

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: P837319

Luminaire Tested: HCSQ415D010-HM40525830-41SQH

Issue Date: 5/17/2024



Test Information

Test Method: LM-79-2019
Report Number: P837319
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-2)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ415D010-HM40525830-41SQH
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: -

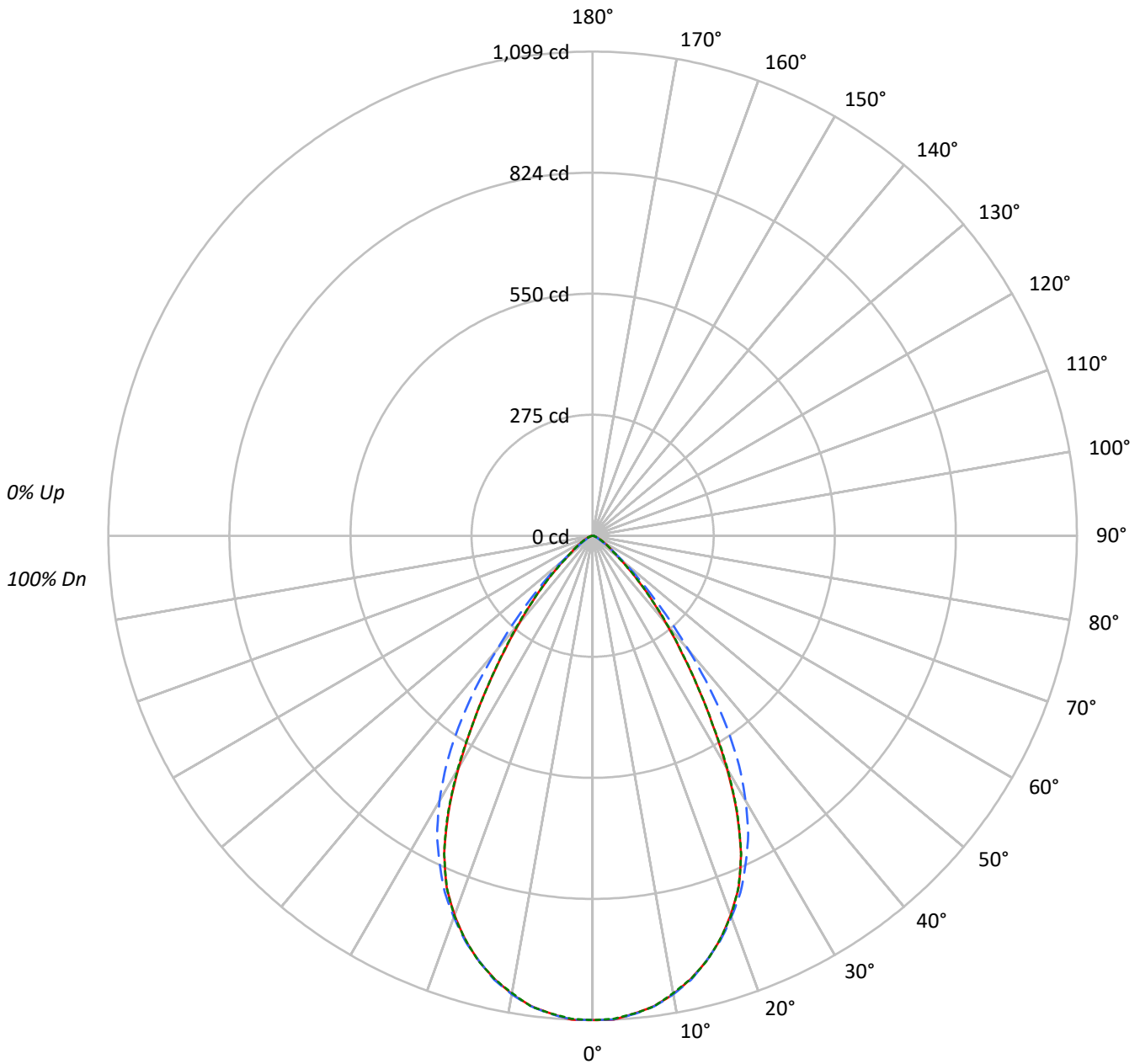
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1235.8 lumens
Efficiency: N/A
Efficacy: 88.3 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 14
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 | 113 | 110 | 107 | 105 | 110 | 108 | 105 | 103 | 104 | 102 | 100 | 100 | 98 | 97 | 96 | 95 | 94 | 92 | | | | | | | | |
| 2 | 107 | 101 | 97 | 93 | 104 | 100 | 95 | 92 | 96 | 93 | 90 | 93 | 90 | 88 | 90 | 88 | 86 | 85 | | | | | | | | |
| 3 | 101 | 93 | 88 | 84 | 98 | 92 | 87 | 83 | 89 | 85 | 82 | 87 | 83 | 80 | 85 | 82 | 79 | 77 | | | | | | | | |
| 4 | 95 | 87 | 80 | 76 | 93 | 85 | 80 | 75 | 83 | 78 | 74 | 81 | 77 | 74 | 79 | 76 | 73 | 71 | | | | | | | | |
| 5 | 89 | 80 | 74 | 69 | 88 | 79 | 73 | 69 | 77 | 72 | 68 | 76 | 71 | 68 | 74 | 70 | 67 | 65 | | | | | | | | |
| 6 | 84 | 75 | 68 | 63 | 83 | 74 | 68 | 63 | 72 | 67 | 63 | 71 | 66 | 62 | 69 | 65 | 62 | 60 | | | | | | | | |
| 7 | 80 | 70 | 63 | 59 | 78 | 69 | 63 | 58 | 68 | 62 | 58 | 66 | 61 | 58 | 65 | 61 | 57 | 56 | | | | | | | | |
| 8 | 75 | 65 | 59 | 54 | 74 | 65 | 58 | 54 | 63 | 58 | 54 | 62 | 57 | 54 | 61 | 57 | 53 | 52 | | | | | | | | |
| 9 | 72 | 61 | 55 | 50 | 70 | 61 | 54 | 50 | 60 | 54 | 50 | 59 | 54 | 50 | 58 | 53 | 50 | 48 | | | | | | | | |
