

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: P990654

Luminaire Tested: **ML2ALSFL9FS1E-TIR1D55WFL-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: P990654  
 Test Lab: Cooper Lighting Solutions  
 Issue Date: 5/13/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML2ALSFL9FS1E-TIR1D55WFL-TL2SDMW-550LM-3500K  
 Description: 2IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM  
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT  
 Ballast/Driver: -

**Summary**

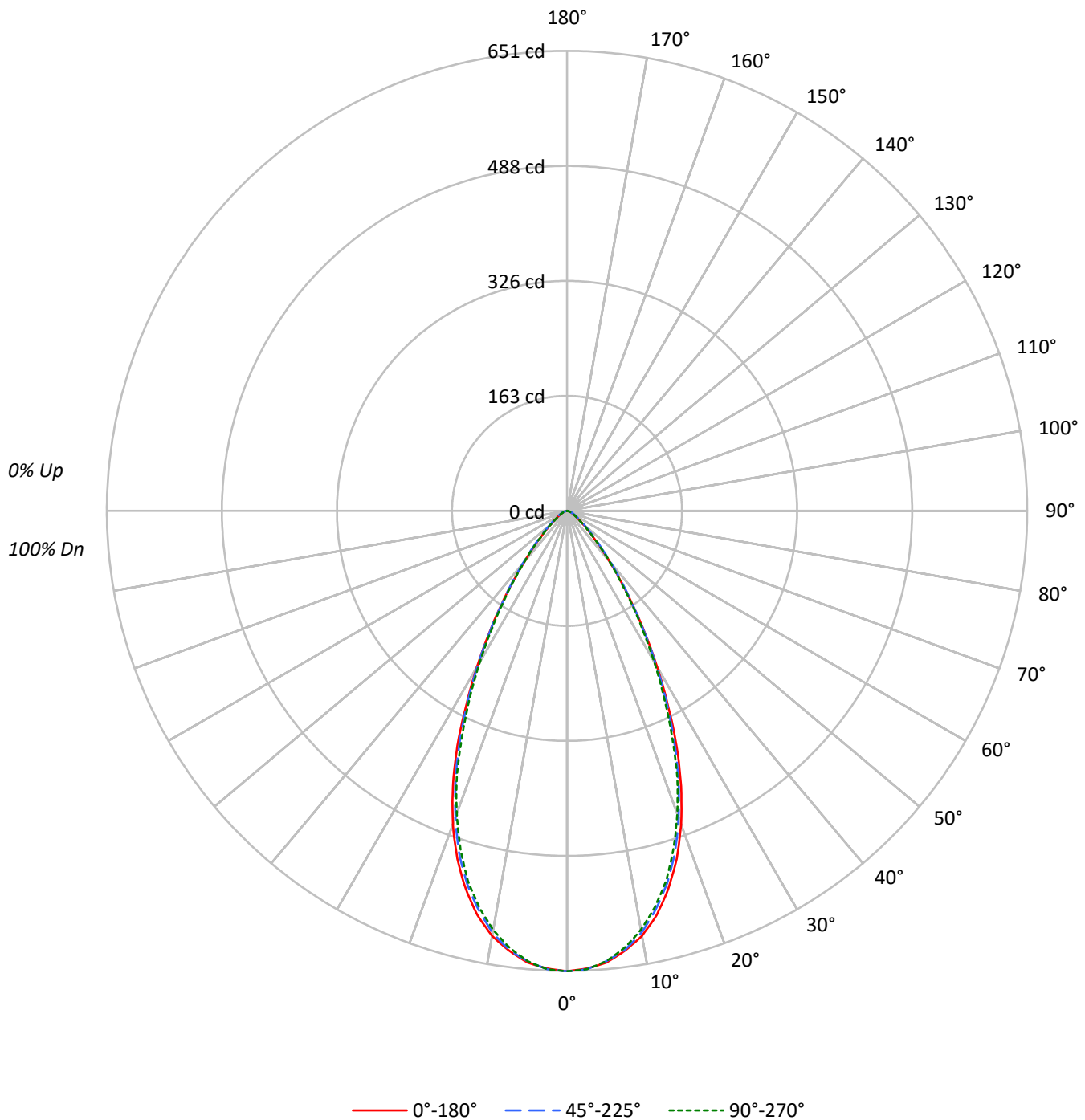
Lumens per Lamp: N/A  
 Luminaire Lumens: 551.6 lumens  
 Efficiency: N/A  
 Efficacy: 72.6 lumens/watt  
 Spacing Criteria (0/90/45): 0.84 / 0.82 / 0.82  
 Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')  
 CIE Type: Direct

