

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: P885971

Luminaire Tested: ML104LSFL9FS1E-TIR1D55WFL-TL1SDMW-400LM-4000K

Issue Date: 6/19/2024

Test Information

Test Method: LM-79-2019
Report Number: P885971
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-148)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 6/19/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML104LSFL9FS1E-TIR1D55WFL-TL1SDMW-400LM-4000K
Description: 1IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

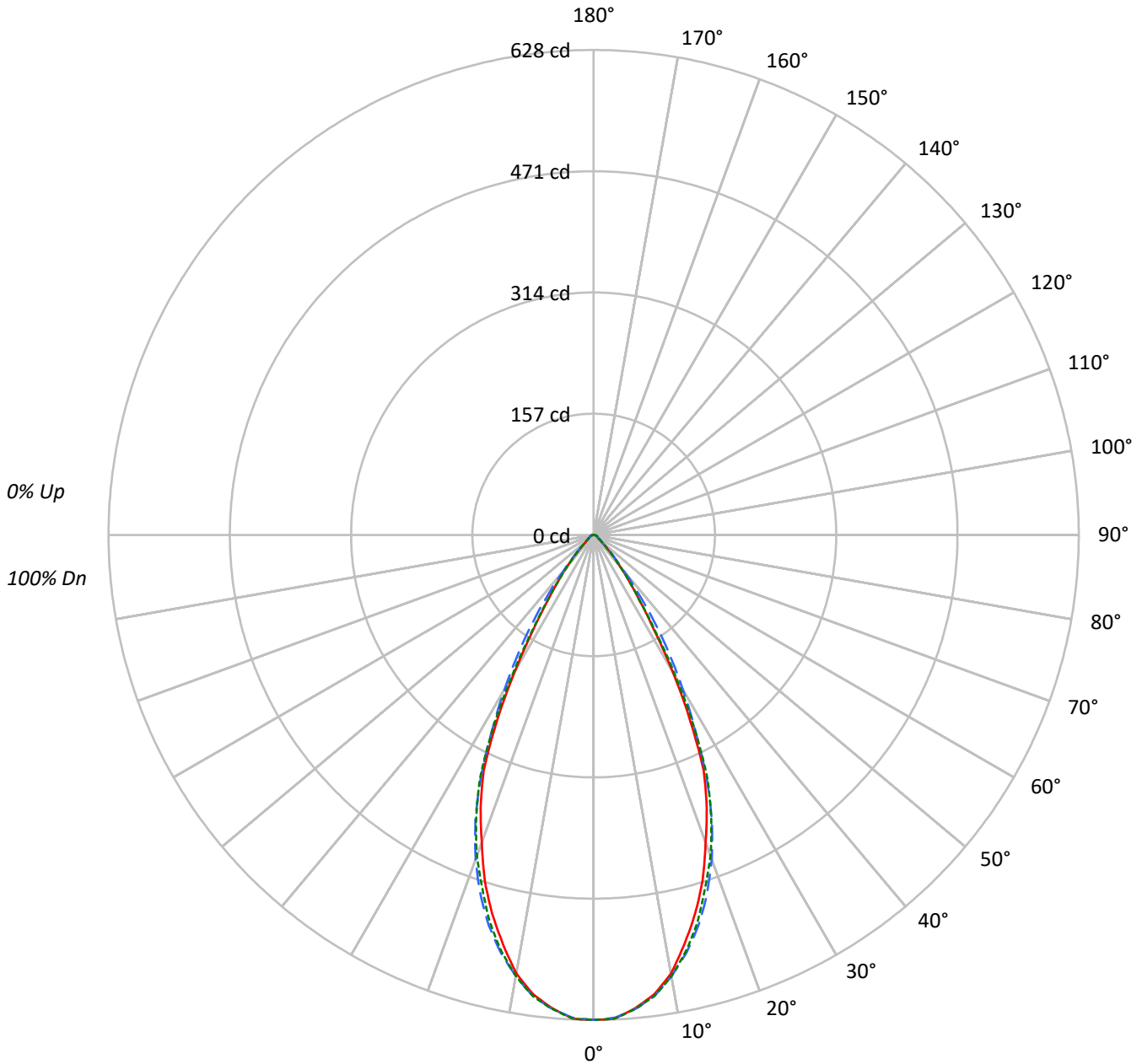
Lumens per Lamp: N/A
Luminaire Lumens: 470.9 lumens
Efficiency: N/A
Efficacy: 78.5 lumens/watt
Spacing Criteria (0/90/45): 0.8 / 0.83 / 0.8
Luminous Opening: Rectangular (W 0.08' x L: 0.08' x H: 0')
CIE Type: Direct

