

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: HALO COMMERCIAL

Report Number: P837563

Luminaire Tested: HCSQ445D010-HM44560835-41SQC

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837563
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-1)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ445D010-HM44560835-41SQC
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: -

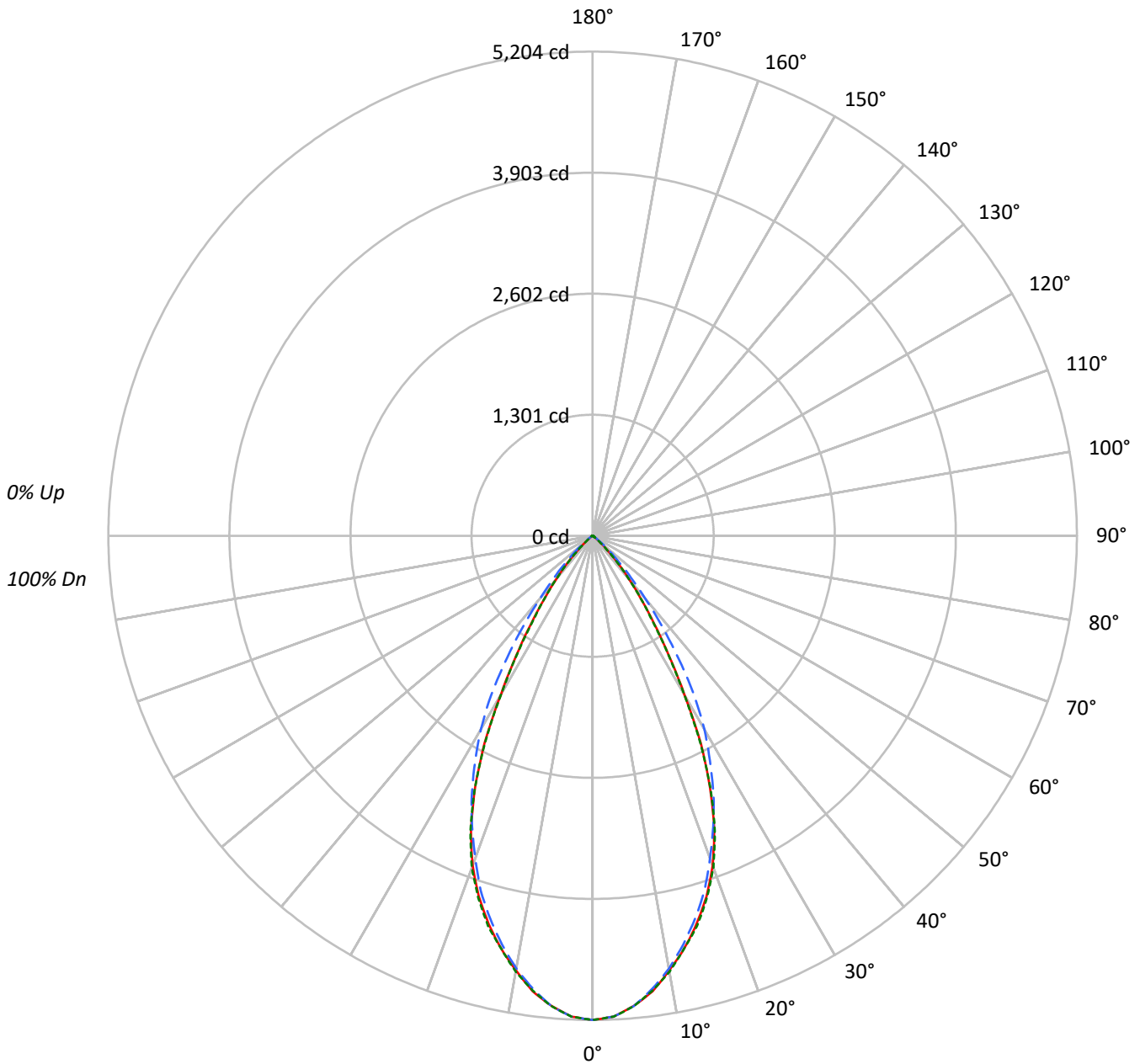
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4205.7 lumens
Efficiency: N/A
Efficacy: 91.6 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 0.85 / 0.87
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 45.9
Input Voltage (V): NR
Input Current (A_{in}): 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

