

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: P990722

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D25NFL-TL3RDSL-750LM-2700K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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### Test Information

Test Method: LM-79-08  
 Report Number: P990722  
 Test Lab: Cooper Lighting Solutions  
 Issue Date: 5/13/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML3ALSFL9FS1E-TIR4D25NFL-TL3RDSL-750LM-2700K  
 Description: 3IN ROUND ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM  
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT  
 Ballast/Driver: -

### Summary

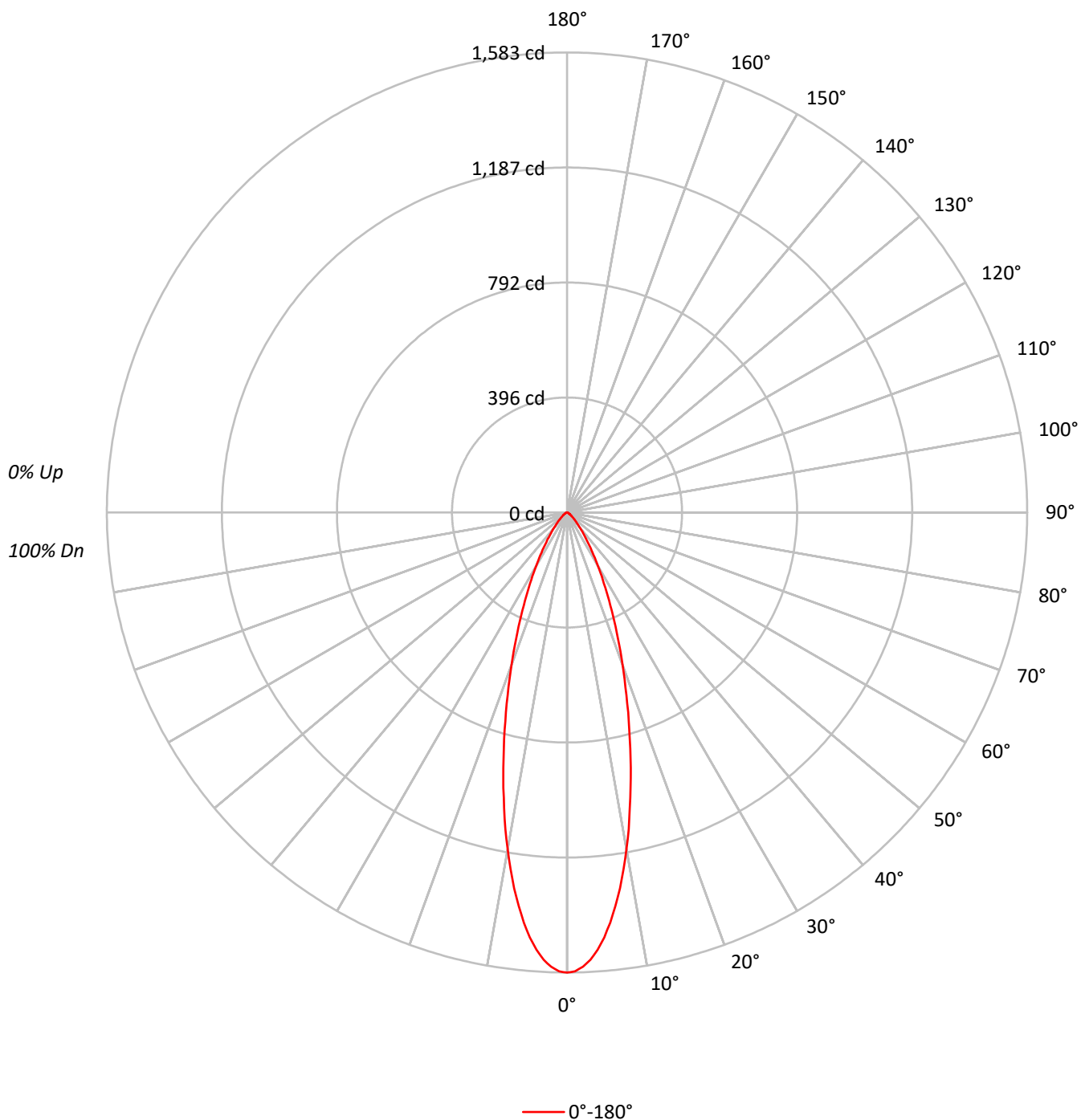
Lumens per Lamp: N/A  
 Luminaire Lumens: 661.9 lumens  
 Efficiency: N/A  
 Efficacy: 68.2 lumens/watt  
 Spacing Criteria (0/90/45): 0.52 / 0.52 / 0.56  
 Luminous Opening: Circular (Dia: 0.25' x H: 0')  
 CIE Type: Direct

