

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: P837380

Luminaire Tested: HCSQ420D010-HM40525930-41SQLWW

Issue Date: 5/17/2024



Test Information

Test Method: LM-79-2019
Report Number: P837380
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ420D010-HM40525930-41SQLWW
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

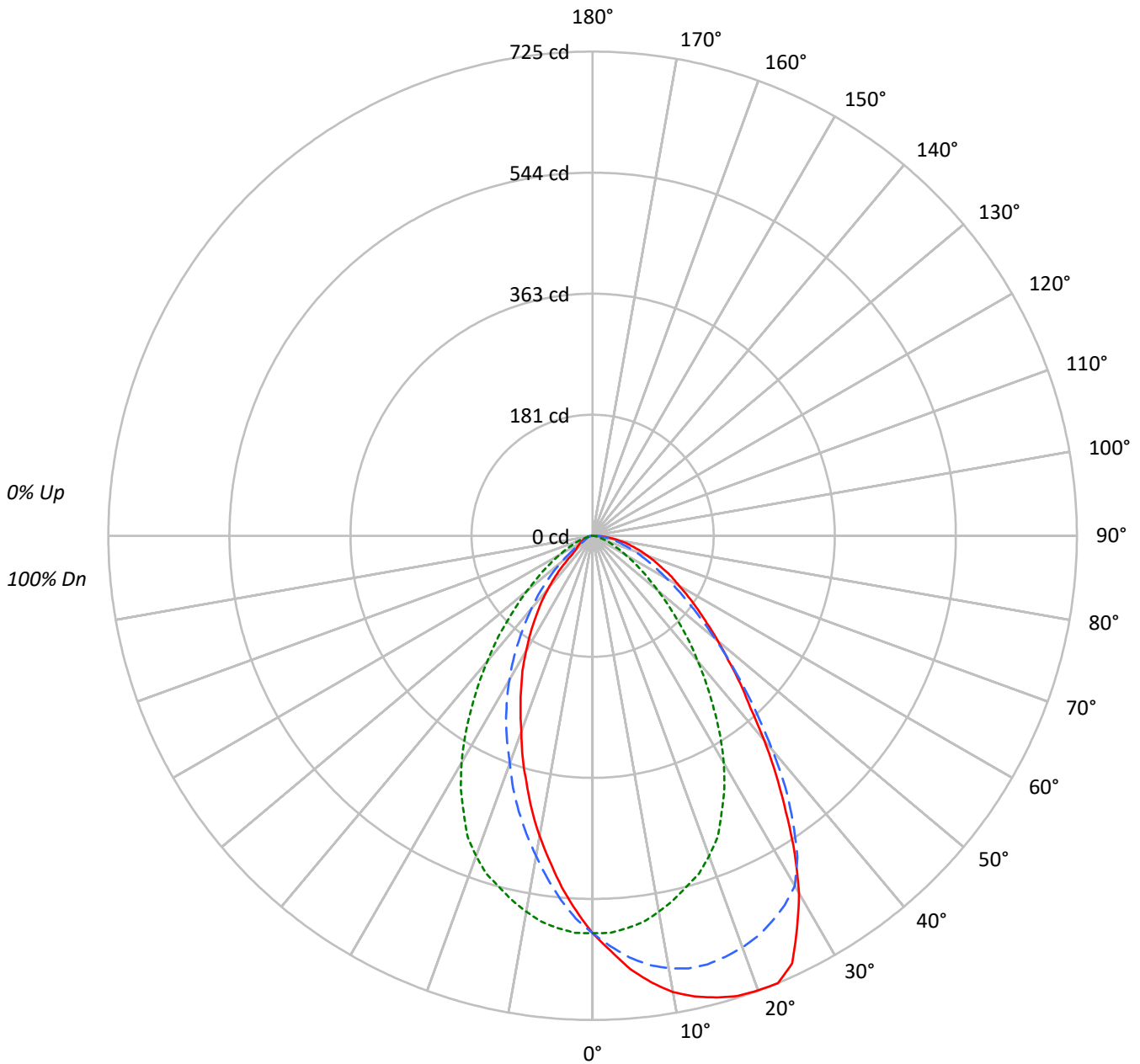
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 962.6 lumens
Efficiency: N/A
Efficacy: 48.1 lumens/watt
Spacing Criteria (0/90/45): 1.07 / 1.04 / 1.12
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 20
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: P837380

