

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: P241647

Luminaire Tested: **PRS440D010-S4M24-44SNDMB-4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P241647
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-4000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" NARROW DISTRIBUTION, SHALLOW TRIM MATTE BLACK
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3005.5 lumens
Efficiency: N/A
Efficacy: 79.1 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

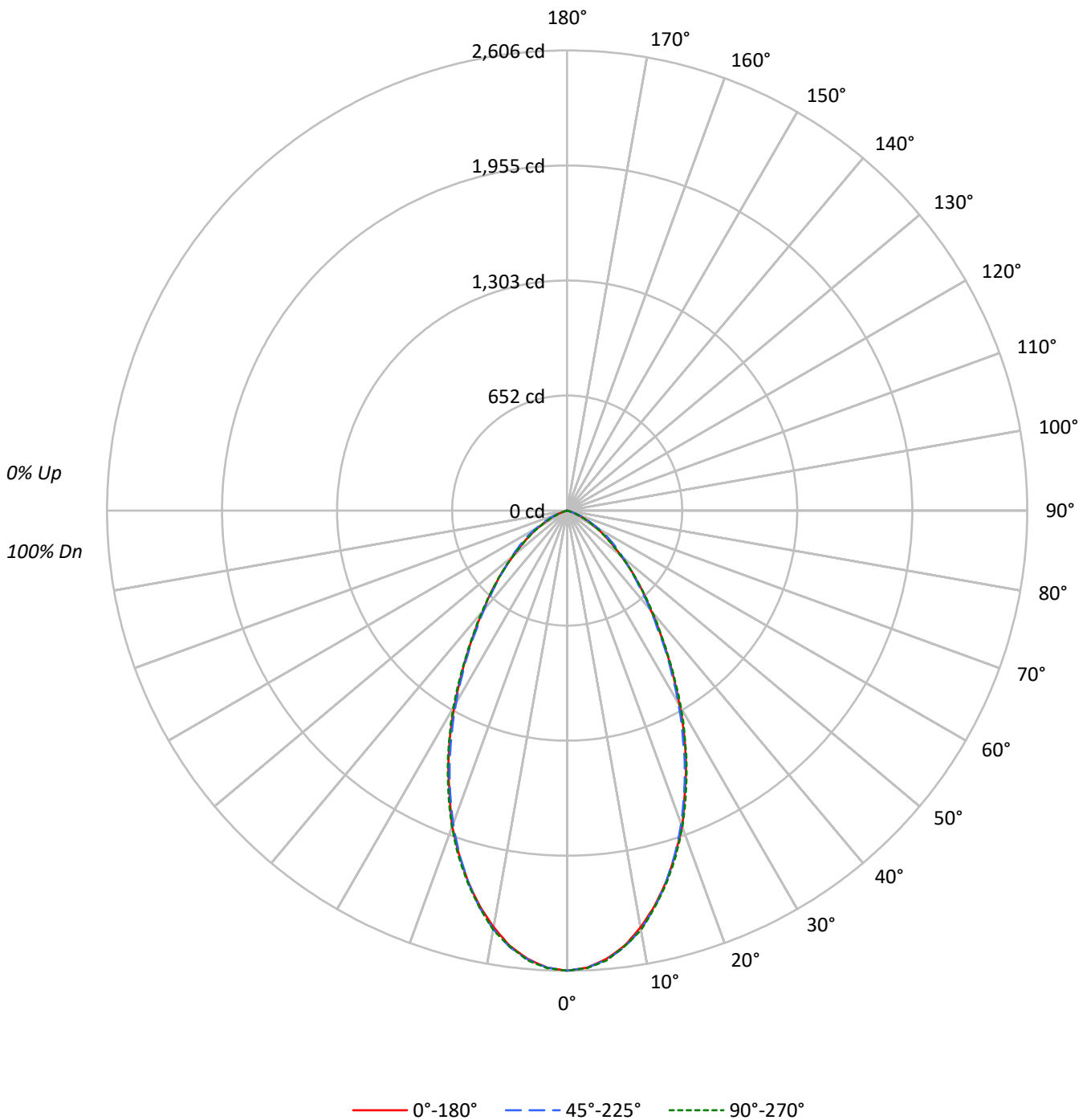
Input Watts (W): 38
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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° | 199434 | 199434 | 199434 |
| 5° | 195885 | 196169 | 196461 |
| 10° | 186235 | 187113 | 187401 |
| 15° | 172109 | 172109 | 172695 |
| 20° | 154986 | 153772 | 155287 |
| 25° | 134488 | 132917 | 135122 |
| 30° | 112664 | 111338 | 113990 |
| 35° | 91863 | 90817 | 92564 |
| 40° | 73951 | 73212 | 75080 |
| 45° | 60295 | 59082 | 60695 |
| 50° | 47180 | 48966 | 47180 |
| 55° | 37419 | 40902 | 36912 |
| 60° | 27464 | 31475 | 27464 |
| 65° | 18963 | 22350 | 18275 |
| 70° | 9198 | 12555 | 9198 |
| 75° | 0 | 3312 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 239.0 | 8.0 |
| 10°-20° | 606.5 | 20.2 |
| 20°-30° | 724.6 | 24.1 |
| 30°-40° | 614.8 | 20.5 |
| 40°-50° | 431.0 | 14.3 |
| 50°-60° | 259.9 | 8.6 |
| 60°-70° | 115.4 | 3.8 |
| 70°-80° | 14.4 | 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° | 1570.1 | 52.2 |
| 0°-40° | 2184.9 | 72.7 |
| 0°-60° | 2875.7 | 95.7 |
| 0°-90° | 3005.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3005.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2606 | 2606 | 2606 | 2606 | 2606 | |
| 5° | 2549 | 2553 | 2553 | 2553 | 2557 | 239 |
| 15° | 2172 | 2172 | 2172 | 2183 | 2179 | 606 |
| 25° | 1592 | 1585 | 1574 | 1589 | 1600 | 727 |
