 20° | 18751.3 | 18751.3 | 18751.3 | 18751.3 | 18751.3 |
| 22.5° | 19323.5 | 19323.5 | 19323.5 | 19323.5 | 19323.5 |
| 25° | 19806.3 | 19806.3 | 19806.3 | 19806.3 | 19806.3 |
| 27.5° | 20066.2 | 20066.2 | 20066.2 | 20066.2 | 20066.2 |
| 30° | 19996.4 | 19996.4 | 19996.4 | 19996.4 | 19996.4 |
| 32.5° | 19403.6 | 19403.6 | 19403.6 | 19403.6 | 19403.6 |
| 35° | 18161.2 | 18161.2 | 18161.2 | 18161.2 | 18161.2 |
| 37.5° | 16223.9 | 16223.9 | 16223.9 | 16223.9 | 16223.9 |
| 40° | 13609.1 | 13609.1 | 13609.1 | 13609.1 | 13609.1 |
| 42.5° | 10651.7 | 10651.7 | 10651.7 | 10651.7 | 10651.7 |
| 45° | 7852.1 | 7852.1 | 7852.1 | 7852.1 | 7852.1 |
| 47.5° | 5612.2 | 5612.2 | 5612.2 | 5612.2 | 5612.2 |
| 50° | 4188.1 | 4188.1 | 4188.1 | 4188.1 | 4188.1 |
| 52.5° | 3391.1 | 3391.1 | 3391.1 | 3391.1 | 3391.1 |
| 55° | 2873.4 | 2873.4 | 2873.4 | 2873.4 | 2873.4 |
| 57.5° | 2495.2 | 2495.2 | 2495.2 | 2495.2 | 2495.2 |
| 60° | 2192.6 | 2192.6 | 2192.6 | 2192.6 | 2192.6 |
| 62.5° | 1940.6 | 1940.6 | 1940.6 | 1940.6 | 1940.6 |
| 65° | 1719.5 | 1719.5 | 1719.5 | 1719.5 | 1719.5 |
| 67.5° | 1524.2 | 1524.2 | 1524.2 | 1524.2 | 1524.2 |
| 70° | 1329.7 | 1329.7 | 1329.7 | 1329.7 | 1329.7 |
| 72.5° | 1135.8 | 1135.8 | 1135.8 | 1135.8 | 1135.8 |
| 75° | 943.2 | 943.2 | 943.2 | 943.2 | 943.2 |
| 77.5° | 757.6 | 757.6 | 757.6 | 757.6 | 757.6 |
| 80° | 574.0 | 574.0 | 574.0 | 574.0 | 574.0 |
| 82.5° | 393.7 | 393.7 | 393.7 | 393.7 | 393.7 |
| 85° | 221.1 | 221.1 | 221.1 | 221.1 | 221.1 |
| 87.5° | 69.8 | 69.8 | 69.8 | 69.8 | 69.8 |
| 90° | 9.5 | 14.5 | 24.0 | 15.7 | 9.5 |
| 92.5° | 12.6 | 20.8 | 37.2 | 19.5 | 11.3 |
| 95° | 15.2 | 24.5 | 52.3 | 26.5 | 17.0 |
| 97.5° | 18.9 | 27.1 | 59.9 | 32.1 | 25.9 |
| 100° | 24.5 | 31.5 | 92.5 | 39.1 | 34.0 |
| 102.5° | 40.9 | 65.5 | 195.1 | 72.4 | 51.1 |
| 105° | 69.9 | 136.6 | 346.7 | 150.4 | 91.9 |
| 107.5° | 120.2 | 243.5 | 456.7 | 265.6 | 173.1 |
| 110° | 224.1 | 323.4 | 479.5 | 364.9 | 276.9 |