CATALOG NUMBER: HCSQ420D010-HM40525930-41SQLWW

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 | 111 | 107 | 104 | 101 | 109 | 105 | 102 | 99 | 101 | 99 | 96 | 97 | 95 | 93 | 94 | 92 | 91 | 89 | | | | | | | | |
| 2 | 103 | 97 | 91 | 87 | 101 | 95 | 90 | 86 | 92 | 87 | 84 | 88 | 85 | 82 | 86 | 83 | 80 | 78 | | | | | | | | |
| 3 | 96 | 87 | 81 | 76 | 94 | 86 | 80 | 75 | 83 | 78 | 74 | 81 | 76 | 72 | 78 | 74 | 71 | 69 | | | | | | | | |
| 4 | 89 | 79 | 72 | 67 | 87 | 78 | 71 | 66 | 76 | 70 | 65 | 74 | 69 | 64 | 72 | 67 | 64 | 62 | | | | | | | | |
| 5 | 83 | 72 | 65 | 59 | 81 | 71 | 64 | 59 | 69 | 63 | 58 | 68 | 62 | 58 | 66 | 61 | 57 | 55 | | | | | | | | |
| 6 | 78 | 66 | 59 | 53 | 76 | 66 | 58 | 53 | 64 | 57 | 53 | 62 | 57 | 52 | 61 | 56 | 52 | 50 | | | | | | | | |
| 7 | 73 | 61 | 54 | 48 | 71 | 60 | 53 | 48 | 59 | 53 | 48 | 58 | 52 | 48 | 56 | 51 | 47 | 45 | | | | | | | | |
| 8 | 68 | 57 | 49 | 44 | 67 | 56 | 49 | 44 | 55 | 48 | 44 | 54 | 48 | 43 | 52 | 47 | 43 | 42 | | | | | | | | |
| 9 | 64 | 53 | 45 | 40 | 63 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 49 | 44 | 40 | 38 | | | | | | | | |
| 10 | 61 | 49 | 42 | 37 | 60 | 48 | 42 | 37 | 48 | 41 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° | 135° | 180° |
|-----|-------|-------|-------|-------|-------|
| 0° | 57651 | 57651 | 57651 | 57651 | 57651 |
| 5° | 63375 | 61644 | 57375 | 53193 | 51385 |
| 10° | 68259 | 64688 | 56218 | 47916 | 44926 |
| 15° | 71790 | 66625 | 54519 | 42835 | 38352 |
| 20° | 74670 | 67618 | 52567 | 37330 | 32196 |
| 25° | 75518 | 68036 | 48817 | 32751 | 27065 |
| 30° | 69120 | 67699 | 43906 | 27854 | 22193 |
| 35° | 59593 | 61792 | 37430 | 22860 | 17574 |
| 40° | 50496 | 52836 | 30958 | 18046 | 13127 |
| 45° | 42786 | 43827 | 24743 | 13413 | 8439 |
| 50° | 36894 | 36005 | 19216 | 9028 | 5094 |
| 55° | 32513 | 29658 | 14677 | 4982 | 4560 |
| 60° | 28946 | 24858 | 10966 | 2790 | 4088 |
| 65° | 26499 | 21295 | 8138 | 2521 | 3668 |
| 70° | 24614 | 18411 | 5976 | 2379 | 3597 |
| 75° | 23057 | 16132 | 4117 | 2208 | 3144 |
| 80° | 22148 | 14114 | 2845 | 2343 | 2845 |
| 85° | 21564 | 12227 | 1890 | 1890 | 1890 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 44526 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 55.8 | 5.8 |
| 10°-20° | 153.6 | 16.0 |
| 20°-30° | 214.8 | 22.3 |
| 30°-40° | 210.0 | 21.8 |
| 40°-50° | 152.4 | 15.8 |
| 50°-60° | 91.8 | 9.5 |
| 60°-70° | 51.6 | 5.4 |
| 70°-80° | 25.6 | 2.7 |
| 80°-90° | 7.0 | 0.7 |
| 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° | 424.2 | 44.1 |
| 0°-40° | 634.2 | 65.9 |
| 0°-60° | 878.4 | 91.3 |
| 0°-90° | 962.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 962.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0° | 595 | 595 | 595 | 595 | 595 | |
| 5° | 652 | 634 | 590 | 547 | 528 | 63 |
| 15° | 716 | 664 | 544 | 427 | 382 | 203 |
| 25° | 706 | 636 | 457 | 306 | 253 | 318 |
| 35° | 504 | 522 | 316 | 193 | 149 | 316 |
| 45° | 312 | 320 | 181 | 98 | 62 | 242 |
| 55° | 192 | 176 | 87 | 30 | 27 | 173 |
| 65° | 116 | 93 | 36 | 11 | 16 | 116 |
| 75° | 62 | 43 | 11 | 6 | 8 | 66 |
| 85° | 19 | 11 | 2 | 2 | 2 | 21 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P837380