| 10 | 68 | 57 | 51 | 47 | 67 | 57 | 51 | 47 | 56 | 51 | 47 | 55 | 50 | 47 | 55 | 50 | 46 | 45 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 106495 | 106495 | 106495 |
| 5° | 105852 | 105978 | 105852 |
| 10° | 103869 | 103938 | 103662 |
| 15° | 100172 | 100112 | 100243 |
| 20° | 94433 | 94917 | 94639 |
| 25° | 85213 | 87821 | 85213 |
| 30° | 68057 | 77699 | 68594 |
| 35° | 48582 | 62880 | 48665 |
| 40° | 32804 | 42769 | 33323 |
| 45° | 20838 | 25304 | 20934 |
| 50° | 11876 | 13504 | 11454 |
| 55° | 7803 | 6536 | 7685 |
| 60° | 5386 | 3817 | 5270 |
| 65° | 3736 | 2797 | 3736 |
| 70° | 2691 | 2124 | 2691 |
| 75° | 1797 | 1797 | 1797 |
| 80° | 1116 | 1506 | 1506 |
| 85° | 1556 | 1556 | 1556 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 25304 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 103.0 | 8.3 |
| 10°-20° | 280.0 | 22.7 |
| 20°-30° | 366.7 | 29.7 |
| 30°-40° | 288.2 | 23.3 |
| 40°-50° | 134.6 | 10.9 |
| 50°-60° | 41.7 | 3.4 |
| 60°-70° | 14.9 | 1.2 |
| 70°-80° | 5.2 | 0.4 |
| 80°-90° | 1.5 | 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° | 749.7 | 60.7 |
| 0°-40° | 1037.9 | 84.0 |
| 0°-60° | 1214.2 | 98.3 |
| 0°-90° | 1235.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1235.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1099 | 1099 | 1099 | 1099 | 1099 | |
| 5° | 1088 | 1089 | 1090 | 1091 | 1088 | 103 |
| 15° | 999 | 999 | 998 | 999 | 1000 | 280 |
| 25° | 797 | 808 | 822 | 809 | 797 | 358 |
| 35° | 411 | 448 | 532 | 454 | 412 | 259 |
| 45° | 152 | 170 | 185 | 167 | 153 | 121 |
| 55° | 46 | 44 | 39 | 43 | 46 | 43 |
| 65° | 16 | 15 | 12 | 14 | 16 | 17 |
| 75° | 5 | 5 | 5 | 5 | 5 | 5 |
| 85° | 1 | 1 | 1 | 1 | 1 | 1 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1099.3 | 1099.3 | 1099.3 | 1099.3 | 1099.3 |
| 2.5° | 1099.3 | 1098.0 | 1098.7 | 1097.3 | 1097.3 |
