

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: P580757

Luminaire Tested: **HC445D010-HM44560840-41WWW**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580757
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-16)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC445D010-HM44560840-41WWW
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5150.7 lumens
Efficiency: N/A
Efficacy: 117.1 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

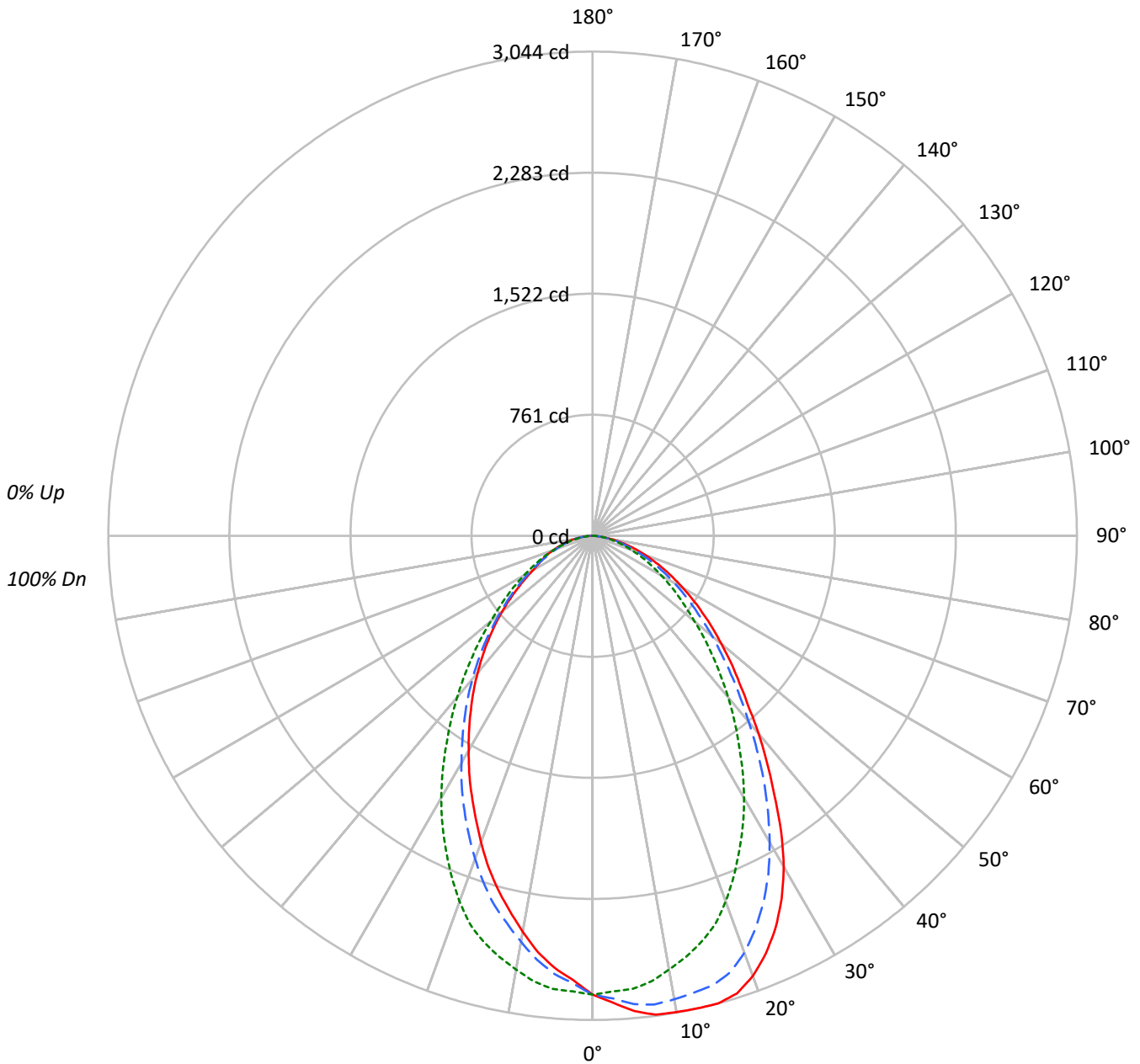
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 106 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | 87 | | | | 87 | | | | |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 81 | 87 | 83 | 80 | 84 | 81 | 78 | 76 | | | | 76 | | | | |
| 3 | 94 | 85 | 78 | 72 | 92 | 84 | 77 | 72 | 81 | 75 | 71 | 78 | 73 | 69 | 76 | 72 | 68 | 66 | | | | 66 | | | | |
| 4 | 87 | 77 | 69 | 63 | 85 | 76 | 68 | 63 | 73 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 | | | | 58 | | | | |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 52 | | | | 52 | | | | |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 59 | 53 | 49 | 58 | 53 | 48 | 47 | | | | 47 | | | | |
| 7 | 71 | 58 | 50 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 44 | 55 | 49 | 44 | 53 | 48 | 44 | 42 | | | | 42 | | | | |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 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° | 355753 | 355753 | 355753 |
| 5° | 371413 | 354178 | 337785 |
| 10° | 380805 | 346800 | 316628 |
| 15° | 388683 | 337541 | 293792 |
| 20° | 386618 | 321132 | 269034 |
| 25° | 370374 | 296936 | 244770 |
| 30° | 342167 | 271125 | 221816 |
| 35° | 299935 | 241180 | 200795 |
| 40° | 261168 | 213089 | 180837 |
| 45° | 227291 | 185863 | 161581 |
| 50° | 202523 | 160191 | 142595 |
| 55° | 180962 | 140834 | 123329 |
| 60° | 161558 | 123050 | 106324 |
| 65° | 143595 | 107930 | 101013 |
| 70° | 126043 | 92973 | 94235 |
| 75° | 106752 | 79254 | 87308 |
| 80° | 81900 | 67480 | 79556 |
| 85° | 47976 | 52930 | 67224 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 270.4 | 5.2 |
