

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: P640318

Luminaire Tested: ML5609LSFL40D2W1E - 594TBZB - 900LM - 3000K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P640318  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-34)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5609LSFL40D2W1E - 594TBZB - 900LM - 3000K  
Description: ML56 RR, 40D TIR OPTIC, 5" TUSCON BRONZE GIMBAL TRIM  
Light Source: (1) D2W SELECTABLE LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

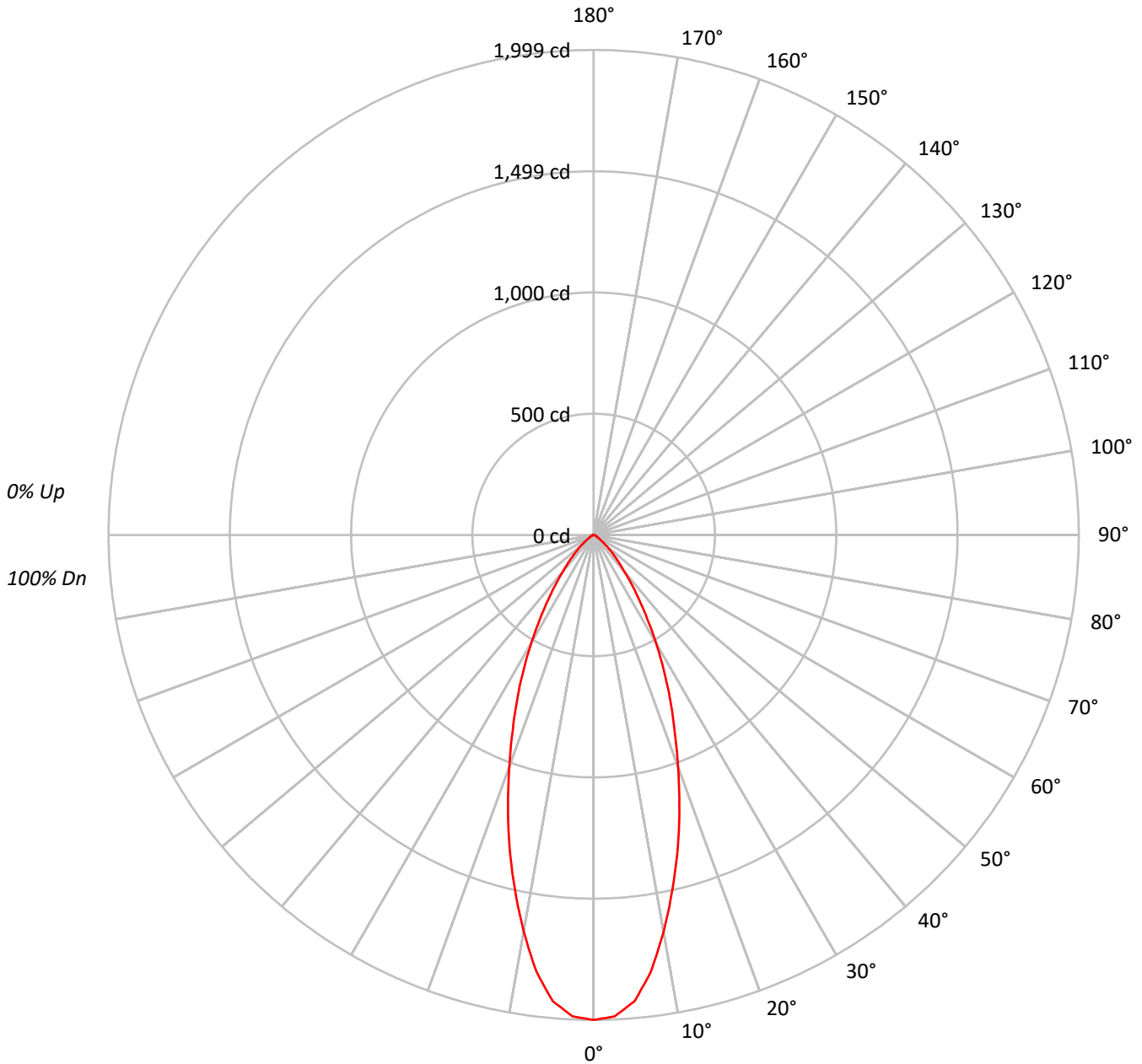
Lumens per Lamp: N/A  
Luminaire Lumens: 1233.1 lumens  
Efficiency: N/A  
Efficacy: 104.5 lumens/watt  
Spacing Criteria (0/90/45): 0.64 / 0.64 / 0.69  
Luminous Opening: Circular (Dia: 0.42' x H: 0')  
CIE Type: Direct

