

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: P241963

Luminaire Tested: **PRS410D010-S4M12-41SMDC-3000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P241963
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-59)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS410D010-S4M12-41SMDC-3000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" MEDIUM 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: 907.5 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 0.82 / 0.82 / 0.85
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

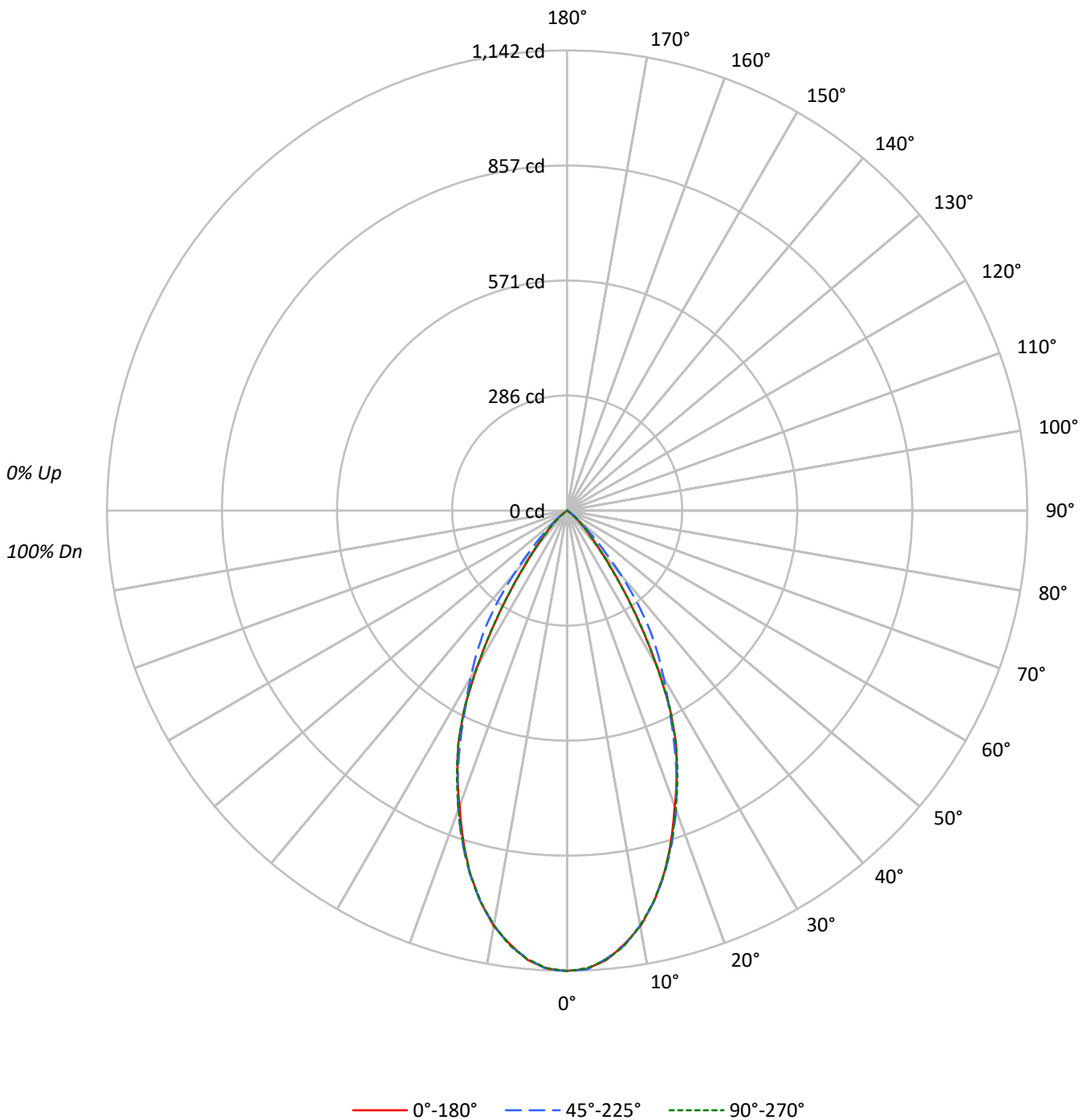
Input Watts (W): 10
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 114 | 111 | 108 | 106 | 111 | 109 | 107 | 105 | 105 | 103 | 101 | 101 | 100 | 98 | 98 | 96 | 95 | 94 | | | | | 94 | | | |
| 2 | 108 | 103 | 99 | 96 | 106 | 102 | 98 | 95 | 98 | 95 | 93 | 95 | 93 | 91 | 93 | 91 | 89 | 87 | | | | | 87 | | | |
| 3 | 103 | 96 | 92 | 88 | 101 | 95 | 91 | 87 | 92 | 89 | 86 | 90 | 87 | 84 | 88 | 85 | 83 | 81 | | | | | 81 | | | |
| 4 | 98 | 90 | 85 | 81 | 96 | 89 | 84 | 80 | 87 | 83 | 79 | 85 | 81 | 78 | 83 | 80 | 77 | 76 | | | | | 76 | | | |
| 5 | 93 | 85 | 79 | 75 | 91 | 84 | 78 | 74 | 82 | 77 | 74 | 80 | 76 | 73 | 79 | 75 | 72 | 71 | | | | | 71 | | | |
| 6 | 88 | 79 | 73 | 69 | 87 | 79 | 73 | 69 | 77 | 72 | 69 | 76 | 71 | 68 | 74 | 71 | 68 | 66 | | | | | 66 | | | |
| 7 | 84 | 75 | 69 | 65 | 83 | 74 | 68 | 64 | 73 | 68 | 64 | 72 | 67 | 64 | 70 | 66 | 63 | 62 | | | | | 62 | | | |
| 8 | 80 | 70 | 65 | 61 | 79 | 70 | 64 | 60 | 69 | 64 | 60 | 68 | 63 | 60 | 67 | 63 | 60 | 58 | | | | | 58 | | | |
| 9 | 76 | 67 | 61 | 57 | 75 | 66 | 61 | 57 | 65 | 60 | 57 | 64 | 60 | 56 | 63 | 59 | 56 | 55 | | | | | 55 | | | |
| 10 | 73 | 63 | 57 | 54 | 72 | 63 | 57 | 53 | 62 | 57 | 53 | 61 | 56 | 53 | 60 | 56 | 53 | 52 | | | | | 52 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 87451 | 87451 | 87451 |
| 5° | 86002 | 85779 | 85933 |
| 10° | 81377 | 81222 | 81222 |
| 15° | 73792 | 73942 | 73792 |
| 20° | 63584 | 64375 | 64138 |
| 25° | 53951 | 52811 | 53951 |
| 30° | 39234 | 42301 | 39146 |
| 35° | 23529 | 32910 | 23445 |
| 40° | 12240 | 20244 | 12150 |
| 45° | 6690 | 9612 | 6473 |
| 50° | 2989 | 4025 | 2870 |
| 55° | 254 | 1668 | 133 |
| 60° | 153 | 444 | 153 |
| 65° | 0 | 181 | 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° | 104.4 | 11.5 |
| 10°-20° | 258.7 | 28.5 |
| 20°-30° | 288.3 | 31.8 |
| 30°-40° | 185.6 | 20.5 |
| 40°-50° | 60.5 | 6.7 |
| 50°-60° | 9.5 | 1.0 |
| 60°-70° | 0.5 | 0.1 |
| 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° | 651.4 | 71.8 |
| 0°-40° | 837.0 | 92.2 |
| 0°-60° | 907.0 | 99.9 |
| 0°-90° | 907.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 907.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1142 | 1142 | 1142 | 1142 | 1142 | |
| 5° | 1119 | 1119 | 1116 | 1120 | 1118 | 104 |
| 15° | 931 | 931 | 933 | 933 | 931 | 258 |
| 25° | 639 | 638 | 625 | 638 | 639 | 286 |
| 35° | 252 | 290 | 352 | 290 | 251 | 161 |
| 45° | 62 | 70 | 89 | 68 | 60 | 50 |
| 55° | 2 | 8 | 12 | 8 | 1 | 6 |
| 65° | 0 | 0 | 1 | 0 | 0 | 0 |
| 75° | 0 | 0 | 0 | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P241963

