

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO

Report Number: P642356

Luminaire Tested: ML5615LSFL409FS1E - 591WB - 1200LM - 2700K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642356  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-24)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5615LSFL409FS1E - 591WB - 1200LM - 2700K  
Description: ML56 RR, 40D TIR OPTIC, 5" DEADFRONT TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

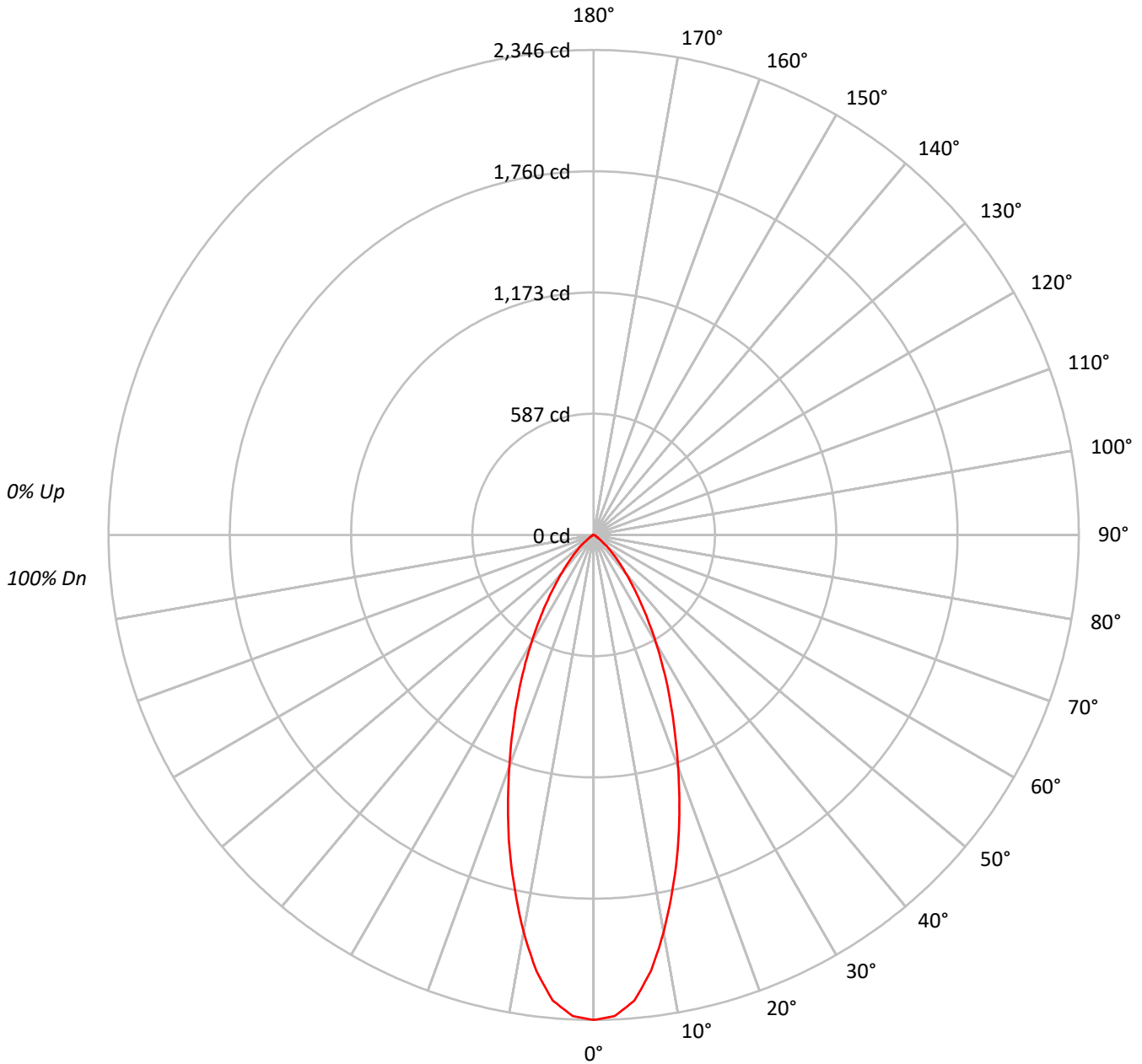
Lumens per Lamp: N/A  
Luminaire Lumens: 1441.8 lumens  
Efficiency: N/A  
Efficacy: 107.6 lumens/watt  
Spacing Criteria (0/90/45): 0.64 / 0.64 / 0.69  
Luminous Opening: Circular (Dia: 0.42' x H: 0')  
CIE Type: Direct

Input Watts (W): 13.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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: 24 FT



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### Luminous Intensity Polar Plot





