

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: P241637

Luminaire Tested: **PRS440D010-S4M24-44SNDMB-3000K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P241637  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-37)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: PRS440D010-S4M24-44SNDMB-3000K  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" NARROW DISTRIBUTION, SHALLOW TRIM MATTE BLACK  
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2845.3 lumens  
Efficiency: N/A  
Efficacy: 74.9 lumens/watt  
Spacing Criteria (0/90/45): 0.87 / 0.87 / 0.91  
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')  
CIE Type: Direct

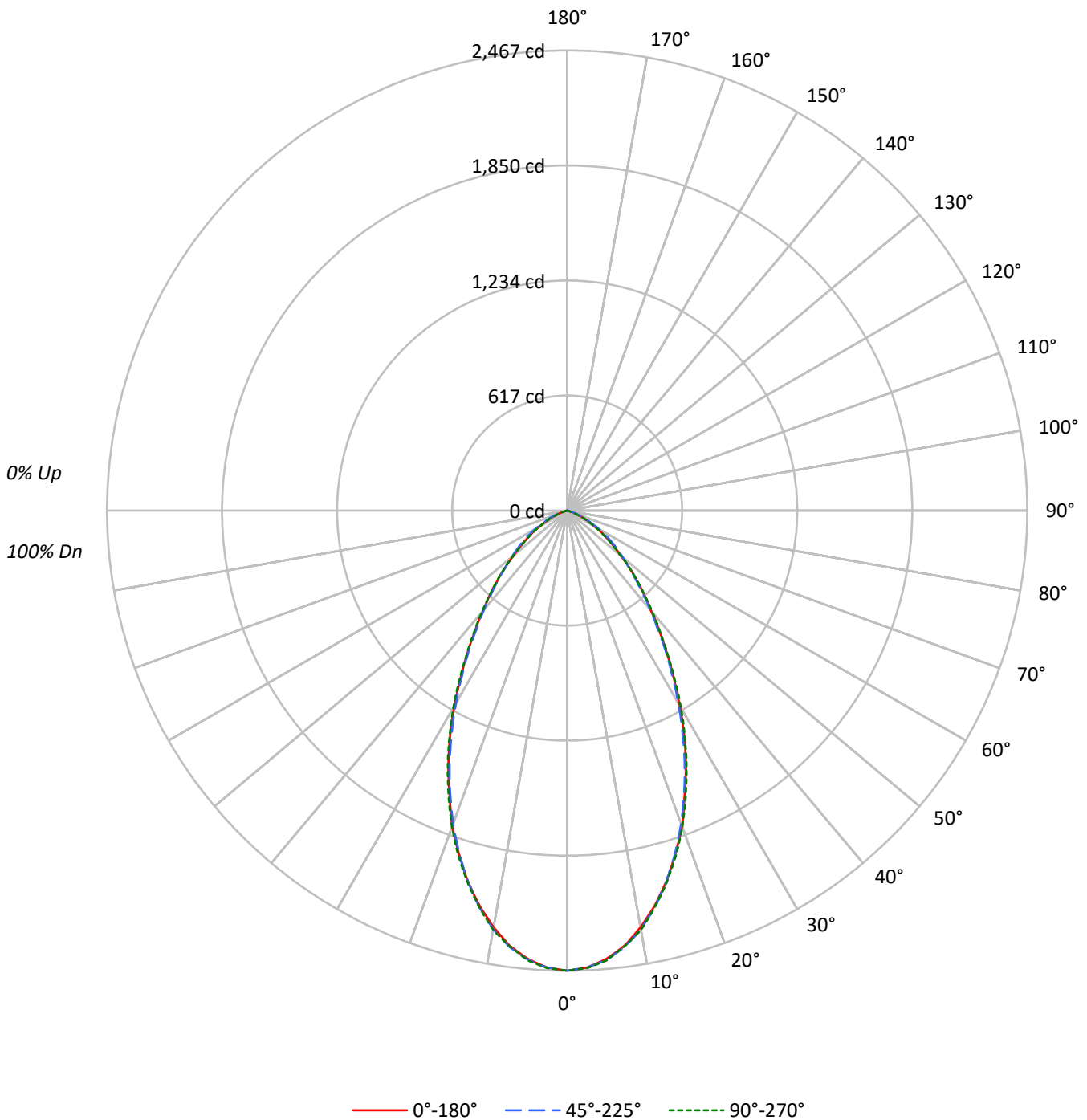
Input Watts (W): 38  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 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   | 112 | 109 | 106 | 103 | 110 | 107 | 104 | 102 | 103 | 101 | 99  | 99  | 97  | 96  | 95  | 94  | 93  | 91  |    |    |    |    | 91  |   |  |   |
| 2   | 105 | 99  | 95  | 90  | 103 | 98  | 93  | 89  | 94  | 91  | 87  | 91  | 88  | 85  | 88  | 86  | 84  | 82  |    |    |    |    | 82  |   |  |   |
| 3   | 98  | 91  | 85  | 80  | 96  | 89  | 84  | 79  | 87  | 82  | 78  | 84  | 80  | 77  | 82  | 78  | 75  | 74  |    |    |    |    | 74  |   |  |   |
| 4   | 92  | 83  | 76  | 71  | 90  | 82  | 76  | 71  | 80  | 74  | 70  | 78  | 73  | 69  | 76  | 72  | 68  | 67  |    |    |    |    | 67  |   |  |   |
| 5   | 86  | 76  | 70  | 64  | 85  | 75  | 69  | 64  | 74  | 68  | 63  | 72  | 67  | 63  | 70  | 66  | 62  | 61  |    |    |    |    | 61  |   |  |   |
| 6   | 81  | 71  | 64  | 58  | 80  | 70  | 63  | 58  | 68  | 62  | 58  | 67  | 61  | 57  | 65  | 61  | 57  | 55  |    |    |    |    | 55  |   |  |   |
| 7   | 76  | 66  | 58  | 54  | 75  | 65  | 58  | 53  | 63  | 57  | 53  | 62  | 57  | 53  | 61  | 56  | 52  | 51  |    |    |    |    | 51  |   |  |   |
