

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: P837234

Luminaire Tested: HCSQ407D010-HM40525827-41SQH

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837234
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: HCSQ407D010-HM40525827-41SQH
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: -

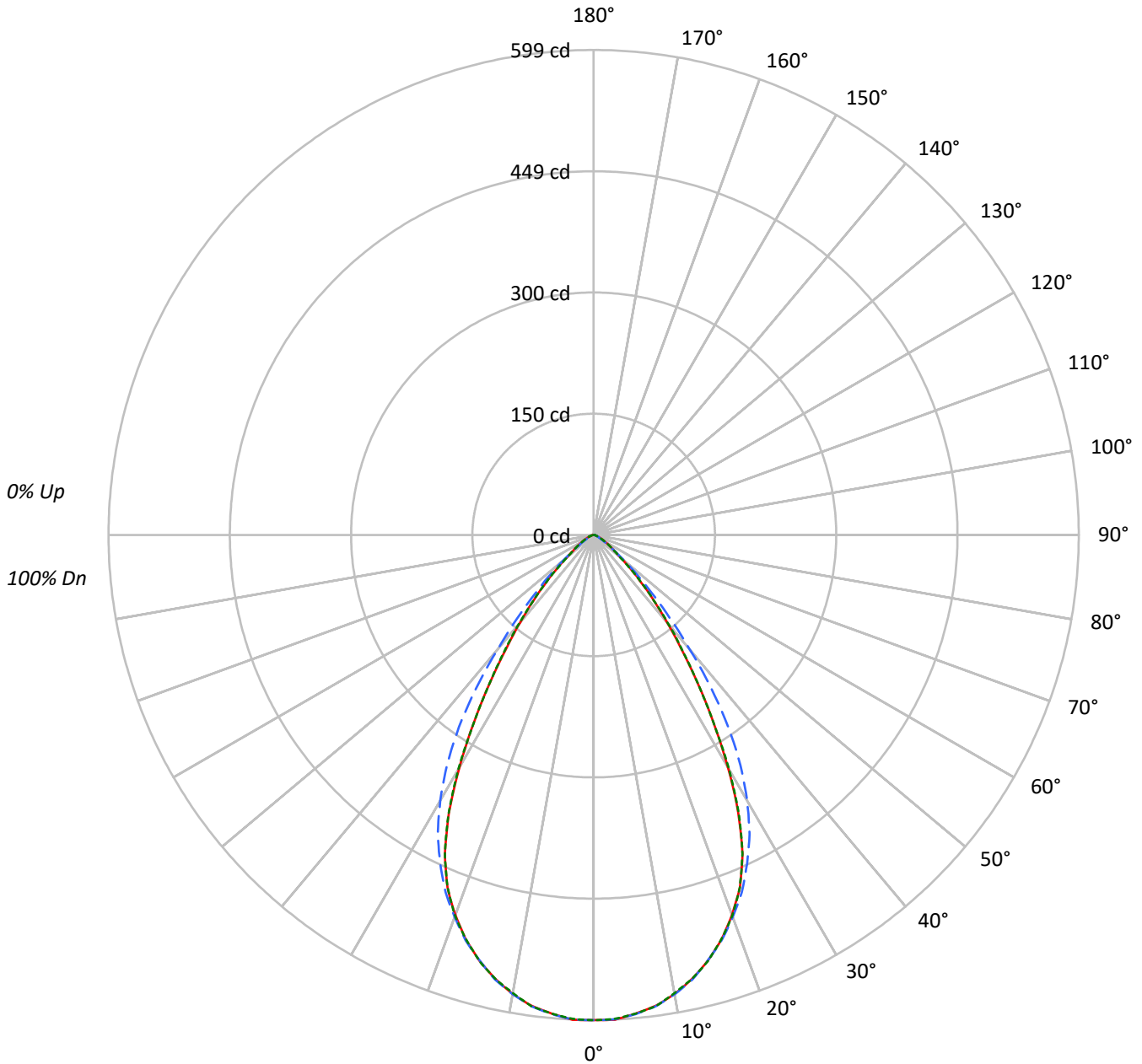
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 673.8 lumens
Efficiency: N/A
Efficacy: 84.2 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): 8
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: P837234