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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF  | 20  |     |     |     |     |     |     |     |     | 20  |     |     |     |     |     |     |     |     | 20 |    |   |  |  |  |  |  |  | 20 |  |  |  |  |  |  |  |  |   |
| RC  | 80  |     |     |     |     |     |     |     |     | 50  |     |     |     |     |     |     |     |     | 30 |    |   |  |  |  |  |  |  | 10 |  |  |  |  |  |  |  |  | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 10 | 0 |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 1   | 114 | 111 | 108 | 106 | 111 | 109 | 106 | 104 | 105 | 103 | 101 | 101 | 99  | 98  | 97  | 96  | 95  | 94  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 108 | 103 | 99  | 96  | 106 | 101 | 98  | 95  | 98  | 95  | 93  | 95  | 93  | 91  | 93  | 91  | 89  | 87  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 103 | 96  | 91  | 88  | 101 | 95  | 90  | 87  | 92  | 89  | 85  | 90  | 87  | 84  | 88  | 85  | 83  | 81  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 98  | 90  | 85  | 81  | 96  | 89  | 84  | 80  | 87  | 83  | 79  | 85  | 81  | 78  | 83  | 80  | 77  | 76  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 93  | 85  | 79  | 75  | 91  | 84  | 78  | 74  | 82  | 77  | 74  | 80  | 76  | 73  | 79  | 75  | 72  | 71  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 88  | 80  | 74  | 70  | 87  | 79  | 73  | 69  | 77  | 73  | 69  | 76  | 72  | 69  | 75  | 71  | 68  | 67  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 84  | 75  | 69  | 65  | 83  | 75  | 69  | 65  | 73  | 68  | 65  | 72  | 68  | 64  | 71  | 67  | 64  | 63  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 80  | 71  | 65  | 61  | 79  | 71  | 65  | 61  | 70  | 65  | 61  | 69  | 64  | 61  | 68  | 63  | 60  | 59  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 77  | 67  | 62  | 58  | 76  | 67  | 62  | 58  | 66  | 61  | 58  | 65  | 61  | 57  | 64  | 60  | 57  | 56  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 74  | 64  | 59  | 55  | 73  | 64  | 58  | 55  | 63  | 58  | 55  | 62  | 58  | 54  | 61  | 57  | 54  | 53  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°     |
|-----|--------|
| 0°  | 185203 |
| 5°  | 179191 |
| 10° | 156326 |
| 15° | 128481 |
| 20° | 100086 |
| 25° | 75787  |
| 30° | 54874  |
| 35° | 37661  |
| 40° | 24629  |
| 45° | 15529  |
| 50° | 9014   |
| 55° | 3826   |
| 60° | 2589   |
| 65° | 1662   |
| 70° | 877    |
| 75° | 763    |
| 80° | 1137   |
| 85° | 1177   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 15529 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 205.6  | 14.3      |
| 10°-20°   | 434.0  | 30.1      |
| 20°-30°   | 399.0  | 27.7      |
| 30°-40°   | 247.7  | 17.2      |
| 40°-50°   | 111.0  | 7.7       |
| 50°-60°   | 30.9   | 2.1       |
| 60°-70°   | 9.3    | 0.6       |
| 70°-80°   | 2.8    | 0.2       |
| 80°-90°   | 1.4    | 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°    | 1038.6 | 72.0      |
| 0°-40°    | 1286.4 | 89.2      |
| 0°-60°    | 1428.2 | 99.1      |
| 0°-90°    | 1441.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1441.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 2346 |      |
| 5°  | 2261 | 206  |
| 15° | 1572 | 434  |
| 25° | 870  | 399  |
| 35° | 391  | 248  |
| 45° | 139  | 111  |
| 55° | 28   | 31   |
| 65° | 9    | 9    |
| 75° | 2    | 3    |
| 85° | 1    | 1    |
| 90° | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 2346.1 |
| 2.5°  | 2329.6 |
| 5°    | 2261.3 |
| 7.5°  | 2126.0 |
| 10°   | 1950.2 |
| 12.5° | 1759.2 |
| 15°   | 1572.1 |
| 17.5° | 1377.3 |
| 20°   | 1191.4 |
| 22.5° | 1021.9 |
| 25°   | 870.1  |
| 27.5° | 728.5  |
| 30°   | 602.0  |
| 32.5° | 486.9  |
| 35°   | 390.8  |
| 37.5° | 307.3  |
| 40°   | 239.0  |
| 42.5° | 184.7  |
| 45°   | 139.1  |
| 47.5° | 102.4  |
| 50°   | 73.4   |
| 52.5° | 45.5   |
| 55°   | 27.8   |
| 57.5° | 21.5   |
| 60°   | 16.4   |
| 62.5° | 12.6   |
| 65°   | 8.9    |
| 67.5° | 6.3    |
| 70°   | 3.8    |
| 72.5° | 2.5    |
| 75°   | 2.5    |
| 77.5° | 2.5    |
| 80°   | 2.5    |
| 82.5° | 1.3    |
| 85°   | 1.3    |
| 87.5° | 1.3    |
| 90°   | 0.0    |

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

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

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Scaled Data Report





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Scaled Data Report



— 0°-180°

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