

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: P990661

Luminaire Tested: **ML2ALSFL9FS1E-TIR1D55WFL-TL2SDSL-550LM-5000K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-08  
 Report Number: P990661  
 Test Lab: Cooper Lighting Solutions  
 Issue Date: 5/13/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML2ALSFL9FS1E-TIR1D55WFL-TL2SDSL-550LM-5000K  
 Description: 2IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 55D TIR,  
 METALLIC SILVER TRIM  
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT  
 Ballast/Driver: -

**Summary**

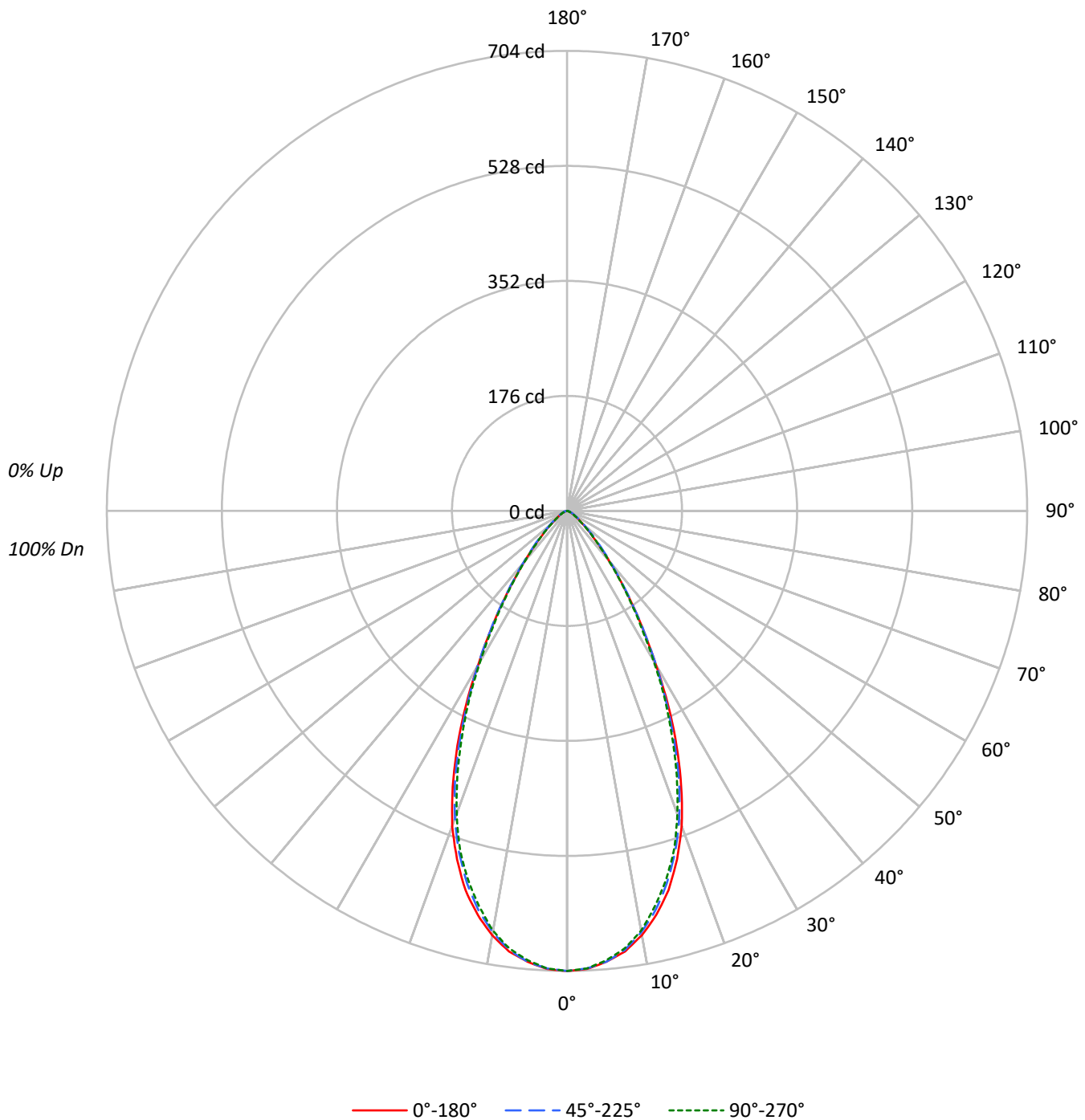
Lumens per Lamp: N/A  
 Luminaire Lumens: 592.3 lumens  
 Efficiency: N/A  
 Efficacy: 77.9 lumens/watt  
 Spacing Criteria (0/90/45): 0.84 / 0.82 / 0.82  
 Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')  
 CIE Type: Direct

