

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P990584

Luminaire Tested: **ML2ALSFL9FS1E-TIR1D25NFL-TL2SDMW-550LM-3500K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-08  
 Report Number: P990584  
 Test Lab: Cooper Lighting Solutions  
 Issue Date: 5/13/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML2ALSFL9FS1E-TIR1D25NFL-TL2SDMW-550LM-3500K  
 Description: 2IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM  
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT  
 Ballast/Driver: -

**Summary**

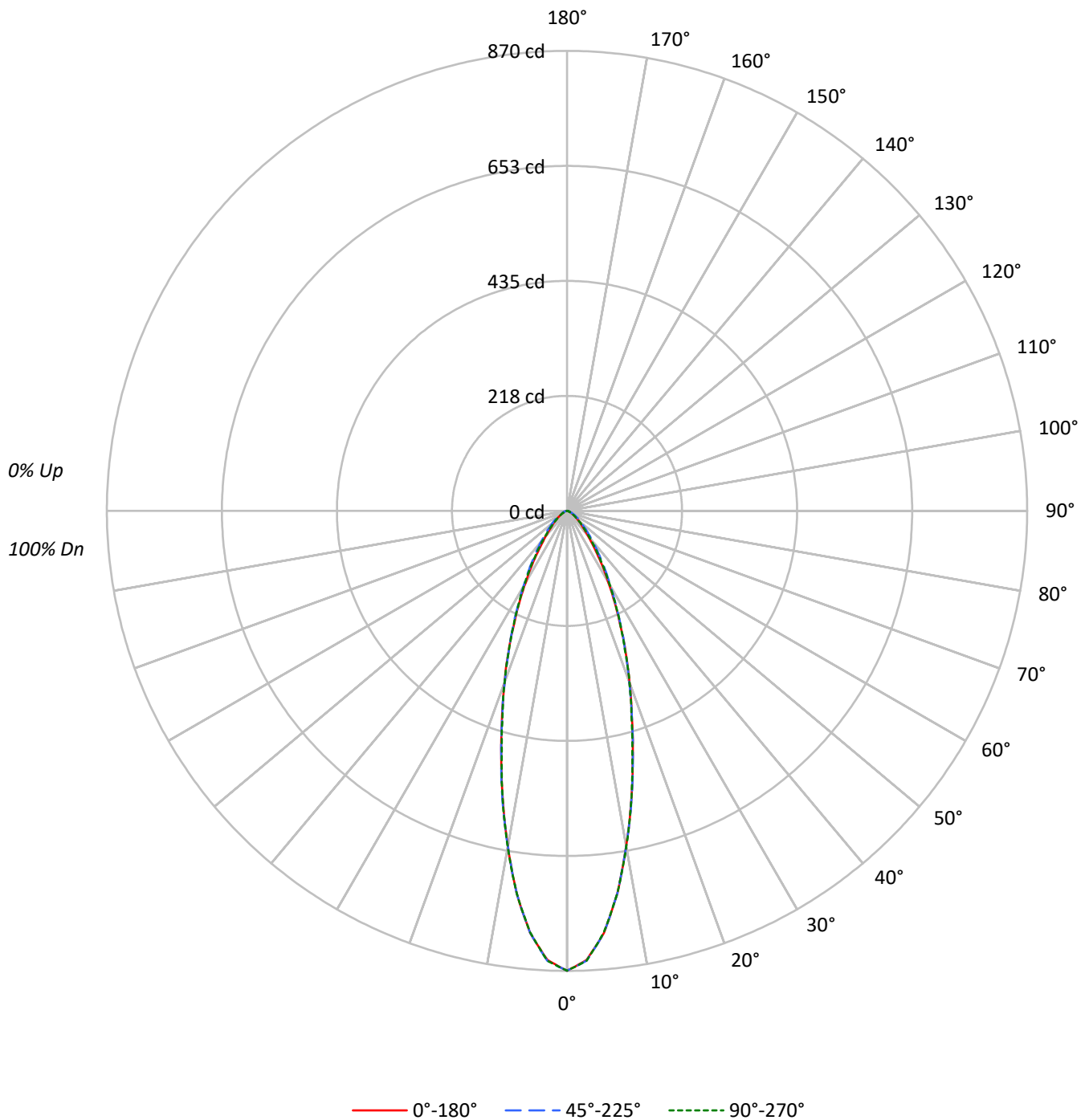
Lumens per Lamp: N/A  
 Luminaire Lumens: 454.0 lumens  
 Efficiency: N/A  
 Efficacy: 59.7 lumens/watt  
 Spacing Criteria (0/90/45): 0.53 / 0.53 / 0.6  
 Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')  
 CIE Type: Direct

