

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO COMMERCIAL

Report Number: P582729

Luminaire Tested: **HC650D010-HM64560830-61RWWH**

Issue Date: 9/16/2021

Test Information

Test Method: LM-41-14
Report Number: P582729
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2105-241-15)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/16/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC650D010-HM64560830-61RWWH
Description: HALO COMMERCIAL 6" ROUND, NEW CONSTRUCTION FRAME, WITH 6" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5213.3 lumens
Efficiency: N/A
Efficacy: 108.6 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.12 / 1.19
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

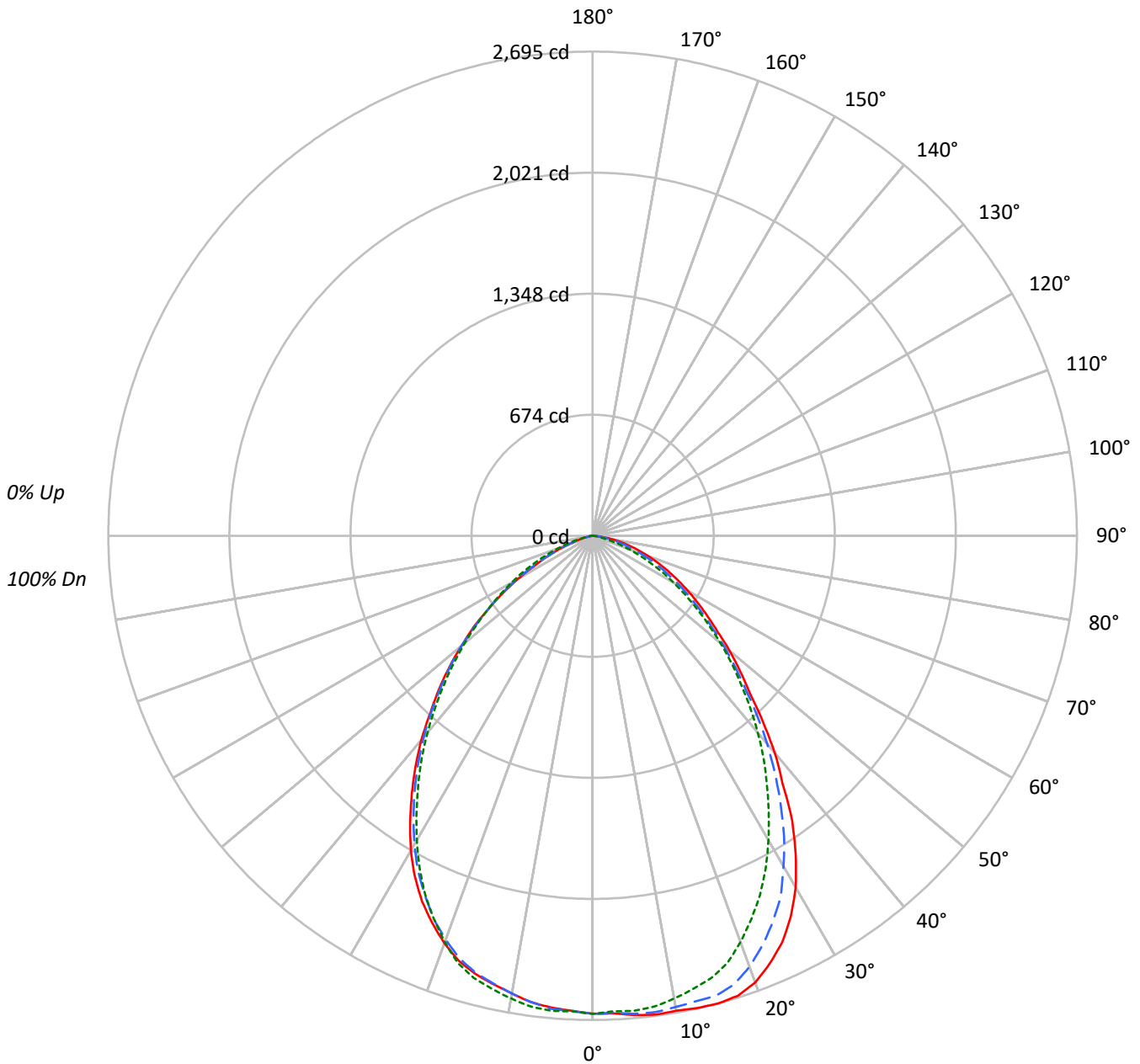
Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | 100 |
| 1 | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 88 | | | 88 |
| 2 | 103 | 96 | 90 | 85 | 100 | 94 | 89 | 84 | 91 | 86 | 83 | 87 | 84 | 81 | 85 | 82 | 79 | 77 | | | 77 |
| 3 | 95 | 86 | 79 | 74 | 93 | 84 | 78 | 73 | 82 | 76 | 72 | 79 | 74 | 70 | 77 | 73 | 69 | 67 | | | 67 |
| 4 | 88 | 78 | 70 | 64 | 86 | 76 | 69 | 64 | 74 | 68 | 63 | 72 | 66 | 62 | 70 | 65 | 61 | 59 | | | 59 |
| 5 | 82 | 70 | 62 | 57 | 80 | 69 | 62 | 56 | 67 | 61 | 56 | 65 | 60 | 55 | 64 | 59 | 55 | 53 | | | 53 |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 56 | 50 | 61 | 55 | 50 | 60 | 54 | 49 | 58 | 53 | 49 | 47 | | | 47 |
| 7 | 71 | 59 | 51 | 45 | 69 | 58 | 50 | 45 | 56 | 50 | 45 | 55 | 49 | 44 | 54 | 48 | 44 | 42 | | | 42 |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 41 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | 38 |
| 9 | 62 | 50 | 42 | 37 | 61 | 49 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | 35 |
| 10 | 59 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 | | | 32 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 145855 | 145855 | 145855 |
| 5° | 147364 | 146026 | 145063 |
| 10° | 149457 | 145577 | 144024 |
| 15° | 152975 | 144666 | 143276 |
| 20° | 154398 | 140356 | 140765 |
| 25° | 151013 | 133296 | 135830 |
| 30° | 143028 | 123829 | 128026 |
| 35° | 129516 | 113180 | 117376 |
| 40° | 112783 | 102306 | 106049 |
| 45° | 95700 | 90560 | 93800 |
| 50° | 84756 | 79110 | 81183 |
