

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: HALO COMMERCIAL

Report Number: P241949

Luminaire Tested: **PRS415D010-S4M12-41SNDC-3000K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P241949  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-58)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: PRS415D010-S4M12-41SNDC-3000K  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" NARROW DISTRIBUTION, DEEP TRIM SPECULAR  
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1093.3 lumens  
Efficiency: N/A  
Efficacy: 91.1 lumens/watt  
Spacing Criteria (0/90/45): 0.8 / 0.79 / 0.83  
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')  
CIE Type: Direct

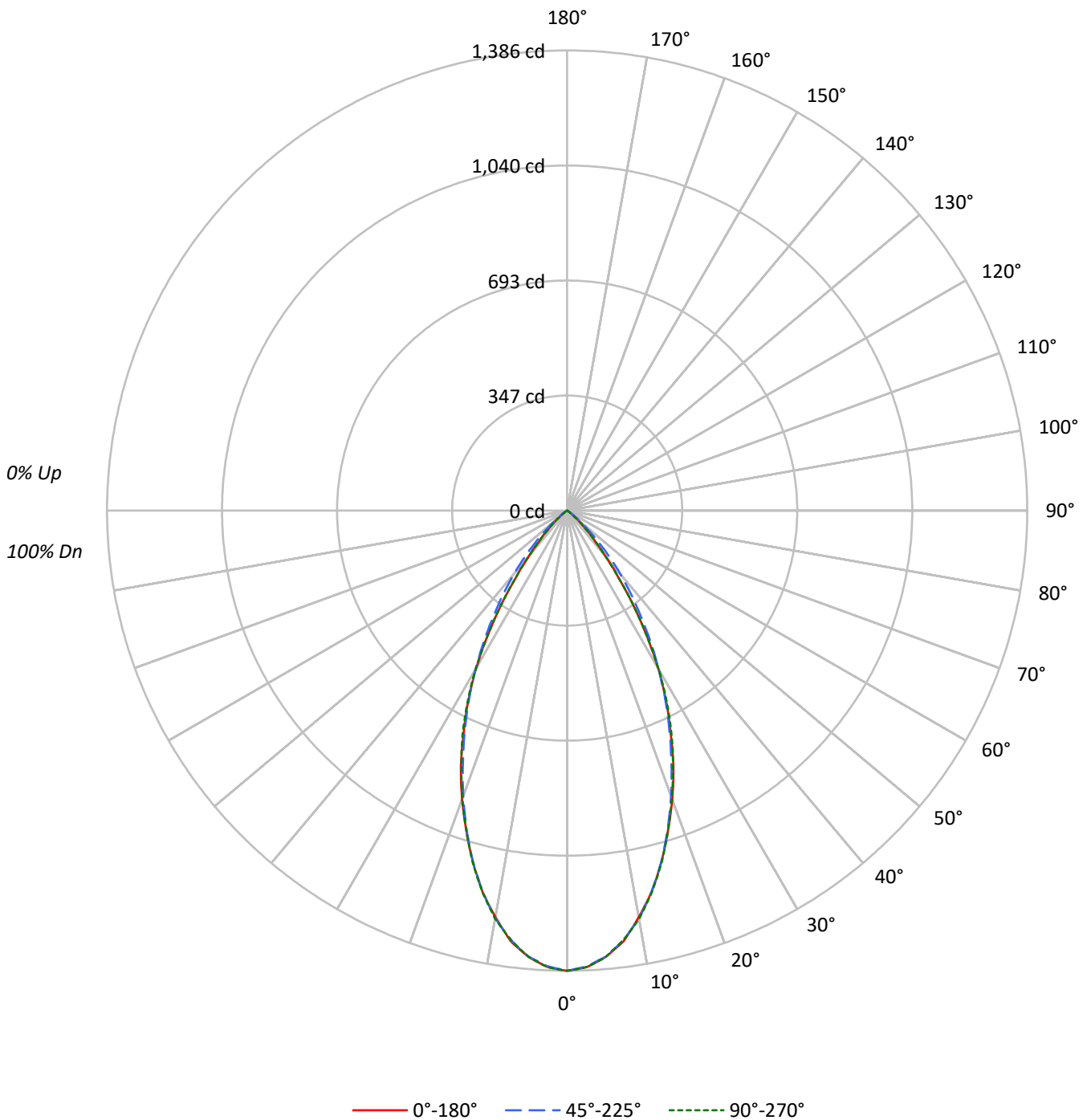
Input Watts (W): 12  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 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 | 100 | 98  | 97  | 96  | 95  | 94  |
| 2   | 108 | 103 | 99  | 96  | 106 | 101 | 98  | 95  | 98  | 95  | 93  | 95  | 93  | 91  | 92  | 91  | 89  | 87  |
| 3   | 103 | 96  | 91  | 87  | 101 | 95  | 90  | 87  | 92  | 88  | 85  | 90  | 87  | 84  | 87  | 85  | 83  | 81  |
| 4   | 97  | 90  | 84  | 80  | 96  | 89  | 84  | 80  | 87  | 82  | 79  | 85  | 81  | 78  | 83  | 80  | 77  | 75  |
| 5   | 92  | 84  | 78  | 74  | 91  | 83  | 78  | 74  | 81  | 77  | 73  | 80  | 76  | 72  | 78  | 75  | 72  | 70  |
| 6   | 88  | 79  | 73  | 69  | 86  | 78  | 73  | 68  | 77  | 72  | 68  | 75  | 71  | 68  | 74  | 70  | 67  | 66  |
| 7   | 83  | 74  | 68  | 64  | 82  | 74  | 68  | 64  | 72  | 67  | 63  | 71  | 67  | 63  | 70  | 66  | 63  | 61  |
| 8   | 79  | 70  | 64  | 60  | 78  | 69  | 64  | 60  | 68  | 63  | 59  | 67  | 63  | 59  | 66  | 62  | 59  | 58  |
| 9   | 76  | 66  | 60  | 56  | 75  | 66  | 60  | 56  | 65  | 59  | 56  | 64  | 59  | 56  | 63  | 59  | 55  | 54  |
| 10  | 72  | 62  | 57  | 53  | 71  | 62  | 57  | 53  | 61  | 56  | 53  | 60  | 56  | 52  | 60  | 55  | 52  | 51  |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 106104 | 106104 | 106104 |
| 5°  | 103644 | 103544 | 103644 |
| 10° | 96642  | 96938  | 97039  |
| 15° | 86898  | 86803  | 87001  |
| 20° | 75387  | 74548  | 75176  |
| 25° | 62287  | 61526  | 62945  |
| 30° | 48461  | 48576  | 48691  |
| 35° | 32350  | 35844  | 32471  |
| 40° | 18136  | 24820  | 17876  |
| 45° | 9201   | 14213  | 8920   |
| 50° | 3834   | 6287   | 3834   |
| 55° | 173    | 2402   | 173    |
| 60° | 199    | 597    | 199    |
| 65° | 0      | 0      | 0      |
| 70° | 0      | 0      | 0      |
| 75° | 0      | 0      | 0      |
| 80° | 0      | 0      | 0      |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 125.5  | 11.5      |
| 10°-20°   | 304.6  | 27.9      |
| 20°-30°   | 335.6  | 30.7      |