Input Watts (W): 7.6  
 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: 25 FT

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | GONIO 1 IN0055        | 4/22/2021        | 10/22/2021           |
| Power Meter                    | XITRON 2801 IN0197    | 12/1/2020        | 12/1/2021            |
| AC Power Source                | CHROMA 61505 IN0196   | 12/1/2020        | 12/1/2021            |
| DC Power Supply                | AGILENT E3634A IN0198 | 11/30/2020       | 11/30/2021           |
| Room Thermometer               | ONSET IN0143          | 12/1/2020        | 12/1/2021            |

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### Luminous Intensity Polar Plot



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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 10  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 113 | 110 | 108 | 105 | 111 | 108 | 106 | 104 | 104 | 102 | 100 |  | 100 | 99  | 97  |  | 97  |
| 2   | 107 | 102 | 98  | 94  | 105 | 100 | 97  | 93  | 97  | 94  | 91  |  | 94  | 92  | 89  |  | 91  |
| 3   | 102 | 95  | 90  | 86  | 100 | 94  | 89  | 85  | 91  | 87  | 84  |  | 89  | 85  | 82  |  | 86  |
| 4   | 97  | 89  | 83  | 79  | 95  | 88  | 82  | 78  | 86  | 81  | 77  |  | 84  | 80  | 77  |  | 82  |
| 5   | 92  | 83  | 77  | 73  | 90  | 82  | 77  | 73  | 81  | 76  | 72  |  | 79  | 75  | 71  |  | 77  |
| 6   | 87  | 78  | 72  | 68  | 86  | 78  | 72  | 68  | 76  | 71  | 67  |  | 75  | 70  | 67  |  | 73  |
| 7   | 83  | 74  | 68  | 64  | 82  | 73  | 68  | 64  | 72  | 67  | 63  |  | 71  | 66  | 63  |  | 70  |
| 8   | 80  | 70  | 64  | 60  | 78  | 69  | 64  | 60  | 68  | 63  | 60  |  | 67  | 63  | 59  |  | 66  |
| 9   | 76  | 67  | 61  | 57  | 75  | 66  | 60  | 57  | 65  | 60  | 56  |  | 64  | 60  | 56  |  | 63  |
| 10  | 73  | 63  | 58  | 54  | 72  | 63  | 57  | 54  | 62  | 57  | 54  |  | 61  | 57  | 53  |  | 61  |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 336969 | 336969 | 336969 |
| 5°  | 311534 | 311534 | 311106 |
| 10° | 253478 | 253478 | 253871 |
| 15° | 192521 | 192962 | 191237 |
| 20° | 142556 | 142102 | 142556 |
| 25° | 101887 | 103298 | 102357 |
| 30° | 70115  | 73515  | 72039  |
| 35° | 46737  | 52840  | 49765  |
| 40° | 31514  | 38545  | 34195  |
| 45° | 22359  | 28222  | 23509  |
| 50° | 16819  | 21341  | 16819  |
| 55° | 12363  | 16687  | 12363  |
| 60° | 9145   | 13330  | 9145   |
| 65° | 7885   | 9811   | 6877   |
| 70° | 6118   | 7251   | 6118   |
| 75° | 6438   | 6438   | 4791   |
| 80° | 4686   | 4686   | 4686   |
| 85° | 4891   | 4891   | 4891   |