Input Watts (W): 9.7  
 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   | 114 | 111 | 109 | 107 | 111 | 109 | 107 | 105 | 105 | 103 | 102 |  | 101 | 100 | 99  |  | 98  |
| 2   | 109 | 104 | 101 | 97  | 107 | 103 | 99  | 96  | 99  | 97  | 94  |  | 96  | 94  | 92  |  | 94  |
| 3   | 104 | 98  | 93  | 90  | 102 | 97  | 92  | 89  | 94  | 91  | 88  |  | 92  | 89  | 86  |  | 90  |
| 4   | 99  | 92  | 87  | 84  | 98  | 91  | 87  | 83  | 89  | 85  | 82  |  | 87  | 84  | 81  |  | 86  |
| 5   | 95  | 88  | 82  | 78  | 94  | 87  | 82  | 78  | 85  | 81  | 77  |  | 83  | 80  | 77  |  | 82  |
| 6   | 91  | 83  | 78  | 74  | 90  | 82  | 77  | 74  | 81  | 76  | 73  |  | 80  | 76  | 73  |  | 78  |
| 7   | 87  | 79  | 74  | 70  | 86  | 78  | 73  | 70  | 77  | 73  | 69  |  | 76  | 72  | 69  |  | 75  |
| 8   | 84  | 75  | 70  | 66  | 83  | 75  | 70  | 66  | 74  | 69  | 66  |  | 73  | 69  | 66  |  | 72  |
| 9   | 81  | 72  | 67  | 63  | 80  | 72  | 67  | 63  | 71  | 66  | 63  |  | 70  | 66  | 63  |  | 69  |
| 10  | 78  | 69  | 64  | 60  | 77  | 69  | 64  | 60  | 68  | 63  | 60  |  | 67  | 63  | 60  |  | 66  |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 347165 |
| 5°  | 322980 |
| 10° | 261941 |
| 15° | 190830 |
| 20° | 130141 |
| 25° | 85118  |
| 30° | 53654  |
| 35° | 33167  |
| 40° | 20324  |
| 45° | 12714  |
| 50° | 8187   |
| 55° | 5735   |
| 60° | 4386   |
| 65° | 3113   |
| 70° | 2565   |
| 75° | 1694   |
| 80° | 1263   |
| 85° | 0      |

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 130.6  | 19.7      |
| 10°-20°   | 231.4  | 35.0      |
| 20°-30°   | 164.0  | 24.8      |
| 30°-40°   | 80.3   | 12.1      |
| 40°-50°   | 32.9   | 5.0       |
| 50°-60°   | 14.0   | 2.1       |
| 60°-70°   | 6.4    | 1.0       |
| 70°-80°   | 2.2    | 0.3       |
| 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°    | 525.9  | 79.5      |
| 0°-40°    | 606.2  | 91.6      |
| 0°-60°    | 653.1  | 98.7      |
| 0°-90°    | 661.9  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 661.9  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 1583 |      |
| 5°  | 1467 | 131  |
| 15° | 841  | 231  |
| 25° | 352  | 164  |
| 35° | 124  | 80   |
| 45° | 41   | 33   |
| 55° | 15   | 14   |
| 65° | 6    | 6    |
| 75° | 2    | 2    |
| 85° | 0    | 0    |
| 90° | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 1583.2 |
| 1°    | 1579.2 |
| 2°    | 1564.2 |
| 3°    | 1541.3 |
| 4°    | 1508.3 |
| 5°    | 1467.3 |
| 6°    | 1419.3 |
| 7°    | 1364.3 |
| 8°    | 1306.4 |
| 9°    | 1241.4 |
| 10°   | 1176.4 |
| 11°   | 1110.5 |
| 12°   | 1039.5 |
| 13°   | 972.5  |
| 14°   | 905.6  |
| 15°   | 840.6  |
| 16°   | 777.6  |
| 17°   | 718.7  |
| 18°   | 660.7  |
| 19°   | 607.7  |
| 20°   | 557.7  |
| 22.5° | 445.8  |
| 25°   | 351.8  |
| 27.5° | 274.9  |
| 30°   | 211.9  |
| 32.5° | 162.9  |
| 35°   | 123.9  |
| 37.5° | 94.0   |
| 40°   | 71.0   |
| 42.5° | 53.0   |
| 45°   | 41.0   |
| 47.5° | 31.0   |
| 50°   | 24.0   |
| 52.5° | 19.0   |
| 55°   | 15.0   |
| 57.5° | 12.0   |
| 60°   | 10.0   |
| 62.5° | 8.0    |
| 65°   | 6.0    |
| 67.5° | 5.0    |
| 70°   | 4.0    |
| 72.5° | 3.0    |
| 75°   | 2.0    |
| 77.5° | 1.0    |
| 80°   | 1.0    |

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  |
|-------|-----|
| 82.5° | 0.0 |
| 85°   | 0.0 |
| 87.5° | 0.0 |
| 90°   | 0.0 |

(END OF REPORT)