

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: P837488

Luminaire Tested: HCSQ435D010-HM43040840-41SQC

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837488
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-HM43040840-41SQC
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: -

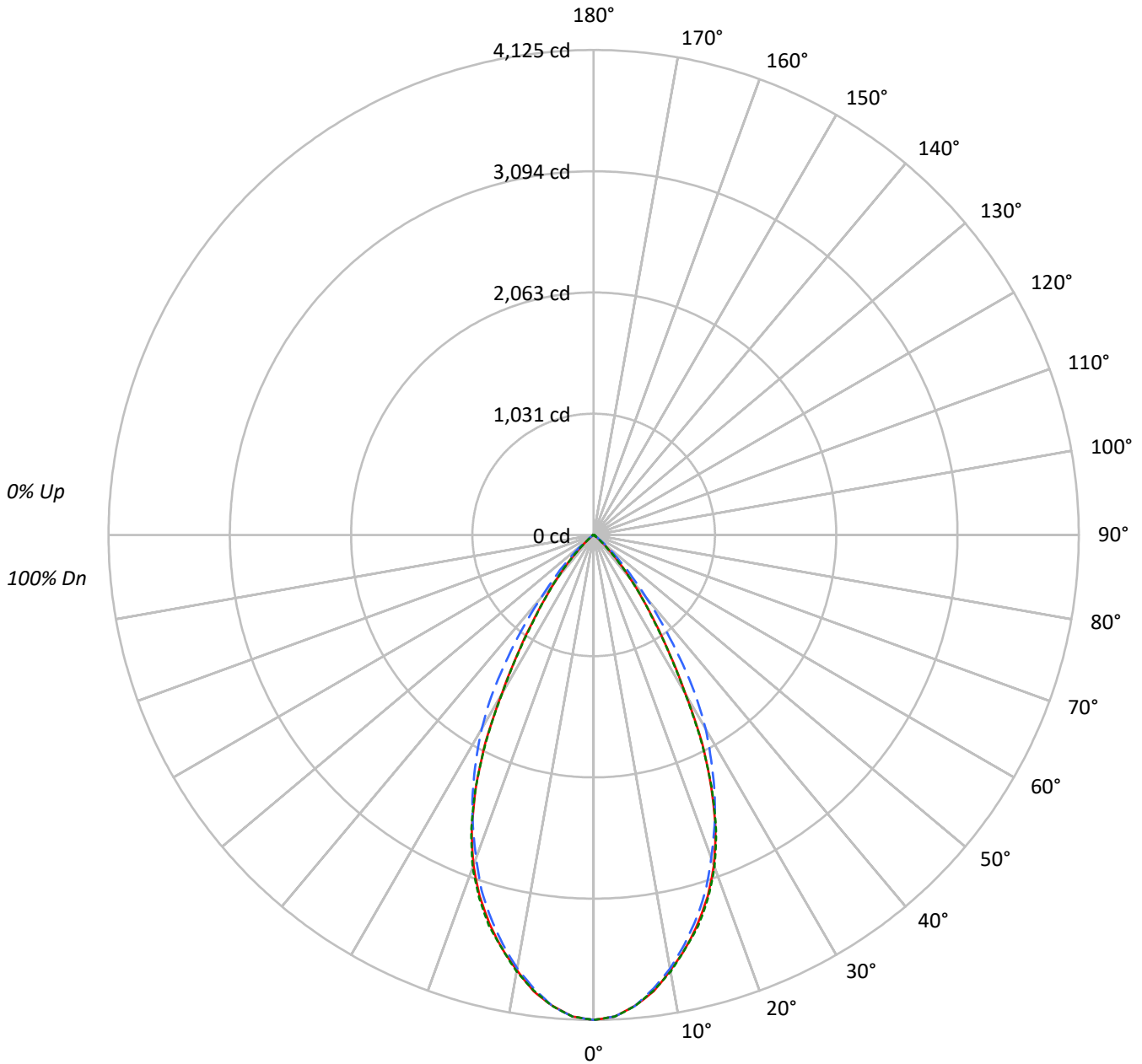
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3333.5 lumens
Efficiency: N/A
Efficacy: 98.0 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





