

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: P886704

Luminaire Tested: ML310LSFL9FS1E-TIR4D25NFL-TL3SDMW-1000LM-3500K

Issue Date: 7/5/2024

Test Information

Test Method: LM-79-2019
Report Number: P886704
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-13)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/5/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML310LSFL9FS1E-TIR4D25NFL-TL3SDMW-1000LM-3500K
Description: 3IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1170.9 lumens
Efficiency: N/A
Efficacy: 84.8 lumens/watt
Spacing Criteria (0/90/45): 0.5 / 0.49 / 0.52
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')

CIE Type: Direct

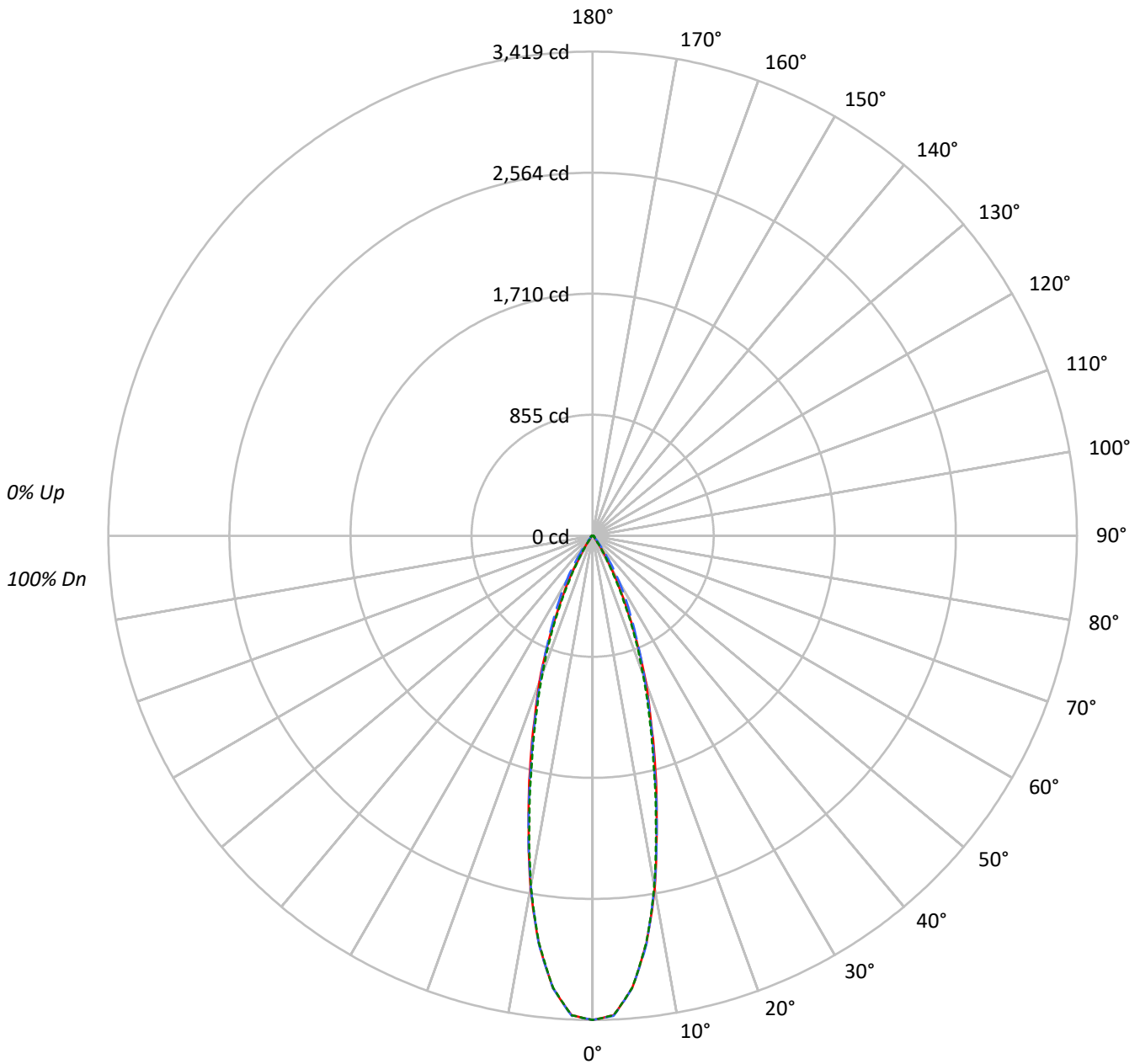
Input Watts (W): 13.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P886704