| 10°-20° | 745.7 | 14.5 |
| 20°-30° | 1018.9 | 19.8 |
| 30°-40° | 1023.1 | 19.9 |
| 40°-50° | 846.3 | 16.4 |
| 50°-60° | 613.3 | 11.9 |
| 60°-70° | 388.5 | 7.5 |
| 70°-80° | 196.4 | 3.8 |
| 80°-90° | 48.1 | 0.9 |
| 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° | 2035.0 | 39.5 |
| 0°-40° | 3058.0 | 59.4 |
| 0°-60° | 4517.7 | 87.7 |
| 0°-90° | 5150.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5150.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2884 | 2884 | 2884 | 2884 | 2884 | |
| 5° | 3000 | 2956 | 2860 | 2766 | 2728 | 287 |
| 15° | 3044 | 2925 | 2643 | 2399 | 2301 | 856 |
| 25° | 2721 | 2542 | 2182 | 1907 | 1798 | 1244 |
| 35° | 1992 | 1873 | 1602 | 1405 | 1334 | 1249 |
| 45° | 1303 | 1228 | 1066 | 960 | 926 | 1013 |
| 55° | 842 | 767 | 655 | 597 | 574 | 757 |
| 65° | 492 | 438 | 370 | 333 | 346 | 490 |
| 75° | 224 | 193 | 166 | 173 | 183 | 239 |
| 85° | 34 | 34 | 37 | 44 | 48 | 47 |
| 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° | 2884.2 | 2884.2 | 2884.2 | 2884.2 | 2884.2 | 2884.2 | 2884.2 | 2884.2 | 2884.2 |
| 2.5° | 2938.5 | 2928.4 | 2911.4 | 2891.1 | 2867.3 | 2840.1 | 2816.4 | 2802.9 | 2796.0 |
| 5° | 2999.7 | 2986.1 | 2955.5 | 2911.4 | 2860.5 | 2809.6 | 2765.5 | 2738.4 | 2728.1 |
| 7.5° | 3036.9 | 3016.6 | 2972.5 | 2904.6 | 2826.5 | 2751.9 | 2687.4 | 2650.2 | 2640.0 |
| 10° | 3040.4 | 3016.6 | 2958.9 | 2867.3 | 2768.9 | 2670.5 | 2592.4 | 2538.2 | 2528.0 |
| 12.5° | 3043.8 | 3013.2 | 2941.9 | 2833.4 | 2711.2 | 2589.0 | 2494.0 | 2429.6 | 2412.6 |
| 15° | 3043.8 | 3013.2 | 2924.9 | 2796.0 | 2643.3 | 2504.2 | 2399.1 | 2324.3 | 2300.7 |
| 17.5° | 3016.6 | 2982.6 | 2877.5 | 2728.1 | 2561.9 | 2405.8 | 2283.6 | 2205.6 | 2181.8 |
| 20° | 2945.4 | 2908.0 | 2789.3 | 2626.4 | 2446.5 | 2283.6 | 2161.5 | 2080.1 | 2049.6 |
| 22.5° | 2843.5 | 2799.4 | 2673.8 | 2497.5 | 2317.6 | 2151.3 | 2032.5 | 1947.7 | 1920.5 |
| 25° | 2721.4 | 2677.3 | 2541.6 | 2368.4 | 2181.8 | 2025.8 | 1907.0 | 1829.0 | 1798.5 |
| 27.5° | 2572.1 | 2524.6 | 2392.2 | 2219.2 | 2046.1 | 1890.0 | 1781.4 | 1710.2 | 1679.6 |