| 55° | 74654 | 67658 | 67314 |
| 60° | 66903 | 56958 | 52375 |
| 65° | 59695 | 45686 | 37553 |
| 70° | 52525 | 32970 | 23465 |
| 75° | 44332 | 19931 | 13280 |
| 80° | 34127 | 8808 | 5525 |
| 85° | 19750 | 2201 | 2201 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 252.5 | 4.8 |
| 10°-20° | 725.8 | 13.9 |
| 20°-30° | 1049.2 | 20.1 |
| 30°-40° | 1104.0 | 21.2 |
| 40°-50° | 928.1 | 17.8 |
| 50°-60° | 651.4 | 12.5 |
| 60°-70° | 358.3 | 6.9 |
| 70°-80° | 127.2 | 2.4 |
| 80°-90° | 16.7 | 0.3 |
| 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° | 2027.6 | 38.9 |
| 0°-40° | 3131.6 | 60.1 |
| 0°-60° | 4711.1 | 90.4 |
| 0°-90° | 5213.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5213.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2661 | 2661 | 2661 | 2661 | 2661 | |
| 5° | 2678 | 2671 | 2654 | 2643 | 2636 | 256 |
| 15° | 2695 | 2650 | 2549 | 2518 | 2524 | 761 |
| 25° | 2497 | 2371 | 2204 | 2207 | 2246 | 1142 |
| 35° | 1935 | 1824 | 1691 | 1726 | 1754 | 1199 |
| 45° | 1234 | 1200 | 1168 | 1196 | 1210 | 968 |
| 55° | 781 | 739 | 708 | 708 | 704 | 703 |
| 65° | 460 | 412 | 352 | 290 | 290 | 458 |
| 75° | 209 | 167 | 94 | 63 | 63 | 225 |
| 85° | 31 | 18 | 4 | 4 | 4 | 43 |
| 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° | 2660.6 | 2660.6 | 2660.6 | 2660.6 | 2660.6 | 2660.6 | 2660.6 | 2660.6 | 2660.6 |
| 2.5° | 2660.6 | 2660.6 | 2657.0 | 2657.0 | 2650.0 | 2650.0 | 2646.6 | 2646.6 | 2646.6 |
| 5° | 2677.9 | 2677.9 | 2670.9 | 2660.6 | 2653.6 | 2643.1 | 2643.1 | 2639.7 | 2636.1 |
| 7.5° | 2688.4 | 2684.9 | 2674.5 | 2660.6 | 2643.1 | 2625.7 | 2618.6 | 2622.2 | 2618.6 |
| 10° | 2684.9 | 2677.9 | 2664.0 | 2636.1 | 2615.2 | 2590.8 | 2587.3 | 2583.8 | 2587.3 |
| 12.5° | 2691.9 | 2681.5 | 2653.6 | 2618.6 | 2583.8 | 2555.9 | 2552.4 | 2552.4 | 2555.9 |
| 15° | 2695.4 | 2684.9 | 2650.0 | 2597.7 | 2549.0 | 2521.1 | 2517.5 | 2521.1 | 2524.5 |
| 17.5° | 2684.9 | 2670.9 | 2618.6 | 2549.0 | 2493.2 | 2465.2 | 2465.2 | 2472.2 | 2479.2 |
| 20° | 2646.6 | 2625.7 | 2552.4 | 2468.8 | 2405.9 | 2385.0 | 2392.0 | 2405.9 | 2412.9 |
| 22.5° | 2576.8 | 2552.4 | 2468.8 | 2374.6 | 2308.4 | 2290.9 | 2308.4 | 2325.7 | 2332.7 |
| 25° | 2496.6 | 2468.8 | 2371.1 | 2273.4 | 2203.7 | 2182.8 | 2207.2 | 2235.2 | 2245.6 |
