

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: P837195

Luminaire Tested: HCSQ405D010-HM40525827-41SQLWW

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837195  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ405D010-HM40525827-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

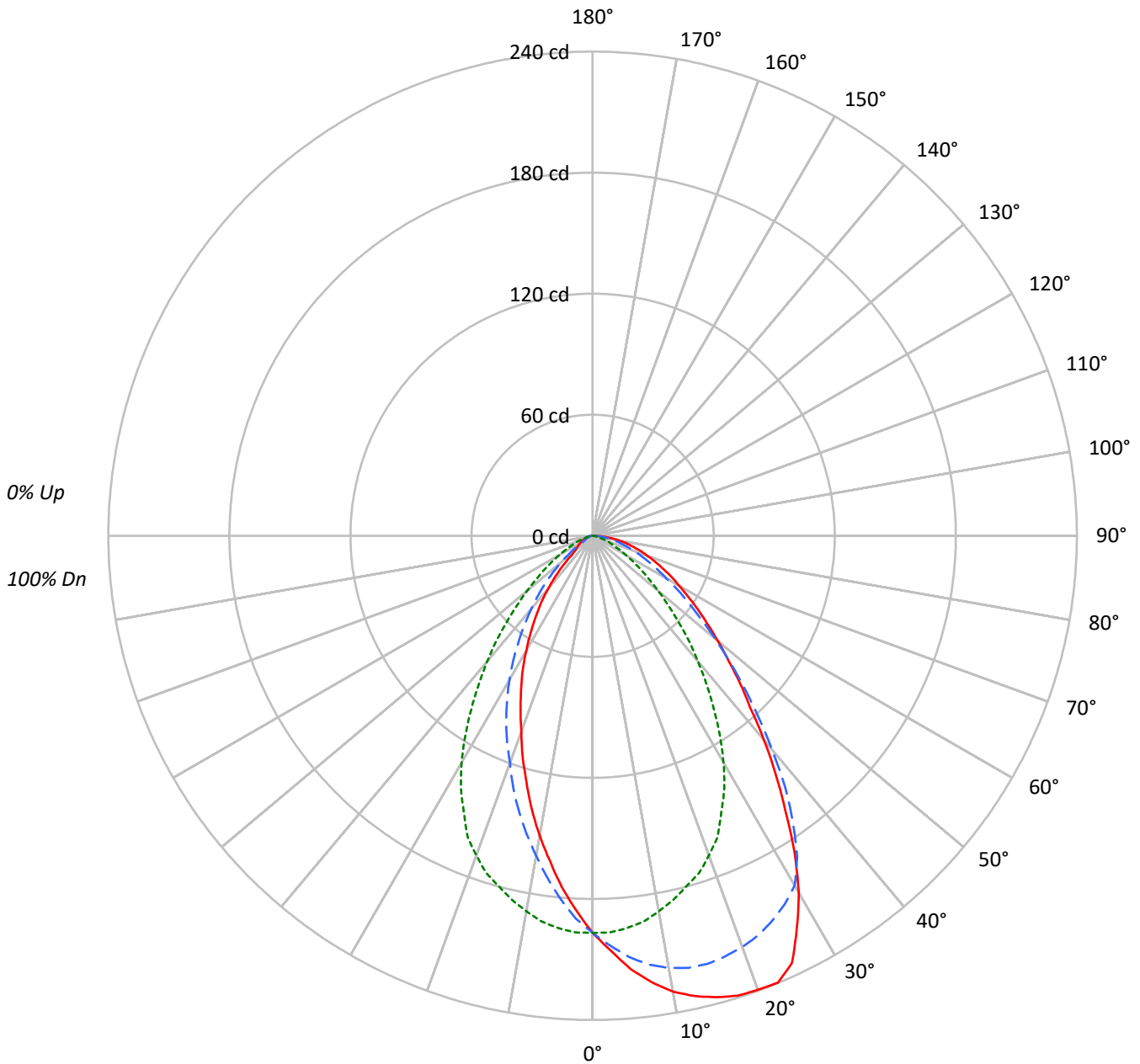
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 318.4 lumens  
Efficiency: N/A  
Efficacy: 53.1 lumens/watt  
Spacing Criteria (0/90/45): 1.07 / 1.04 / 1.12  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 6  
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





