

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: P886580

Luminaire Tested: ML310LSFL95FS1E-TIR4D25NFL-TL3SDSL-850LM-4000K

Issue Date: 7/5/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886580  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/5/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML310LSFL95FS1E-TIR4D25NFL-TL3SDSL-850LM-4000K  
Description: 3IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1092.5 lumens  
Efficiency: N/A  
Efficacy: 80.3 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')

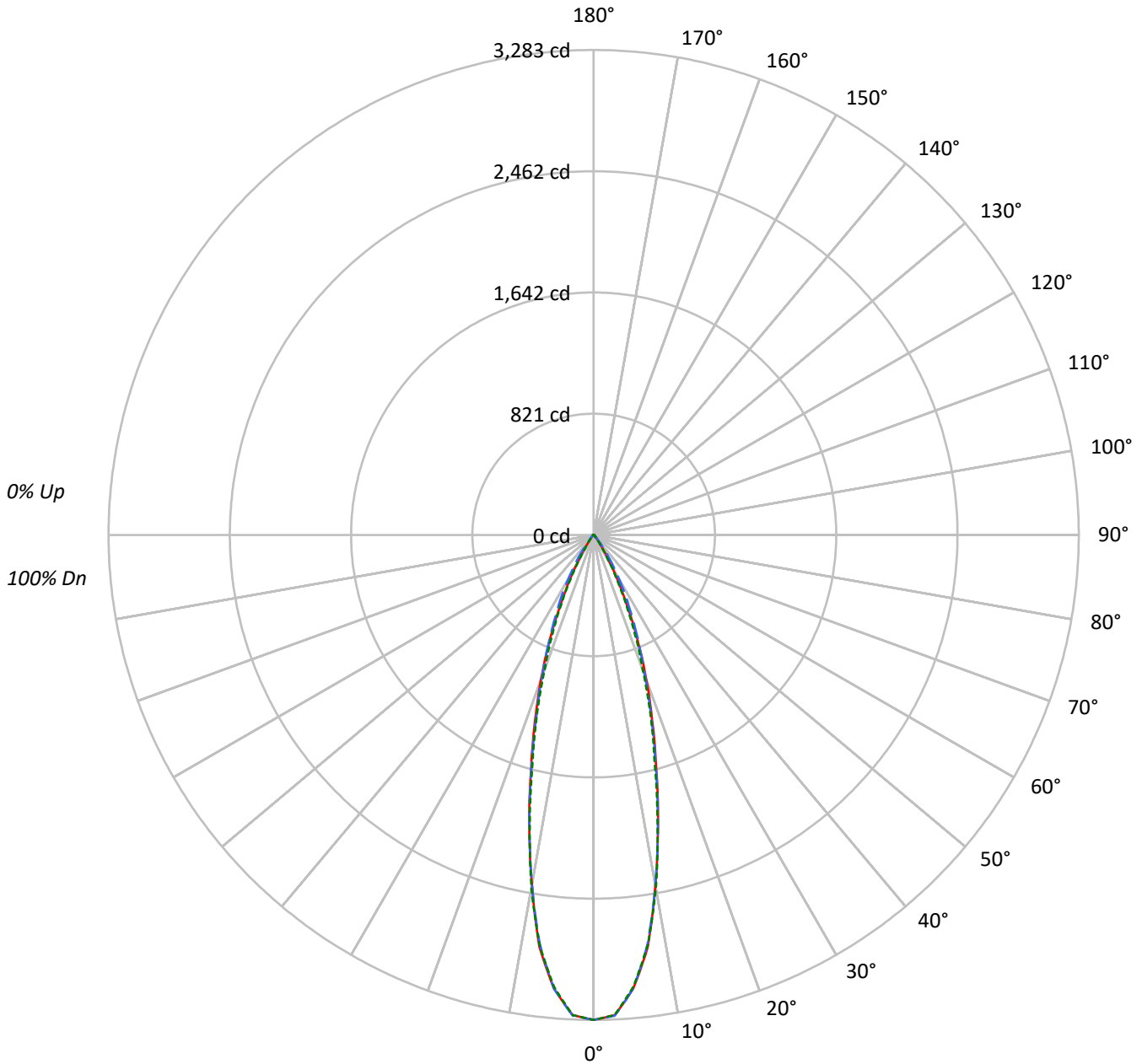
CIE Type: Direct

Input Watts (W): 13.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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  |     |     |     |     |     |     |     |     | 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 | 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  | 88  | 93  | 89  | 87  | 91  | 88  | 86  | 89  | 87  | 85  | 83  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 98  | 92  | 87  | 84  | 97  | 91  | 86  | 83  | 89  | 85  | 82  | 88  | 84  | 82  | 86  | 83  | 81  | 80  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 95  | 88  | 83  | 80  | 94  | 87  | 83  | 79  | 86  | 82  | 79  | 84  | 81  | 78  | 83  | 80  | 78  | 77  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 92  | 84  | 79  | 76  | 90  | 84  | 79  | 76  | 82  | 78  | 76  | 81  | 78  | 75  | 80  | 77  | 75  | 74  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 88  | 81  | 76  | 73  | 87  | 80  | 76  | 73  | 79  | 75  | 73  | 79  | 75  | 72  | 78  | 74  | 72  | 71  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 86  | 78  | 73  | 70  | 85  | 78  | 73  | 70  | 77  | 73  | 70  | 76  | 72  | 70  | 75  | 72  | 69  | 68  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 83  | 75  | 71  | 68  | 82  | 75  | 70  | 67  | 74  | 70  | 67  | 73  | 70  | 67  | 73  | 69  | 67  | 66  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 565424 | 565424 | 565424 |
| 5°  | 532921 | 532921 | 531020 |
| 10° | 420882 | 420358 | 424397 |
| 15° | 291446 | 289823 | 284457 |
| 20° | 190771 | 186538 | 177539 |
| 25° | 105370 | 116999 | 99099  |
| 30° | 45262  | 67396  | 41483  |
| 35° | 14969  | 31621  | 13708  |
| 40° | 4744   | 11713  | 5193   |
| 45° | 2923   | 4652   | 3166   |
| 50° | 2411   | 2679   | 2411   |
| 55° | 2102   | 2402   | 2102   |
| 60° | 2067   | 2067   | 2067   |
| 65° | 1630   | 2038   | 2038   |
| 70° | 1511   | 2014   | 2014   |
| 75° | 1331   | 1996   | 1996   |
| 80° | 992    | 1984   | 1984   |
| 85° | 1976   | 1976   | 1976   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 4652 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 272.5  | 24.9      |
| 10°-20°   | 449.2  | 41.1      |
| 20°-30°   | 269.4  | 24.7      |
| 30°-40°   | 73.0   | 6.7       |
| 40°-50°   | 13.0   | 1.2       |
| 50°-60°   | 6.5    | 0.6       |
| 60°-70°   | 4.8    | 0.4       |
| 70°-80°   | 3.0    | 0.3       |
| 80°-90°   | 1.1    | 0.1       |
