

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: P886908

Luminaire Tested: ML412LSFL95FS1E-TIR4D40FL-TL4SDMB-1020LM-4000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P886908
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-53)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL95FS1E-TIR4D40FL-TL4SDMB-1020LM-4000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

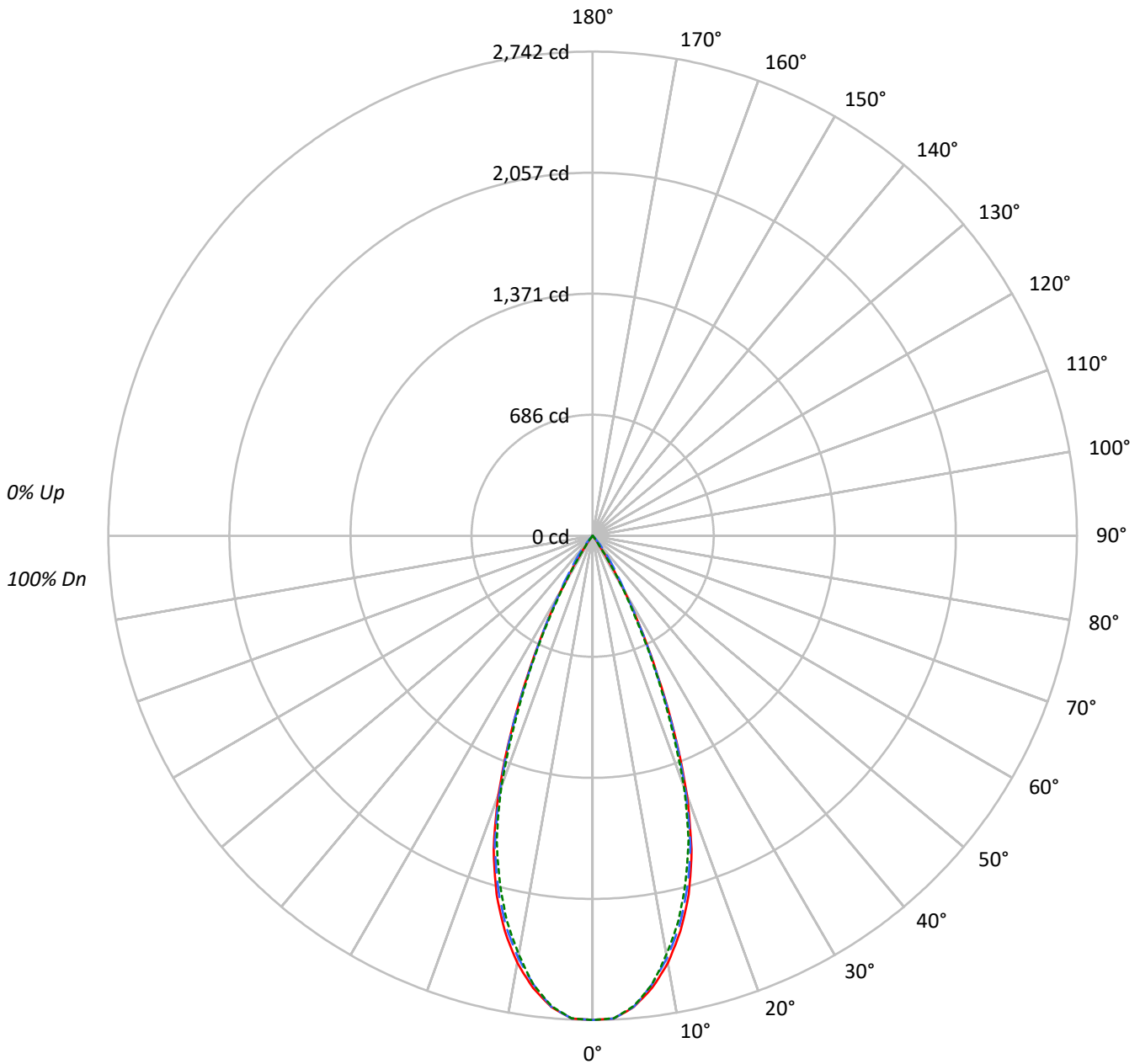
Lumens per Lamp: N/A
Luminaire Lumens: 1292.8 lumens
Efficiency: N/A
Efficacy: 73.5 lumens/watt
Spacing Criteria (0/90/45): 0.7 / 0.69 / 0.65
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 17.6
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