TEST NUMBER: P1432443

CATALOG NUMBER: EHBR1-42-UNV-W-L830-UPL12

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 302.1 | 347.3 | 459.4 | 402.7 | 359.9 |
| 115° | 317.8 | 334.1 | 410.3 | 393.2 | 390.8 |
| 117.5° | 307.1 | 305.2 | 348.6 | 353.6 | 377.6 |
| 120° | 284.5 | 271.8 | 291.3 | 308.9 | 341.1 |
| 122.5° | 256.1 | 241.0 | 249.8 | 263.0 | 295.2 |
| 125° | 230.3 | 215.3 | 221.0 | 224.1 | 251.1 |
| 127.5° | 207.1 | 197.0 | 200.2 | 196.4 | 213.4 |
| 130° | 192.0 | 183.2 | 187.6 | 178.8 | 187.0 |
| 132.5° | 180.0 | 174.3 | 179.4 | 168.7 | 171.2 |
| 135° | 171.2 | 166.2 | 171.9 | 161.8 | 161.2 |
| 137.5° | 163.7 | 159.3 | 165.0 | 157.5 | 155.5 |
| 140° | 157.5 | 153.7 | 160.0 | 154.4 | 153.1 |
| 142.5° | 150.0 | 147.4 | 155.0 | 151.2 | 150.0 |
| 145° | 144.9 | 143.0 | 151.3 | 149.3 | 148.7 |
| 147.5° | 140.6 | 139.3 | 146.9 | 146.2 | 146.2 |
| 150° | 136.2 | 134.9 | 142.5 | 141.8 | 142.5 |
| 152.5° | 131.8 | 130.5 | 137.4 | 136.8 | 137.4 |
| 155° | 129.3 | 128.0 | 133.7 | 133.7 | 133.7 |
| 157.5° | 126.7 | 126.1 | 130.6 | 130.6 | 130.6 |
| 160° | 125.4 | 124.8 | 128.6 | 128.6 | 128.0 |
| 162.5° | 124.2 | 123.6 | 128.0 | 127.3 | 127.3 |
| 165° | 122.9 | 122.9 | 126.1 | 126.1 | 125.4 |
| 167.5° | 122.9 | 122.3 | 125.4 | 125.4 | 124.9 |
| 170° | 122.3 | 122.3 | 124.9 | 124.2 | 123.6 |
| 172.5° | 123.0 | 123.0 | 125.5 | 124.9 | 124.2 |
| 175° | 123.0 | 123.0 | 124.9 | 124.9 | 124.9 |
| 177.5° | 123.6 | 123.6 | 124.9 | 124.9 | 124.2 |
| 180° | 124.9 | 124.9 | 124.9 | 124.9 | 124.9 |



TEST NUMBER: P1432443
 CATALOG NUMBER: EHBR1-42-UNV-W-L830-UPL12

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 | 19.31 | 20.57 | 19.72 | 20.94 | 21.33 | 19.31 | 20.57 | 19.72 | 20.94 | 21.33 |
| | 3H | 20.81 | 21.93 | 21.24 | 22.32 | 22.76 | 20.81 | 21.93 | 21.24 | 22.32 | 22.76 |
| | 4H | 21.37 | 22.42 | 21.82 | 22.83 | 23.28 | 21.37 | 22.42 | 21.82 | 22.83 | 23.28 |
| | 6H | 21.76 | 22.72 | 22.22 | 23.15 | 23.61 | 21.76 | 22.72 | 22.22 | 23.15 | 23.61 |
| | 8H | 21.86 | 22.77 | 22.34 | 23.22 | 23.69 | 21.86 | 22.77 | 22.34 | 23.22 | 23.69 |
| | 12H | 21.90 | 22.77 | 22.38 | 23.21 | 23.71 | 21.90 | 22.77 | 22.38 | 23.21 | 23.71 |
| 4H | 2H | 19.76 | 20.80 | 20.21 | 21.21 | 21.66 | 19.76 | 20.80 | 20.21 | 21.21 | 21.66 |
| | 3H | 21.48 | 22.34 | 21.94 | 22.80 | 23.27 | 21.48 | 22.34 | 21.94 | 22.80 | 23.27 |
| | 4H | 22.16 | 22.93 | 22.64 | 23.40 | 23.91 | 22.16 | 22.93 | 22.64 | 23.40 | 23.91 |
| | 6H | 22.66 | 23.32 | 23.17 | 23.82 | 24.35 | 22.66 | 23.32 | 23.17 | 23.82 | 24.35 |
| | 8H | 22.79 | 23.41 | 23.31 | 23.91 | 24.45 | 22.79 | 23.41 | 23.31 | 23.91 | 24.45 |
| | 12H | 22.85 | 23.40 | 23.39 | 23.94 | 24.48 | 22.85 | 23.40 | 23.39 | 23.94 | 24.48 |
| 8H | 4H | 22.36 | 22.99 | 22.88 | 23.48 | 24.02 | 22.36 | 22.99 | 22.88 | 23.48 | 24.02 |
| | 6H | 22.96 | 23.47 | 23.51 | 24.02 | 24.56 | 22.96 | 23.47 | 23.51 | 24.02 | 24.56 |
| | 8H | 23.15 | 23.60 | 23.72 | 24.17 | 24.72 | 23.15 | 23.60 | 23.72 | 24.17 | 24.72 |
| | 12H | 23.26 | 23.66 | 23.82 | 24.20 | 24.84 | 23.26 | 23.66 | 23.82 | 24.20 | 24.84 |
| 12H | 4H | 22.36 | 22.91 | 22.90 | 23.45 | 23.99 | 22.36 | 22.91 | 22.90 | 23.45 | 23.99 |
| | 6H | 22.98 | 23.43 | 23.54 | 24.00 | 24.55 | 22.98 | 23.43 | 23.54 | 24.00 | 24.55 |
| | 8H | 23.20 | 23.60 | 23.77 | 24.15 | 24.78 | 23.20 | 23.60 | 23.77 | 24.15 | 24.78 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-2

