

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

Report Number: P885918

Luminaire Tested: ML104LSFL9FS1E-TIR1D40FL-TL1SDSL-400LM-2700K

Issue Date: 6/19/2024

Test Information

Test Method: LM-79-2019
Report Number: P885918
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-143)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 6/19/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML104LSFL9FS1E-TIR1D40FL-TL1SDSL-400LM-2700K
Description: 1IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 405.4 lumens
Efficiency: N/A
Efficacy: 67.6 lumens/watt
Spacing Criteria (0/90/45): 0.68 / 0.69 / 0.68
Luminous Opening: Rectangular (W 0.08' x L: 0.08' x H: 0')
CIE Type: Direct

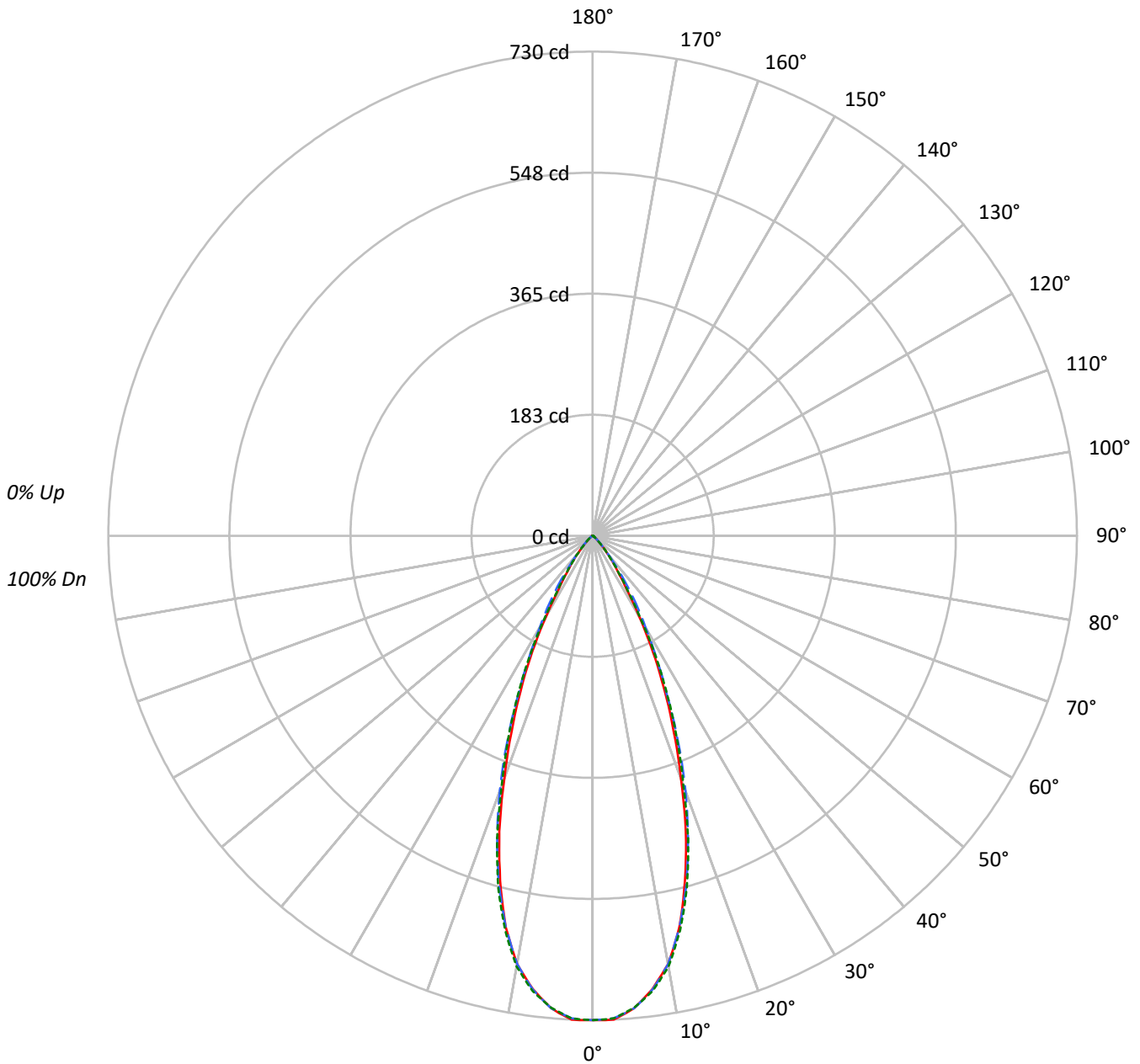
Input Watts (W): 6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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 | | | | | | | | |
| 1 | 114 | 112 | 109 | 107 | 112 | 109 | 107 | 106 | 105 | 104 | 102 | 102 | 100 | 99 | 98 | 97 | 96 | 95 | | | | | | | | |
| 2 | 109 | 105 | 101 | 98 | 107 | 103 | 100 | 97 | 100 | 97 | 95 | 97 | 95 | 93 | 94 | 92 | 91 | 89 | | | | | | | | |
| 3 | 104 | 99 | 94 | 91 | 102 | 97 | 93 | 90 | 95 | 91 | 88 | 92 | 89 | 87 | 90 | 88 | 86 | 84 | | | | | | | | |
| 4 | 100 | 93 | 88 | 84 | 98 | 92 | 87 | 84 | 90 | 86 | 83 | 88 | 85 | 82 | 86 | 83 | 81 | 80 | | | | | | | | |
| 5 | 96 | 88 | 83 | 79 | 94 | 87 | 82 | 79 | 85 | 81 | 78 | 84 | 80 | 77 | 82 | 79 | 77 | 75 | | | | | | | | |
| 6 | 92 | 84 | 78 | 74 | 90 | 83 | 78 | 74 | 81 | 77 | 74 | 80 | 76 | 73 | 79 | 75 | 73 | 71 | | | | | | | | |
| 7 | 88 | 79 | 74 | 70 | 86 | 79 | 74 | 70 | 78 | 73 | 70 | 76 | 72 | 69 | 75 | 72 | 69 | 68 | | | | | | | | |
| 8 | 84 | 76 | 70 | 67 | 83 | 75 | 70 | 67 | 74 | 70 | 66 | 73 | 69 | 66 | 72 | 69 | 66 | 65 | | | | | | | | |
| 9 | 81 | 72 | 67 | 63 | 80 | 72 | 67 | 63 | 71 | 66 | 63 | 70 | 66 | 63 | 69 | 65 | 63 | 61 | | | | | | | | |
| 10 | 78 | 69 | 64 | 60 | 77 | 69 | 64 | 60 | 68 | 63 | 60 | 67 | 63 | 60 | 66 | 63 | 60 | 59 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 1132132 | 1132132 | 1132132 |
| 5° | 1113117 | 1113117 | 1111561 |
| 10° | 1031552 | 1031552 | 1037848 |
| 15° | 863807 | 875040 | 881459 |
| 20° | 641983 | 674972 | 660127 |
| 25° | 436457 | 455270 | 458690 |
| 30° | 250752 | 284758 | 263280 |
| 35° | 126779 | 164812 | 130563 |
| 40° | 68796 | 74866 | 68796 |
| 45° | 28497 | 37265 | 30689 |
| 50° | 16880 | 16880 | 16880 |
| 55° | 10809 | 8107 | 10809 |
| 60° | 6200 | 3100 | 6200 |
| 65° | 3668 | 3668 | 7335 |
| 70° | 4532 | 4532 | 4532 |