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Luminous Intensity Polar Plot





TEST NUMBER: P837563

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | | | | | | | | | | | | | | | | |
| 1 | 114 | 111 | 108 | 106 | 111 | 109 | 106 | 104 | 105 | 103 | 101 | 101 | 99 | 98 | 97 | 96 | 95 | 94 | | | | | | | | | | | | | | | | | | | |
| 2 | 108 | 103 | 99 | 96 | 106 | 101 | 98 | 95 | 98 | 95 | 93 | 95 | 93 | 91 | 93 | 91 | 89 | 87 | | | | | | | | | | | | | | | | | | | |
| 3 | 103 | 96 | 91 | 87 | 101 | 95 | 90 | 87 | 92 | 89 | 85 | 90 | 87 | 84 | 88 | 85 | 83 | 81 | | | | | | | | | | | | | | | | | | | |
| 4 | 98 | 90 | 85 | 80 | 96 | 89 | 84 | 80 | 87 | 82 | 79 | 85 | 81 | 78 | 83 | 80 | 77 | 76 | | | | | | | | | | | | | | | | | | | |
| 5 | 93 | 84 | 79 | 74 | 91 | 83 | 78 | 74 | 82 | 77 | 73 | 80 | 76 | 73 | 78 | 75 | 72 | 71 | | | | | | | | | | | | | | | | | | | |
| 6 | 88 | 79 | 73 | 69 | 87 | 79 | 73 | 69 | 77 | 72 | 68 | 76 | 71 | 68 | 74 | 70 | 68 | 66 | | | | | | | | | | | | | | | | | | | |
| 7 | 84 | 75 | 69 | 65 | 82 | 74 | 68 | 64 | 73 | 68 | 64 | 71 | 67 | 64 | 70 | 66 | 63 | 62 | | | | | | | | | | | | | | | | | | | |
| 8 | 80 | 70 | 64 | 60 | 79 | 70 | 64 | 60 | 69 | 64 | 60 | 68 | 63 | 60 | 67 | 63 | 60 | 58 | | | | | | | | | | | | | | | | | | | |
| 9 | 76 | 67 | 61 | 57 | 75 | 66 | 60 | 57 | 65 | 60 | 56 | 64 | 60 | 56 | 63 | 59 | 56 | 55 | | | | | | | | | | | | | | | | | | | |
| 10 | 73 | 63 | 57 | 53 | 72 | 63 | 57 | 53 | 62 | 57 | 53 | 61 | 56 | 53 | 60 | 56 | 53 | 52 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 504178 | 504178 | 504178 |
| 5° | 493375 | 493579 | 493579 |
| 10° | 466667 | 464581 | 467906 |
| 15° | 432994 | 427067 | 435321 |
| 20° | 388680 | 379979 | 391082 |
| 25° | 319238 | 328495 | 320371 |
| 30° | 220682 | 268402 | 219026 |
| 35° | 135884 | 189588 | 132644 |
| 40° | 76661 | 110856 | 76130 |
| 45° | 35018 | 55555 | 33566 |
| 50° | 8907 | 22290 | 9239 |
| 55° | 4273 | 6773 | 3918 |
| 60° | 2868 | 2461 | 3274 |
| 65° | 2430 | 1926 | 2430 |
| 70° | 1784 | 1784 | 2379 |
| 75° | 1572 | 1572 | 2358 |
| 80° | 2343 | 2343 | 2343 |
| 85° | 2334 | 4668 | 4668 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 55555 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 473.4 | 11.3 |
| 10°-20° | 1195.7 | 28.4 |
| 20°-30° | 1366.8 | 32.5 |
| 30°-40° | 848.5 | 20.2 |
| 40°-50° | 267.4 | 6.4 |
| 50°-60° | 34.6 | 0.8 |
| 60°-70° | 10.2 | 0.2 |
| 70°-80° | 5.4 | 0.1 |
| 80°-90° | 3.6 | 0.1 |
| 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° | 3035.9 | 72.2 |