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 | 96  | 93  | 97  | 94  | 91  |  | 94  | 91  | 89  |  | 91  |
| 3   | 101 | 95  | 89  | 85  | 99  | 93  | 88  | 85  | 91  | 87  | 83  |  | 88  | 85  | 82  |  | 86  |
| 4   | 96  | 88  | 82  | 78  | 94  | 87  | 82  | 77  | 85  | 80  | 77  |  | 83  | 79  | 76  |  | 81  |
| 5   | 91  | 82  | 76  | 72  | 89  | 81  | 76  | 71  | 80  | 75  | 71  |  | 78  | 74  | 70  |  | 76  |
| 6   | 86  | 77  | 71  | 66  | 85  | 76  | 70  | 66  | 75  | 70  | 66  |  | 73  | 69  | 65  |  | 72  |
| 7   | 82  | 72  | 66  | 62  | 81  | 72  | 66  | 62  | 70  | 65  | 61  |  | 69  | 64  | 61  |  | 68  |
| 8   | 78  | 68  | 62  | 58  | 77  | 68  | 62  | 58  | 66  | 61  | 57  |  | 65  | 61  | 57  |  | 64  |
| 9   | 74  | 64  | 58  | 54  | 73  | 64  | 58  | 54  | 63  | 58  | 54  |  | 62  | 57  | 54  |  | 61  |
| 10  | 71  | 61  | 55  | 51  | 70  | 60  | 55  | 51  | 60  | 54  | 51  |  | 59  | 54  | 51  |  | 58  |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 252417 | 252417 | 252417 |
| 5°  | 249608 | 248791 | 248791 |
| 10° | 240257 | 238565 | 236873 |
| 15° | 222127 | 219118 | 217393 |
| 20° | 194720 | 190267 | 188081 |
| 25° | 156914 | 153237 | 150030 |
| 30° | 113785 | 112846 | 109937 |
| 35° | 76161  | 76161  | 74127  |
| 40° | 47246  | 49421  | 47246  |
| 45° | 28825  | 31182  | 28825  |
| 50° | 18085  | 20075  | 18085  |
| 55° | 12296  | 13782  | 12296  |
| 60° | 9145   | 10850  | 9145   |
| 65° | 7885   | 8894   | 7885   |
| 70° | 6118   | 7251   | 6118   |
| 75° | 4791   | 6438   | 4791   |
| 80° | 2455   | 2455   | 2455   |
| 85° | 0      | 0      | 0      |

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 60.0   | 10.9      |
| 10°-20°   | 151.7  | 27.5      |
| 20°-30°   | 162.8  | 29.5      |
| 30°-40°   | 101.6  | 18.4      |
| 40°-50°   | 44.2   | 8.0       |
| 50°-60°   | 18.2   | 3.3       |
| 60°-70°   | 9.0    | 1.6       |
| 70°-80°   | 3.6    | 0.7       |
| 80°-90°   | 0.4    | 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°    | 374.6  | 67.9      |
| 0°-40°    | 476.2  | 86.3      |
| 0°-60°    | 538.6  | 97.6      |
| 0°-90°    | 551.6  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 551.6  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 651 | 651   | 651 | 651   | 651 |      |
| 5°  | 642 | 642   | 640 | 641   | 640 | 60   |
| 15° | 554 | 553   | 546 | 543   | 542 | 154  |
| 25° | 367 | 364   | 358 | 354   | 351 | 166  |
| 35° | 161 | 161   | 161 | 158   | 157 | 102  |
| 45° | 53  | 55    | 57  | 54    | 53  | 43   |
| 55° | 18  | 19    | 20  | 19    | 18  | 17   |
| 65° | 9   | 9     | 10  | 9     | 9   | 8    |
| 75° | 3   | 3     | 4   | 3     | 3   | 3    |
| 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°    | 651.4 | 651.4 | 651.4 | 651.4 | 651.4 |
| 2.5°  | 648.2 | 648.2 | 649.2 | 649.2 | 649.2 |
| 5°    | 641.7 | 641.7 | 639.6 | 640.7 | 639.6 |
| 7.5°  | 627.8 | 627.8 | 626.7 | 624.6 | 623.5 |
| 10°   | 610.6 | 608.5 | 606.3 | 603.1 | 602.0 |
| 12.5° | 585.9 | 582.7 | 578.4 | 577.3 | 574.1 |
| 15°   | 553.7 | 552.7 | 546.2 | 543.0 | 541.9 |
| 17.5° | 516.2 | 514.0 | 507.6 | 502.2 | 501.2 |
| 20°   | 472.2 | 467.9 | 461.4 | 457.2 | 456.1 |
| 22.5° | 421.7 | 418.5 | 412.1 | 407.8 | 407.8 |
| 25°   | 367.0 | 363.8 | 358.4 | 354.1 | 350.9 |
| 27.5° | 308.0 | 308.0 | 303.7 | 299.4 | 297.3 |
| 30°   | 254.3 | 254.3 | 252.2 | 247.9 | 245.7 |
| 32.5° | 205.0 | 205.0 | 203.9 | 199.6 | 198.5 |
| 35°   | 161.0 | 161.0 | 161.0 | 157.8 | 156.7 |
| 37.5° | 124.5 | 124.5 | 126.6 | 122.3 | 121.3 |
| 40°   | 93.4  | 95.5  | 97.7  | 93.4  | 93.4  |
| 42.5° | 70.8  | 73.0  | 74.0  | 71.9  | 70.8  |
| 45°   | 52.6  | 54.7  | 56.9  | 53.7  | 52.6  |
| 47.5° | 39.7  | 41.9  | 44.0  | 40.8  | 39.7  |
| 50°   | 30.0  | 32.2  | 33.3  | 31.1  | 30.0  |
| 52.5° | 23.6  | 24.7  | 26.8  | 23.6  | 22.5  |
| 55°   | 18.2  | 19.3  | 20.4  | 19.3  | 18.2  |
| 57.5° | 15.0  | 16.1  | 17.2  | 15.0  | 14.0  |
| 60°   | 11.8  | 12.9  | 14.0  | 12.9  | 11.8  |
| 62.5° | 9.7   | 10.7  | 11.8  | 10.7  | 9.7   |
| 65°   | 8.6   | 8.6   | 9.7   | 8.6   | 8.6   |
| 67.5° | 6.4   | 7.5   | 7.5   | 7.5   | 6.4   |
| 70°   | 5.4   | 6.4   | 6.4   | 6.4   | 5.4   |
| 72.5° | 4.3   | 4.3   | 5.4   | 4.3   | 4.3   |
| 75°   | 3.2   | 3.2   | 4.3   | 3.2   | 3.2   |
| 77.5° | 1.1   | 2.1   | 2.1   | 2.1   | 2.1   |
| 80°   | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   |
| 82.5° | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   |
| 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   |

(END OF REPORT)