| 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°    | 991.1  | 90.7      |
| 0°-40°    | 1064.1 | 97.4      |
| 0°-60°    | 1083.6 | 99.2      |
| 0°-90°    | 1092.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1092.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 3283 | 3283  | 3283 | 3283  | 3283 |      |
| 5°  | 3083 | 3086  | 3083 | 3079  | 3072 | 273  |
| 15° | 1635 | 1630  | 1626 | 1606  | 1595 | 454  |
| 25° | 554  | 592   | 616  | 562   | 522  | 261  |
| 35° | 71   | 99    | 150  | 90    | 65   | 55   |
| 45° | 12   | 13    | 19   | 14    | 13   | 10   |
| 55° | 7    | 7     | 8    | 7     | 7    | 6    |
| 65° | 4    | 5     | 5    | 5     | 5    | 4    |
| 75° | 2    | 3     | 3    | 3     | 3    | 2    |
| 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°    | 3283.1 | 3283.1 | 3283.1 | 3283.1 | 3283.1 |
| 2.5°  | 3254.1 | 3256.1 | 3258.1 | 3254.1 | 3252.1 |
| 5°    | 3082.6 | 3085.6 | 3082.6 | 3078.6 | 3071.6 |
| 7.5°  | 2811.8 | 2793.8 | 2793.8 | 2774.7 | 2800.8 |
| 10°   | 2406.7 | 2418.7 | 2403.7 | 2406.7 | 2426.8 |
| 12.5° | 2012.6 | 1998.6 | 2009.6 | 1990.5 | 1997.6 |
| 15°   | 1634.6 | 1630.5 | 1625.5 | 1605.5 | 1595.4 |
| 17.5° | 1318.7 | 1297.6 | 1292.6 | 1276.6 | 1276.6 |
| 20°   | 1040.9 | 1042.9 | 1017.8 | 1000.8 | 968.7  |
| 22.5° | 787.2  | 811.3  | 800.2  | 771.1  | 734.0  |
| 25°   | 554.5  | 591.6  | 615.7  | 561.6  | 521.5  |
| 27.5° | 372.0  | 410.1  | 470.3  | 401.1  | 342.0  |
| 30°   | 227.6  | 266.7  | 338.9  | 256.7  | 208.6  |
| 32.5° | 133.4  | 171.5  | 232.6  | 157.4  | 117.3  |
| 35°   | 71.2   | 99.3   | 150.4  | 90.3   | 65.2   |
| 37.5° | 36.1   | 54.2   | 88.2   | 51.1   | 38.1   |
| 40°   | 21.1   | 28.1   | 52.1   | 30.1   | 23.1   |
| 42.5° | 15.0   | 17.0   | 32.1   | 19.1   | 17.0   |
| 45°   | 12.0   | 13.0   | 19.1   | 14.0   | 13.0   |
| 47.5° | 10.0   | 11.0   | 13.0   | 11.0   | 11.0   |
| 50°   | 9.0    | 9.0    | 10.0   | 9.0    | 9.0    |
| 52.5° | 7.0    | 8.0    | 9.0    | 8.0    | 8.0    |
| 55°   | 7.0    | 7.0    | 8.0    | 7.0    | 7.0    |
| 57.5° | 6.0    | 6.0    | 7.0    | 6.0    | 6.0    |
| 60°   | 6.0    | 6.0    | 6.0    | 6.0    | 6.0    |
| 62.5° | 5.0    | 5.0    | 6.0    | 5.0    | 5.0    |
| 65°   | 4.0    | 5.0    | 5.0    | 5.0    | 5.0    |
| 67.5° | 4.0    | 4.0    | 5.0    | 5.0    | 4.0    |
| 70°   | 3.0    | 4.0    | 4.0    | 4.0    | 4.0    |
| 72.5° | 3.0    | 3.0    | 4.0    | 4.0    | 3.0    |
| 75°   | 2.0    | 3.0    | 3.0    | 3.0    | 3.0    |
| 77.5° | 2.0    | 2.0    | 2.0    | 3.0    | 2.0    |
| 80°   | 1.0    | 2.0    | 2.0    | 2.0    | 2.0    |
| 82.5° | 1.0    | 1.0    | 1.0    | 2.0    | 2.0    |
| 85°   | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    |
| 87.5° | 0.0    | 0.0    | 1.0    | 1.0    | 1.0    |
| 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



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Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

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Scaled Data Report



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