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





TEST NUMBER: P885971

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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 | 113 | 111 | 108 | 106 | 111 | 108 | 106 | 104 | 104 | 103 | 101 | 101 | 99 | 98 | 97 | 96 | 95 | 93 | | | | | | | | |
| 2 | 108 | 103 | 99 | 96 | 106 | 101 | 98 | 94 | 98 | 95 | 92 | 95 | 93 | 90 | 92 | 90 | 89 | 87 | | | | | | | | |
| 3 | 103 | 96 | 91 | 87 | 101 | 95 | 90 | 87 | 92 | 88 | 85 | 90 | 87 | 84 | 88 | 85 | 83 | 81 | | | | | | | | |
| 4 | 98 | 90 | 85 | 80 | 96 | 89 | 84 | 80 | 87 | 82 | 79 | 85 | 81 | 78 | 83 | 80 | 77 | 76 | | | | | | | | |
| 5 | 93 | 85 | 79 | 75 | 91 | 84 | 78 | 74 | 82 | 77 | 74 | 80 | 76 | 73 | 79 | 75 | 72 | 71 | | | | | | | | |
| 6 | 88 | 80 | 74 | 70 | 87 | 79 | 73 | 69 | 77 | 73 | 69 | 76 | 72 | 68 | 75 | 71 | 68 | 67 | | | | | | | | |
| 7 | 84 | 75 | 69 | 65 | 83 | 75 | 69 | 65 | 73 | 68 | 65 | 72 | 68 | 64 | 71 | 67 | 64 | 63 | | | | | | | | |
| 8 | 80 | 71 | 65 | 61 | 79 | 71 | 65 | 61 | 69 | 64 | 61 | 68 | 64 | 61 | 68 | 63 | 60 | 59 | | | | | | | | |
| 9 | 77 | 67 | 62 | 58 | 76 | 67 | 61 | 58 | 66 | 61 | 57 | 65 | 61 | 57 | 64 | 60 | 57 | 56 | | | | | | | | |
| 10 | 73 | 64 | 58 | 55 | 72 | 64 | 58 | 55 | 63 | 58 | 54 | 62 | 57 | 54 | 61 | 57 | 54 | 53 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 973410 | 973410 | 973410 |
| 5° | 957212 | 958924 | 958924 |
| 10° | 907527 | 913035 | 913035 |
| 15° | 814543 | 840700 | 833318 |
| 20° | 698395 | 736828 | 729241 |
| 25° | 576013 | 590037 | 596023 |
| 30° | 364225 | 412371 | 380870 |
| 35° | 194709 | 256774 | 196980 |
| 40° | 108859 | 123023 | 104205 |
| 45° | 51294 | 58966 | 53925 |
| 50° | 28213 | 31107 | 31107 |
| 55° | 22159 | 22159 | 22159 |
| 60° | 17980 | 17980 | 17980 |
| 65° | 17238 | 21272 | 17238 |
| 70° | 21300 | 21300 | 21300 |
| 75° | 20961 | 20961 | 20961 |
| 80° | 20530 | 20530 | 20530 |
| 85° | 21341 | 21341 | 21341 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 58966 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 57.7 | 12.3 |
| 10°-20° | 143.9 | 30.6 |
| 20°-30° | 153.4 | 32.6 |
| 30°-40° | 76.8 | 16.3 |
| 40°-50° | 21.8 | 4.6 |
| 50°-60° | 7.7 | 1.6 |
| 60°-70° | 5.3 | 1.1 |
| 70°-80° | 3.4 | 0.7 |
| 80°-90° | 1.0 | 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° | 355.0 | 75.4 |
| 0°-40° | 431.8 | 91.7 |
| 0°-60° | 461.3 | 98.0 |
| 0°-90° | 470.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 470.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 628 | 628 | 628 | 628 | 628 | |
| 5° | 615 | 616 | 616 | 616 | 616 | 58 |
| 15° | 508 | 513 | 524 | 520 | 519 | 141 |
| 25° | 337 | 340 | 345 | 348 | 348 | 148 |
| 35° | 103 | 113 | 136 | 115 | 104 | 69 |
| 45° | 23 | 25 | 27 | 26 | 25 | 20 |
| 55° | 8 | 8 | 8 | 8 | 8 | 7 |
| 65° | 5 | 6 | 6 | 6 | 5 | 5 |
| 75° | 4 | 4 | 4 | 4 | 4 | 3 |
| 85° | 1 | 1 | 1 | 1 | 1 | 1 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CATALOG NUMBER: ML104LSFL9FS1E-TIR1D55WFL-TL1SDMW-400LM-4000K