| 8   | 72  | 61  | 54  | 49  | 71  | 60  | 54  | 49  | 59  | 53  | 49  | 58  | 53  | 49  | 57  | 52  | 48  | 47  |    |    |    |    | 47  |   |  |   |
| 9   | 68  | 57  | 50  | 46  | 67  | 56  | 50  | 45  | 55  | 49  | 45  | 54  | 49  | 45  | 54  | 49  | 45  | 43  |    |    |    |    | 43  |   |  |   |
| 10  | 64  | 53  | 47  | 42  | 63  | 53  | 47  | 42  | 52  | 46  | 42  | 51  | 46  | 42  | 50  | 45  | 42  | 40  |    |    |    |    | 40  |   |  |   |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 188802 | 188802 | 188802 |
| 5°  | 185443 | 185720 | 185989 |
| 10° | 176310 | 177141 | 177413 |
| 15° | 162933 | 162933 | 163495 |
| 20° | 146726 | 145578 | 147020 |
| 25° | 127326 | 125831 | 127926 |
| 30° | 106663 | 105408 | 107909 |
| 35° | 86967  | 85976  | 87630  |
| 40° | 70014  | 69305  | 71073  |
| 45° | 57080  | 55932  | 57458  |
| 50° | 44667  | 46358  | 44667  |
| 55° | 35417  | 38727  | 34950  |
| 60° | 26009  | 29791  | 26009  |
| 65° | 17949  | 21154  | 17315  |
| 70° | 8706   | 11884  | 8706   |
| 75° | 0      | 3135   | 0      |
| 80° | 0      | 0      | 0      |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 226.2  | 8.0       |
| 10°-20°   | 574.2  | 20.2      |
| 20°-30°   | 686.0  | 24.1      |
| 30°-40°   | 582.0  | 20.5      |
| 40°-50°   | 408.0  | 14.3      |
| 50°-60°   | 246.0  | 8.6       |
| 60°-70°   | 109.3  | 3.8       |
| 70°-80°   | 13.6   | 0.5       |
| 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°    | 1486.4 | 52.2      |
| 0°-40°    | 2068.4 | 72.7      |
| 0°-60°    | 2722.5 | 95.7      |
| 0°-90°    | 2845.3 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2845.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2467 | 2467  | 2467 | 2467  | 2467 |      |
| 5°  | 2414 | 2417  | 2417 | 2417  | 2421 | 226  |
| 15° | 2056 | 2056  | 2056 | 2067  | 2063 | 574  |
| 25° | 1508 | 1500  | 1490 | 1504  | 1515 | 688  |
| 35° | 931  | 927   | 920  | 934   | 938  | 584  |
| 45° | 527  | 524   | 517  | 527   | 531  | 408  |
