

Signify Classified - Internal
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: HALO COMMERCIAL

Report Number: P837558

Luminaire Tested: HCSQ445D010-HM44560830-41SQC

Issue Date: 5/17/2024



Test Information

Test Method: LM-79-2019
Report Number: P837558
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-HM44560830-41SQC
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: -

Summary

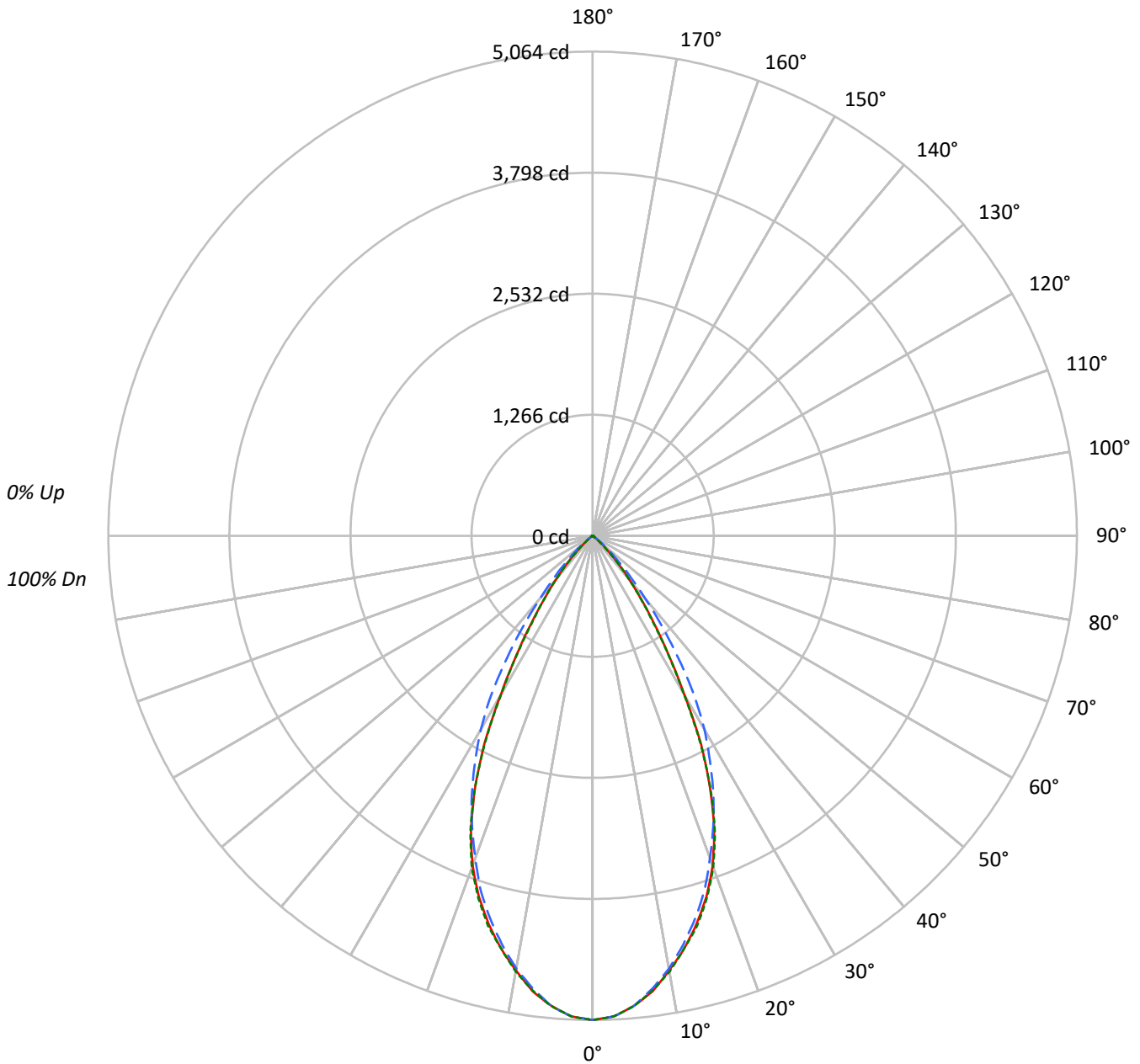
Lumens per Lamp: N/A
Luminaire Lumens: 4092.3 lumens
Efficiency: N/A
Efficacy: 89.2 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 0.85 / 0.87
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|--|--|--|--|---|
| RF | 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 | 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° | 490577 | 490577 | 490577 |
| 5° | 480062 | 480257 | 480257 |
| 10° | 454066 | 452049 | 455285 |
| 15° | 421310 | 415543 | 423577 |
| 20° | 378195 | 369721 | 380525 |
| 25° | 310623 | 319634 | 311724 |
| 30° | 214719 | 261164 | 213120 |
| 35° | 132218 | 184479 | 129060 |
| 40° | 74587 | 107859 | 74069 |
| 45° | 34073 | 54061 | 32661 |
| 50° | 8666 | 21687 | 8982 |
| 55° | 4172 | 6587 | 3817 |
| 60° | 2790 | 2383 | 3178 |
| 65° | 2361 | 1880 | 2361 |
| 70° | 1756 | 1756 | 2323 |
| 75° | 1535 | 1535 | 2321 |
| 80° | 2287 | 2287 | 2287 |
| 85° | 2334 | 4557 | 4557 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 54061 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 460.7 | 11.3 |
| 10°-20° | 1163.4 | 28.4 |
| 20°-30° | 1329.9 | 32.5 |
| 30°-40° | 825.6 | 20.2 |
| 40°-50° | 260.2 | 6.4 |
| 50°-60° | 33.7 | 0.8 |
| 60°-70° | 10.0 | 0.2 |
| 70°-80° | 5.3 | 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° | 2954.0 | 72.2 |
| 0°-40° | 3779.6 | 92.4 |
| 0°-60° | 4073.4 | 99.5 |
| 0°-90° | 4092.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4092.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 5064 | 5064 | 5064 | 5064 | 5064 | |
| 5° | 4937 | 4932 | 4939 | 4934 | 4939 | 461 |
| 15° | 4201 | 4170 | 4143 | 4170 | 4223 | 1171 |
| 25° | 2906 | 2947 | 2990 | 2947 | 2916 | 1304 |
| 35° | 1118 | 1291 | 1560 | 1260 | 1091 | 719 |
| 45° | 249 | 298 | 395 | 300 | 238 | 210 |
