

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: P582484

Luminaire Tested: **HC640D010-HM63040840-61WWW**

Issue Date: 9/16/2021

Test Information

Test Method: LM-41-14
Report Number: P582484
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2105-241-16)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/16/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC640D010-HM63040840-61WWW
Description: HALO COMMERCIAL 6" ROUND, NEW CONSTRUCTION FRAME, WITH 6" 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: 4572.7 lumens
Efficiency: N/A
Efficacy: 111.5 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1.06 / 1.14
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

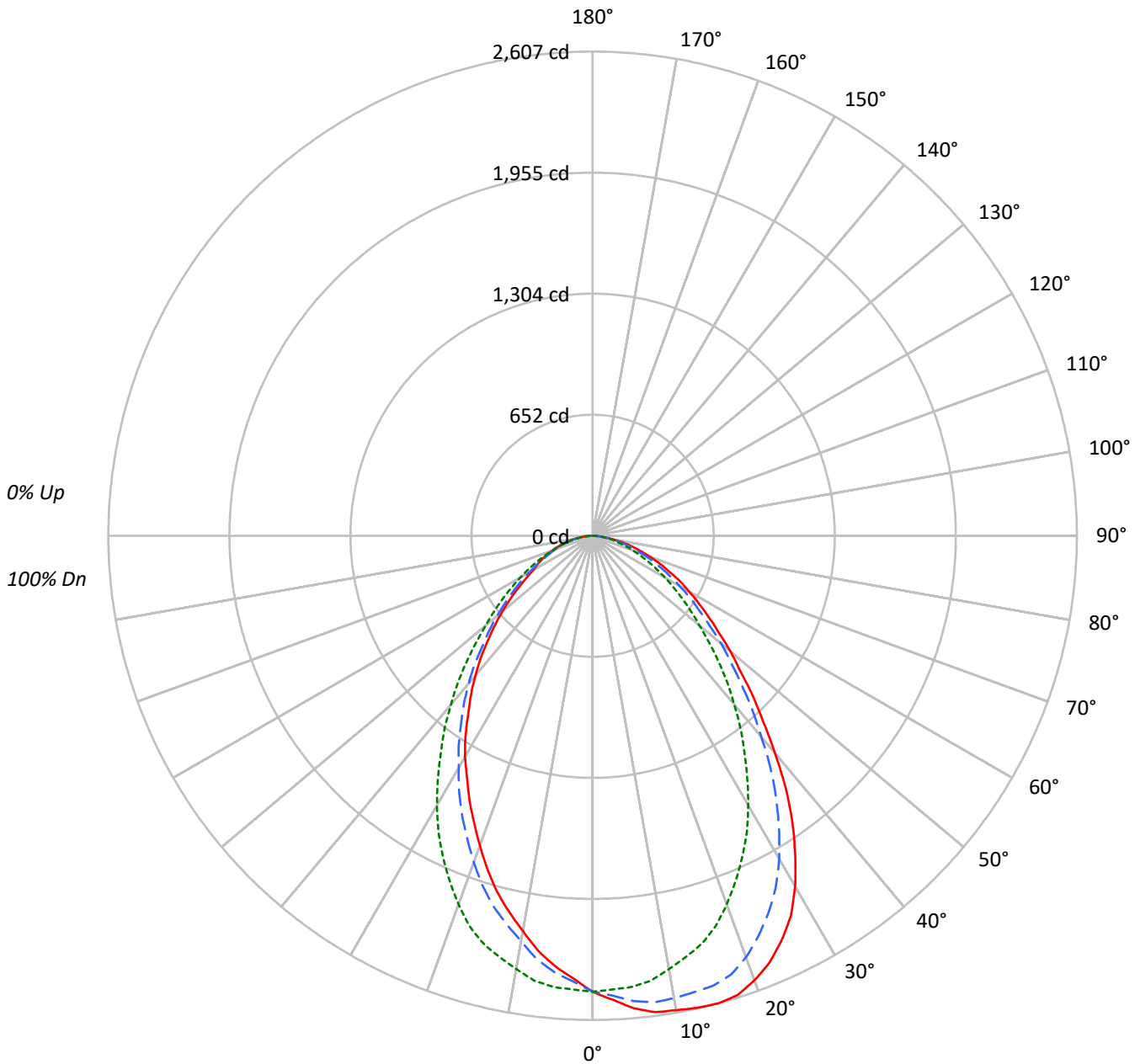
Input Watts (W): 41
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 100 | 100 |
| 1 | 110 | 106 | 103 | 99 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | 87 | 87 | 87 | 87 |
| 2 | 102 | 95 | 89 | 84 | 99 | 93 | 88 | 83 | 90 | 85 | 81 | 86 | 83 | 79 | 83 | 80 | 78 | 76 | 76 | 76 | 76 |
| 3 | 94 | 85 | 78 | 72 | 92 | 83 | 77 | 71 | 80 | 75 | 70 | 78 | 73 | 69 | 75 | 71 | 68 | 66 | 66 | 66 | 66 |
| 4 | 87 | 76 | 69 | 63 | 85 | 75 | 68 | 62 | 73 | 67 | 62 | 71 | 65 | 61 | 69 | 64 | 60 | 58 | 58 | 58 | 58 |
| 5 | 81 | 69 | 61 | 55 | 79 | 68 | 61 | 55 | 66 | 60 | 55 | 64 | 59 | 54 | 63 | 58 | 53 | 51 | 51 | 51 | 51 |
| 6 | 75 | 63 | 55 | 49 | 73 | 62 | 55 | 49 | 61 | 54 | 49 | 59 | 53 | 48 | 57 | 52 | 48 | 46 | 46 | 46 | 46 |
| 7 | 70 | 58 | 50 | 44 | 69 | 57 | 50 | 44 | 56 | 49 | 44 | 54 | 48 | 44 | 53 | 48 | 43 | 42 | 42 | 42 | 42 |
| 8 | 66 | 53 | 46 | 40 | 64 | 53 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 49 | 44 | 39 | 38 | 38 | 38 | 38 |
| 9 | 62 | 49 | 42 | 37 | 60 | 49 | 42 | 37 | 48 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 36 | 34 | 34 | 34 | 34 |
| 10 | 58 | 46 | 39 | 34 | 57 | 45 | 38 | 34 | 44 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 32 | 32 | 32 | 32 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 134573 | 134573 | 134573 |
| 5° | 140535 | 134179 | 127993 |
| 10° | 144369 | 131867 | 120277 |
| 15° | 147941 | 129002 | 112691 |
| 20° | 148605 | 123164 | 103504 |
| 25° | 145484 | 115313 | 94923 |
| 30° | 138034 | 106029 | 87001 |