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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 | 114 | 112 | 110 | 108 | 112 | 110 | 108 | 106 | 106 | 104 | 103 | 102 | 101 | 100 | 98 | 98 | 97 | 95 | | | 95 | | | | | | | | | | | | | | | | |
| 2 | 110 | 105 | 102 | 99 | 107 | 104 | 101 | 98 | 101 | 98 | 96 | 98 | 96 | 94 | 95 | 93 | 92 | 90 | | | 90 | | | | | | | | | | | | | | | | |
| 3 | 105 | 100 | 96 | 92 | 103 | 98 | 95 | 91 | 96 | 93 | 90 | 94 | 91 | 89 | 91 | 89 | 87 | 86 | | | 86 | | | | | | | | | | | | | | | | |
| 4 | 101 | 95 | 90 | 87 | 100 | 94 | 90 | 86 | 92 | 88 | 85 | 90 | 87 | 84 | 88 | 85 | 83 | 82 | | | 82 | | | | | | | | | | | | | | | | |
| 5 | 97 | 91 | 86 | 82 | 96 | 90 | 85 | 82 | 88 | 84 | 81 | 86 | 83 | 80 | 85 | 82 | 80 | 78 | | | 78 | | | | | | | | | | | | | | | | |
| 6 | 94 | 87 | 82 | 78 | 93 | 86 | 81 | 78 | 84 | 80 | 77 | 83 | 80 | 77 | 82 | 79 | 76 | 75 | | | 75 | | | | | | | | | | | | | | | | |
| 7 | 91 | 83 | 78 | 75 | 89 | 82 | 78 | 74 | 81 | 77 | 74 | 80 | 76 | 74 | 79 | 76 | 73 | 72 | | | 72 | | | | | | | | | | | | | | | | |
| 8 | 87 | 80 | 75 | 71 | 86 | 79 | 75 | 71 | 78 | 74 | 71 | 77 | 74 | 71 | 76 | 73 | 71 | 69 | | | 69 | | | | | | | | | | | | | | | | |
| 9 | 85 | 77 | 72 | 69 | 84 | 76 | 72 | 69 | 75 | 71 | 68 | 75 | 71 | 68 | 74 | 70 | 68 | 67 | | | 67 | | | | | | | | | | | | | | | | |
| 10 | 82 | 74 | 69 | 66 | 81 | 74 | 69 | 66 | 73 | 69 | 66 | 72 | 68 | 66 | 71 | 68 | 65 | 64 | | | 64 | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 588829 | 588829 | 588829 |
| 5° | 554289 | 554289 | 553926 |
| 10° | 441606 | 439734 | 438808 |
| 15° | 305175 | 299469 | 295083 |
| 20° | 201035 | 196526 | 188884 |
| 25° | 109493 | 124125 | 103812 |
| 30° | 48901 | 74415 | 42319 |
| 35° | 16862 | 33051 | 14843 |
| 40° | 6250 | 14411 | 6250 |
| 45° | 4944 | 6503 | 4944 |
| 50° | 4287 | 5144 | 4287 |
| 55° | 4504 | 4804 | 4504 |
| 60° | 4409 | 4788 | 4409 |
| 65° | 4360 | 4809 | 4809 |
| 70° | 4330 | 4834 | 4834 |
| 75° | 4259 | 4259 | 4991 |
| 80° | 4265 | 4265 | 5256 |
| 85° | 4150 | 4150 | 4150 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 6503 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 283.6 | 24.2 |
| 10°-20° | 468.1 | 40.0 |
| 20°-30° | 284.9 | 24.3 |
| 30°-40° | 80.2 | 6.8 |
| 40°-50° | 19.0 | 1.6 |
| 50°-60° | 13.9 | 1.2 |
| 60°-70° | 11.5 | 1.0 |
| 70°-80° | 7.4 | 0.6 |
| 80°-90° | 2.4 | 0.2 |
| 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° | 1036.6 | 88.5 |