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 71.4   | 15.7      |
| 10°-20°   | 133.3  | 29.4      |
| 20°-30°   | 110.8  | 24.4      |
| 30°-40°   | 68.1   | 15.0      |
| 40°-50°   | 36.6   | 8.1       |
| 50°-60°   | 19.5   | 4.3       |
| 60°-70°   | 9.2    | 2.0       |
| 70°-80°   | 4.2    | 0.9       |
| 80°-90°   | 0.9    | 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°    | 315.5  | 69.5      |
| 0°-40°    | 383.6  | 84.5      |
| 0°-60°    | 439.7  | 96.9      |
| 0°-90°    | 454.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 454.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 870 | 870   | 870 | 870   | 870 |      |
| 5°  | 801 | 801   | 801 | 801   | 800 | 71   |
| 15° | 480 | 480   | 481 | 480   | 477 | 133  |
| 25° | 238 | 242   | 242 | 238   | 239 | 110  |
| 35° | 99  | 104   | 112 | 108   | 105 | 63   |
| 45° | 41  | 44    | 52  | 47    | 43  | 33   |
| 55° | 18  | 20    | 25  | 22    | 18  | 17   |
| 65° | 9   | 9     | 11  | 9     | 8   | 9    |
| 75° | 4   | 4     | 4   | 3     | 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°    | 869.6 | 869.6 | 869.6 | 869.6 | 869.6 |
| 2.5°  | 850.3 | 851.4 | 851.4 | 851.4 | 851.4 |
| 5°    | 800.9 | 800.9 | 800.9 | 800.9 | 799.8 |
| 7.5°  | 729.0 | 726.8 | 729.0 | 729.0 | 729.0 |
| 10°   | 644.2 | 644.2 | 644.2 | 645.2 | 645.2 |
| 12.5° | 560.4 | 562.6 | 562.6 | 559.3 | 561.5 |
| 15°   | 479.9 | 479.9 | 481.0 | 479.9 | 476.7 |
| 17.5° | 408.0 | 406.9 | 406.9 | 405.8 | 404.7 |
| 20°   | 345.7 | 344.6 | 344.6 | 344.6 | 345.7 |
| 22.5° | 289.9 | 288.8 | 287.7 | 287.7 | 287.7 |
| 25°   | 238.3 | 241.6 | 241.6 | 238.3 | 239.4 |
| 27.5° | 194.3 | 197.5 | 198.6 | 197.5 | 197.5 |
| 30°   | 156.7 | 161.0 | 164.3 | 163.2 | 161.0 |
| 32.5° | 125.6 | 131.0 | 136.3 | 133.1 | 132.1 |
| 35°   | 98.8  | 104.1 | 111.7 | 108.4 | 105.2 |
| 37.5° | 77.3  | 83.7  | 92.3  | 88.0  | 84.8  |
| 40°   | 62.3  | 66.6  | 76.2  | 71.9  | 67.6  |
| 42.5° | 49.4  | 53.7  | 62.3  | 58.0  | 53.7  |
| 45°   | 40.8  | 44.0  | 51.5  | 47.2  | 42.9  |
| 47.5° | 34.4  | 36.5  | 41.9  | 38.6  | 35.4  |
| 50°   | 27.9  | 30.1  | 35.4  | 32.2  | 27.9  |
| 52.5° | 22.5  | 25.8  | 30.1  | 25.8  | 22.5  |
| 55°   | 18.3  | 20.4  | 24.7  | 21.5  | 18.3  |
| 57.5° | 15.0  | 17.2  | 20.4  | 17.2  | 15.0  |
| 60°   | 11.8  | 12.9  | 17.2  | 14.0  | 11.8  |
| 62.5° | 9.7   | 10.7  | 14.0  | 10.7  | 8.6   |
| 65°   | 8.6   | 8.6   | 10.7  | 8.6   | 7.5   |
| 67.5° | 7.5   | 7.5   | 8.6   | 6.4   | 6.4   |
| 70°   | 5.4   | 6.4   | 6.4   | 5.4   | 5.4   |
| 72.5° | 4.3   | 5.4   | 5.4   | 4.3   | 4.3   |
| 75°   | 4.3   | 4.3   | 4.3   | 3.2   | 3.2   |
| 77.5° | 3.2   | 3.2   | 3.2   | 3.2   | 2.1   |
| 80°   | 2.1   | 2.1   | 2.1   | 2.1   | 2.1   |
| 82.5° | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   |
| 85°   | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)