| 35° | 983 | 979 | 972 | 987 | 991 | 617 |
| 45° | 557 | 553 | 546 | 557 | 561 | 431 |
| 55° | 280 | 284 | 306 | 284 | 277 | 251 |
| 65° | 105 | 116 | 123 | 116 | 101 | 105 |
| 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° | 2605.5 | 2605.5 | 2605.5 | 2605.5 | 2605.5 |
| 2.5° | 2590.5 | 2590.5 | 2590.5 | 2590.5 | 2594.3 |
| 5° | 2549.4 | 2553.1 | 2553.1 | 2553.1 | 2556.9 |
| 7.5° | 2485.9 | 2485.9 | 2493.3 | 2493.3 | 2489.6 |
| 10° | 2396.1 | 2396.1 | 2407.4 | 2411.1 | 2411.1 |
| 12.5° | 2291.5 | 2291.5 | 2298.9 | 2302.7 | 2298.9 |
| 15° | 2171.9 | 2171.9 | 2171.9 | 2183.1 | 2179.3 |
| 17.5° | 2037.3 | 2037.3 | 2033.5 | 2044.8 | 2048.5 |
| 20° | 1902.7 | 1895.2 | 1887.8 | 1895.2 | 1906.4 |
| 22.5° | 1738.2 | 1738.2 | 1730.8 | 1745.7 | 1753.2 |
| 25° | 1592.4 | 1585.0 | 1573.8 | 1588.7 | 1599.9 |
| 27.5° | 1435.4 | 1428.0 | 1413.0 | 1424.2 | 1442.9 |
| 30° | 1274.7 | 1271.0 | 1259.7 | 1271.0 | 1289.7 |
| 32.5° | 1121.4 | 1117.7 | 1106.5 | 1121.4 | 1132.7 |
| 35° | 983.1 | 979.4 | 971.9 | 986.9 | 990.6 |
| 37.5° | 856.0 | 848.6 | 841.1 | 856.0 | 863.5 |
| 40° | 740.1 | 740.1 | 732.7 | 740.1 | 751.4 |
| 42.5° | 646.7 | 643.0 | 631.7 | 643.0 | 650.4 |
| 45° | 557.0 | 553.2 | 545.8 | 557.0 | 560.7 |
| 47.5° | 474.7 | 478.5 | 471.0 | 478.5 | 478.5 |
| 50° | 396.2 | 407.5 | 411.2 | 407.5 | 396.2 |
| 52.5° | 332.7 | 340.2 | 355.1 | 340.2 | 329.0 |
| 55° | 280.4 | 284.1 | 306.5 | 284.1 | 276.6 |
| 57.5° | 228.0 | 235.5 | 254.2 | 235.5 | 224.3 |
| 60° | 179.4 | 194.4 | 205.6 | 190.6 | 179.4 |
| 62.5° | 142.0 | 153.3 | 160.7 | 149.5 | 138.3 |
| 65° | 104.7 | 115.9 | 123.4 | 115.9 | 100.9 |
| 67.5° | 71.0 | 86.0 | 89.7 | 82.2 | 67.3 |
| 70° | 41.1 | 52.3 | 56.1 | 52.3 | 41.1 |
| 72.5° | 18.7 | 26.2 | 29.9 | 26.2 | 18.7 |
| 75° | 0.0 | 3.7 | 11.2 | 3.7 | 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)