

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: P593317

Luminaire Tested: **HC645D010-HM64560850-61RWWH**

Issue Date: 9/16/2021

Test Information

Test Method: LM-41-14
Report Number: P593317
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: HC645D010-HM64560850-61RWWH
Description: HALO COMMERCIAL 6" ROUND, NEW CONSTRUCTION FRAME, WITH 6" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5360.1 lumens
Efficiency: N/A
Efficacy: 121.8 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

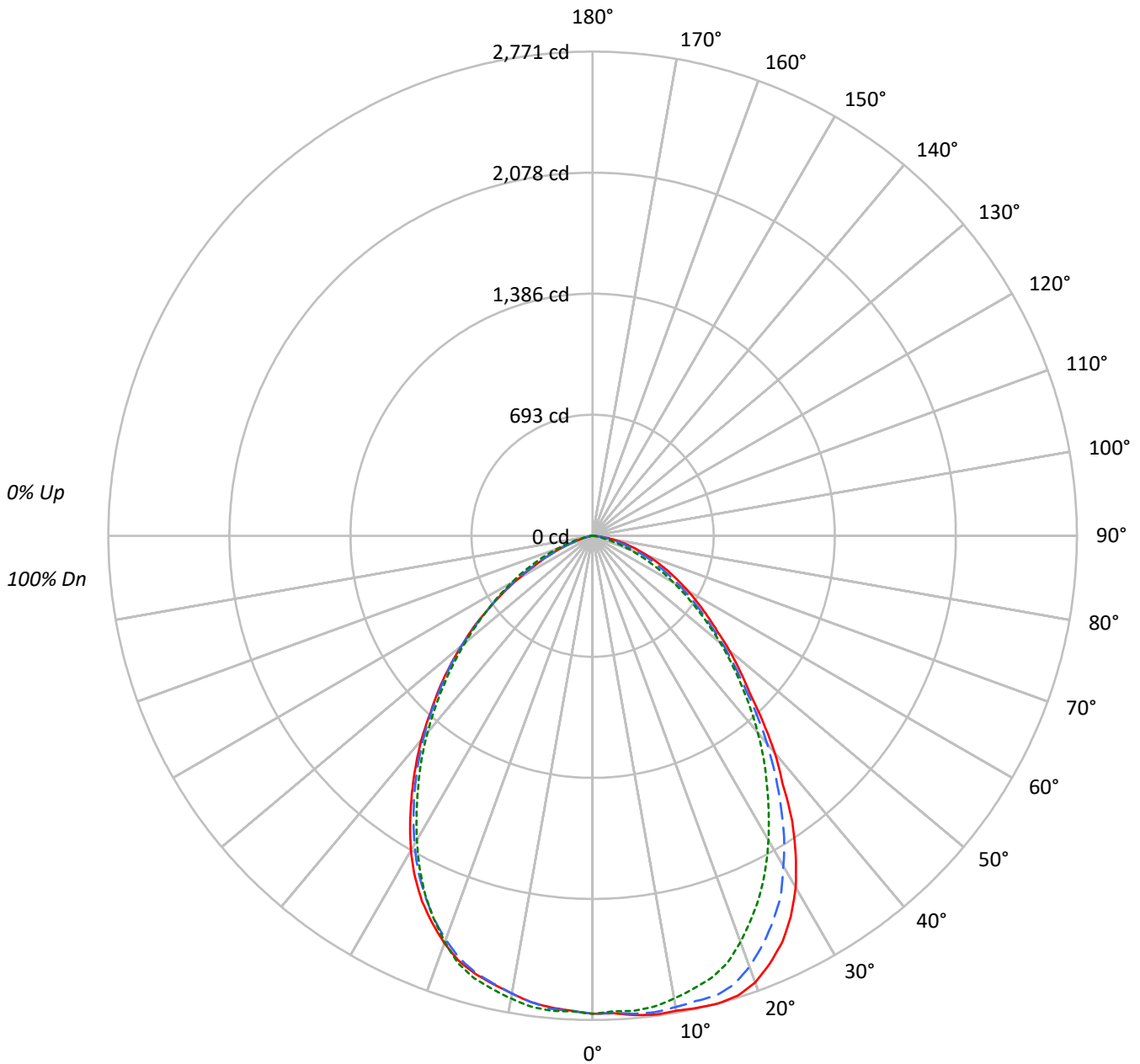
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 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° | 149955 | 149955 | 149955 |
| 5° | 151518 | 150137 | 149147 |
| 10° | 153666 | 149680 | 148077 |
| 15° | 157282 | 148735 | 147311 |
| 20° | 158745 | 144312 | 144732 |
| 25° | 155271 | 137052 | 139653 |
| 30° | 147054 | 127311 | 131628 |
| 35° | 133164 | 116359 | 120689 |
| 40° | 115967 | 105190 | 109040 |
| 45° | 98398 | 93110 | 96452 |
| 50° | 87144 | 81328 | 83477 |
| 55° | 76748 | 69551 | 69216 |
| 60° | 68788 | 58570 | 53844 |
| 65° | 61381 | 46970 | 38603 |
| 70° | 54016 | 33900 | 24139 |
| 75° | 45560 | 20503 | 13662 |
| 80° | 35074 | 9060 | 5651 |
| 85° | 20316 | 2264 | 2264 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 259.6 | 4.8 |
| 10°-20° | 746.3 | 13.9 |
| 20°-30° | 1078.8 | 20.1 |
| 30°-40° | 1135.1 | 21.2 |
| 40°-50° | 954.2 | 17.8 |
| 50°-60° | 669.7 | 12.5 |
| 60°-70° | 368.4 | 6.9 |
| 70°-80° | 130.8 | 2.4 |
| 80°-90° | 17.1 | 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° | 2084.7 | 38.9 |
| 0°-40° | 3219.8 | 60.1 |
| 0°-60° | 4843.7 | 90.4 |
| 0°-90° | 5360.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5360.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2735 | 2735 | 2735 | 2735 | 2735 | |