| 0°-40° | 1116.8 | 95.4 |
| 0°-60° | 1149.6 | 98.2 |
| 0°-90° | 1170.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1170.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3419 | 3419 | 3419 | 3419 | 3419 | |
| 5° | 3206 | 3207 | 3206 | 3206 | 3204 | 284 |
| 15° | 1712 | 1696 | 1680 | 1671 | 1655 | 473 |
| 25° | 576 | 630 | 653 | 608 | 546 | 274 |
| 35° | 80 | 112 | 157 | 100 | 71 | 61 |
| 45° | 20 | 21 | 27 | 21 | 20 | 16 |
| 55° | 15 | 15 | 16 | 15 | 15 | 13 |
| 65° | 11 | 12 | 12 | 12 | 12 | 11 |
| 75° | 6 | 6 | 6 | 8 | 8 | 7 |
| 85° | 2 | 2 | 2 | 2 | 2 | 2 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3419.0 | 3419.0 | 3419.0 | 3419.0 | 3419.0 |
| 2.5° | 3389.0 | 3388.0 | 3393.3 | 3390.1 | 3389.0 |
| 5° | 3206.2 | 3207.3 | 3206.2 | 3206.2 | 3204.1 |
| 7.5° | 2903.7 | 2899.4 | 2909.0 | 2900.5 | 2899.4 |
| 10° | 2525.2 | 2514.5 | 2514.5 | 2506.0 | 2509.2 |
| 12.5° | 2085.8 | 2094.4 | 2092.2 | 2073.0 | 2063.4 |
| 15° | 1711.6 | 1695.6 | 1679.6 | 1671.0 | 1655.0 |
| 17.5° | 1361.0 | 1362.0 | 1349.2 | 1328.9 | 1324.6 |
| 20° | 1096.9 | 1079.8 | 1072.3 | 1058.4 | 1030.6 |
| 22.5° | 824.3 | 854.2 | 837.1 | 823.2 | 784.7 |
| 25° | 576.2 | 629.7 | 653.2 | 608.3 | 546.3 |
| 27.5° | 395.6 | 427.6 | 504.6 | 412.7 | 357.1 |
| 30° | 245.9 | 294.0 | 374.2 | 272.6 | 212.8 |
| 32.5° | 146.5 | 186.0 | 259.8 | 168.9 | 127.2 |
| 35° | 80.2 | 112.3 | 157.2 | 100.5 | 70.6 |
| 37.5° | 41.7 | 62.0 | 98.4 | 57.7 | 39.6 |
| 40° | 27.8 | 35.3 | 64.1 | 33.1 | 27.8 |
| 42.5° | 22.5 | 25.7 | 40.6 | 24.6 | 22.5 |
| 45° | 20.3 | 21.4 | 26.7 | 21.4 | 20.3 |
| 47.5° | 18.2 | 19.2 | 20.3 | 19.2 | 18.2 |
| 50° | 16.0 | 18.2 | 19.2 | 18.2 | 16.0 |
| 52.5° | 16.0 | 16.0 | 17.1 | 16.0 | 16.0 |
| 55° | 15.0 | 15.0 | 16.0 | 15.0 | 15.0 |
| 57.5° | 13.9 | 15.0 | 15.0 | 15.0 | 13.9 |
| 60° | 12.8 | 13.9 | 13.9 | 13.9 | 12.8 |
| 62.5° | 11.8 | 12.8 | 12.8 | 12.8 | 12.8 |
| 65° | 10.7 | 11.8 | 11.8 | 11.8 | 11.8 |
| 67.5° | 9.6 | 10.7 | 10.7 | 10.7 | 10.7 |
| 70° | 8.6 | 9.6 | 9.6 | 9.6 | 9.6 |
| 72.5° | 7.5 | 8.6 | 8.6 | 8.6 | 8.6 |
| 75° | 6.4 | 6.4 | 6.4 | 7.5 | 7.5 |
| 77.5° | 5.3 | 5.3 | 5.3 | 6.4 | 6.4 |
| 80° | 4.3 | 4.3 | 4.3 | 5.3 | 5.3 |
| 82.5° | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| 85° | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| 87.5° | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 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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