| 30°-40°   | 229.1  | 21.0      |
| 40°-50°   | 85.4   | 7.8       |
| 50°-60°   | 12.9   | 1.2       |
| 60°-70°   | 0.3    | 0.0       |
| 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°    | 765.6  | 70.0      |
| 0°-40°    | 994.7  | 91.0      |
| 0°-60°    | 1093.0 | 100.0     |
| 0°-90°    | 1093.3 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1093.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1386 | 1386  | 1386 | 1386  | 1386 |      |
| 5°  | 1349 | 1349  | 1348 | 1348  | 1349 | 126  |
| 15° | 1097 | 1095  | 1095 | 1095  | 1098 | 305  |
| 25° | 738  | 738   | 728  | 739   | 745  | 337  |
| 35° | 346  | 367   | 384  | 368   | 348  | 216  |
| 45° | 85   | 102   | 131  | 99    | 82   | 70   |
| 55° | 1    | 10    | 18   | 10    | 1    | 8    |
| 65° | 0    | 0     | 0    | 0     | 0    | 0    |
| 75° | 0    | 0     | 0    | 0     | 0    | 0    |
| 85° | 0    | 0     | 0    | 0     | 0    | 0    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1386.2 | 1386.2 | 1386.2 | 1386.2 | 1386.2 |
| 2.5°  | 1375.9 | 1375.9 | 1373.4 | 1373.4 | 1375.9 |
| 5°    | 1348.9 | 1348.9 | 1347.6 | 1347.6 | 1348.9 |
| 7.5°  | 1307.7 | 1305.2 | 1303.9 | 1305.2 | 1303.9 |
| 10°   | 1243.4 | 1244.7 | 1247.2 | 1247.2 | 1248.5 |
| 12.5° | 1176.4 | 1175.2 | 1175.2 | 1177.7 | 1177.7 |
| 15°   | 1096.6 | 1095.4 | 1095.4 | 1095.4 | 1097.9 |
| 17.5° | 1010.4 | 1010.4 | 1006.5 | 1009.1 | 1010.4 |
| 20°   | 925.5  | 921.6  | 915.2  | 922.9  | 922.9  |
| 22.5° | 836.6  | 830.2  | 819.9  | 831.5  | 832.8  |
| 25°   | 737.5  | 737.5  | 728.5  | 738.8  | 745.3  |
| 27.5° | 644.9  | 639.7  | 639.7  | 643.6  | 650.0  |
| 30°   | 548.3  | 549.6  | 549.6  | 550.9  | 550.9  |
| 32.5° | 444.1  | 458.2  | 465.9  | 458.2  | 444.1  |
| 35°   | 346.2  | 366.8  | 383.6  | 368.1  | 347.5  |
| 37.5° | 252.3  | 281.9  | 312.8  | 280.6  | 253.6  |
| 40°   | 181.5  | 208.5  | 248.4  | 205.9  | 178.9  |
| 42.5° | 123.6  | 148.0  | 186.6  | 144.2  | 123.6  |
| 45°   | 85.0   | 101.7  | 131.3  | 99.1   | 82.4   |
| 47.5° | 55.3   | 68.2   | 85.0   | 66.9   | 55.3   |
| 50°   | 32.2   | 43.8   | 52.8   | 41.2   | 32.2   |
| 52.5° | 15.4   | 24.5   | 30.9   | 24.5   | 15.4   |
| 55°   | 1.3    | 10.3   | 18.0   | 10.3   | 1.3    |
| 57.5° | 1.3    | 1.3    | 9.0    | 1.3    | 1.3    |
| 60°   | 1.3    | 1.3    | 3.9    | 1.3    | 1.3    |
| 62.5° | 0.0    | 0.0    | 1.3    | 0.0    | 0.0    |
| 65°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 67.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 70°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 72.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 75°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 77.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)