| 5° | 2753 | 2746 | 2728 | 2718 | 2710 | 263 |
| 15° | 2771 | 2725 | 2621 | 2588 | 2596 | 782 |
| 25° | 2567 | 2438 | 2266 | 2269 | 2309 | 1174 |
| 35° | 1990 | 1875 | 1739 | 1775 | 1803 | 1233 |
| 45° | 1269 | 1233 | 1201 | 1230 | 1244 | 996 |
| 55° | 803 | 760 | 728 | 728 | 724 | 723 |
| 65° | 473 | 423 | 362 | 298 | 298 | 471 |
| 75° | 215 | 172 | 97 | 64 | 64 | 231 |
| 85° | 32 | 18 | 4 | 4 | 4 | 44 |
| 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° | 2735.4 | 2735.4 | 2735.4 | 2735.4 | 2735.4 | 2735.4 | 2735.4 | 2735.4 | 2735.4 |
| 2.5° | 2735.4 | 2735.4 | 2731.9 | 2731.9 | 2724.6 | 2724.6 | 2721.1 | 2721.1 | 2721.1 |
| 5° | 2753.4 | 2753.4 | 2746.2 | 2735.4 | 2728.3 | 2717.5 | 2717.5 | 2714.0 | 2710.3 |
| 7.5° | 2764.2 | 2760.5 | 2749.7 | 2735.4 | 2717.5 | 2699.7 | 2692.4 | 2696.0 | 2692.4 |
| 10° | 2760.5 | 2753.4 | 2739.1 | 2710.3 | 2688.9 | 2663.8 | 2660.1 | 2656.6 | 2660.1 |
| 12.5° | 2767.7 | 2757.0 | 2728.3 | 2692.4 | 2656.6 | 2627.9 | 2624.4 | 2624.4 | 2627.9 |
| 15° | 2771.3 | 2760.5 | 2724.6 | 2670.9 | 2620.7 | 2592.1 | 2588.5 | 2592.1 | 2595.6 |
| 17.5° | 2760.5 | 2746.2 | 2692.4 | 2620.7 | 2563.4 | 2534.7 | 2534.7 | 2541.9 | 2549.0 |
| 20° | 2721.1 | 2699.7 | 2624.4 | 2538.3 | 2473.7 | 2452.3 | 2459.4 | 2473.7 | 2480.9 |
| 22.5° | 2649.5 | 2624.4 | 2538.3 | 2441.5 | 2373.3 | 2355.4 | 2373.3 | 2391.3 | 2398.4 |
| 25° | 2567.0 | 2538.3 | 2437.8 | 2337.6 | 2265.8 | 2244.3 | 2269.4 | 2298.0 | 2308.8 |
| 27.5° | 2455.8 | 2423.5 | 2330.3 | 2215.6 | 2143.9 | 2133.1 | 2161.8 | 2194.1 | 2201.3 |
| 30° | 2323.1 | 2287.4 | 2183.3 | 2075.7 | 2011.2 | 2007.7 | 2040.0 | 2068.6 | 2079.4 |
| 32.5° | 2161.8 | 2129.6 | 2040.0 | 1932.4 | 1875.0 | 1875.0 | 1907.3 | 1932.4 | 1943.2 |
| 35° | 1989.8 | 1953.9 | 1875.0 | 1785.4 | 1738.7 | 1742.4 | 1774.6 | 1792.6 | 1803.4 |
