

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: P837478

Luminaire Tested: HCSQ435D010-HM43040830-41SQC

Issue Date: 5/17/2024



Test Information

Test Method: LM-79-2019
Report Number: P837478
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: HCSQ435D010-HM43040830-41SQC
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: -

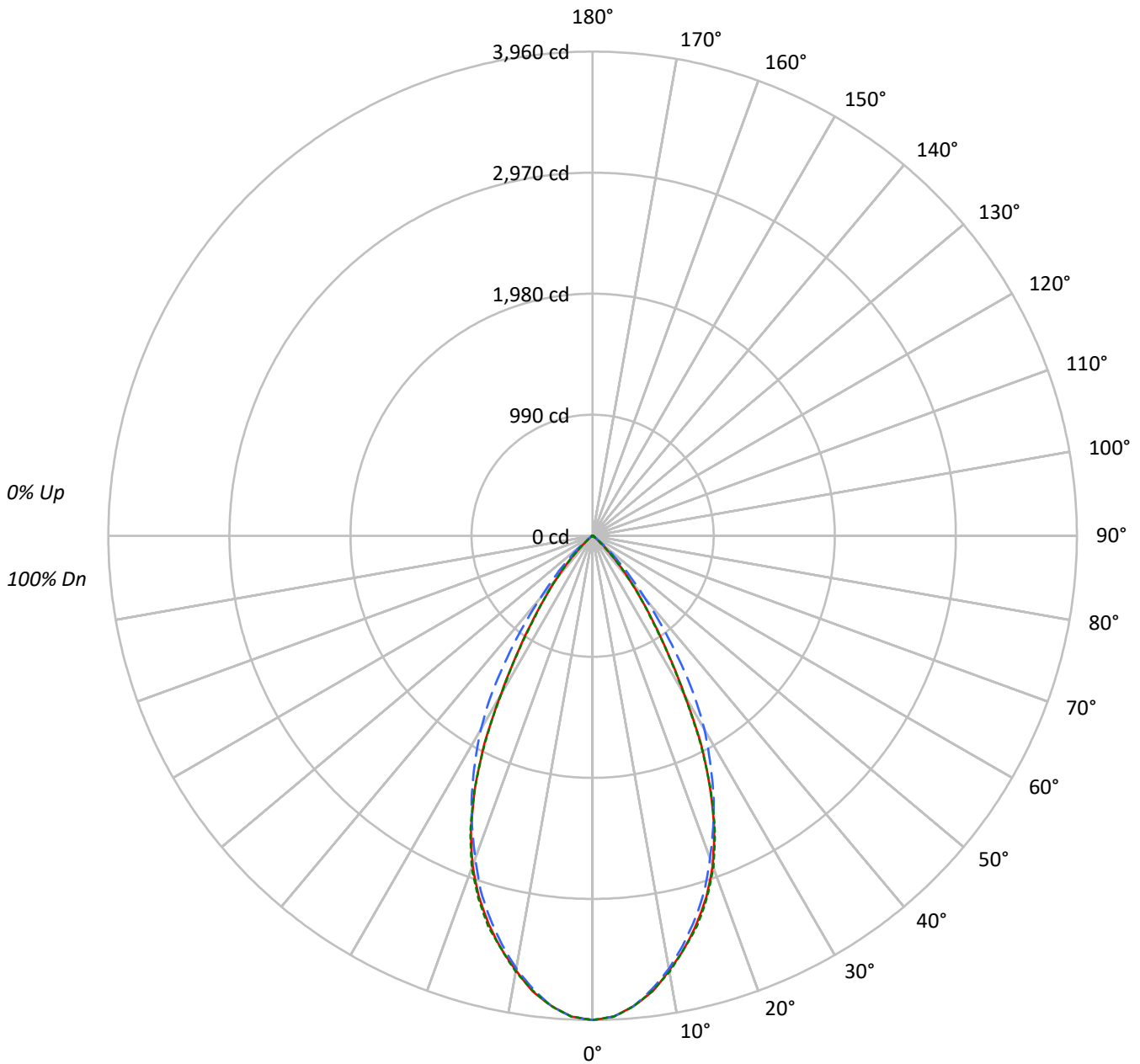
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3200.4 lumens
Efficiency: N/A
Efficacy: 94.1 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): 34
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 | | | | |
| RW | 70 | 50 | 30 | 10 | 70 | 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° | 383665 | 383665 | 383665 |
| 5° | 375436 | 375591 | 375591 |
| 10° | 355115 | 353532 | 356060 |
| 15° | 329492 | 324979 | 331267 |
| 20° | 295773 | 289144 | 297598 |
| 25° | 242929 | 249973 | 243795 |
| 30° | 167927 | 204249 | 166675 |
| 35° | 103409 | 144269 | 100938 |
| 40° | 58337 | 84350 | 57932 |
| 45° | 26647 | 42279 | 25537 |
| 50° | 6782 | 16955 | 7023 |
| 55° | 3260 | 5151 | 2989 |
| 60° | 2189 | 1860 | 2499 |
| 65° | 1834 | 1467 | 1834 |
| 70° | 1360 | 1360 | 1813 |
| 75° | 1198 | 1198 | 1797 |
| 80° | 1785 | 1785 | 1785 |
| 85° | 1778 | 3557 | 3557 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 42279 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 360.3 | 11.3 |
| 10°-20° | 909.9 | 28.4 |
| 20°-30° | 1040.1 | 32.5 |
| 30°-40° | 645.7 | 20.2 |
| 40°-50° | 203.5 | 6.4 |
| 50°-60° | 26.4 | 0.8 |
| 60°-70° | 7.8 | 0.2 |
| 70°-80° | 4.1 | 0.1 |
| 80°-90° | 2.8 | 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° | 2310.2 | 72.2 |
| 0°-40° | 2955.9 | 92.4 |
| 0°-60° | 3185.7 | 99.5 |
| 0°-90° | 3200.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3200.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3960 | 3960 | 3960 | 3960 | 3960 | |
| 5° | 3861 | 3858 | 3862 | 3859 | 3862 | 361 |
| 15° | 3285 | 3261 | 3240 | 3261 | 3303 | 916 |
| 25° | 2273 | 2305 | 2339 | 2305 | 2281 | 1020 |
| 35° | 874 | 1009 | 1220 | 985 | 854 | 562 |
