

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: P837290

Luminaire Tested: HCSQ410D010-HM40525840-41SQLWW

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837290
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: HCSQ410D010-HM40525840-41SQLWW
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: -

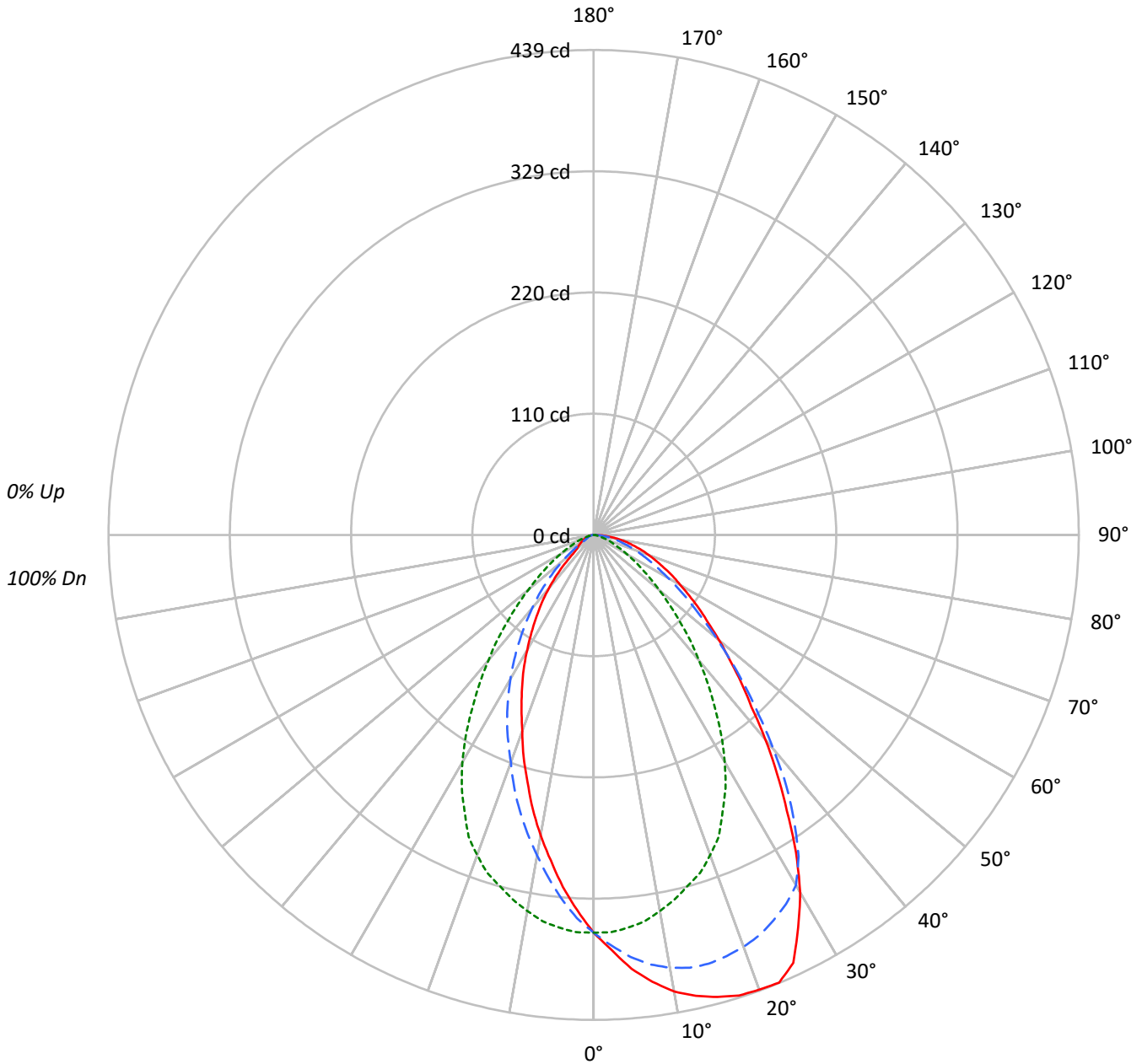
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 582.3 lumens
Efficiency: N/A
Efficacy: 58.8 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): 9.9
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: P837290