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 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 | | | 100 | | | | | | | | | | | | | | | | |
| 1 | 113 | 110 | 107 | 105 | 110 | 108 | 105 | 103 | 104 | 102 | 100 | 100 | 98 | 97 | 96 | 95 | 94 | 92 | | | 92 | | | | | | | | | | | | | | | | |
| 2 | 107 | 101 | 97 | 93 | 104 | 100 | 95 | 92 | 96 | 93 | 90 | 93 | 90 | 88 | 90 | 88 | 86 | 85 | | | 85 | | | | | | | | | | | | | | | | |
| 3 | 101 | 93 | 88 | 84 | 98 | 92 | 87 | 83 | 89 | 85 | 82 | 87 | 83 | 80 | 85 | 82 | 79 | 77 | | | 77 | | | | | | | | | | | | | | | | |
| 4 | 95 | 87 | 80 | 76 | 93 | 85 | 80 | 75 | 83 | 78 | 74 | 81 | 77 | 74 | 79 | 76 | 73 | 71 | | | 71 | | | | | | | | | | | | | | | | |
| 5 | 89 | 80 | 74 | 69 | 88 | 79 | 73 | 69 | 77 | 72 | 68 | 76 | 71 | 68 | 74 | 70 | 67 | 65 | | | 65 | | | | | | | | | | | | | | | | |
| 6 | 84 | 75 | 68 | 63 | 83 | 74 | 68 | 63 | 72 | 67 | 63 | 71 | 66 | 62 | 69 | 65 | 62 | 60 | | | 60 | | | | | | | | | | | | | | | | |
| 7 | 80 | 70 | 63 | 59 | 78 | 69 | 63 | 58 | 68 | 62 | 58 | 66 | 61 | 58 | 65 | 61 | 57 | 56 | | | 56 | | | | | | | | | | | | | | | | |
| 8 | 75 | 65 | 59 | 54 | 74 | 65 | 58 | 54 | 63 | 58 | 54 | 62 | 57 | 54 | 61 | 57 | 53 | 52 | | | 52 | | | | | | | | | | | | | | | | |
| 9 | 72 | 61 | 55 | 50 | 70 | 61 | 54 | 50 | 60 | 54 | 50 | 59 | 54 | 50 | 58 | 53 | 50 | 48 | | | 48 | | | | | | | | | | | | | | | | |
| 10 | 68 | 57 | 51 | 47 | 67 | 57 | 51 | 47 | 56 | 51 | 47 | 55 | 50 | 47 | 55 | 50 | 46 | 45 | | | 45 | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 58067 | 58067 | 58067 |
| 5° | 57715 | 57783 | 57715 |
| 10° | 56632 | 56671 | 56523 |
| 15° | 54619 | 54579 | 54660 |
| 20° | 51484 | 51753 | 51608 |
| 25° | 46465 | 47887 | 46465 |
| 30° | 37105 | 42362 | 37396 |
| 35° | 26491 | 34284 | 26538 |
| 40° | 17882 | 23320 | 18160 |
| 45° | 11358 | 13796 | 11412 |
| 50° | 6466 | 7370 | 6255 |
| 55° | 4256 | 3564 | 4189 |
| 60° | 2945 | 2073 | 2868 |
| 65° | 2040 | 1536 | 2040 |
| 70° | 1473 | 1161 | 1473 |
| 75° | 973 | 973 | 973 |
| 80° | 614 | 837 | 837 |
| 85° | 778 | 778 | 778 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 13796 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 56.2 | 8.3 |
| 10°-20° | 152.7 | 22.7 |
| 20°-30° | 199.9 | 29.7 |
| 30°-40° | 157.1 | 23.3 |
| 40°-50° | 73.4 | 10.9 |
| 50°-60° | 22.7 | 3.4 |
| 60°-70° | 8.1 | 1.2 |
| 70°-80° | 2.9 | 0.4 |