TEST NUMBER: P886908

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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 | 115 | 112 | 110 | 108 | 112 | 110 | 108 | 106 | 106 | 105 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | 96 | | | | | | | | | | | | | | | | | | | |
| 2 | 110 | 106 | 103 | 100 | 108 | 104 | 101 | 99 | 101 | 99 | 97 | 98 | 96 | 95 | 96 | 94 | 93 | 91 | | | | | | | | | | | | | | | | | | | |
| 3 | 106 | 101 | 97 | 93 | 104 | 99 | 96 | 93 | 97 | 94 | 91 | 94 | 92 | 90 | 92 | 90 | 88 | 87 | | | | | | | | | | | | | | | | | | | |
| 4 | 102 | 96 | 91 | 88 | 100 | 95 | 91 | 87 | 93 | 89 | 86 | 91 | 88 | 85 | 89 | 86 | 84 | 83 | | | | | | | | | | | | | | | | | | | |
| 5 | 98 | 91 | 87 | 83 | 97 | 90 | 86 | 83 | 89 | 85 | 82 | 87 | 84 | 81 | 86 | 83 | 81 | 79 | | | | | | | | | | | | | | | | | | | |
| 6 | 94 | 87 | 82 | 79 | 93 | 87 | 82 | 79 | 85 | 81 | 78 | 84 | 80 | 78 | 83 | 80 | 77 | 76 | | | | | | | | | | | | | | | | | | | |
| 7 | 91 | 83 | 79 | 75 | 90 | 83 | 78 | 75 | 82 | 78 | 75 | 81 | 77 | 74 | 80 | 76 | 74 | 73 | | | | | | | | | | | | | | | | | | | |
| 8 | 88 | 80 | 75 | 72 | 87 | 79 | 75 | 72 | 79 | 74 | 71 | 78 | 74 | 71 | 77 | 73 | 71 | 70 | | | | | | | | | | | | | | | | | | | |
| 9 | 85 | 77 | 72 | 69 | 84 | 76 | 72 | 69 | 76 | 71 | 68 | 75 | 71 | 68 | 74 | 71 | 68 | 67 | | | | | | | | | | | | | | | | | | | |
| 10 | 82 | 74 | 69 | 66 | 81 | 73 | 69 | 66 | 73 | 69 | 66 | 72 | 68 | 66 | 71 | 68 | 65 | 64 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 265661 | 265661 | 265661 |
| 5° | 260530 | 260365 | 259937 |
| 10° | 241547 | 238655 | 236776 |
| 15° | 210816 | 207426 | 203695 |
| 20° | 160608 | 158557 | 155691 |
| 25° | 92620 | 90760 | 89093 |
| 30° | 38671 | 41389 | 35281 |
| 35° | 7179 | 19159 | 6256 |
| 40° | 1100 | 6791 | 1100 |
| 45° | 123 | 1302 | 123 |
| 50° | 0 | 256 | 0 |
| 55° | 0 | 0 | 0 |
| 60° | 0 | 0 | 0 |
| 65° | 0 | 0 | 0 |
| 70° | 0 | 0 | 0 |
| 75° | 0 | 0 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 1302 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 247.4 | 19.1 |
| 10°-20° | 564.9 | 43.7 |
| 20°-30° | 394.8 | 30.5 |
| 30°-40° | 80.7 | 6.2 |
| 40°-50° | 5.0 | 0.4 |
| 50°-60° | 0.1 | 0.0 |
| 60°-70° | 0.0 | 0.0 |
| 70°-80° | 0.0 | 0.0 |
| 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° | 1207.0 | 93.4 |
| 0°-40° | 1287.7 | 99.6 |
| 0°-60° | 1292.8 | 100.0 |
| 0°-90° | 1292.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1292.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2742 | 2742 | 2742 | 2742 | 2742 | |
| 5° | 2679 | 2682 | 2677 | 2670 | 2673 | 249 |
| 15° | 2102 | 2099 | 2068 | 2044 | 2031 | 573 |
| 25° | 866 | 872 | 849 | 837 | 834 | 401 |
| 35° | 61 | 100 | 162 | 86 | 53 | 63 |
| 45° | 1 | 2 | 10 | 2 | 1 | 2 |
| 55° | 0 | 0 | 0 | 0 | 0 | 0 |
| 65° | 0 | 0 | 0 | 0 | 0 | 0 |
| 75° | 0 | 0 | 0 | 0 | 0 | 0 |
| 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° | 2742.3 | 2742.3 | 2742.3 | 2742.3 | 2742.3 |
| 2.5° | 2736.3 | 2734.5 | 2736.3 | 2735.4 | 2734.5 |
| 5° | 2679.1 | 2681.7 | 2677.4 | 2669.6 | 2673.0 |
| 7.5° | 2582.9 | 2576.0 | 2563.9 | 2560.4 | 2564.7 |
| 10° | 2455.5 | 2438.2 | 2426.1 | 2421.8 | 2407.0 |
| 12.5° | 2294.4 | 2285.7 | 2264.9 | 2245.9 | 2238.1 |
| 15° | 2102.0 | 2098.6 | 2068.2 | 2044.0 | 2031.0 |
| 17.5° | 1862.9 | 1847.3 | 1840.4 | 1817.0 | 1805.7 |
| 20° | 1557.9 | 1557.9 | 1538.0 | 1505.0 | 1510.2 |
| 22.5° | 1211.3 | 1198.3 | 1202.6 | 1168.0 | 1157.6 |
| 25° | 866.5 | 871.7 | 849.1 | 837.0 | 833.5 |
| 27.5° | 584.0 | 576.2 | 577.9 | 555.4 | 538.9 |
| 30° | 345.7 | 370.0 | 370.0 | 349.2 | 315.4 |
| 32.5° | 162.0 | 208.0 | 244.3 | 194.1 | 137.8 |
| 35° | 60.7 | 99.6 | 162.0 | 85.8 | 52.9 |
| 37.5° | 23.4 | 40.7 | 98.8 | 34.7 | 21.7 |
| 40° | 8.7 | 16.5 | 53.7 | 15.6 | 8.7 |
| 42.5° | 3.5 | 6.1 | 25.1 | 5.2 | 3.5 |
| 45° | 0.9 | 1.7 | 9.5 | 1.7 | 0.9 |
| 47.5° | 0.9 | 0.9 | 3.5 | 0.9 | 0.0 |
| 50° | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 |
| 52.5° | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 |
| 55° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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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