

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 COMMERCIAL

Report Number: P838609

Luminaire Tested: HCSQ640D010-HM63040940-61SQC

Issue Date: 5/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P838609  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-1)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ640D010-HM63040940-61SQC  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

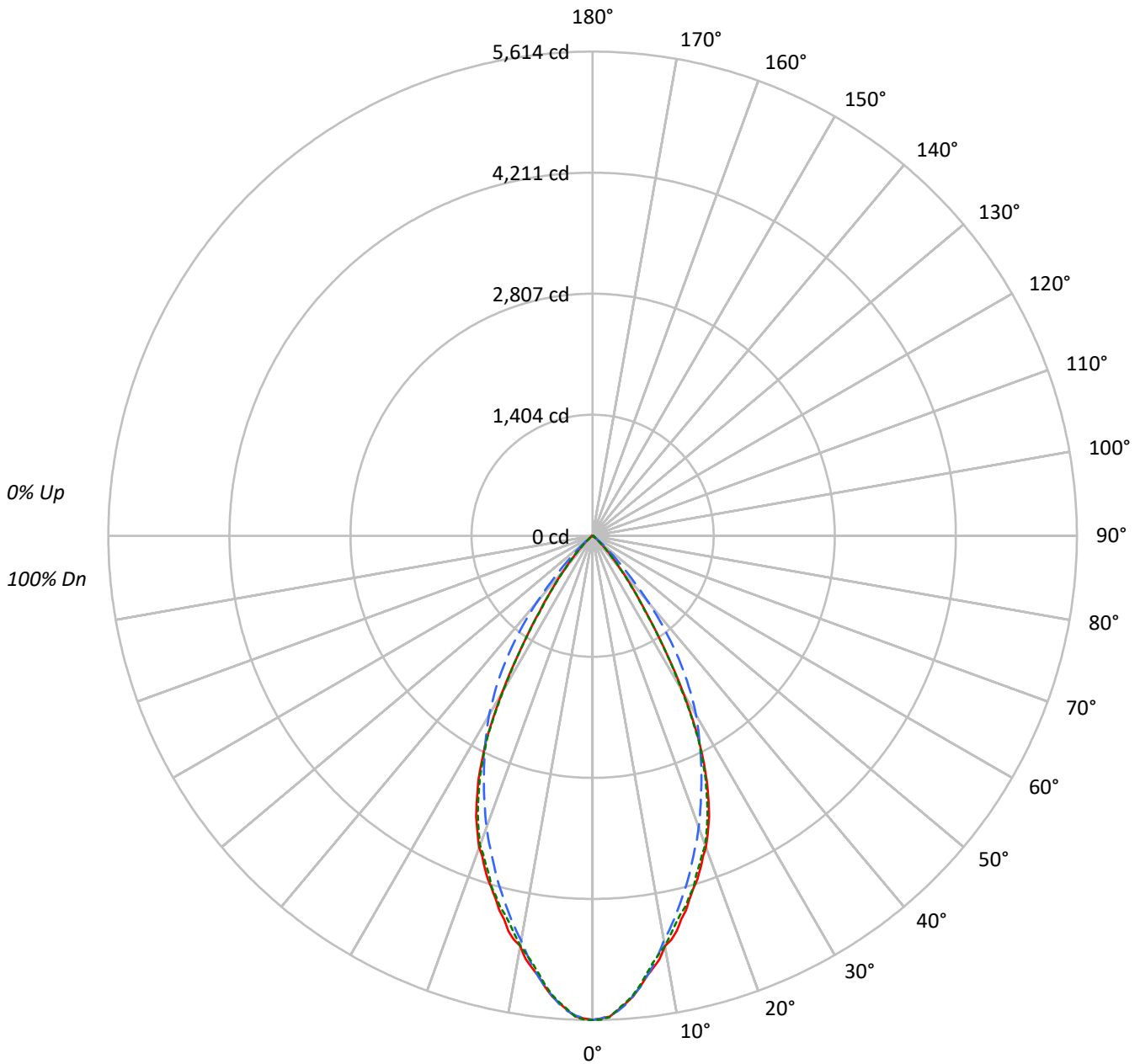
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4205.2 lumens  
Efficiency: N/A  
Efficacy: 102.6 lumens/watt  
Spacing Criteria (0/90/45): 0.82 / 0.81 / 0.85  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
CIE Type: Direct