| 0°-40° | 3884.4 | 92.4 |
| 0°-60° | 4186.4 | 99.5 |
| 0°-90° | 4205.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4205.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 5204 | 5204 | 5204 | 5204 | 5204 | |
| 5° | 5074 | 5069 | 5076 | 5071 | 5076 | 474 |
| 15° | 4317 | 4286 | 4258 | 4286 | 4340 | 1204 |
| 25° | 2987 | 3029 | 3073 | 3029 | 2997 | 1340 |
| 35° | 1149 | 1326 | 1603 | 1295 | 1122 | 738 |
| 45° | 256 | 306 | 406 | 308 | 245 | 216 |
| 55° | 25 | 25 | 40 | 25 | 23 | 25 |
| 65° | 11 | 11 | 8 | 11 | 11 | 10 |
| 75° | 4 | 4 | 4 | 4 | 6 | 5 |
| 85° | 2 | 4 | 4 | 4 | 4 | 2 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 5204.4 | 5204.4 | 5204.4 | 5204.4 | 5204.4 |
| 2.5° | 5172.7 | 5177.0 | 5172.7 | 5181.2 | 5172.7 |
| 5° | 5073.5 | 5069.2 | 5075.6 | 5071.3 | 5075.6 |
| 7.5° | 4938.3 | 4912.9 | 4910.8 | 4927.7 | 4929.8 |
| 10° | 4744.0 | 4737.6 | 4722.8 | 4737.6 | 4756.6 |
| 12.5° | 4545.4 | 4520.1 | 4498.9 | 4528.5 | 4545.4 |
| 15° | 4317.3 | 4285.6 | 4258.2 | 4285.6 | 4340.5 |
| 17.5° | 4065.9 | 4021.6 | 3998.4 | 4030.0 | 4082.8 |
| 20° | 3770.2 | 3723.8 | 3685.8 | 3713.2 | 3793.5 |
| 22.5° | 3415.4 | 3411.2 | 3385.8 | 3400.6 | 3430.2 |
| 25° | 2986.6 | 3028.9 | 3073.2 | 3028.9 | 2997.2 |
| 27.5° | 2515.6 | 2629.7 | 2731.0 | 2598.0 | 2496.6 |
| 30° | 1972.8 | 2146.0 | 2399.4 | 2133.3 | 1958.0 |
| 32.5° | 1525.0 | 1706.6 | 2029.8 | 1683.4 | 1512.3 |
| 35° | 1149.0 | 1326.4 | 1603.1 | 1294.8 | 1121.6 |
| 37.5° | 844.9 | 977.9 | 1218.7 | 969.5 | 844.9 |
| 40° | 606.2 | 692.8 | 876.6 | 690.7 | 602.0 |
| 42.5° | 420.3 | 477.4 | 612.5 | 473.1 | 407.7 |
| 45° | 255.6 | 306.3 | 405.5 | 308.4 | 245.0 |
| 47.5° | 135.2 | 194.3 | 255.6 | 185.9 | 135.2 |
| 50° | 59.1 | 103.5 | 147.9 | 101.4 | 61.3 |
| 52.5° | 31.7 | 44.4 | 80.3 | 44.4 | 31.7 |
| 55° | 25.3 | 25.3 | 40.1 | 25.3 | 23.2 |
| 57.5° | 19.0 | 19.0 | 21.1 | 19.0 | 19.0 |
| 60° | 14.8 | 14.8 | 12.7 | 14.8 | 16.9 |
| 62.5° | 12.7 | 12.7 | 10.6 | 12.7 | 12.7 |
| 65° | 10.6 | 10.6 | 8.4 | 10.6 | 10.6 |
| 67.5° | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 |
| 70° | 6.3 | 6.3 | 6.3 | 8.4 | 8.4 |
| 72.5° | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 |
| 75° | 4.2 | 4.2 | 4.2 | 4.2 | 6.3 |
| 77.5° | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| 80° | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| 82.5° | 2.1 | 4.2 | 4.2 | 4.2 | 4.2 |
| 85° | 2.1 | 4.2 | 4.2 | 4.2 | 4.2 |
| 87.5° | 2.1 | 2.1 | 4.2 | 4.2 | 4.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270°

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