Input Watts (W): 11.8  
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 | 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  | 93  |    |    |   |
| 2   | 108 | 103 | 99  | 96  | 106 | 101 | 98  | 95  | 98  | 95  | 92  | 95  | 93  | 91  | 92  | 90  | 89  | 87  |    |    |   |
| 3   | 103 | 96  | 91  | 87  | 101 | 95  | 90  | 87  | 92  | 88  | 85  | 90  | 87  | 84  | 87  | 85  | 83  | 81  |    |    |   |
| 4   | 97  | 90  | 85  | 80  | 96  | 89  | 84  | 80  | 87  | 82  | 79  | 85  | 81  | 78  | 83  | 80  | 77  | 76  |    |    |   |
| 5   | 93  | 84  | 79  | 74  | 91  | 84  | 78  | 74  | 82  | 77  | 73  | 80  | 76  | 73  | 79  | 75  | 72  | 71  |    |    |   |
| 6   | 88  | 79  | 74  | 69  | 87  | 79  | 73  | 69  | 77  | 72  | 69  | 76  | 71  | 68  | 74  | 71  | 68  | 66  |    |    |   |
| 7   | 84  | 75  | 69  | 65  | 83  | 74  | 69  | 65  | 73  | 68  | 64  | 72  | 67  | 64  | 71  | 67  | 64  | 62  |    |    |   |
| 8   | 80  | 71  | 65  | 61  | 79  | 70  | 65  | 61  | 69  | 64  | 61  | 68  | 64  | 60  | 67  | 63  | 60  | 59  |    |    |   |
| 9   | 77  | 67  | 61  | 58  | 76  | 67  | 61  | 58  | 66  | 61  | 57  | 65  | 60  | 57  | 64  | 60  | 57  | 56  |    |    |   |
| 10  | 73  | 64  | 58  | 55  | 72  | 63  | 58  | 54  | 63  | 58  | 54  | 62  | 57  | 54  | 61  | 57  | 54  | 53  |    |    |   |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 157811 |
| 5°  | 152859 |
| 10° | 133031 |
| 15° | 109300 |
| 20° | 85284  |
| 25° | 64769  |
| 30° | 46661  |
| 35° | 31465  |
| 40° | 20321  |
| 45° | 13118  |
| 50° | 7676   |
| 55° | 4308   |
| 60° | 2889   |
| 65° | 2017   |
| 70° | 1500   |
| 75° | 1312   |
| 80° | 500    |
| 85° | 0      |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 13118 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 175.3  | 14.2      |
| 10°-20°   | 369.6  | 30.0      |
| 20°-30°   | 340.3  | 27.6      |
| 30°-40°   | 208.1  | 16.9      |
| 40°-50°   | 93.0   | 7.5       |
| 50°-60°   | 30.7   | 2.5       |
| 60°-70°   | 11.6   | 0.9       |
| 70°-80°   | 4.1    | 0.3       |
| 80°-90°   | 0.4    | 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°    | 885.2  | 71.8      |
| 0°-40°    | 1093.2 | 88.7      |
| 0°-60°    | 1216.9 | 98.7      |
| 0°-90°    | 1233.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1233.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 1999 |      |
| 5°  | 1929 | 175  |
| 15° | 1337 | 370  |
| 25° | 744  | 340  |
| 35° | 326  | 208  |
| 45° | 118  | 93   |
| 55° | 31   | 31   |
| 65° | 11   | 12   |
| 75° | 4    | 4    |
| 85° | 0    | 0    |
| 90° | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     |
|-------|--------|
| 0°    | 1999.1 |
| 2.5°  | 1986.2 |
| 5°    | 1929.0 |
| 7.5°  | 1813.7 |
| 10°   | 1659.6 |
| 12.5° | 1498.0 |
| 15°   | 1337.4 |
| 17.5° | 1173.6 |
| 20°   | 1015.2 |
| 22.5° | 870.8  |
| 25°   | 743.6  |
| 27.5° | 621.8  |
| 30°   | 511.9  |
| 32.5° | 411.7  |
| 35°   | 326.5  |
| 37.5° | 256.5  |
| 40°   | 197.2  |
| 42.5° | 153.0  |
| 45°   | 117.5  |
| 47.5° | 87.3   |
| 50°   | 62.5   |
| 52.5° | 44.2   |
| 55°   | 31.3   |
| 57.5° | 22.6   |
| 60°   | 18.3   |
| 62.5° | 15.1   |
| 65°   | 10.8   |
| 67.5° | 8.6    |
| 70°   | 6.5    |
| 72.5° | 5.4    |
| 75°   | 4.3    |
| 77.5° | 2.2    |
| 80°   | 1.1    |
| 82.5° | 1.1    |
| 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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