| 30° | 2402.4 | 2351.5 | 2225.9 | 2059.7 | 1903.6 | 1754.4 | 1649.1 | 1591.4 | 1557.4 |
| 32.5° | 2205.6 | 2161.5 | 2049.6 | 1900.2 | 1754.4 | 1611.8 | 1523.6 | 1472.6 | 1445.5 |
| 35° | 1991.9 | 1968.1 | 1873.1 | 1744.1 | 1601.7 | 1482.8 | 1404.9 | 1357.3 | 1333.5 |
| 37.5° | 1801.8 | 1778.0 | 1696.6 | 1588.1 | 1462.5 | 1353.9 | 1289.4 | 1248.7 | 1228.4 |
| 40° | 1622.0 | 1601.7 | 1523.6 | 1431.9 | 1323.4 | 1228.4 | 1174.1 | 1143.5 | 1123.1 |
| 42.5° | 1445.5 | 1435.4 | 1370.9 | 1286.0 | 1191.0 | 1109.5 | 1065.5 | 1041.8 | 1024.7 |
| 45° | 1303.0 | 1289.4 | 1228.4 | 1146.9 | 1065.5 | 997.6 | 960.3 | 943.3 | 926.3 |
| 47.5° | 1177.4 | 1160.5 | 1096.0 | 1024.7 | 950.1 | 889.1 | 855.1 | 838.1 | 831.3 |
| 50° | 1055.4 | 1038.3 | 980.6 | 909.4 | 834.8 | 790.7 | 763.5 | 746.5 | 743.1 |
| 52.5° | 946.7 | 929.8 | 865.3 | 797.4 | 739.7 | 702.4 | 678.7 | 661.6 | 654.9 |
| 55° | 841.5 | 821.2 | 766.9 | 702.4 | 654.9 | 620.9 | 597.2 | 580.3 | 573.5 |
| 57.5° | 746.5 | 726.2 | 678.7 | 617.5 | 573.5 | 542.9 | 522.5 | 505.6 | 498.8 |
| 60° | 654.9 | 638.0 | 593.8 | 536.1 | 498.8 | 471.7 | 451.3 | 437.7 | 431.0 |
| 62.5° | 570.1 | 556.5 | 512.4 | 461.5 | 431.0 | 407.2 | 390.2 | 376.7 | 383.4 |
| 65° | 492.0 | 478.4 | 437.7 | 393.6 | 369.8 | 346.1 | 332.6 | 332.6 | 346.1 |
| 67.5° | 417.4 | 403.8 | 369.8 | 332.6 | 312.1 | 295.2 | 285.0 | 295.2 | 305.4 |
| 70° | 349.5 | 335.9 | 305.4 | 274.9 | 257.8 | 244.3 | 244.3 | 254.5 | 261.3 |
| 72.5° | 285.0 | 271.4 | 247.7 | 224.0 | 210.4 | 200.2 | 210.4 | 217.2 | 224.0 |
| 75° | 224.0 | 213.7 | 193.4 | 176.5 | 166.3 | 162.9 | 173.0 | 179.9 | 183.2 |
| 77.5° | 166.3 | 159.4 | 145.9 | 132.3 | 125.6 | 128.9 | 139.1 | 142.5 | 145.9 |
| 80° | 115.3 | 112.0 | 101.8 | 95.0 | 95.0 | 98.4 | 105.2 | 108.6 | 112.0 |
| 82.5° | 71.2 | 71.2 | 64.5 | 61.0 | 64.5 | 71.2 | 74.6 | 78.1 | 78.1 |
| 85° | 33.9 | 37.4 | 33.9 | 33.9 | 37.4 | 44.1 | 44.1 | 47.5 | 47.5 |
| 87.5° | 10.2 | 10.2 | 13.6 | 13.6 | 16.9 | 16.9 | 16.9 | 16.9 | 20.3 |
| 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)