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 |
| 2.5° | 1137.7 | 1138.6 | 1139.6 | 1138.6 | 1136.7 |
| 5° | 1119.3 | 1119.3 | 1116.4 | 1120.3 | 1118.4 |
| 7.5° | 1085.6 | 1086.5 | 1088.5 | 1086.5 | 1088.5 |
| 10° | 1047.0 | 1045.0 | 1045.0 | 1045.0 | 1045.0 |
| 12.5° | 993.9 | 992.9 | 993.9 | 992.9 | 992.9 |
| 15° | 931.2 | 931.2 | 933.1 | 933.1 | 931.2 |
| 17.5° | 857.8 | 859.8 | 864.6 | 863.6 | 861.7 |
| 20° | 780.6 | 784.5 | 790.3 | 785.5 | 787.4 |
| 22.5° | 711.2 | 707.3 | 709.2 | 707.3 | 715.0 |
| 25° | 638.8 | 637.8 | 625.3 | 637.8 | 638.8 |
| 27.5° | 550.0 | 563.5 | 545.2 | 564.5 | 550.0 |
| 30° | 443.9 | 477.6 | 478.6 | 481.5 | 442.9 |
| 32.5° | 340.6 | 380.2 | 415.9 | 382.1 | 344.5 |
| 35° | 251.8 | 290.4 | 352.2 | 289.5 | 250.9 |
| 37.5° | 175.6 | 210.4 | 278.9 | 209.4 | 173.7 |
| 40° | 122.5 | 145.7 | 202.6 | 146.7 | 121.6 |
| 42.5° | 85.9 | 101.3 | 138.0 | 98.4 | 84.9 |
| 45° | 61.8 | 70.4 | 88.8 | 68.5 | 59.8 |
| 47.5° | 42.5 | 49.2 | 55.0 | 48.2 | 41.5 |
| 50° | 25.1 | 32.8 | 33.8 | 32.8 | 24.1 |
| 52.5° | 11.6 | 18.3 | 21.2 | 18.3 | 11.6 |
| 55° | 1.9 | 7.7 | 12.5 | 7.7 | 1.0 |
| 57.5° | 1.0 | 1.0 | 6.8 | 1.0 | 1.0 |
| 60° | 1.0 | 1.0 | 2.9 | 1.0 | 1.0 |
| 62.5° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 65° | 0.0 | 0.0 | 1.0 | 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)