Test Date: 07/31/2025

Luminaire Tested: EHBR-60-L830-N

Data in this report applies to families of products including EHBR-60-L830-N

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-2
 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-L830-N**
 Description: Elevate Round Highbay at, 60000 lumens, 3000K 80CRI LEDs with N lens

Spectral Parameters

CCT (K): 2983
 CIE u': 0.2516
 CIE v': 0.5201
 Duv: -0.0012
 CIE x: 0.4364
 CIE y: 0.4010
 CIE z: 0.1626
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 583
 Purity: 51.34918
 R_f: 81.2
 R_g: 101.5

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 83.4 | | |
| R1: | 84.0 | R9: | 29.4 |
| R2: | 87.5 | R10: | 68.6 |
| R3: | 88.9 | R11: | 82.2 |
| R4: | 83.8 | R12: | 61.6 |
| R5: | 81.9 | R13: | 83.9 |
| R6: | 83.1 | R14: | 92.5 |
| R7: | 87.1 | R15: | 79.8 |
| R8: | 70.9 | | |



Test Conditions

Stabilization Time: 38M
 Operation Time: 1H 38M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-2

| 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



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| 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 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.34

| 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 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 81.2$
 $R_g = 101.5$
 CIE $R_a = 83.4$
 $R_9 = 29.4$



Color Vector Graphics

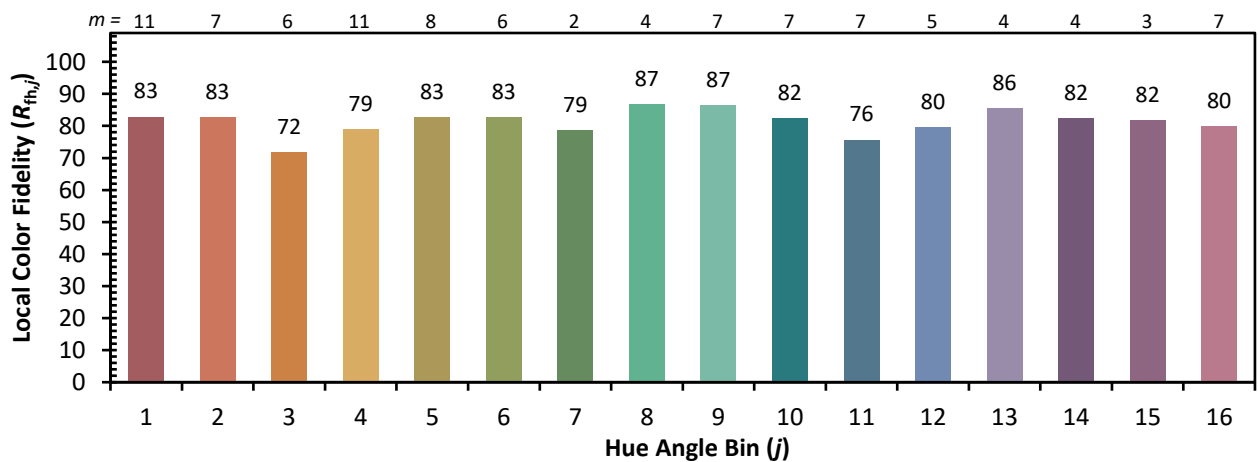
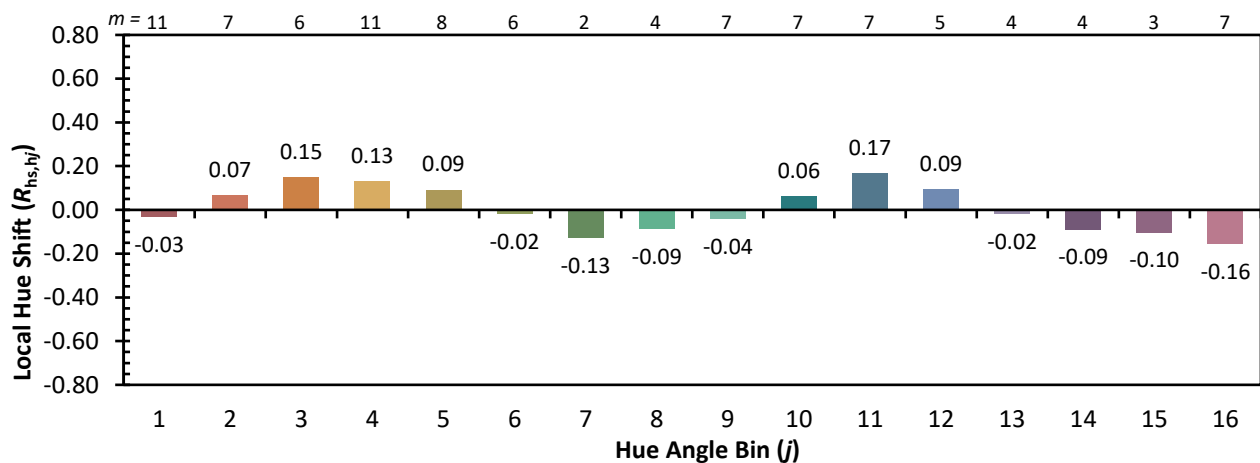
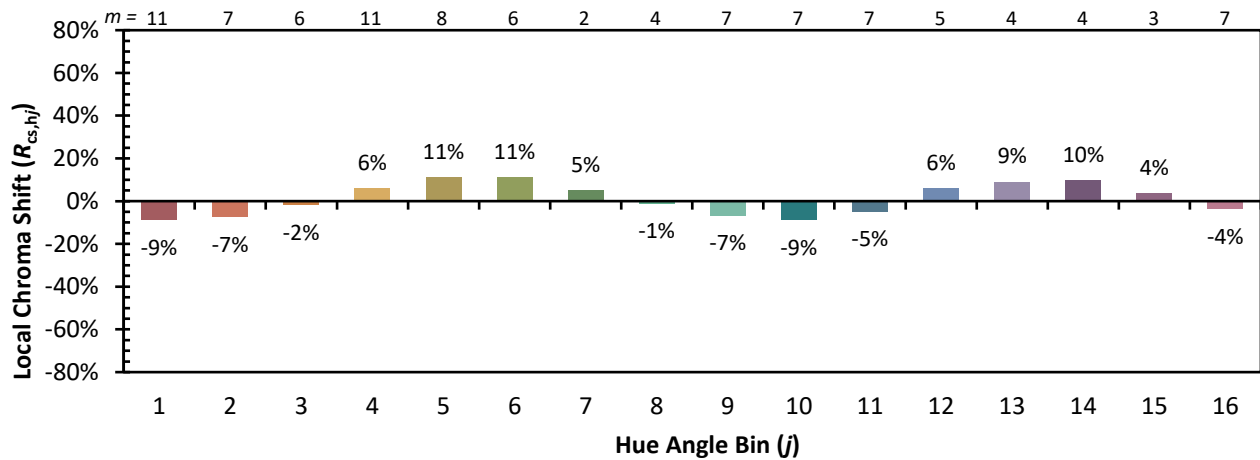