| 55° | 25 | 25 | 39 | 25 | 23 | 24 |
| 65° | 10 | 10 | 8 | 10 | 10 | 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° | 5064.0 | 5064.0 | 5064.0 | 5064.0 | 5064.0 |
| 2.5° | 5033.1 | 5037.3 | 5033.1 | 5041.4 | 5033.1 |
| 5° | 4936.6 | 4932.4 | 4938.6 | 4934.5 | 4938.6 |
| 7.5° | 4805.0 | 4780.4 | 4778.3 | 4794.7 | 4796.8 |
| 10° | 4615.9 | 4609.8 | 4595.4 | 4609.8 | 4628.3 |
| 12.5° | 4422.8 | 4398.1 | 4377.5 | 4406.3 | 4422.8 |
| 15° | 4200.8 | 4170.0 | 4143.3 | 4170.0 | 4223.4 |
| 17.5° | 3956.2 | 3913.1 | 3890.5 | 3921.3 | 3972.7 |
| 20° | 3668.5 | 3623.3 | 3586.3 | 3613.0 | 3691.1 |
| 22.5° | 3323.2 | 3319.1 | 3294.5 | 3308.8 | 3337.6 |
| 25° | 2906.0 | 2947.1 | 2990.3 | 2947.1 | 2916.3 |
| 27.5° | 2447.7 | 2558.7 | 2657.4 | 2527.9 | 2429.2 |
| 30° | 1919.5 | 2088.1 | 2334.7 | 2075.7 | 1905.2 |
| 32.5° | 1483.8 | 1660.6 | 1975.0 | 1638.0 | 1471.5 |
| 35° | 1118.0 | 1290.7 | 1559.9 | 1259.8 | 1091.3 |
| 37.5° | 822.1 | 951.6 | 1185.8 | 943.3 | 822.1 |
| 40° | 589.8 | 674.1 | 852.9 | 672.0 | 585.7 |
| 42.5° | 409.0 | 464.5 | 596.0 | 460.4 | 396.7 |
| 45° | 248.7 | 298.0 | 394.6 | 300.1 | 238.4 |
| 47.5° | 131.5 | 189.1 | 248.7 | 180.9 | 131.5 |
| 50° | 57.5 | 100.7 | 143.9 | 98.6 | 59.6 |
| 52.5° | 30.8 | 43.2 | 78.1 | 43.2 | 30.8 |
| 55° | 24.7 | 24.7 | 39.0 | 24.7 | 22.6 |
| 57.5° | 18.5 | 18.5 | 20.6 | 18.5 | 18.5 |
| 60° | 14.4 | 14.4 | 12.3 | 14.4 | 16.4 |
| 62.5° | 12.3 | 12.3 | 10.3 | 12.3 | 12.3 |
| 65° | 10.3 | 10.3 | 8.2 | 10.3 | 10.3 |
| 67.5° | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 |
| 70° | 6.2 | 6.2 | 6.2 | 8.2 | 8.2 |
| 72.5° | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 |
| 75° | 4.1 | 4.1 | 4.1 | 4.1 | 6.2 |
| 77.5° | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| 80° | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| 82.5° | 2.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| 85° | 2.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| 87.5° | 2.1 | 2.1 | 4.1 | 4.1 | 4.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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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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