

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: P642417

Luminaire Tested: ML5615LSFL409FS1E - 593BB - 1200LM - 3000K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642417  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-29)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5615LSFL409FS1E - 593BB - 1200LM - 3000K  
Description: ML56 RR, 40D TIR OPTIC, 5" BLACK BAFFLE TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

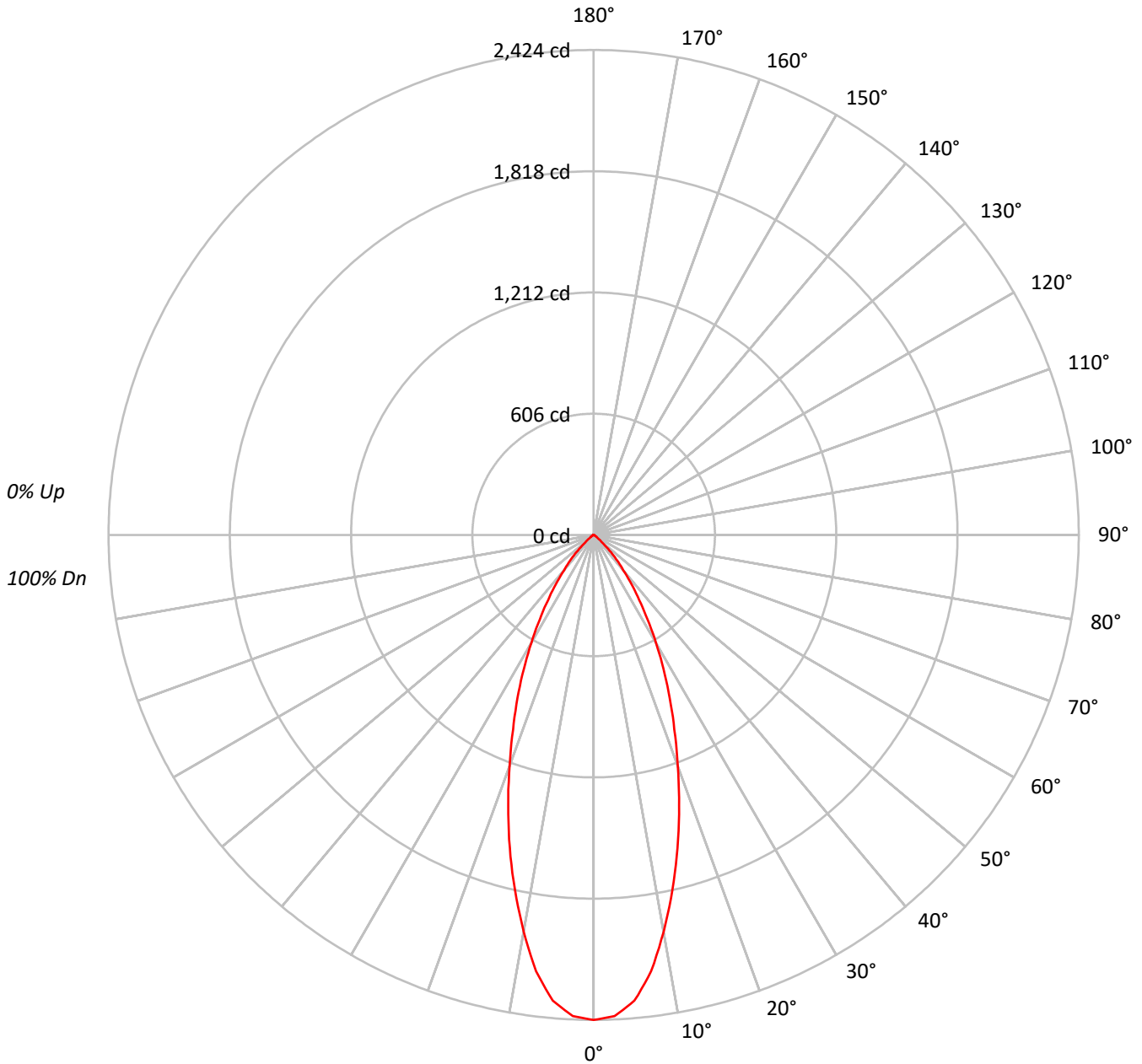
Lumens per Lamp: N/A  
Luminaire Lumens: 1441.4 lumens  
Efficiency: N/A  
Efficacy: 107.6 lumens/watt  
Spacing Criteria (0/90/45): 0.64 / 0.64 / 0.69  
Luminous Opening: Circular (Dia: 0.42' x H: 0')  
CIE Type: Direct