TEST NUMBER: P837488

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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 | 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° | 399621 | 399621 | 399621 |
| 5° | 391053 | 391219 | 391219 |
| 10° | 369890 | 368238 | 370874 |
| 15° | 343202 | 338498 | 345047 |
| 20° | 308082 | 301175 | 309979 |
| 25° | 253041 | 260374 | 253928 |
| 30° | 174919 | 212739 | 173599 |
| 35° | 107702 | 150277 | 105136 |
| 40° | 60765 | 87866 | 60335 |
| 45° | 27757 | 44033 | 26606 |
| 50° | 7068 | 17663 | 7325 |
| 55° | 3395 | 5371 | 3108 |
| 60° | 2267 | 1938 | 2596 |
| 65° | 1926 | 1536 | 1926 |
| 70° | 1416 | 1416 | 1898 |
| 75° | 1235 | 1235 | 1871 |
| 80° | 1841 | 1841 | 1841 |
| 85° | 1890 | 3668 | 3668 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 44033 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 375.3 | 11.3 |
| 10°-20° | 947.7 | 28.4 |
| 20°-30° | 1083.4 | 32.5 |
| 30°-40° | 672.5 | 20.2 |
| 40°-50° | 211.9 | 6.4 |
| 50°-60° | 27.4 | 0.8 |
| 60°-70° | 8.1 | 0.2 |
| 70°-80° | 4.3 | 0.1 |
| 80°-90° | 2.9 | 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° | 2406.3 | 72.2 |
| 0°-40° | 3078.8 | 92.4 |
| 0°-60° | 3318.2 | 99.5 |
| 0°-90° | 3333.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3333.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4125 | 4125 | 4125 | 4125 | 4125 | |
| 5° | 4021 | 4018 | 4023 | 4020 | 4023 | 376 |
| 15° | 3422 | 3397 | 3375 | 3397 | 3440 | 954 |
| 25° | 2367 | 2401 | 2436 | 2401 | 2376 | 1062 |
| 35° | 911 | 1051 | 1271 | 1026 | 889 | 585 |
| 45° | 203 | 243 | 321 | 244 | 194 | 171 |
| 55° | 20 | 20 | 32 | 20 | 18 | 20 |
| 65° | 8 | 8 | 7 | 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° | 4125.1 | 4125.1 | 4125.1 | 4125.1 | 4125.1 |
| 2.5° | 4100.0 | 4103.4 | 4100.0 | 4106.7 | 4100.0 |
| 5° | 4021.3 | 4018.0 | 4023.0 | 4019.7 | 4023.0 |
| 7.5° | 3914.2 | 3894.1 | 3892.4 | 3905.8 | 3907.5 |
| 10° | 3760.2 | 3755.1 | 3743.4 | 3755.1 | 3770.2 |
| 12.5° | 3602.8 | 3582.7 | 3566.0 | 3589.4 | 3602.8 |
| 15° | 3422.0 | 3396.9 | 3375.1 | 3396.9 | 3440.4 |
| 17.5° | 3222.8 | 3187.6 | 3169.2 | 3194.3 | 3236.2 |
| 20° | 2988.4 | 2951.5 | 2921.4 | 2943.2 | 3006.8 |
| 22.5° | 2707.1 | 2703.8 | 2683.7 | 2695.4 | 2718.8 |
| 25° | 2367.3 | 2400.7 | 2435.9 | 2400.7 | 2375.6 |
| 27.5° | 1993.9 | 2084.3 | 2164.7 | 2059.2 | 1978.9 |
| 30° | 1563.7 | 1700.9 | 1901.8 | 1690.9 | 1551.9 |
| 32.5° | 1208.7 | 1352.7 | 1608.9 | 1334.3 | 1198.7 |
| 35° | 910.7 | 1051.4 | 1270.7 | 1026.3 | 889.0 |
| 37.5° | 669.7 | 775.1 | 966.0 | 768.4 | 669.7 |
| 40° | 480.5 | 549.1 | 694.8 | 547.5 | 477.1 |
| 42.5° | 333.2 | 378.4 | 485.5 | 375.0 | 323.1 |
| 45° | 202.6 | 242.8 | 321.4 | 244.4 | 194.2 |
| 47.5° | 107.1 | 154.0 | 202.6 | 147.3 | 107.1 |
| 50° | 46.9 | 82.0 | 117.2 | 80.4 | 48.6 |
| 52.5° | 25.1 | 35.2 | 63.6 | 35.2 | 25.1 |
| 55° | 20.1 | 20.1 | 31.8 | 20.1 | 18.4 |
| 57.5° | 15.1 | 15.1 | 16.7 | 15.1 | 15.1 |
| 60° | 11.7 | 11.7 | 10.0 | 11.7 | 13.4 |
| 62.5° | 10.0 | 10.0 | 8.4 | 10.0 | 10.0 |
| 65° | 8.4 | 8.4 | 6.7 | 8.4 | 8.4 |
| 67.5° | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 |
| 70° | 5.0 | 5.0 | 5.0 | 6.7 | 6.7 |
| 72.5° | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| 75° | 3.3 | 3.3 | 3.3 | 3.3 | 5.0 |
| 77.5° | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| 80° | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| 82.5° | 1.7 | 3.3 | 3.3 | 3.3 | 3.3 |
| 85° | 1.7 | 3.3 | 3.3 | 3.3 | 3.3 |
| 87.5° | 1.7 | 1.7 | 3.3 | 3.3 | 3.3 |
| 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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