| 75° | 5989 | 0 | 5989 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 37265 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 66.4 | 16.4 |
| 10°-20° | 148.9 | 36.7 |
| 20°-30° | 121.5 | 30.0 |
| 30°-40° | 50.5 | 12.5 |
| 40°-50° | 13.1 | 3.2 |
| 50°-60° | 3.3 | 0.8 |
| 60°-70° | 1.2 | 0.3 |
| 70°-80° | 0.4 | 0.1 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 336.8 | 83.1 |
| 0°-40° | 387.3 | 95.5 |
| 0°-60° | 403.7 | 99.6 |
| 0°-90° | 405.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 405.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 730 | 730 | 730 | 730 | 730 | |
| 5° | 715 | 715 | 715 | 716 | 714 | 66 |
| 15° | 538 | 539 | 545 | 547 | 549 | 147 |
| 25° | 255 | 262 | 266 | 269 | 268 | 116 |
| 35° | 67 | 73 | 87 | 74 | 69 | 45 |
| 45° | 13 | 15 | 17 | 15 | 14 | 12 |
| 55° | 4 | 3 | 3 | 3 | 4 | 4 |
| 65° | 1 | 1 | 1 | 1 | 2 | 1 |
| 75° | 1 | 0 | 0 | 0 | 1 | 1 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 730.4 | 730.4 | 730.4 | 730.4 | 730.4 |
| 2.5° | 730.4 | 730.4 | 728.4 | 729.4 | 728.4 |
| 5° | 715.4 | 715.4 | 715.4 | 716.4 | 714.4 |
| 7.5° | 689.4 | 691.4 | 690.4 | 690.4 | 692.4 |
| 10° | 655.4 | 655.4 | 655.4 | 656.4 | 659.4 |
| 12.5° | 604.4 | 605.4 | 604.4 | 607.4 | 609.4 |
| 15° | 538.3 | 539.3 | 545.3 | 547.3 | 549.3 |
| 17.5° | 467.3 | 470.3 | 478.3 | 479.3 | 478.3 |
| 20° | 389.2 | 397.2 | 409.2 | 406.2 | 400.2 |
| 22.5° | 319.2 | 324.2 | 337.2 | 332.2 | 333.2 |
| 25° | 255.2 | 262.2 | 266.2 | 269.2 | 268.2 |
| 27.5° | 196.1 | 205.1 | 208.1 | 211.1 | 207.1 |
| 30° | 140.1 | 151.1 | 159.1 | 158.1 | 147.1 |
| 32.5° | 94.1 | 107.1 | 121.1 | 110.1 | 100.1 |
| 35° | 67.0 | 73.0 | 87.1 | 74.0 | 69.0 |
| 37.5° | 49.0 | 51.0 | 57.0 | 51.0 | 49.0 |
| 40° | 34.0 | 36.0 | 37.0 | 36.0 | 34.0 |
| 42.5° | 22.0 | 24.0 | 25.0 | 24.0 | 22.0 |
| 45° | 13.0 | 15.0 | 17.0 | 15.0 | 14.0 |
| 47.5° | 9.0 | 8.0 | 11.0 | 9.0 | 10.0 |
| 50° | 7.0 | 6.0 | 7.0 | 7.0 | 7.0 |
| 52.5° | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 |
| 55° | 4.0 | 3.0 | 3.0 | 3.0 | 4.0 |
| 57.5° | 3.0 | 2.0 | 2.0 | 3.0 | 3.0 |
| 60° | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 |
| 62.5° | 2.0 | 1.0 | 1.0 | 2.0 | 2.0 |
| 65° | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 |
| 67.5° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 70° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 72.5° | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 |
| 75° | 1.0 | 0.0 | 0.0 | 0.0 | 1.0 |
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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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