

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: P837476

Luminaire Tested: HCSQ435D010-HM43040827-41SQMB

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837476
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ435D010-HM43040827-41SQMB
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: -

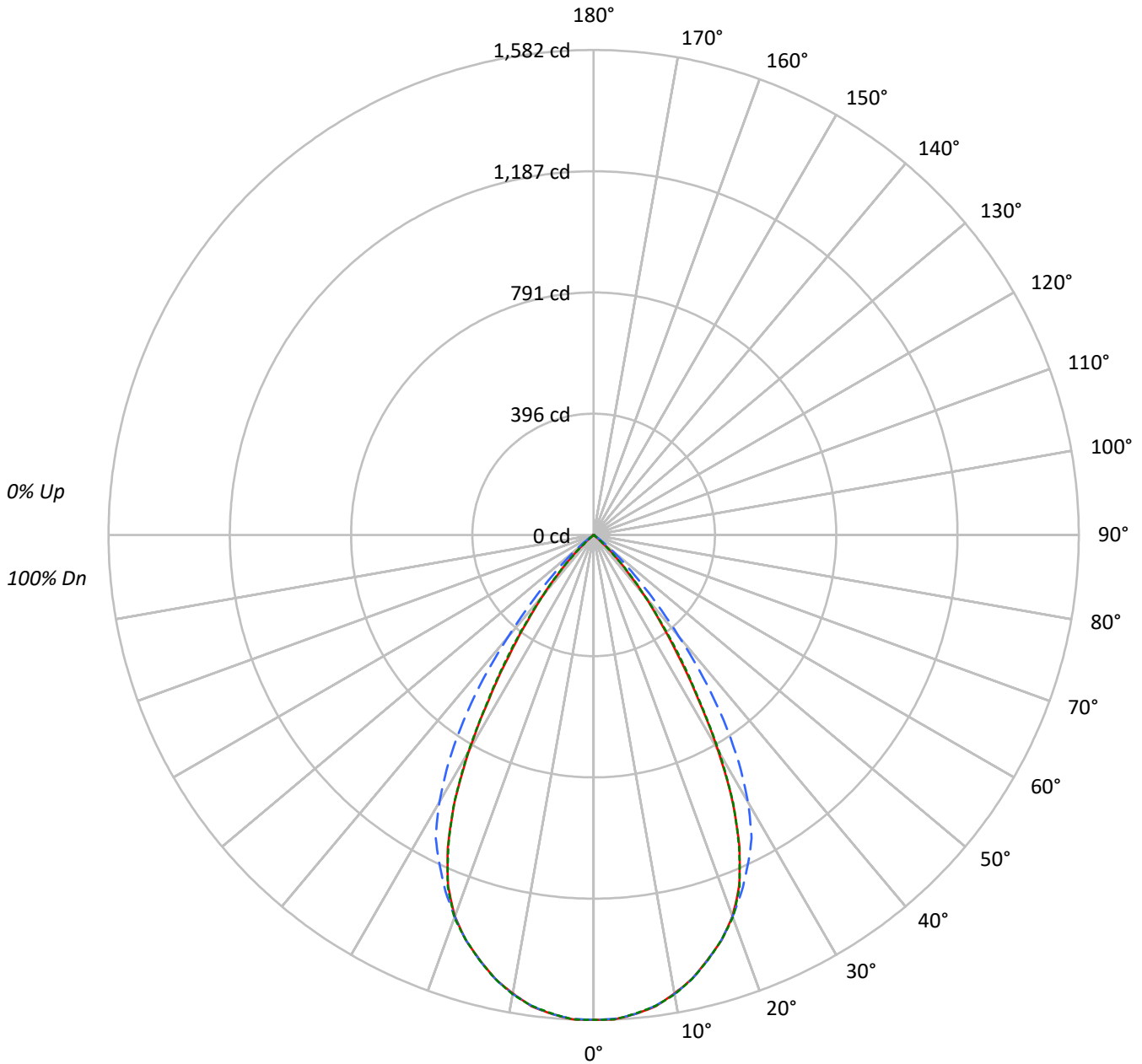
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1580.1 lumens
Efficiency: N/A
Efficacy: 46.5 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.99
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 | | | | | 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 | 100 | 100 | 100 | 100 | 100 | | |
| | 1 | 113 | 111 | 108 | 106 | 111 | 108 | 106 | 104 | 104 | 103 | 101 | 101 | 99 | 98 | 97 | 96 | 95 | 93 | 93 | 93 | 93 | 93 | 93 | | |
| | 2 | 108 | 103 | 99 | 95 | 105 | 101 | 97 | 94 | 98 | 95 | 92 | 95 | 92 | 90 | 92 | 90 | 88 | 87 | 87 | 87 | 87 | 87 | 87 | | |
| | 3 | 102 | 96 | 91 | 87 | 100 | 94 | 90 | 86 | 92 | 88 | 84 | 89 | 86 | 83 | 87 | 84 | 82 | 80 | 80 | 80 | 80 | 80 | 80 | | |
| | 4 | 97 | 89 | 83 | 79 | 95 | 88 | 83 | 79 | 86 | 81 | 78 | 84 | 80 | 77 | 82 | 79 | 76 | 74 | 74 | 74 | 74 | 74 | 74 | | |
| | 5 | 92 | 83 | 77 | 73 | 90 | 82 | 77 | 73 | 80 | 76 | 72 | 79 | 75 | 71 | 77 | 74 | 71 | 69 | 69 | 69 | 69 | 69 | 69 | | |
| | 6 | 87 | 78 | 72 | 67 | 85 | 77 | 71 | 67 | 76 | 70 | 67 | 74 | 70 | 66 | 73 | 69 | 66 | 64 | 64 | 64 | 64 | 64 | 64 | | |
| | 7 | 82 | 73 | 67 | 63 | 81 | 72 | 66 | 62 | 71 | 66 | 62 | 70 | 65 | 62 | 69 | 65 | 61 | 60 | 60 | 60 | 60 | 60 | 60 | | |
| | 8 | 78 | 69 | 62 | 58 | 77 | 68 | 62 | 58 | 67 | 62 | 58 | 66 | 61 | 58 | 65 | 61 | 57 | 56 | 56 | 56 | 56 | 56 | 56 | | |
| | 9 | 74 | 65 | 58 | 54 | 73 | 64 | 58 | 54 | 63 | 58 | 54 | 62 | 57 | 54 | 61 | 57 | 54 | 52 | 52 | 52 | 52 | 52 | 52 | | |
