

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: P990755

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D40FL-TL3RDMW-750LM-4000K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-08  
 Report Number: P990755  
 Test Lab: Cooper Lighting Solutions  
 Issue Date: 5/13/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML3ALSFL9FS1E-TIR4D40FL-TL3RDMW-750LM-4000K  
 Description: 3IN ROUND ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR, MATTE WHITE TRIM  
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT  
 Ballast/Driver: -

**Summary**

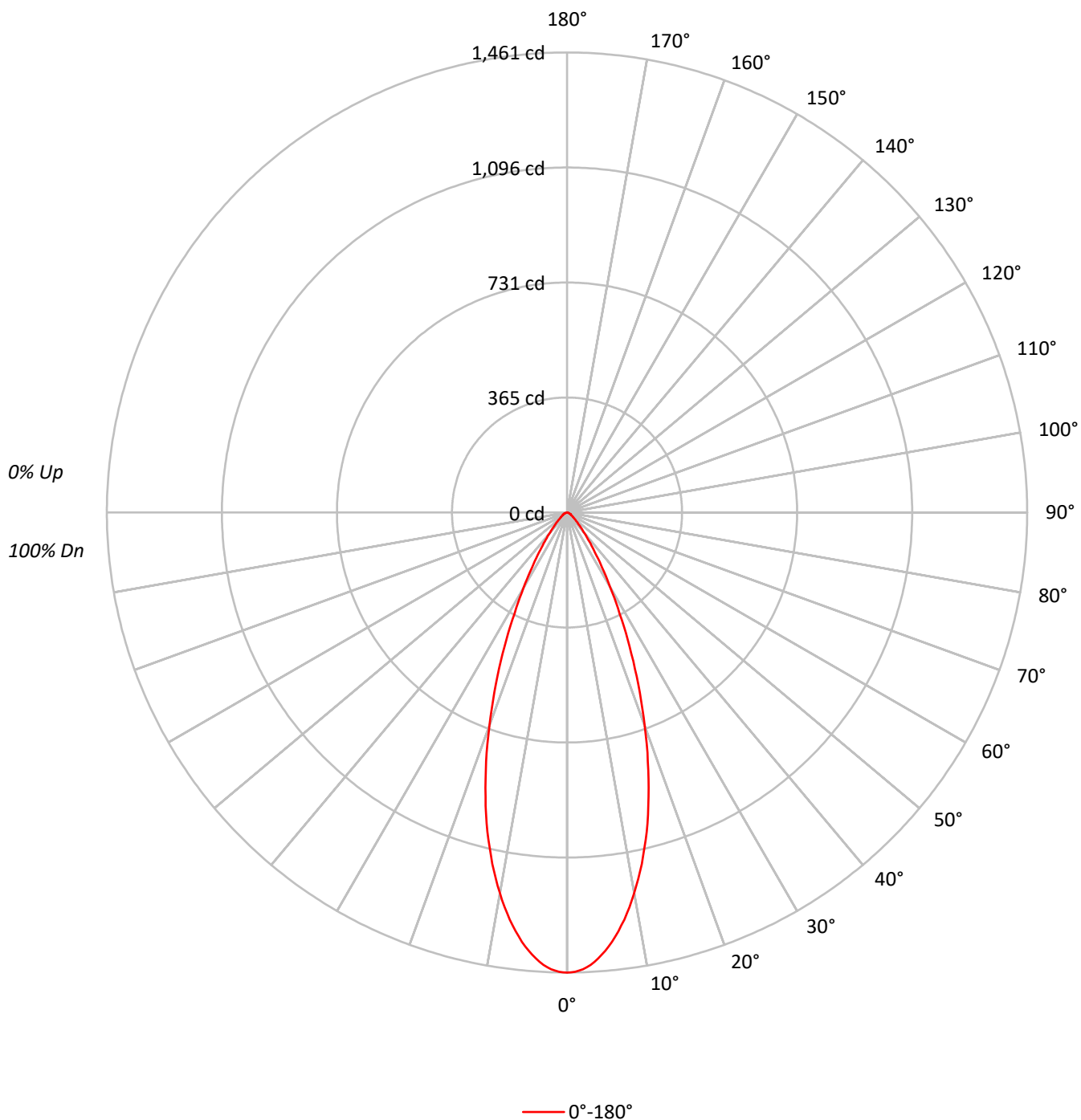
Lumens per Lamp: N/A  
 Luminaire Lumens: 791.2 lumens  
 Efficiency: N/A  
 Efficacy: 81.6 lumens/watt  
 Spacing Criteria (0/90/45): 0.64 / 0.64 / 0.65  
 Luminous Opening: Circular (Dia: 0.25' x H: 0')  
 CIE Type: Direct