Input Watts (W): 41  
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 | 107 | 105 | 105 | 103 | 101 | 101 | 100 | 98  | 98  | 96  | 95  | 94  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 108 | 103 | 99  | 96  | 106 | 102 | 98  | 95  | 98  | 95  | 93  | 95  | 93  | 91  | 93  | 91  | 89  | 87  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 103 | 96  | 92  | 88  | 101 | 95  | 91  | 87  | 93  | 89  | 86  | 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  | 72  | 69  | 76  | 72  | 68  | 75  | 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  | 60  | 68  | 64  | 60  | 67  | 63  | 60  | 59  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 76  | 67  | 61  | 57  | 75  | 66  | 61  | 57  | 65  | 60  | 57  | 65  | 60  | 57  | 64  | 60  | 56  | 55  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 73  | 63  | 58  | 54  | 72  | 63  | 57  | 54  | 62  | 57  | 54  | 61  | 57  | 53  | 61  | 56  | 53  | 52  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 241723 | 241723 | 241723 |
| 5°  | 231867 | 231461 | 231137 |
| 10° | 211184 | 208312 | 211018 |
| 15° | 194082 | 186977 | 192910 |
| 20° | 176128 | 164788 | 174927 |
| 25° | 148857 | 141641 | 146805 |
| 30° | 104225 | 119235 | 102456 |
| 35° | 55983  | 91462  | 54900  |
| 40° | 27720  | 56593  | 27507  |
| 45° | 12105  | 23863  | 11874  |
| 50° | 3892   | 8668   | 3892   |
| 55° | 1974   | 2815   | 1832   |
| 60° | 1292   | 1292   | 1292   |
| 65° | 958    | 958    | 958    |
| 70° | 705    | 705    | 705    |
| 75° | 632    | 632    | 632    |
| 80° | 471    | 471    | 471    |
| 85° | 939    | 939    | 939    |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 23863 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 493.0  | 11.7      |
| 10°-20°   | 1190.5 | 28.3      |
| 20°-30°   | 1375.2 | 32.7      |
| 30°-40°   | 858.8  | 20.4      |
| 40°-50°   | 238.6  | 5.7       |
| 50°-60°   | 33.4   | 0.8       |
| 60°-70°   | 9.8    | 0.2       |
| 70°-80°   | 4.2    | 0.1       |
| 80°-90°   | 1.8    | 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°    | 3058.6 | 72.7      |
| 0°-40°    | 3917.4 | 93.2      |
| 0°-60°    | 4189.4 | 99.6      |
| 0°-90°    | 4205.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4205.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 5614 | 5614  | 5614 | 5614  | 5614 |      |
| 5°  | 5365 | 5350  | 5355 | 5348  | 5348 | 494  |
| 15° | 4354 | 4272  | 4195 | 4260  | 4328 | 1220 |
| 25° | 3133 | 3042  | 2982 | 3040  | 3090 | 1399 |
| 35° | 1065 | 1314  | 1740 | 1300  | 1044 | 708  |
| 45° | 199  | 253   | 392  | 251   | 195  | 172  |
| 55° | 26   | 26    | 38   | 26    | 24   | 26   |
| 65° | 9    | 9     | 9    | 9     | 9    | 10   |
| 75° | 4    | 4     | 4    | 4     | 4    | 4    |
| 85° | 2    | 2     | 2    | 2     | 2    | 2    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 5614.2 | 5614.2 | 5614.2 | 5614.2 | 5614.2 |
| 1°    | 5597.3 | 5597.3 | 5597.3 | 5612.3 | 5612.3 |
| 2°    | 5580.4 | 5576.7 | 5567.3 | 5578.5 | 5584.2 |
| 3°    | 5511.0 | 5518.5 | 5522.3 | 5516.7 | 5503.5 |
| 4°    | 5439.8 | 5432.3 | 5452.9 | 5439.8 | 5428.5 |