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 71 | CES51 = 89 | CES76 = 65 |
| CES02 = 63 | CES27 = 89 | CES52 = 89 | CES77 = 82 |
| CES03 = 31 | CES28 = 86 | CES53 = 80 | CES78 = 67 |
| CES04 = 70 | CES29 = 68 | CES54 = 92 | CES79 = 89 |
| CES05 = 50 | CES30 = 77 | CES55 = 90 | CES80 = 85 |
| CES06 = 51 | CES31 = 70 | CES56 = 81 | CES81 = 75 |
| CES07 = 43 | CES32 = 64 | CES57 = 79 | CES82 = 93 |
| CES08 = 41 | CES33 = 74 | CES58 = 81 | CES83 = 89 |
| CES09 = 29 | CES34 = 76 | CES59 = 92 | CES84 = 91 |
| CES10 = 76 | CES35 = 87 | CES60 = 96 | CES85 = 81 |
| CES11 = 59 | CES36 = 99 | CES61 = 91 | CES86 = 74 |
| CES12 = 65 | CES37 = 81 | CES62 = 93 | CES87 = 83 |
| CES13 = 44 | CES38 = 83 | CES63 = 79 | CES88 = 86 |
| CES14 = 74 | CES39 = 94 | CES64 = 81 | CES89 = 74 |
| CES15 = 72 | CES40 = 89 | CES65 = 78 | CES90 = 85 |
| CES16 = 48 | CES41 = 88 | CES66 = 76 | CES91 = 87 |
| CES17 = 50 | CES42 = 80 | CES67 = 74 | CES92 = 73 |
| CES18 = 57 | CES43 = 75 | CES68 = 79 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 83 | CES94 = 64 |
| CES20 = 67 | CES45 = 83 | CES70 = 72 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 70 | CES96 = 86 |
| CES22 = 79 | CES47 = 79 | CES72 = 90 | CES97 = 85 |
| CES23 = 92 | CES48 = 78 | CES73 = 65 | CES98 = 83 |
| CES24 = 91 | CES49 = 79 | CES74 = 94 | CES99 = 82 |
| CES25 = 72 | CES50 = 88 | CES75 = 70 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)