| 5° | 1088.5 | 1089.1 | 1089.8 | 1091.2 | 1088.5 |
| 7.5° | 1076.2 | 1077.6 | 1076.9 | 1076.9 | 1076.9 |
| 10° | 1055.9 | 1056.6 | 1056.6 | 1056.6 | 1053.8 |
| 12.5° | 1030.1 | 1031.4 | 1032.1 | 1030.1 | 1030.1 |
| 15° | 998.8 | 998.8 | 998.2 | 998.8 | 999.5 |
| 17.5° | 961.5 | 963.5 | 963.5 | 961.5 | 960.8 |
| 20° | 916.0 | 919.4 | 920.7 | 918.0 | 918.0 |
| 22.5° | 865.1 | 868.5 | 876.6 | 869.8 | 864.4 |
| 25° | 797.2 | 808.0 | 821.6 | 808.7 | 797.2 |
| 27.5° | 709.6 | 733.3 | 764.6 | 737.4 | 711.6 |
| 30° | 608.4 | 647.1 | 694.6 | 649.1 | 613.2 |
| 32.5° | 505.2 | 548.6 | 618.6 | 552.0 | 505.2 |
| 35° | 410.8 | 448.2 | 531.7 | 453.6 | 411.5 |
| 37.5° | 326.6 | 362.6 | 435.9 | 366.7 | 331.4 |
| 40° | 259.4 | 288.6 | 338.2 | 287.9 | 263.5 |
| 42.5° | 202.3 | 223.4 | 256.0 | 222.7 | 201.7 |
| 45° | 152.1 | 170.4 | 184.7 | 167.0 | 152.8 |
| 47.5° | 112.0 | 124.3 | 132.4 | 122.2 | 109.3 |
| 50° | 78.8 | 87.6 | 89.6 | 85.6 | 76.0 |
| 52.5° | 59.1 | 59.1 | 59.8 | 58.4 | 57.7 |
| 55° | 46.2 | 43.5 | 38.7 | 42.8 | 45.5 |
| 57.5° | 36.0 | 33.3 | 27.2 | 31.9 | 35.3 |
| 60° | 27.8 | 25.1 | 19.7 | 24.4 | 27.2 |
| 62.5° | 21.7 | 19.0 | 15.6 | 19.0 | 21.0 |
| 65° | 16.3 | 14.9 | 12.2 | 14.3 | 16.3 |
| 67.5° | 12.2 | 10.9 | 9.5 | 10.9 | 12.2 |
| 70° | 9.5 | 8.8 | 7.5 | 8.1 | 9.5 |
| 72.5° | 6.8 | 6.1 | 6.1 | 6.1 | 6.8 |
| 75° | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| 77.5° | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| 80° | 2.0 | 2.0 | 2.7 | 2.7 | 2.7 |
| 82.5° | 1.4 | 1.4 | 2.0 | 2.0 | 2.0 |
| 85° | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| 87.5° | 0.7 | 0.7 | 0.7 | 1.4 | 1.4 |
| 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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