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  |     |     |    |    | 20 |    |     |   |  |   |
| RC  | 80  |     |     |     |     | 70  |     |     |     |     | 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 | 50 | 30 | 10  | 0 |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |     |   |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |    |    | 100 |   |  |   |
| 1   | 114 | 111 | 109 | 107 | 111 | 109 | 107 | 105 | 105 | 103 | 102 | 101 | 100 | 99  | 98  | 97  | 96  | 94  |    |    |    |    | 94  |   |  |   |
| 2   | 108 | 104 | 100 | 97  | 106 | 102 | 99  | 96  | 99  | 96  | 93  | 96  | 94  | 92  | 93  | 91  | 90  | 88  |    |    |    |    | 88  |   |  |   |
| 3   | 103 | 97  | 92  | 89  | 101 | 96  | 91  | 88  | 93  | 90  | 87  | 91  | 88  | 85  | 89  | 86  | 84  | 82  |    |    |    |    | 82  |   |  |   |
| 4   | 98  | 91  | 86  | 82  | 97  | 90  | 85  | 81  | 88  | 84  | 80  | 86  | 82  | 79  | 84  | 81  | 79  | 77  |    |    |    |    | 77  |   |  |   |
| 5   | 94  | 86  | 80  | 76  | 92  | 85  | 80  | 76  | 83  | 79  | 75  | 81  | 78  | 74  | 80  | 77  | 74  | 72  |    |    |    |    | 72  |   |  |   |
| 6   | 89  | 81  | 75  | 71  | 88  | 80  | 75  | 71  | 79  | 74  | 70  | 77  | 73  | 70  | 76  | 72  | 69  | 68  |    |    |    |    | 68  |   |  |   |
| 7   | 85  | 76  | 71  | 67  | 84  | 76  | 70  | 67  | 75  | 70  | 66  | 73  | 69  | 66  | 72  | 68  | 65  | 64  |    |    |    |    | 64  |   |  |   |
| 8   | 81  | 72  | 67  | 63  | 80  | 72  | 66  | 63  | 71  | 66  | 62  | 70  | 65  | 62  | 69  | 65  | 62  | 61  |    |    |    |    | 61  |   |  |   |
| 9   | 78  | 69  | 63  | 59  | 77  | 68  | 63  | 59  | 67  | 62  | 59  | 66  | 62  | 59  | 66  | 62  | 59  | 57  |    |    |    |    | 57  |   |  |   |
| 10  | 75  | 65  | 60  | 56  | 74  | 65  | 60  | 56  | 64  | 59  | 56  | 63  | 59  | 56  | 63  | 59  | 56  | 54  |    |    |    |    | 54  |   |  |   |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 191384 |
| 5°  | 185198 |
| 10° | 161351 |
| 15° | 132371 |
| 20° | 103144 |
| 25° | 78365  |
| 30° | 56734  |
| 35° | 38268  |
| 40° | 23753  |
| 45° | 13665  |
| 50° | 4802   |
| 55° | 2684   |
| 60° | 1437   |
| 65° | 486    |
| 70° | 0      |
| 75° | 0      |
| 80° | 0      |
| 85° | 0      |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 13665 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 212.5  | 14.7      |
| 10°-20°   | 447.6  | 31.1      |
| 20°-30°   | 412.3  | 28.6      |
| 30°-40°   | 252.2  | 17.5      |
| 40°-50°   | 94.3   | 6.5       |
| 50°-60°   | 19.1   | 1.3       |
| 60°-70°   | 3.3    | 0.2       |
| 70°-80°   | 0.0    | 0.0       |
| 80°-90°   | 0.0    | 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°    | 1072.4 | 74.4      |
| 0°-40°    | 1324.6 | 91.9      |
| 0°-60°    | 1438.1 | 99.8      |
| 0°-90°    | 1441.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1441.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 2424 |      |
| 5°  | 2337 | 213  |
| 15° | 1620 | 448  |
| 25° | 900  | 412  |
| 35° | 397  | 252  |
| 45° | 122  | 94   |
| 55° | 20   | 19   |
| 65° | 3    | 3    |
| 75° | 0    | 0    |
| 85° | 0    | 0    |
| 90° | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 2424.4 |
| 2.5°  | 2407.4 |
| 5°    | 2337.1 |
| 7.5°  | 2200.4 |
| 10°   | 2012.9 |
| 12.5° | 1817.6 |
| 15°   | 1619.7 |
| 17.5° | 1419.2 |
| 20°   | 1227.8 |
| 22.5° | 1053.3 |
| 25°   | 899.7  |
| 27.5° | 755.2  |
| 30°   | 622.4  |
| 32.5° | 501.3  |
| 35°   | 397.1  |
| 37.5° | 311.2  |
| 40°   | 230.5  |
| 42.5° | 174.5  |
| 45°   | 122.4  |
| 47.5° | 66.4   |
| 50°   | 39.1   |
| 52.5° | 28.6   |
| 55°   | 19.5   |
| 57.5° | 14.3   |
| 60°   | 9.1    |
| 62.5° | 6.5    |
| 65°   | 2.6    |
| 67.5° | 0.0    |
| 70°   | 0.0    |
| 72.5° | 0.0    |
| 75°   | 0.0    |
| 77.5° | 0.0    |
| 80°   | 0.0    |
| 82.5° | 0.0    |
| 85°   | 0.0    |
| 87.5° | 0.0    |
| 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



— 0°-180°

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Scaled Data Report



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