| 35° | 125360 | 95298 | 78052 |
| 40° | 109226 | 84873 | 70217 |
| 45° | 94521 | 74279 | 61735 |
| 50° | 82556 | 63964 | 54096 |
| 55° | 72944 | 56208 | 46421 |
| 60° | 65565 | 49272 | 40205 |
| 65° | 58722 | 42858 | 38993 |
| 70° | 52429 | 36529 | 36529 |
| 75° | 45475 | 30797 | 34271 |
| 80° | 36526 | 26077 | 31286 |
| 85° | 24971 | 22895 | 27047 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 230.7 | 5.0 |
| 10°-20° | 641.3 | 14.0 |
| 20°-30° | 893.8 | 19.5 |
| 30°-40° | 920.9 | 20.1 |
| 40°-50° | 763.2 | 16.7 |
| 50°-60° | 548.5 | 12.0 |
| 60°-70° | 349.3 | 7.6 |
| 70°-80° | 179.4 | 3.9 |
| 80°-90° | 45.6 | 1.0 |
| 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° | 1765.8 | 38.6 |
| 0°-40° | 2686.7 | 58.8 |
| 0°-60° | 3998.4 | 87.4 |
| 0°-90° | 4572.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4572.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2455 | 2455 | 2455 | 2455 | 2455 | |
| 5° | 2554 | 2514 | 2438 | 2359 | 2326 | 245 |
| 15° | 2607 | 2508 | 2273 | 2065 | 1986 | 735 |
| 25° | 2405 | 2240 | 1906 | 1662 | 1569 | 1102 |
| 35° | 1873 | 1721 | 1424 | 1236 | 1166 | 1164 |
| 45° | 1219 | 1133 | 958 | 836 | 796 | 944 |
| 55° | 763 | 700 | 588 | 522 | 486 | 687 |
| 65° | 453 | 403 | 330 | 287 | 301 | 453 |
| 75° | 215 | 185 | 145 | 152 | 162 | 229 |
| 85° | 40 | 36 | 36 | 40 | 43 | 51 |
| 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° | 2454.8 | 2454.8 | 2454.8 | 2454.8 | 2454.8 | 2454.8 | 2454.8 | 2454.8 | 2454.8 |
| 2.5° | 2501.0 | 2491.1 | 2477.9 | 2464.7 | 2444.9 | 2421.7 | 2401.9 | 2395.3 | 2385.4 |
| 5° | 2553.8 | 2540.7 | 2514.3 | 2481.2 | 2438.3 | 2395.3 | 2358.9 | 2335.8 | 2325.9 |
| 7.5° | 2587.0 | 2570.3 | 2534.1 | 2477.9 | 2415.1 | 2352.3 | 2299.4 | 2266.4 | 2253.2 |
| 10° | 2593.5 | 2577.1 | 2527.5 | 2451.5 | 2368.9 | 2282.9 | 2216.8 | 2177.3 | 2160.7 |
| 12.5° | 2603.4 | 2580.4 | 2517.6 | 2428.3 | 2322.6 | 2223.4 | 2140.9 | 2091.3 | 2074.8 |
| 15° | 2606.7 | 2580.4 | 2507.7 | 2398.6 | 2273.0 | 2154.1 | 2064.9 | 2005.4 | 1985.6 |
| 17.5° | 2593.5 | 2563.7 | 2477.9 | 2345.7 | 2203.7 | 2078.1 | 1972.4 | 1909.6 | 1883.1 |
| 20° | 2547.3 | 2514.3 | 2415.1 | 2266.4 | 2111.2 | 1979.0 | 1869.9 | 1803.9 | 1774.2 |
| 22.5° | 2487.8 | 2444.9 | 2332.5 | 2174.0 | 2012.0 | 1873.2 | 1764.3 | 1698.2 | 1668.4 |