CATALOG NUMBER: HCSQ420D010-HM40525930-41SQLWW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0° | 595.1 | 595.1 | 595.1 | 595.1 | 595.1 | 595.1 | 595.1 | 595.1 | 595.1 |
| 2.5° | 622.1 | 620.4 | 615.4 | 605.2 | 595.1 | 583.3 | 574.0 | 567.3 | 562.2 |
| 5° | 651.7 | 648.3 | 633.9 | 612.8 | 590.0 | 567.3 | 547.0 | 535.2 | 528.4 |
| 7.5° | 674.5 | 668.6 | 648.3 | 618.7 | 583.3 | 548.7 | 517.5 | 498.9 | 491.3 |
| 10° | 693.9 | 683.7 | 657.6 | 617.9 | 571.5 | 525.9 | 487.1 | 465.1 | 456.7 |
| 12.5° | 706.5 | 695.6 | 663.5 | 617.1 | 558.8 | 503.1 | 457.5 | 428.8 | 420.4 |
| 15° | 715.8 | 702.3 | 664.3 | 610.3 | 543.6 | 479.5 | 427.1 | 393.4 | 382.4 |
| 17.5° | 722.6 | 704.0 | 661.0 | 602.7 | 530.1 | 455.0 | 395.9 | 359.6 | 348.6 |
| 20° | 724.3 | 704.0 | 655.9 | 591.7 | 509.9 | 430.5 | 362.1 | 325.8 | 312.3 |
| 22.5° | 725.1 | 701.5 | 648.3 | 578.2 | 488.8 | 402.7 | 334.3 | 296.3 | 281.9 |
| 25° | 706.5 | 693.0 | 636.5 | 555.4 | 456.7 | 372.3 | 306.4 | 265.1 | 253.2 |
| 27.5° | 662.6 | 661.8 | 623.0 | 525.0 | 427.1 | 339.3 | 277.7 | 238.0 | 227.1 |
| 30° | 617.9 | 618.7 | 605.2 | 491.3 | 392.5 | 308.1 | 249.0 | 210.2 | 198.4 |
| 32.5° | 563.0 | 571.5 | 570.6 | 453.3 | 355.4 | 278.6 | 221.2 | 184.9 | 173.0 |
| 35° | 503.9 | 519.1 | 522.5 | 410.2 | 316.5 | 244.8 | 193.3 | 160.4 | 148.6 |
| 37.5° | 450.8 | 466.0 | 473.6 | 372.3 | 280.3 | 215.3 | 167.1 | 138.4 | 126.6 |
| 40° | 399.3 | 411.9 | 417.8 | 328.4 | 244.8 | 184.9 | 142.7 | 115.6 | 103.8 |
| 42.5° | 349.5 | 368.0 | 366.4 | 291.2 | 213.6 | 160.4 | 120.7 | 93.7 | 81.9 |
| 45° | 312.3 | 325.0 | 319.9 | 252.4 | 180.6 | 135.1 | 97.9 | 72.6 | 61.6 |
| 47.5° | 275.2 | 284.5 | 276.9 | 219.5 | 152.8 | 111.4 | 79.3 | 53.2 | 41.4 |
| 50° | 244.8 | 249.0 | 238.9 | 186.6 | 127.5 | 91.2 | 59.9 | 35.5 | 33.8 |
| 52.5° | 216.1 | 218.6 | 204.3 | 158.7 | 105.5 | 73.4 | 43.9 | 27.9 | 29.5 |
| 55° | 192.5 | 191.6 | 175.6 | 134.2 | 86.9 | 56.6 | 29.5 | 25.3 | 27.0 |
| 57.5° | 169.7 | 167.1 | 151.1 | 111.4 | 70.9 | 43.9 | 17.7 | 21.9 | 23.6 |
| 60° | 149.4 | 146.9 | 128.3 | 92.0 | 56.6 | 32.9 | 14.4 | 19.4 | 21.1 |
| 62.5° | 133.4 | 127.5 | 108.9 | 76.0 | 45.6 | 23.6 | 12.7 | 16.9 | 18.6 |
| 65° | 115.6 | 110.6 | 92.9 | 61.6 | 35.5 | 16.9 | 11.0 | 14.4 | 16.0 |
| 67.5° | 101.3 | 95.4 | 78.5 | 50.6 | 28.7 | 11.8 | 10.1 | 12.7 | 14.4 |
| 70° | 86.9 | 81.9 | 65.0 | 40.5 | 21.1 | 7.6 | 8.4 | 11.0 | 12.7 |
| 72.5° | 75.1 | 69.2 | 54.0 | 32.1 | 16.0 | 5.9 | 7.6 | 9.3 | 10.1 |
| 75° | 61.6 | 56.6 | 43.1 | 24.5 | 11.0 | 5.1 | 5.9 | 7.6 | 8.4 |
| 77.5° | 51.5 | 46.4 | 33.8 | 18.6 | 7.6 | 4.2 | 5.1 | 6.8 | 6.8 |
| 80° | 39.7 | 35.5 | 25.3 | 12.7 | 5.1 | 2.5 | 4.2 | 5.1 | 5.1 |
| 82.5° | 28.7 | 25.3 | 17.7 | 8.4 | 2.5 | 2.5 | 2.5 | 3.4 | 3.4 |
| 85° | 19.4 | 16.9 | 11.0 | 5.1 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| 87.5° | 11.0 | 8.4 | 5.1 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270°

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Peachtree City, GA 30269

Scaled Data Report



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