CATALOG NUMBER: HCSQ410D010-HM40525840-41SQLWW

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 | | | | | | | | | | | | | | | | | | | |
| 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° | 34875 | 34875 | 34875 | 34875 | 34875 |
| 5° | 38334 | 37294 | 34707 | 32179 | 31089 |
| 10° | 41286 | 39132 | 34006 | 28980 | 27170 |
| 15° | 43427 | 40308 | 32976 | 25916 | 23198 |
| 20° | 45165 | 40907 | 31794 | 22588 | 19474 |
| 25° | 45685 | 41153 | 29523 | 19817 | 16376 |
| 30° | 41814 | 40953 | 26556 | 16846 | 13423 |
| 35° | 36047 | 37383 | 22647 | 13825 | 10632 |
| 40° | 30541 | 31970 | 18729 | 10914 | 7942 |
| 45° | 25880 | 26510 | 14974 | 8111 | 5110 |
| 50° | 22320 | 21778 | 11620 | 5471 | 3075 |
| 55° | 19660 | 17937 | 8884 | 3023 | 2753 |
| 60° | 17515 | 15035 | 6626 | 1686 | 2480 |
| 65° | 16046 | 12883 | 4905 | 1513 | 2223 |
| 70° | 14899 | 11132 | 3626 | 1445 | 2181 |
| 75° | 13961 | 9732 | 2470 | 1347 | 1909 |
| 80° | 13389 | 8536 | 1729 | 1450 | 1729 |
| 85° | 13005 | 7336 | 1112 | 1112 | 1112 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 26935 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 33.8 | 5.8 |
| 10°-20° | 92.9 | 16.0 |
| 20°-30° | 129.9 | 22.3 |
| 30°-40° | 127.0 | 21.8 |
| 40°-50° | 92.2 | 15.8 |
| 50°-60° | 55.6 | 9.5 |
| 60°-70° | 31.2 | 5.4 |
| 70°-80° | 15.5 | 2.7 |
| 80°-90° | 4.2 | 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° | 256.6 | 44.1 |
| 0°-40° | 383.6 | 65.9 |
| 0°-60° | 531.4 | 91.3 |
| 0°-90° | 582.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 582.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0° | 360 | 360 | 360 | 360 | 360 | |
| 5° | 394 | 384 | 357 | 331 | 320 | 38 |
| 15° | 433 | 402 | 329 | 258 | 231 | 123 |
| 25° | 427 | 385 | 276 | 185 | 153 | 193 |
| 35° | 305 | 316 | 192 | 117 | 90 | 191 |
| 45° | 189 | 194 | 109 | 59 | 37 | 146 |
| 55° | 116 | 106 | 53 | 18 | 16 | 105 |
| 65° | 70 | 56 | 21 | 7 | 10 | 70 |
| 75° | 37 | 26 | 7 | 4 | 5 | 40 |
| 85° | 12 | 7 | 1 | 1 | 1 | 13 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P837290