| | 10 | 71 | 61 | 55 | 51 | 70 | 60 | 55 | 51 | 60 | 54 | 51 | 59 | 54 | 51 | 58 | 54 | 50 | 49 | 49 | 49 | 49 | 49 | 49 | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 153238 | 153238 | 153238 |
| 5° | 152539 | 152539 | 152393 |
| 10° | 149394 | 149542 | 149680 |
| 15° | 143930 | 144071 | 144071 |
| 20° | 136443 | 136598 | 136897 |
| 25° | 120305 | 127050 | 119835 |
| 30° | 90765 | 112600 | 91593 |
| 35° | 56920 | 87633 | 58824 |
| 40° | 32109 | 54556 | 32109 |
| 45° | 13467 | 27538 | 13262 |
| 50° | 1100 | 10610 | 1326 |
| 55° | 490 | 2229 | 490 |
| 60° | 562 | 291 | 562 |
| 65° | 344 | 344 | 344 |
| 70° | 425 | 425 | 425 |
| 75° | 561 | 561 | 561 |
| 80° | 0 | 837 | 837 |
| 85° | 0 | 1667 | 1667 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 27538 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 148.3 | 9.4 |
| 10°-20° | 403.3 | 25.5 |
| 20°-30° | 523.2 | 33.1 |
| 30°-40° | 372.0 | 23.5 |
| 40°-50° | 120.6 | 7.6 |
| 50°-60° | 8.7 | 0.5 |
| 60°-70° | 1.5 | 0.1 |
| 70°-80° | 1.6 | 0.1 |
| 80°-90° | 1.0 | 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° | 1074.8 | 68.0 |
| 0°-40° | 1446.7 | 91.6 |
| 0°-60° | 1576.0 | 99.7 |
| 0°-90° | 1580.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1580.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1582 | 1582 | 1582 | 1582 | 1582 | |
| 5° | 1569 | 1570 | 1569 | 1569 | 1567 | 148 |
| 15° | 1435 | 1440 | 1436 | 1440 | 1436 | 403 |
| 25° | 1126 | 1155 | 1189 | 1161 | 1121 | 504 |
| 35° | 481 | 569 | 741 | 575 | 497 | 308 |
| 45° | 98 | 139 | 201 | 142 | 97 | 82 |
| 55° | 3 | 3 | 13 | 3 | 3 | 3 |
| 65° | 2 | 2 | 2 | 2 | 2 | 2 |
| 75° | 2 | 2 | 2 | 2 | 2 | 1 |
| 85° | 0 | 0 | 2 | 2 | 2 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1581.8 | 1581.8 | 1581.8 | 1581.8 | 1581.8 |
| 2.5° | 1581.8 | 1581.8 | 1580.3 | 1580.3 | 1581.8 |