| 27.5° | 2388.6 | 2357.2 | 2266.5 | 2155.0 | 2085.2 | 2074.8 | 2102.7 | 2133.9 | 2140.9 |
| 30° | 2259.5 | 2224.6 | 2123.6 | 2018.9 | 1956.2 | 1952.7 | 1984.1 | 2012.0 | 2022.5 |
| 32.5° | 2102.7 | 2071.2 | 1984.1 | 1879.4 | 1823.7 | 1823.7 | 1855.0 | 1879.4 | 1890.0 |
| 35° | 1935.3 | 1900.3 | 1823.7 | 1736.5 | 1691.2 | 1694.6 | 1726.0 | 1743.5 | 1753.9 |
| 37.5° | 1736.5 | 1726.0 | 1666.7 | 1593.5 | 1562.1 | 1569.1 | 1593.5 | 1607.5 | 1618.0 |
| 40° | 1576.0 | 1548.2 | 1509.8 | 1450.6 | 1429.6 | 1436.6 | 1461.0 | 1475.0 | 1481.9 |
| 42.5° | 1401.7 | 1384.4 | 1353.0 | 1311.0 | 1297.1 | 1307.6 | 1328.5 | 1339.0 | 1335.5 |
| 45° | 1234.4 | 1230.8 | 1199.5 | 1175.1 | 1168.1 | 1182.1 | 1196.0 | 1206.5 | 1209.9 |
| 47.5° | 1112.4 | 1098.3 | 1070.5 | 1053.1 | 1046.1 | 1060.1 | 1074.0 | 1081.0 | 1081.0 |
| 50° | 993.8 | 979.9 | 951.9 | 934.5 | 927.6 | 941.5 | 951.9 | 958.9 | 951.9 |
| 52.5° | 875.2 | 861.3 | 836.9 | 816.0 | 812.4 | 819.4 | 822.9 | 826.3 | 833.4 |
| 55° | 781.1 | 767.2 | 739.2 | 714.9 | 707.9 | 711.3 | 707.9 | 707.9 | 704.3 |
| 57.5° | 690.4 | 676.5 | 648.6 | 620.6 | 610.2 | 606.7 | 596.3 | 592.7 | 589.3 |
| 60° | 610.2 | 592.7 | 564.9 | 533.5 | 519.5 | 505.6 | 488.2 | 477.7 | 477.7 |
| 62.5° | 533.5 | 516.1 | 484.7 | 456.8 | 435.9 | 411.5 | 383.6 | 369.7 | 369.7 |
| 65° | 460.2 | 446.3 | 411.5 | 380.0 | 352.2 | 320.8 | 289.5 | 282.5 | 289.5 |
| 67.5° | 390.6 | 376.6 | 341.7 | 310.4 | 275.4 | 237.1 | 209.3 | 209.3 | 216.2 |
| 70° | 327.7 | 313.8 | 282.5 | 244.1 | 205.7 | 167.3 | 146.4 | 146.4 | 146.4 |
| 72.5° | 268.4 | 254.5 | 219.7 | 184.8 | 146.4 | 108.1 | 97.7 | 101.1 | 97.7 |
| 75° | 209.3 | 198.8 | 167.3 | 129.0 | 94.1 | 66.3 | 62.7 | 59.3 | 62.7 |
| 77.5° | 157.0 | 146.4 | 118.6 | 83.7 | 52.3 | 38.4 | 34.8 | 34.8 | 34.8 |
| 80° | 108.1 | 97.7 | 76.8 | 48.8 | 27.9 | 17.5 | 17.5 | 17.5 | 17.5 |
| 82.5° | 66.3 | 55.7 | 41.8 | 24.4 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 |
| 85° | 31.4 | 24.4 | 17.5 | 7.0 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 87.5° | 7.0 | 7.0 | 3.5 | 3.5 | 0.0 | 3.5 | 3.5 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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— 0°-180° - - 45°-225° - - - - 90°-270°







(END OF REPORT)