CATALOG NUMBER: HCSQ410D010-HM40525840-41SQLWW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0° | 360.0 | 360.0 | 360.0 | 360.0 | 360.0 | 360.0 | 360.0 | 360.0 | 360.0 |
| 2.5° | 376.3 | 375.3 | 372.2 | 366.1 | 360.0 | 352.8 | 347.2 | 343.1 | 340.1 |
| 5° | 394.2 | 392.2 | 383.5 | 370.7 | 356.9 | 343.1 | 330.9 | 323.7 | 319.7 |
| 7.5° | 408.0 | 404.4 | 392.2 | 374.3 | 352.8 | 331.9 | 313.0 | 301.8 | 297.2 |
| 10° | 419.7 | 413.6 | 397.8 | 373.8 | 345.7 | 318.1 | 294.6 | 281.4 | 276.2 |
| 12.5° | 427.4 | 420.8 | 401.4 | 373.3 | 338.0 | 304.3 | 276.8 | 259.4 | 254.3 |
| 15° | 433.0 | 424.8 | 401.9 | 369.2 | 328.8 | 290.0 | 258.4 | 238.0 | 231.3 |
| 17.5° | 437.1 | 425.9 | 399.8 | 364.6 | 320.7 | 275.2 | 239.5 | 217.5 | 210.9 |
| 20° | 438.1 | 425.9 | 396.8 | 358.0 | 308.4 | 260.4 | 219.1 | 197.1 | 188.9 |
| 22.5° | 438.6 | 424.3 | 392.2 | 349.8 | 295.7 | 243.6 | 202.2 | 179.2 | 170.5 |
| 25° | 427.4 | 419.2 | 385.0 | 336.0 | 276.2 | 225.2 | 185.4 | 160.3 | 153.2 |
| 27.5° | 400.8 | 400.3 | 376.8 | 317.6 | 258.4 | 205.3 | 168.0 | 144.0 | 137.4 |
| 30° | 373.8 | 374.3 | 366.1 | 297.2 | 237.4 | 186.4 | 150.6 | 127.1 | 120.0 |
| 32.5° | 340.6 | 345.7 | 345.2 | 274.2 | 215.0 | 168.5 | 133.8 | 111.8 | 104.7 |
| 35° | 304.8 | 314.0 | 316.1 | 248.2 | 191.5 | 148.1 | 116.9 | 97.0 | 89.9 |
| 37.5° | 272.7 | 281.9 | 286.5 | 225.2 | 169.5 | 130.2 | 101.1 | 83.7 | 76.6 |
| 40° | 241.5 | 249.2 | 252.8 | 198.6 | 148.1 | 111.8 | 86.3 | 70.0 | 62.8 |
| 42.5° | 211.4 | 222.6 | 221.6 | 176.2 | 129.2 | 97.0 | 73.0 | 56.7 | 49.5 |
| 45° | 188.9 | 196.6 | 193.5 | 152.7 | 109.3 | 81.7 | 59.2 | 43.9 | 37.3 |
| 47.5° | 166.5 | 172.1 | 167.5 | 132.8 | 92.4 | 67.4 | 48.0 | 32.2 | 25.0 |
| 50° | 148.1 | 150.6 | 144.5 | 112.8 | 77.1 | 55.1 | 36.3 | 21.4 | 20.4 |
| 52.5° | 130.7 | 132.3 | 123.6 | 96.0 | 63.8 | 44.4 | 26.6 | 16.9 | 17.9 |
| 55° | 116.4 | 115.9 | 106.2 | 81.2 | 52.6 | 34.2 | 17.9 | 15.3 | 16.3 |
| 57.5° | 102.6 | 101.1 | 91.4 | 67.4 | 42.9 | 26.6 | 10.7 | 13.3 | 14.3 |
| 60° | 90.4 | 88.8 | 77.6 | 55.7 | 34.2 | 19.9 | 8.7 | 11.7 | 12.8 |
| 62.5° | 80.7 | 77.1 | 65.9 | 46.0 | 27.6 | 14.3 | 7.7 | 10.2 | 11.2 |
| 65° | 70.0 | 66.9 | 56.2 | 37.3 | 21.4 | 10.2 | 6.6 | 8.7 | 9.7 |
| 67.5° | 61.3 | 57.7 | 47.5 | 30.6 | 17.4 | 7.1 | 6.1 | 7.7 | 8.7 |
| 70° | 52.6 | 49.5 | 39.3 | 24.5 | 12.8 | 4.6 | 5.1 | 6.6 | 7.7 |
| 72.5° | 45.4 | 41.9 | 32.7 | 19.4 | 9.7 | 3.6 | 4.6 | 5.6 | 6.1 |
| 75° | 37.3 | 34.2 | 26.0 | 14.8 | 6.6 | 3.1 | 3.6 | 4.6 | 5.1 |
| 77.5° | 31.1 | 28.1 | 20.4 | 11.2 | 4.6 | 2.6 | 3.1 | 4.1 | 4.1 |
| 80° | 24.0 | 21.4 | 15.3 | 7.7 | 3.1 | 1.5 | 2.6 | 3.1 | 3.1 |
| 82.5° | 17.4 | 15.3 | 10.7 | 5.1 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 |
| 85° | 11.7 | 10.2 | 6.6 | 3.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 87.5° | 6.6 | 5.1 | 3.1 | 1.0 | 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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Scaled Data Report



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