

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: P887101

Luminaire Tested: ML412LSFLD2W1E-TIR4D25NFL-TL4SDMW-600LM-3000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887101
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-48)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFLD2W1E-TIR4D25NFL-TL4SDMW-600LM-3000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 3000K CCT
Ballast/Driver: -

Summary

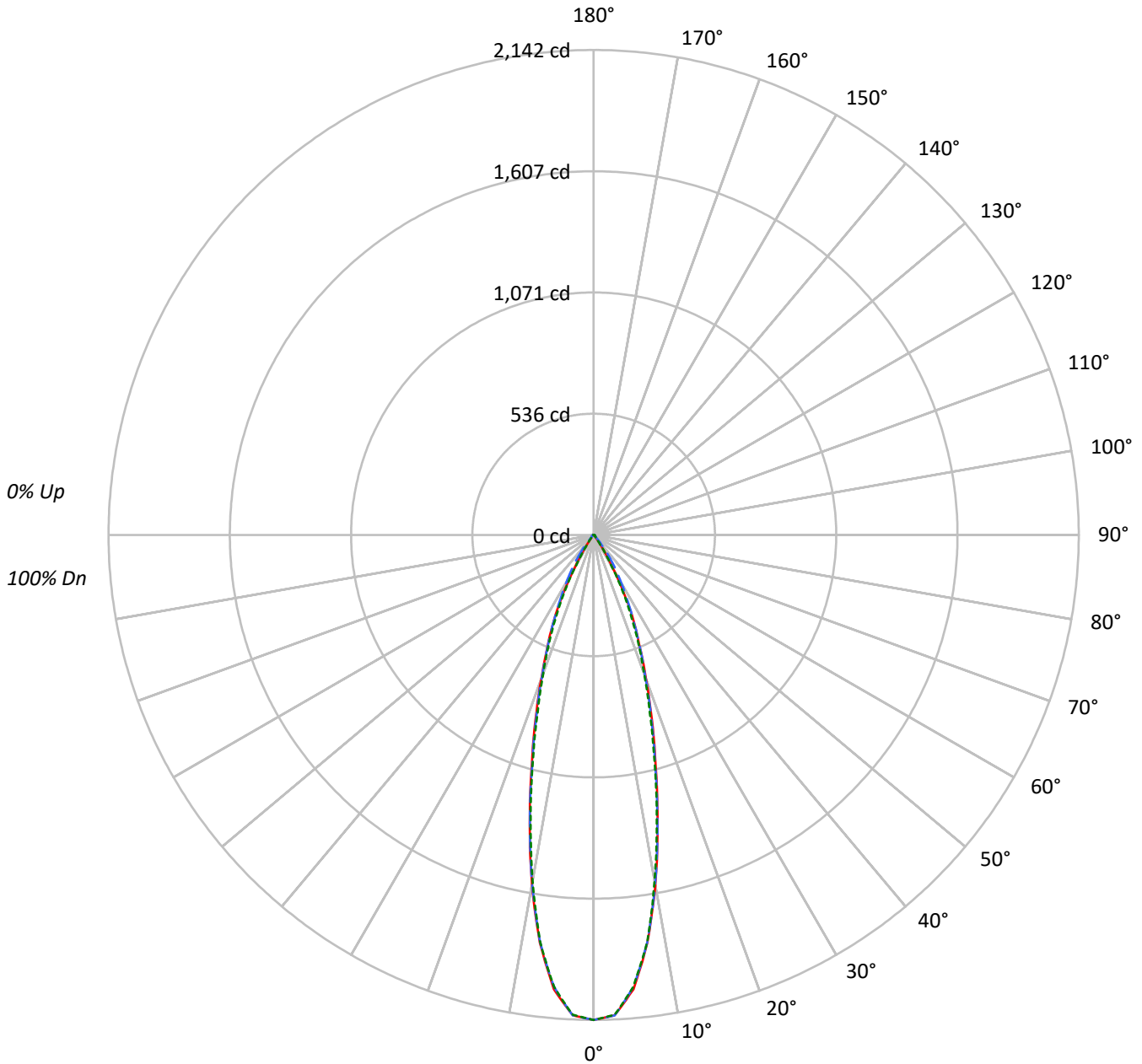
Lumens per Lamp: N/A
Luminaire Lumens: 738.6 lumens
Efficiency: N/A
Efficacy: 78.6 lumens/watt
Spacing Criteria (0/90/45): 0.49 / 0.49 / 0.52
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 9.4
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