| 45° | 194 | 233 | 309 | 235 | 186 | 164 |
| 55° | 19 | 19 | 30 | 19 | 18 | 19 |
| 65° | 8 | 8 | 6 | 8 | 8 | 8 |
| 75° | 3 | 3 | 3 | 3 | 5 | 4 |
| 85° | 2 | 3 | 3 | 3 | 3 | 2 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3960.4 | 3960.4 | 3960.4 | 3960.4 | 3960.4 |
| 2.5° | 3936.3 | 3939.5 | 3936.3 | 3942.7 | 3936.3 |
| 5° | 3860.7 | 3857.5 | 3862.3 | 3859.1 | 3862.3 |
| 7.5° | 3757.9 | 3738.6 | 3737.0 | 3749.8 | 3751.4 |
| 10° | 3610.0 | 3605.2 | 3593.9 | 3605.2 | 3619.6 |
| 12.5° | 3458.9 | 3439.6 | 3423.6 | 3446.1 | 3458.9 |
| 15° | 3285.3 | 3261.2 | 3240.3 | 3261.2 | 3303.0 |
| 17.5° | 3094.1 | 3060.3 | 3042.6 | 3066.7 | 3106.9 |
| 20° | 2869.0 | 2833.7 | 2804.7 | 2825.6 | 2886.7 |
| 22.5° | 2599.0 | 2595.8 | 2576.5 | 2587.8 | 2610.3 |
| 25° | 2272.7 | 2304.9 | 2338.6 | 2304.9 | 2280.8 |
| 27.5° | 1914.3 | 2001.1 | 2078.2 | 1977.0 | 1899.8 |
| 30° | 1501.2 | 1633.0 | 1825.9 | 1623.4 | 1490.0 |
| 32.5° | 1160.5 | 1298.7 | 1544.6 | 1281.0 | 1150.8 |
| 35° | 874.4 | 1009.4 | 1219.9 | 985.3 | 853.5 |
| 37.5° | 642.9 | 744.2 | 927.4 | 737.8 | 642.9 |
| 40° | 461.3 | 527.2 | 667.0 | 525.6 | 458.1 |
| 42.5° | 319.9 | 363.2 | 466.1 | 360.0 | 310.2 |
| 45° | 194.5 | 233.1 | 308.6 | 234.7 | 186.4 |
| 47.5° | 102.9 | 147.9 | 194.5 | 141.4 | 102.9 |
| 50° | 45.0 | 78.8 | 112.5 | 77.2 | 46.6 |
| 52.5° | 24.1 | 33.8 | 61.1 | 33.8 | 24.1 |
| 55° | 19.3 | 19.3 | 30.5 | 19.3 | 17.7 |
| 57.5° | 14.5 | 14.5 | 16.1 | 14.5 | 14.5 |
| 60° | 11.3 | 11.3 | 9.6 | 11.3 | 12.9 |
| 62.5° | 9.6 | 9.6 | 8.0 | 9.6 | 9.6 |
| 65° | 8.0 | 8.0 | 6.4 | 8.0 | 8.0 |
| 67.5° | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
| 70° | 4.8 | 4.8 | 4.8 | 6.4 | 6.4 |
| 72.5° | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| 75° | 3.2 | 3.2 | 3.2 | 3.2 | 4.8 |
| 77.5° | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| 80° | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| 82.5° | 1.6 | 3.2 | 3.2 | 3.2 | 3.2 |
| 85° | 1.6 | 3.2 | 3.2 | 3.2 | 3.2 |
| 87.5° | 1.6 | 1.6 | 3.2 | 3.2 | 3.2 |
| 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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