| 37.5° | 1785.4 | 1774.6 | 1713.6 | 1638.4 | 1606.2 | 1613.3 | 1638.4 | 1652.8 | 1663.5 |
| 40° | 1620.5 | 1591.8 | 1552.3 | 1491.5 | 1469.9 | 1477.0 | 1502.1 | 1516.5 | 1523.7 |
| 42.5° | 1441.3 | 1423.3 | 1391.1 | 1348.0 | 1333.7 | 1344.4 | 1366.0 | 1376.6 | 1373.1 |
| 45° | 1269.2 | 1265.5 | 1233.3 | 1208.2 | 1201.0 | 1215.3 | 1229.7 | 1240.4 | 1244.1 |
| 47.5° | 1143.7 | 1129.4 | 1100.6 | 1082.7 | 1075.5 | 1089.8 | 1104.3 | 1111.4 | 1111.4 |
| 50° | 1021.8 | 1007.4 | 978.8 | 960.8 | 953.6 | 968.0 | 978.8 | 985.9 | 978.8 |
| 52.5° | 899.9 | 885.5 | 860.4 | 838.9 | 835.3 | 842.4 | 846.1 | 849.7 | 856.9 |
| 55° | 803.0 | 788.7 | 760.1 | 735.0 | 727.7 | 731.4 | 727.7 | 727.7 | 724.2 |
| 57.5° | 709.9 | 695.5 | 666.9 | 638.1 | 627.4 | 623.8 | 613.0 | 609.5 | 605.9 |
| 60° | 627.4 | 609.5 | 580.8 | 548.5 | 534.2 | 519.9 | 501.9 | 491.1 | 491.1 |
| 62.5° | 548.5 | 530.5 | 498.3 | 469.7 | 448.1 | 423.1 | 394.4 | 380.1 | 380.1 |
| 65° | 473.2 | 458.9 | 423.1 | 390.7 | 362.1 | 329.8 | 297.6 | 290.4 | 297.6 |
| 67.5° | 401.5 | 387.2 | 351.3 | 319.1 | 283.3 | 243.7 | 215.1 | 215.1 | 222.3 |
| 70° | 337.0 | 322.7 | 290.4 | 250.9 | 211.5 | 172.1 | 150.6 | 150.6 | 150.6 |
| 72.5° | 276.0 | 261.7 | 225.9 | 190.0 | 150.6 | 111.1 | 100.4 | 103.9 | 100.4 |
| 75° | 215.1 | 204.3 | 172.1 | 132.7 | 96.8 | 68.2 | 64.5 | 61.0 | 64.5 |
| 77.5° | 161.3 | 150.6 | 121.9 | 86.1 | 53.7 | 39.4 | 35.9 | 35.9 | 35.9 |
| 80° | 111.1 | 100.4 | 78.8 | 50.2 | 28.7 | 17.9 | 17.9 | 17.9 | 17.9 |
| 82.5° | 68.2 | 57.4 | 43.0 | 25.1 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 |
| 85° | 32.3 | 25.1 | 17.9 | 7.2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 |
| 87.5° | 7.2 | 7.2 | 3.6 | 3.6 | 0.0 | 3.6 | 3.6 | 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)