TEST NUMBER: P887101

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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 | | | | | | | | | | | | | | | | | | | |
| 1 | 114 | 112 | 110 | 108 | 112 | 110 | 108 | 106 | 106 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | 95 | | | | | | | | | | | | | | | | | | | |
| 2 | 110 | 105 | 102 | 99 | 108 | 104 | 101 | 98 | 101 | 98 | 96 | 98 | 96 | 94 | 95 | 93 | 92 | 90 | | | | | | | | | | | | | | | | | | | |
| 3 | 105 | 100 | 96 | 92 | 104 | 99 | 95 | 92 | 96 | 93 | 90 | 94 | 91 | 89 | 92 | 89 | 88 | 86 | | | | | | | | | | | | | | | | | | | |
| 4 | 101 | 95 | 90 | 87 | 100 | 94 | 90 | 86 | 92 | 88 | 85 | 90 | 87 | 84 | 88 | 86 | 84 | 82 | | | | | | | | | | | | | | | | | | | |
| 5 | 98 | 91 | 86 | 82 | 96 | 90 | 85 | 82 | 88 | 84 | 81 | 87 | 83 | 81 | 85 | 82 | 80 | 79 | | | | | | | | | | | | | | | | | | | |
| 6 | 94 | 87 | 82 | 78 | 93 | 86 | 81 | 78 | 85 | 81 | 78 | 83 | 80 | 77 | 82 | 79 | 77 | 75 | | | | | | | | | | | | | | | | | | | |
| 7 | 91 | 83 | 78 | 75 | 89 | 82 | 78 | 75 | 81 | 77 | 74 | 80 | 77 | 74 | 79 | 76 | 73 | 72 | | | | | | | | | | | | | | | | | | | |
| 8 | 87 | 80 | 75 | 72 | 86 | 79 | 75 | 71 | 78 | 74 | 71 | 77 | 74 | 71 | 76 | 73 | 71 | 69 | | | | | | | | | | | | | | | | | | | |
| 9 | 85 | 77 | 72 | 69 | 84 | 76 | 72 | 69 | 75 | 71 | 68 | 75 | 71 | 68 | 74 | 70 | 68 | 67 | | | | | | | | | | | | | | | | | | | |
| 10 | 82 | 74 | 69 | 66 | 81 | 74 | 69 | 66 | 73 | 69 | 66 | 72 | 68 | 66 | 71 | 68 | 65 | 64 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 207556 | 207556 | 207556 |
| 5° | 195940 | 194919 | 194870 |
| 10° | 154303 | 153929 | 152513 |
| 15° | 105809 | 105027 | 103974 |
| 20° | 69526 | 68618 | 67021 |
| 25° | 44520 | 43868 | 40736 |
| 30° | 19151 | 26880 | 17238 |
| 35° | 5286 | 14830 | 5026 |
| 40° | 1884 | 5451 | 1821 |
| 45° | 1439 | 1973 | 1356 |
| 50° | 1326 | 1492 | 1251 |
| 55° | 1301 | 1402 | 1301 |
| 60° | 1279 | 1395 | 1279 |
| 65° | 1261 | 1398 | 1261 |
| 70° | 1246 | 1416 | 1246 |
| 75° | 1235 | 1460 | 1235 |
| 80° | 1227 | 1562 | 1227 |
| 85° | 1223 | 1223 | 1223 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 1973 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 177.3 | 24.0 |
| 10°-20° | 291.9 | 39.5 |
| 20°-30° | 186.6 | 25.3 |
| 30°-40° | 54.4 | 7.4 |
| 40°-50° | 10.2 | 1.4 |
| 50°-60° | 7.1 | 1.0 |
| 60°-70° | 5.9 | 0.8 |
| 70°-80° | 3.9 | 0.5 |