| 80°-90° | 0.8 | 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° | 408.8 | 60.7 |
| 0°-40° | 565.9 | 84.0 |
| 0°-60° | 662.0 | 98.3 |
| 0°-90° | 673.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 673.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 599 | 599 | 599 | 599 | 599 | |
| 5° | 594 | 594 | 594 | 595 | 594 | 56 |
| 15° | 545 | 545 | 544 | 545 | 545 | 153 |
| 25° | 435 | 441 | 448 | 441 | 435 | 195 |
| 35° | 224 | 244 | 290 | 247 | 224 | 141 |
| 45° | 83 | 93 | 101 | 91 | 83 | 66 |
| 55° | 25 | 24 | 21 | 23 | 25 | 24 |
| 65° | 9 | 8 | 7 | 8 | 9 | 9 |
| 75° | 3 | 3 | 3 | 3 | 3 | 3 |
| 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° | 599.4 | 599.4 | 599.4 | 599.4 | 599.4 |
| 2.5° | 599.4 | 598.7 | 599.0 | 598.3 | 598.3 |
| 5° | 593.5 | 593.9 | 594.2 | 595.0 | 593.5 |
| 7.5° | 586.8 | 587.6 | 587.2 | 587.2 | 587.2 |
| 10° | 575.7 | 576.1 | 576.1 | 576.1 | 574.6 |
| 12.5° | 561.6 | 562.4 | 562.8 | 561.6 | 561.6 |
| 15° | 544.6 | 544.6 | 544.2 | 544.6 | 545.0 |
| 17.5° | 524.2 | 525.4 | 525.4 | 524.2 | 523.9 |
| 20° | 499.4 | 501.3 | 502.0 | 500.6 | 500.6 |
| 22.5° | 471.7 | 473.5 | 478.0 | 474.3 | 471.3 |
| 25° | 434.7 | 440.6 | 448.0 | 440.9 | 434.7 |
| 27.5° | 386.9 | 399.9 | 416.9 | 402.1 | 388.0 |
| 30° | 331.7 | 352.8 | 378.7 | 353.9 | 334.3 |
| 32.5° | 275.5 | 299.1 | 337.3 | 301.0 | 275.5 |
| 35° | 224.0 | 244.4 | 289.9 | 247.3 | 224.4 |
| 37.5° | 178.1 | 197.7 | 237.7 | 199.9 | 180.7 |
| 40° | 141.4 | 157.3 | 184.4 | 157.0 | 143.6 |
| 42.5° | 110.3 | 121.8 | 139.6 | 121.4 | 110.0 |
| 45° | 82.9 | 92.9 | 100.7 | 91.1 | 83.3 |
| 47.5° | 61.1 | 67.8 | 72.2 | 66.6 | 59.6 |
| 50° | 42.9 | 47.8 | 48.9 | 46.6 | 41.5 |
| 52.5° | 32.2 | 32.2 | 32.6 | 31.8 | 31.5 |
| 55° | 25.2 | 23.7 | 21.1 | 23.3 | 24.8 |
| 57.5° | 19.6 | 18.1 | 14.8 | 17.4 | 19.3 |
| 60° | 15.2 | 13.7 | 10.7 | 13.3 | 14.8 |
| 62.5° | 11.8 | 10.4 | 8.5 | 10.4 | 11.5 |
| 65° | 8.9 | 8.1 | 6.7 | 7.8 | 8.9 |
| 67.5° | 6.7 | 5.9 | 5.2 | 5.9 | 6.7 |
| 70° | 5.2 | 4.8 | 4.1 | 4.4 | 5.2 |
| 72.5° | 3.7 | 3.3 | 3.3 | 3.3 | 3.7 |
| 75° | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 77.5° | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 80° | 1.1 | 1.1 | 1.5 | 1.5 | 1.5 |
| 82.5° | 0.7 | 0.7 | 1.1 | 1.1 | 1.1 |
| 85° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 87.5° | 0.4 | 0.4 | 0.4 | 0.7 | 0.7 |
| 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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