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 628.0 | 628.0 | 628.0 | 628.0 | 628.0 |
| 2.5° | 626.9 | 625.7 | 625.7 | 626.9 | 626.9 |
| 5° | 615.2 | 616.3 | 616.3 | 616.3 | 616.3 |
| 7.5° | 600.0 | 601.1 | 602.3 | 603.5 | 602.3 |
| 10° | 576.6 | 577.7 | 580.1 | 582.4 | 580.1 |
| 12.5° | 542.6 | 548.5 | 554.3 | 553.2 | 552.0 |
| 15° | 507.6 | 513.4 | 523.9 | 520.4 | 519.3 |
| 17.5° | 469.0 | 476.0 | 487.7 | 486.5 | 479.5 |
| 20° | 423.4 | 433.9 | 446.7 | 443.2 | 442.1 |
| 22.5° | 382.4 | 390.6 | 400.0 | 401.1 | 397.6 |
| 25° | 336.8 | 340.3 | 345.0 | 348.5 | 348.5 |
| 27.5° | 270.2 | 280.7 | 284.2 | 287.7 | 283.0 |
| 30° | 203.5 | 217.5 | 230.4 | 226.9 | 212.8 |
| 32.5° | 145.0 | 162.6 | 181.3 | 168.4 | 150.9 |
| 35° | 102.9 | 113.4 | 135.7 | 114.6 | 104.1 |
| 37.5° | 74.8 | 78.4 | 93.6 | 79.5 | 74.8 |
| 40° | 53.8 | 55.0 | 60.8 | 55.0 | 51.5 |
| 42.5° | 36.3 | 38.6 | 40.9 | 38.6 | 36.3 |
| 45° | 23.4 | 24.6 | 26.9 | 25.7 | 24.6 |
| 47.5° | 15.2 | 16.4 | 17.5 | 17.5 | 17.5 |
| 50° | 11.7 | 11.7 | 12.9 | 14.0 | 12.9 |
| 52.5° | 9.4 | 9.4 | 10.5 | 10.5 | 9.4 |
| 55° | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 |
| 57.5° | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| 60° | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 |
| 62.5° | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 |
| 65° | 4.7 | 5.8 | 5.8 | 5.8 | 4.7 |
| 67.5° | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| 70° | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| 72.5° | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 75° | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 77.5° | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| 80° | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| 82.5° | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 85° | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 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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