| 5°    | 5364.8 | 5349.8 | 5355.4 | 5347.9 | 5347.9 |
| 6°    | 5259.8 | 5278.5 | 5263.5 | 5250.4 | 5242.9 |
| 7°    | 5145.4 | 5160.4 | 5151.0 | 5132.3 | 5119.1 |
| 8°    | 5055.4 | 5046.0 | 5031.0 | 5027.2 | 5004.7 |
| 9°    | 4969.1 | 4935.4 | 4901.6 | 4907.2 | 4912.9 |
| 10°   | 4830.4 | 4834.1 | 4764.7 | 4817.2 | 4826.6 |
| 11°   | 4772.2 | 4751.6 | 4659.7 | 4702.8 | 4717.8 |
| 12°   | 4687.8 | 4622.2 | 4543.5 | 4579.1 | 4607.2 |
| 13°   | 4566.0 | 4498.5 | 4427.2 | 4481.6 | 4509.7 |
| 14°   | 4474.1 | 4397.2 | 4307.2 | 4376.6 | 4434.7 |
| 15°   | 4354.1 | 4271.6 | 4194.7 | 4260.3 | 4327.8 |
| 16°   | 4249.1 | 4153.4 | 4076.5 | 4140.3 | 4241.6 |
| 17°   | 4157.2 | 4039.0 | 3945.3 | 4012.8 | 4110.3 |
| 18°   | 4050.3 | 3913.4 | 3827.2 | 3898.4 | 4009.0 |
| 19°   | 3932.2 | 3793.4 | 3716.5 | 3774.7 | 3902.2 |
| 20°   | 3844.0 | 3688.4 | 3596.5 | 3652.8 | 3817.8 |
| 22.5° | 3529.0 | 3365.9 | 3281.5 | 3349.0 | 3480.3 |
| 25°   | 3133.4 | 3041.5 | 2981.5 | 3039.6 | 3090.2 |
| 27.5° | 2664.6 | 2664.6 | 2685.2 | 2660.8 | 2645.8 |
| 30°   | 2096.4 | 2248.3 | 2398.3 | 2240.8 | 2060.8 |
| 32.5° | 1530.1 | 1773.9 | 2075.8 | 1805.8 | 1528.2 |
| 35°   | 1065.1 | 1314.5 | 1740.1 | 1299.5 | 1044.5 |
| 37.5° | 740.7  | 905.7  | 1372.6 | 915.1  | 731.3  |
| 40°   | 493.2  | 607.5  | 1006.9 | 618.8  | 489.4  |
| 42.5° | 322.5  | 401.3  | 650.7  | 403.2  | 315.0  |
| 45°   | 198.8  | 253.1  | 391.9  | 251.3  | 195.0  |
| 47.5° | 116.3  | 150.0  | 228.8  | 151.9  | 114.4  |
| 50°   | 58.1   | 88.1   | 129.4  | 86.3   | 58.1   |
| 52.5° | 33.8   | 46.9   | 71.3   | 45.0   | 33.8   |
| 55°   | 26.3   | 26.3   | 37.5   | 26.3   | 24.4   |
| 57.5° | 20.6   | 20.6   | 20.6   | 20.6   | 18.8   |
| 60°   | 15.0   | 16.9   | 15.0   | 15.0   | 15.0   |
| 62.5° | 13.1   | 13.1   | 11.3   | 13.1   | 11.3   |
| 65°   | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    |
| 67.5° | 7.5    | 7.5    | 7.5    | 7.5    | 7.5    |
| 70°   | 5.6    | 5.6    | 5.6    | 5.6    | 5.6    |
| 72.5° | 3.8    | 5.6    | 3.8    | 5.6    | 5.6    |
| 75°   | 3.8    | 3.8    | 3.8    | 3.8    | 3.8    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 82.5° | 1.9 | 1.9   | 1.9 | 1.9   | 1.9 |
| 85°   | 1.9 | 1.9   | 1.9 | 1.9   | 1.9 |
| 87.5° | 1.9 | 1.9   | 1.9 | 1.9   | 1.9 |
| 90°   | 0.0 | 0.0   | 0.0 | 0.0   | 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



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
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Peachtree City, GA 30269

Scaled Data Report





— 0°-180°    - - 45°-225°    - - - 90°-270°

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Scaled Data Report



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Scaled Data Report



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Scaled Data Report



|       |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|
| 77.5° | 3.8 | 3.8 | 3.8 | 3.8 | 1.9 |
| 80°   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |

Signify Classified - Internal  
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Scaled Data Report



(END OF REPORT)