TEST NUMBER: P837195

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |  |  |  |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|--|--|--|--|---|
| RF  | 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   | 111 | 107 | 104 | 101 | 109 | 105 | 102 | 99  | 101 | 99  | 96  | 97  | 95  | 93  | 94  | 92  | 91  | 89  |    |    |    |  |  |  |  |   |
| 2   | 103 | 97  | 91  | 87  | 101 | 95  | 90  | 86  | 92  | 87  | 84  | 88  | 85  | 82  | 86  | 83  | 80  | 78  |    |    |    |  |  |  |  |   |
| 3   | 96  | 87  | 81  | 76  | 94  | 86  | 80  | 75  | 83  | 78  | 74  | 81  | 76  | 72  | 78  | 74  | 71  | 69  |    |    |    |  |  |  |  |   |
| 4   | 89  | 79  | 72  | 67  | 87  | 78  | 71  | 66  | 76  | 70  | 65  | 74  | 69  | 64  | 72  | 67  | 64  | 62  |    |    |    |  |  |  |  |   |
| 5   | 83  | 72  | 65  | 59  | 81  | 71  | 64  | 59  | 69  | 63  | 58  | 68  | 62  | 58  | 66  | 61  | 57  | 55  |    |    |    |  |  |  |  |   |
| 6   | 78  | 66  | 59  | 53  | 76  | 66  | 58  | 53  | 64  | 57  | 53  | 62  | 57  | 52  | 61  | 56  | 52  | 50  |    |    |    |  |  |  |  |   |
| 7   | 73  | 61  | 54  | 48  | 71  | 60  | 53  | 48  | 59  | 53  | 48  | 58  | 52  | 48  | 56  | 51  | 47  | 45  |    |    |    |  |  |  |  |   |
| 8   | 68  | 57  | 49  | 44  | 67  | 56  | 49  | 44  | 55  | 48  | 44  | 54  | 48  | 43  | 52  | 47  | 43  | 42  |    |    |    |  |  |  |  |   |
| 9   | 64  | 53  | 45  | 40  | 63  | 52  | 45  | 40  | 51  | 45  | 40  | 50  | 44  | 40  | 49  | 44  | 40  | 38  |    |    |    |  |  |  |  |   |
| 10  | 61  | 49  | 42  | 37  | 60  | 48  | 42  | 37  | 48  | 41  | 37  | 47  | 41  | 37  | 46  | 41  | 37  | 35  |    |    |    |  |  |  |  |   |

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

|     | 0°    | 45°   | 90°   | 135°  | 180°  |
|-----|-------|-------|-------|-------|-------|
| 0°  | 19065 | 19065 | 19065 | 19065 | 19065 |
| 5°  | 20956 | 20392 | 18982 | 17592 | 16999 |
| 10° | 22576 | 21395 | 18592 | 15847 | 14854 |
| 15° | 23749 | 22034 | 18033 | 14171 | 12687 |
| 20° | 24691 | 22361 | 17381 | 12351 | 10649 |
| 25° | 24980 | 22500 | 16140 | 10828 | 8957  |
| 30° | 22865 | 22395 | 14520 | 9217  | 7338  |
| 35° | 19714 | 20436 | 12382 | 7557  | 5807  |
| 40° | 16706 | 17477 | 10243 | 5969  | 4338  |
| 45° | 14152 | 14495 | 8179  | 4439  | 2795  |
| 50° | 12208 | 11906 | 6360  | 2984  | 1688  |
| 55° | 10759 | 9813  | 4864  | 1655  | 1503  |
| 60° | 9571  | 8215  | 3623  | 911   | 1356  |
| 65° | 8756  | 7037  | 2682  | 825   | 1215  |
| 70° | 8157  | 6090  | 1983  | 793   | 1190  |
| 75° | 7636  | 5315  | 1347  | 749   | 1048  |
| 80° | 7308  | 4686  | 948   | 781   | 948   |
| 85° | 7114  | 4001  | 667   | 667   | 667   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°