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 | 101 |  | 100 | 99  | 98  |  | 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  |  | 88  | 85  | 82  |  | 86  |
| 4   | 96  | 88  | 83  | 78  | 94  | 87  | 82  | 78  | 85  | 80  | 77  |  | 83  | 79  | 76  |  | 81  |
| 5   | 91  | 83  | 77  | 72  | 90  | 82  | 76  | 72  | 80  | 75  | 71  |  | 78  | 74  | 70  |  | 77  |
| 6   | 87  | 77  | 71  | 67  | 85  | 77  | 71  | 67  | 75  | 70  | 66  |  | 74  | 69  | 66  |  | 72  |
| 7   | 82  | 73  | 66  | 62  | 81  | 72  | 66  | 62  | 71  | 65  | 62  |  | 69  | 65  | 61  |  | 68  |
| 8   | 78  | 68  | 62  | 58  | 77  | 68  | 62  | 58  | 67  | 61  | 58  |  | 66  | 61  | 57  |  | 65  |
| 9   | 74  | 65  | 59  | 54  | 73  | 64  | 58  | 54  | 63  | 58  | 54  |  | 62  | 57  | 54  |  | 61  |
| 10  | 71  | 61  | 55  | 51  | 70  | 61  | 55  | 51  | 60  | 55  | 51  |  | 59  | 54  | 51  |  | 58  |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 272838 | 272838 | 272838 |
| 5°  | 269407 | 269407 | 268513 |
| 10° | 259420 | 257610 | 256705 |
| 15° | 240942 | 236770 | 234483 |
| 20° | 211627 | 206844 | 203545 |
| 25° | 169698 | 165764 | 162344 |
| 30° | 121482 | 122018 | 118394 |
| 35° | 81648  | 82169  | 79472  |
| 40° | 51242  | 52962  | 50028  |
| 45° | 30908  | 33428  | 30908  |
| 50° | 19412  | 21521  | 18748  |
| 55° | 12431  | 14795  | 12431  |
| 60° | 9842   | 10695  | 8912   |
| 65° | 7427   | 8435   | 7427   |
| 70° | 5212   | 6571   | 5212   |
| 75° | 3444   | 5240   | 3444   |
| 80° | 0      | 2678   | 2678   |
| 85° | 0      | 0      | 0      |

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 64.9   | 11.0      |
| 10°-20°   | 164.1  | 27.7      |
| 20°-30°   | 176.2  | 29.8      |
| 30°-40°   | 109.5  | 18.5      |
| 40°-50°   | 47.2   | 8.0       |
| 50°-60°   | 18.7   | 3.2       |
| 60°-70°   | 8.5    | 1.4       |
| 70°-80°   | 3.1    | 0.5       |
| 80°-90°   | 0.1    | 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°    | 405.3  | 68.4      |
| 0°-40°    | 514.8  | 86.9      |
| 0°-60°    | 580.6  | 98.0      |
| 0°-90°    | 592.3  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 592.3  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 704 | 704   | 704 | 704   | 704 |      |
| 5°  | 693 | 693   | 693 | 692   | 690 | 65   |
| 15° | 601 | 597   | 590 | 586   | 584 | 166  |
| 25° | 397 | 394   | 388 | 383   | 380 | 180  |
| 35° | 173 | 175   | 174 | 171   | 168 | 109  |
| 45° | 56  | 59    | 61  | 58    | 56  | 46   |
| 55° | 18  | 20    | 22  | 20    | 18  | 18   |
| 65° | 8   | 8     | 9   | 8     | 8   | 8    |
| 75° | 2   | 2     | 4   | 2     | 2   | 2    |
| 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°    | 704.1 | 704.1 | 704.1 | 704.1 | 704.1 |
| 2.5°  | 701.8 | 700.7 | 700.7 | 700.7 | 700.7 |
| 5°    | 692.6 | 692.6 | 692.6 | 691.5 | 690.3 |
| 7.5°  | 680.0 | 678.8 | 677.7 | 675.4 | 675.4 |
| 10°   | 659.3 | 659.3 | 654.7 | 652.4 | 652.4 |
| 12.5° | 632.8 | 631.7 | 625.9 | 623.6 | 620.2 |
| 15°   | 600.6 | 597.1 | 590.2 | 585.6 | 584.5 |
| 17.5° | 559.2 | 554.6 | 548.8 | 544.2 | 544.2 |
| 20°   | 513.2 | 509.7 | 501.6 | 494.7 | 493.6 |
| 22.5° | 456.8 | 453.3 | 447.6 | 440.7 | 438.4 |
| 25°   | 396.9 | 393.5 | 387.7 | 383.1 | 379.7 |
| 27.5° | 334.8 | 333.7 | 327.9 | 323.3 | 323.3 |
| 30°   | 271.5 | 275.0 | 272.7 | 266.9 | 264.6 |
| 32.5° | 218.6 | 219.8 | 219.8 | 215.2 | 211.7 |
| 35°   | 172.6 | 174.9 | 173.7 | 171.4 | 168.0 |
| 37.5° | 132.3 | 134.6 | 135.8 | 132.3 | 131.2 |
| 40°   | 101.3 | 103.6 | 104.7 | 101.3 | 98.9  |
| 42.5° | 75.9  | 78.2  | 80.5  | 77.1  | 74.8  |
| 45°   | 56.4  | 58.7  | 61.0  | 57.5  | 56.4  |
| 47.5° | 42.6  | 43.7  | 46.0  | 42.6  | 41.4  |
| 50°   | 32.2  | 33.4  | 35.7  | 32.2  | 31.1  |
| 52.5° | 24.2  | 25.3  | 27.6  | 25.3  | 23.0  |
| 55°   | 18.4  | 19.6  | 21.9  | 19.6  | 18.4  |
| 57.5° | 15.0  | 16.1  | 17.3  | 15.0  | 13.8  |
| 60°   | 12.7  | 12.7  | 13.8  | 12.7  | 11.5  |
| 62.5° | 9.2   | 10.4  | 10.4  | 10.4  | 9.2   |
| 65°   | 8.1   | 8.1   | 9.2   | 8.1   | 8.1   |
| 67.5° | 5.8   | 6.9   | 6.9   | 6.9   | 5.8   |
| 70°   | 4.6   | 5.8   | 5.8   | 5.8   | 4.6   |
| 72.5° | 3.5   | 4.6   | 4.6   | 4.6   | 3.5   |
| 75°   | 2.3   | 2.3   | 3.5   | 2.3   | 2.3   |
| 77.5° | 1.2   | 1.2   | 2.3   | 1.2   | 1.2   |
| 80°   | 0.0   | 1.2   | 1.2   | 1.2   | 1.2   |
| 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   |

(END OF REPORT)