| 25° | 2405.2 | 2365.5 | 2240.1 | 2071.5 | 1906.4 | 1761.0 | 1661.8 | 1592.4 | 1569.3 |
| 27.5° | 2309.4 | 2263.1 | 2134.3 | 1965.8 | 1797.3 | 1651.9 | 1556.2 | 1493.4 | 1463.6 |
| 30° | 2180.6 | 2137.6 | 2008.7 | 1840.3 | 1675.0 | 1539.5 | 1440.5 | 1387.6 | 1374.4 |
| 32.5° | 2028.6 | 1992.2 | 1866.6 | 1708.1 | 1549.6 | 1424.0 | 1341.4 | 1285.2 | 1272.0 |
| 35° | 1873.2 | 1830.4 | 1721.3 | 1572.6 | 1424.0 | 1311.6 | 1235.6 | 1186.0 | 1166.3 |
| 37.5° | 1704.8 | 1665.1 | 1572.6 | 1440.5 | 1308.3 | 1202.7 | 1136.6 | 1093.6 | 1073.8 |
| 40° | 1526.3 | 1496.7 | 1410.8 | 1305.0 | 1186.0 | 1093.6 | 1037.4 | 1001.1 | 981.2 |
| 42.5° | 1361.2 | 1331.4 | 1272.0 | 1172.9 | 1073.8 | 991.1 | 941.6 | 908.5 | 892.0 |
| 45° | 1219.2 | 1192.6 | 1133.3 | 1047.3 | 958.1 | 888.7 | 835.9 | 812.8 | 796.3 |
| 47.5° | 1077.1 | 1063.8 | 1011.0 | 931.7 | 849.0 | 789.7 | 753.3 | 726.9 | 713.6 |
| 50° | 968.0 | 951.5 | 901.9 | 819.4 | 750.0 | 703.7 | 670.7 | 647.5 | 634.3 |
| 52.5° | 855.6 | 839.1 | 793.0 | 723.6 | 667.4 | 624.4 | 591.4 | 571.5 | 558.3 |
| 55° | 763.2 | 750.0 | 700.4 | 637.6 | 588.1 | 551.7 | 522.1 | 498.8 | 485.7 |
| 57.5° | 677.3 | 664.1 | 617.8 | 558.3 | 515.5 | 482.4 | 456.0 | 436.1 | 419.6 |
| 60° | 598.0 | 588.1 | 541.8 | 485.7 | 449.4 | 416.3 | 393.2 | 376.6 | 366.7 |
| 62.5° | 528.7 | 508.7 | 469.2 | 419.6 | 386.6 | 360.1 | 337.0 | 327.1 | 333.7 |
| 65° | 452.7 | 442.7 | 403.1 | 360.1 | 330.4 | 303.9 | 287.4 | 294.0 | 300.6 |
| 67.5° | 389.9 | 376.6 | 343.6 | 303.9 | 277.5 | 257.7 | 247.8 | 261.0 | 264.3 |
| 70° | 327.1 | 313.9 | 284.1 | 251.1 | 227.9 | 214.7 | 214.7 | 224.6 | 227.9 |
| 72.5° | 267.6 | 257.7 | 231.2 | 204.8 | 188.4 | 178.5 | 185.1 | 191.7 | 194.9 |
| 75° | 214.7 | 204.8 | 185.1 | 161.8 | 145.4 | 145.4 | 151.9 | 158.5 | 161.8 |
| 77.5° | 165.1 | 158.5 | 138.8 | 122.3 | 115.7 | 115.7 | 122.3 | 125.6 | 128.9 |
| 80° | 115.7 | 109.1 | 99.1 | 89.2 | 82.6 | 89.2 | 95.8 | 95.8 | 99.1 |
| 82.5° | 76.0 | 72.7 | 66.1 | 59.5 | 59.5 | 62.8 | 66.1 | 69.4 | 69.4 |
| 85° | 39.7 | 39.7 | 36.4 | 33.0 | 36.4 | 39.7 | 39.7 | 43.0 | 43.0 |
| 87.5° | 13.2 | 13.2 | 13.2 | 13.2 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 |
| 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)