| 80°-90° | 1.3 | 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° | 655.8 | 88.8 |
| 0°-40° | 710.3 | 96.2 |
| 0°-60° | 727.5 | 98.5 |
| 0°-90° | 738.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 738.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2142 | 2142 | 2142 | 2142 | 2142 | |
| 5° | 2015 | 2013 | 2004 | 2005 | 2004 | 178 |
| 15° | 1055 | 1051 | 1047 | 1040 | 1037 | 294 |
| 25° | 416 | 414 | 410 | 400 | 381 | 185 |
| 35° | 45 | 71 | 125 | 66 | 42 | 38 |
| 45° | 10 | 11 | 14 | 11 | 10 | 8 |
| 55° | 8 | 8 | 8 | 8 | 8 | 7 |
| 65° | 6 | 6 | 6 | 6 | 6 | 5 |
| 75° | 3 | 4 | 4 | 4 | 3 | 4 |
| 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° | 2142.5 | 2142.5 | 2142.5 | 2142.5 | 2142.5 |
| 2.5° | 2123.2 | 2125.4 | 2124.3 | 2118.2 | 2121.5 |
| 5° | 2014.9 | 2012.7 | 2004.4 | 2005.0 | 2003.9 |
| 7.5° | 1817.2 | 1816.6 | 1813.9 | 1815.0 | 1811.7 |
| 10° | 1568.6 | 1579.7 | 1564.8 | 1564.8 | 1550.4 |
| 12.5° | 1304.6 | 1307.4 | 1300.7 | 1293.0 | 1286.4 |
| 15° | 1055.0 | 1051.1 | 1047.2 | 1040.0 | 1036.7 |
| 17.5° | 852.8 | 852.2 | 842.9 | 834.0 | 821.9 |
| 20° | 674.4 | 672.7 | 665.6 | 662.2 | 650.1 |
| 22.5° | 529.1 | 535.8 | 528.0 | 515.3 | 512.0 |
| 25° | 416.5 | 414.2 | 410.4 | 400.4 | 381.1 |
| 27.5° | 288.9 | 312.1 | 316.5 | 298.3 | 267.9 |
| 30° | 171.2 | 207.7 | 240.3 | 198.3 | 154.1 |
| 32.5° | 96.1 | 128.1 | 181.2 | 119.3 | 82.8 |
| 35° | 44.7 | 71.3 | 125.4 | 65.7 | 42.5 |
| 37.5° | 20.4 | 34.8 | 76.2 | 34.2 | 22.1 |
| 40° | 14.9 | 17.7 | 43.1 | 18.8 | 14.4 |
| 42.5° | 12.2 | 13.3 | 24.3 | 13.3 | 11.6 |
| 45° | 10.5 | 11.0 | 14.4 | 11.0 | 9.9 |
| 47.5° | 8.8 | 9.9 | 11.0 | 9.4 | 8.8 |
| 50° | 8.8 | 8.8 | 9.9 | 8.8 | 8.3 |
| 52.5° | 8.3 | 8.3 | 8.8 | 8.3 | 8.3 |
| 55° | 7.7 | 7.7 | 8.3 | 7.7 | 7.7 |
| 57.5° | 7.2 | 7.2 | 7.7 | 7.2 | 7.2 |
| 60° | 6.6 | 7.2 | 7.2 | 6.6 | 6.6 |
| 62.5° | 6.1 | 6.6 | 6.6 | 6.6 | 6.1 |
| 65° | 5.5 | 6.1 | 6.1 | 6.1 | 5.5 |
| 67.5° | 5.0 | 5.5 | 5.5 | 5.5 | 5.0 |
| 70° | 4.4 | 5.0 | 5.0 | 5.0 | 4.4 |
| 72.5° | 3.9 | 4.4 | 4.4 | 4.4 | 3.9 |
| 75° | 3.3 | 3.9 | 3.9 | 3.9 | 3.3 |
| 77.5° | 2.8 | 3.3 | 3.3 | 3.3 | 2.8 |
| 80° | 2.2 | 2.8 | 2.8 | 2.8 | 2.2 |
| 82.5° | 1.7 | 1.7 | 1.7 | 2.2 | 1.7 |
| 85° | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 87.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 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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