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 | 106 | 111 | 109 | 107 | 105 | 105 | 103 | 101 |  | 101 | 100 | 98  |  | 98  |
| 2   | 108 | 104 | 100 | 96  | 106 | 102 | 98  | 95  | 99  | 96  | 93  |  | 96  | 93  | 91  |  | 93  |
| 3   | 103 | 97  | 92  | 89  | 101 | 96  | 91  | 88  | 93  | 89  | 86  |  | 91  | 88  | 85  |  | 88  |
| 4   | 98  | 91  | 86  | 82  | 97  | 90  | 85  | 82  | 88  | 84  | 81  |  | 86  | 83  | 80  |  | 84  |
| 5   | 94  | 86  | 81  | 77  | 92  | 85  | 80  | 76  | 83  | 79  | 76  |  | 82  | 78  | 75  |  | 80  |
| 6   | 90  | 81  | 76  | 72  | 88  | 81  | 75  | 72  | 79  | 75  | 71  |  | 78  | 74  | 71  |  | 77  |
| 7   | 86  | 77  | 72  | 68  | 85  | 77  | 71  | 67  | 75  | 71  | 67  |  | 74  | 70  | 67  |  | 73  |
| 8   | 82  | 73  | 68  | 64  | 81  | 73  | 68  | 64  | 72  | 67  | 64  |  | 71  | 66  | 63  |  | 70  |
| 9   | 79  | 70  | 64  | 61  | 78  | 69  | 64  | 61  | 69  | 64  | 60  |  | 68  | 63  | 60  |  | 67  |
| 10  | 76  | 67  | 61  | 58  | 75  | 66  | 61  | 58  | 66  | 61  | 58  |  | 65  | 60  | 57  |  | 64  |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 320435 |
| 5°  | 307593 |
| 10° | 273431 |
| 15° | 225586 |
| 20° | 168015 |
| 25° | 113378 |
| 30° | 69580  |
| 35° | 41332  |
| 40° | 24703  |
| 45° | 15536  |
| 50° | 10541  |
| 55° | 7723   |
| 60° | 6535   |
| 65° | 5552   |
| 70° | 4809   |
| 75° | 2711   |
| 80° | 1389   |
| 85° | 0      |

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 127.9  | 16.2      |
| 10°-20°   | 271.8  | 34.4      |
| 20°-30°   | 215.7  | 27.3      |
| 30°-40°   | 100.8  | 12.7      |
| 40°-50°   | 40.7   | 5.1       |
| 50°-60°   | 18.8   | 2.4       |
| 60°-70°   | 10.9   | 1.4       |
| 70°-80°   | 3.9    | 0.5       |
| 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°    | 615.5  | 77.8      |
| 0°-40°    | 716.3  | 90.5      |
| 0°-60°    | 775.8  | 98.1      |
| 0°-90°    | 791.2  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 791.2  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 1461 |      |
| 5°  | 1397 | 128  |
| 15° | 994  | 272  |
| 25° | 469  | 216  |
| 35° | 154  | 101  |
| 45° | 50   | 41   |
| 55° | 20   | 19   |
| 65° | 11   | 11   |
| 75° | 3    | 4    |
| 85° | 0    | 0    |
| 90° | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 1461.3 |
| 1°    | 1459.1 |
| 2°    | 1451.7 |
| 3°    | 1438.9 |
| 4°    | 1419.7 |
| 5°    | 1397.4 |
| 6°    | 1370.7 |
| 7°    | 1339.8 |
| 8°    | 1305.8 |
| 9°    | 1268.5 |
| 10°   | 1228.0 |
| 11°   | 1185.4 |
| 12°   | 1140.7 |
| 13°   | 1092.8 |
| 14°   | 1044.8 |
| 15°   | 993.7  |
| 16°   | 939.4  |
| 17°   | 885.1  |
| 18°   | 830.7  |
| 19°   | 777.5  |
| 20°   | 720.0  |
| 22.5° | 590.0  |
| 25°   | 468.6  |
| 27.5° | 361.1  |
| 30°   | 274.8  |
| 32.5° | 206.6  |
| 35°   | 154.4  |
| 37.5° | 115.0  |
| 40°   | 86.3   |
| 42.5° | 65.0   |
| 45°   | 50.1   |
| 47.5° | 39.4   |
| 50°   | 30.9   |
| 52.5° | 24.5   |
| 55°   | 20.2   |
| 57.5° | 17.0   |
| 60°   | 14.9   |
| 62.5° | 12.8   |
| 65°   | 10.7   |
| 67.5° | 9.6    |
| 70°   | 7.5    |
| 72.5° | 5.3    |
| 75°   | 3.2    |
| 77.5° | 2.1    |
| 80°   | 1.1    |

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° | 1.1 |
| 85°   | 0.0 |
| 87.5° | 0.0 |
| 90°   | 0.0 |

(END OF REPORT)