Vertical Angle: 45°

Luminance: 14728 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 18.5   | 5.8       |
| 10°-20°   | 50.8   | 16.0      |
| 20°-30°   | 71.0   | 22.3      |
| 30°-40°   | 69.4   | 21.8      |
| 40°-50°   | 50.4   | 15.8      |
| 50°-60°   | 30.4   | 9.5       |
| 60°-70°   | 17.1   | 5.4       |
| 70°-80°   | 8.5    | 2.7       |
| 80°-90°   | 2.3    | 0.7       |
| 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°    | 140.3  | 44.1      |
| 0°-40°    | 209.8  | 65.9      |
| 0°-60°    | 290.5  | 91.3      |
| 0°-90°    | 318.4  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 318.4  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0°  | 197 | 197 | 197 | 197  | 197  |      |
| 5°  | 216 | 210 | 195 | 181  | 175  | 21   |
| 15° | 237 | 220 | 180 | 141  | 126  | 67   |
| 25° | 234 | 210 | 151 | 101  | 84   | 105  |
| 35° | 167 | 173 | 105 | 64   | 49   | 104  |
| 45° | 103 | 106 | 60  | 32   | 20   | 80   |
| 55° | 64  | 58  | 29  | 10   | 9    | 57   |
| 65° | 38  | 31  | 12  | 4    | 5    | 38   |
| 75° | 20  | 14  | 4   | 2    | 3    | 22   |
| 85° | 6   | 4   | 1   | 1    | 1    | 7    |
| 90° | 0   | 0   | 0   | 0    | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0°    | 196.8 | 196.8 | 196.8 | 196.8 | 196.8 | 196.8  | 196.8 | 196.8  | 196.8 |
| 2.5°  | 205.8 | 205.2 | 203.5 | 200.2 | 196.8 | 192.9  | 189.9 | 187.6  | 185.9 |
| 5°    | 215.5 | 214.4 | 209.7 | 202.7 | 195.2 | 187.6  | 180.9 | 177.0  | 174.8 |
| 7.5°  | 223.1 | 221.1 | 214.4 | 204.6 | 192.9 | 181.5  | 171.1 | 165.0  | 162.5 |
| 10°   | 229.5 | 226.1 | 217.5 | 204.4 | 189.0 | 173.9  | 161.1 | 153.8  | 151.0 |
| 12.5° | 233.7 | 230.1 | 219.4 | 204.1 | 184.8 | 166.4  | 151.3 | 141.8  | 139.0 |
| 15°   | 236.8 | 232.3 | 219.7 | 201.9 | 179.8 | 158.6  | 141.3 | 130.1  | 126.5 |
| 17.5° | 239.0 | 232.8 | 218.6 | 199.3 | 175.3 | 150.5  | 130.9 | 118.9  | 115.3 |
| 20°   | 239.5 | 232.8 | 216.9 | 195.7 | 168.6 | 142.4  | 119.8 | 107.8  | 103.3 |
| 22.5° | 239.8 | 232.0 | 214.4 | 191.2 | 161.7 | 133.2  | 110.6 | 98.0   | 93.3  |
| 25°   | 233.7 | 229.2 | 210.5 | 183.7 | 151.0 | 123.1  | 101.3 | 87.7   | 83.8  |
| 27.5° | 219.2 | 218.9 | 206.0 | 173.7 | 141.3 | 112.2  | 91.9  | 78.7   | 75.1  |
| 30°   | 204.4 | 204.6 | 200.2 | 162.5 | 129.8 | 101.9  | 82.4  | 69.5   | 65.6  |
| 32.5° | 186.2 | 189.0 | 188.7 | 149.9 | 117.5 | 92.1   | 73.1  | 61.1   | 57.2  |
| 35°   | 166.7 | 171.7 | 172.8 | 135.7 | 104.7 | 81.0   | 63.9  | 53.0   | 49.1  |
| 37.5° | 149.1 | 154.1 | 156.6 | 123.1 | 92.7  | 71.2   | 55.3  | 45.8   | 41.9  |
| 40°   | 132.1 | 136.2 | 138.2 | 108.6 | 81.0  | 61.1   | 47.2  | 38.2   | 34.3  |
| 42.5° | 115.6 | 121.7 | 121.2 | 96.3  | 70.6  | 53.0   | 39.9  | 31.0   | 27.1  |
| 45°   | 103.3 | 107.5 | 105.8 | 83.5  | 59.7  | 44.7   | 32.4  | 24.0   | 20.4  |
| 47.5° | 91.0  | 94.1  | 91.6  | 72.6  | 50.5  | 36.9   | 26.2  | 17.6   | 13.7  |
| 50°   | 81.0  | 82.4  | 79.0  | 61.7  | 42.2  | 30.2   | 19.8  | 11.7   | 11.2  |
| 52.5° | 71.5  | 72.3  | 67.6  | 52.5  | 34.9  | 24.3   | 14.5  | 9.2    | 9.8   |
| 55°   | 63.7  | 63.4  | 58.1  | 44.4  | 28.8  | 18.7   | 9.8   | 8.4    | 8.9   |
| 57.5° | 56.1  | 55.3  | 50.0  | 36.9  | 23.5  | 14.5   | 5.9   | 7.3    | 7.8   |
| 60°   | 49.4  | 48.6  | 42.4  | 30.4  | 18.7  | 10.9   | 4.7   | 6.4    | 7.0   |
| 62.5° | 44.1  | 42.2  | 36.0  | 25.1  | 15.1  | 7.8    | 4.2   | 5.6    | 6.1   |
| 65°   | 38.2  | 36.6  | 30.7  | 20.4  | 11.7  | 5.6    | 3.6   | 4.7    | 5.3   |
| 67.5° | 33.5  | 31.5  | 26.0  | 16.8  | 9.5   | 3.9    | 3.4   | 4.2    | 4.7   |
| 70°   | 28.8  | 27.1  | 21.5  | 13.4  | 7.0   | 2.5    | 2.8   | 3.6    | 4.2   |
| 72.5° | 24.8  | 22.9  | 17.9  | 10.6  | 5.3   | 2.0    | 2.5   | 3.1    | 3.4   |
| 75°   | 20.4  | 18.7  | 14.2  | 8.1   | 3.6   | 1.7    | 2.0   | 2.5    | 2.8   |
| 77.5° | 17.0  | 15.4  | 11.2  | 6.1   | 2.5   | 1.4    | 1.7   | 2.2    | 2.2   |
| 80°   | 13.1  | 11.7  | 8.4   | 4.2   | 1.7   | 0.8    | 1.4   | 1.7    | 1.7   |
| 82.5° | 9.5   | 8.4   | 5.9   | 2.8   | 0.8   | 0.8    | 0.8   | 1.1    | 1.1   |
| 85°   | 6.4   | 5.6   | 3.6   | 1.7   | 0.6   | 0.6    | 0.6   | 0.6    | 0.6   |
| 87.5° | 3.6   | 2.8   | 1.7   | 0.6   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 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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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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