| 55° | 265  | 269   | 290  | 269   | 262  | 238  |
| 65° | 99   | 110   | 117  | 110   | 96   | 100  |
| 75° | 0    | 4     | 11   | 4     | 0    | 10   |
| 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°    | 2466.6 | 2466.6 | 2466.6 | 2466.6 | 2466.6 |
| 2.5°  | 2452.5 | 2452.5 | 2452.5 | 2452.5 | 2456.0 |
| 5°    | 2413.5 | 2417.1 | 2417.1 | 2417.1 | 2420.6 |
| 7.5°  | 2353.4 | 2353.4 | 2360.5 | 2360.5 | 2356.9 |
| 10°   | 2268.4 | 2268.4 | 2279.1 | 2282.6 | 2282.6 |
| 12.5° | 2169.4 | 2169.4 | 2176.4 | 2180.0 | 2176.4 |
| 15°   | 2056.1 | 2056.1 | 2056.1 | 2066.7 | 2063.2 |
| 17.5° | 1928.7 | 1928.7 | 1925.2 | 1935.8 | 1939.3 |
| 20°   | 1801.3 | 1794.2 | 1787.2 | 1794.2 | 1804.9 |
| 22.5° | 1645.6 | 1645.6 | 1638.5 | 1652.7 | 1659.8 |
| 25°   | 1507.6 | 1500.5 | 1489.9 | 1504.0 | 1514.7 |
| 27.5° | 1358.9 | 1351.9 | 1337.7 | 1348.3 | 1366.0 |
| 30°   | 1206.8 | 1203.2 | 1192.6 | 1203.2 | 1220.9 |
| 32.5° | 1061.7 | 1058.1 | 1047.5 | 1061.7 | 1072.3 |
| 35°   | 930.7  | 927.2  | 920.1  | 934.3  | 937.8  |
| 37.5° | 810.4  | 803.3  | 796.3  | 810.4  | 817.5  |
| 40°   | 700.7  | 700.7  | 693.6  | 700.7  | 711.3  |
| 42.5° | 612.2  | 608.7  | 598.1  | 608.7  | 615.8  |
| 45°   | 527.3  | 523.8  | 516.7  | 527.3  | 530.8  |
| 47.5° | 449.4  | 453.0  | 445.9  | 453.0  | 453.0  |
| 50°   | 375.1  | 385.7  | 389.3  | 385.7  | 375.1  |
| 52.5° | 315.0  | 322.0  | 336.2  | 322.0  | 311.4  |
| 55°   | 265.4  | 269.0  | 290.2  | 269.0  | 261.9  |
| 57.5° | 215.9  | 223.0  | 240.6  | 223.0  | 212.3  |
| 60°   | 169.9  | 184.0  | 194.6  | 180.5  | 169.9  |
| 62.5° | 134.5  | 145.1  | 152.2  | 141.6  | 130.9  |
| 65°   | 99.1   | 109.7  | 116.8  | 109.7  | 95.6   |
| 67.5° | 67.2   | 81.4   | 84.9   | 77.9   | 63.7   |
| 70°   | 38.9   | 49.5   | 53.1   | 49.5   | 38.9   |
| 72.5° | 17.7   | 24.8   | 28.3   | 24.8   | 17.7   |
| 75°   | 0.0    | 3.5    | 10.6   | 3.5    | 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)