| 5° | 1568.6 | 1570.1 | 1568.6 | 1568.6 | 1567.1 |
| 7.5° | 1551.0 | 1551.0 | 1549.5 | 1549.5 | 1549.5 |
| 10° | 1518.7 | 1520.2 | 1520.2 | 1520.2 | 1521.6 |
| 12.5° | 1483.5 | 1483.5 | 1483.5 | 1483.5 | 1483.5 |
| 15° | 1435.1 | 1439.5 | 1436.5 | 1439.5 | 1436.5 |
| 17.5° | 1386.6 | 1386.6 | 1385.2 | 1388.1 | 1385.2 |
| 20° | 1323.5 | 1323.5 | 1325.0 | 1327.9 | 1327.9 |
| 22.5° | 1239.9 | 1254.6 | 1260.5 | 1257.5 | 1242.8 |
| 25° | 1125.5 | 1154.8 | 1188.6 | 1160.7 | 1121.1 |
| 27.5° | 981.7 | 1037.4 | 1115.2 | 1046.2 | 984.6 |
| 30° | 811.4 | 895.1 | 1006.6 | 898.0 | 818.8 |
| 32.5° | 635.4 | 732.2 | 880.4 | 739.5 | 641.2 |
| 35° | 481.3 | 569.3 | 741.0 | 575.2 | 497.4 |
| 37.5° | 355.1 | 435.8 | 588.4 | 438.7 | 365.4 |
| 40° | 253.9 | 312.5 | 431.4 | 318.4 | 253.9 |
| 42.5° | 162.9 | 221.6 | 303.7 | 223.0 | 170.2 |
| 45° | 98.3 | 139.4 | 201.0 | 142.3 | 96.8 |
| 47.5° | 44.0 | 79.2 | 124.7 | 82.2 | 44.0 |
| 50° | 7.3 | 32.3 | 70.4 | 33.7 | 8.8 |
| 52.5° | 4.4 | 5.9 | 33.7 | 5.9 | 4.4 |
| 55° | 2.9 | 2.9 | 13.2 | 2.9 | 2.9 |
| 57.5° | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| 60° | 2.9 | 1.5 | 1.5 | 1.5 | 2.9 |
| 62.5° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 65° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 67.5° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 70° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 72.5° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 75° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 77.5° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 80° | 0.0 | 1.5 | 1.5 | 1.5 | 1.5 |
| 82.5° | 0.0 | 1.5 | 1.5 | 1.5 | 1.5 |
| 85° | 0.0 | 0.0 | 1.5 | 1.5 | 1.5 |
| 87.5° | 0.0 | 0.0 | 1.5 | 1.5 | 1.5 |
| 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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