

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: P580578

Luminaire Tested: **HC440D010-HM43040830-41WWWB**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580578
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-18)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC440D010-HM43040830-41WWWB
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4107.3 lumens
Efficiency: N/A
Efficacy: 100.2 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.15
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

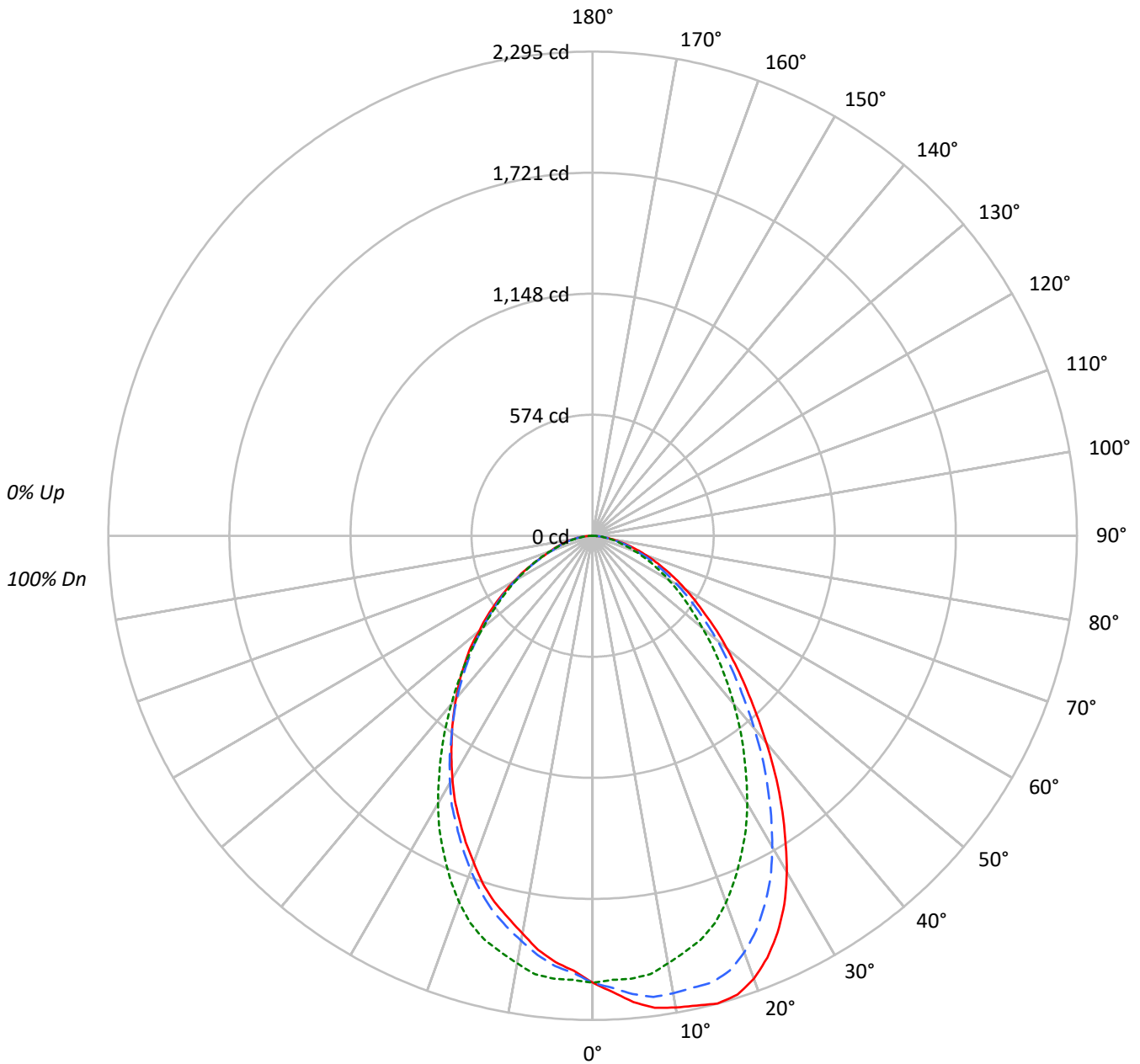
Input Watts (W): 41
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | | | | | | | | |
| 1 | 110 | 106 | 103 | 99 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 92 | 91 | 89 | 87 | | | | | | | | |
| 2 | 102 | 95 | 89 | 84 | 99 | 93 | 87 | 83 | 89 | 85 | 81 | 86 | 82 | 79 | 83 | 80 | 77 | 75 | | | | | | | | |
| 3 | 94 | 85 | 77 | 72 | 92 | 83 | 76 | 71 | 80 | 75 | 70 | 78 | 73 | 69 | 75 | 71 | 68 | 66 | | | | | | | | |
| 4 | 87 | 76 | 68 | 62 | 85 | 75 | 68 | 62 | 72 | 66 | 61 | 70 | 65 | 60 | 68 | 63 | 60 | 58 | | | | | | | | |
| 5 | 81 | 69 | 61 | 55 | 79 | 68 | 60 | 55 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 51 | | | | | | | | |
| 6 | 75 | 63 | 55 | 49 | 73 | 62 | 54 | 49 | 60 | 53 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 46 | | | | | | | | |
| 7 | 70 | 58 | 50 | 44 | 68 | 57 | 49 | 44 | 55 | 48 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 | | | | | | | | |
| 8 | 65 | 53 | 45 | 40 | 64 | 52 | 45 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 49 | 43 | 39 | 37 | | | | | | | | |
| 9 | 61 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 36 | 45 | 40 | 36 | 34 | | | | | | | | |
| 10 | 58 | 45 | 38 | 33 | 57 | 45 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 42 | 37 | 33 | 31 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 261234 | 261234 | 261234 |
| 5° | 274688 | 260882 | 251113 |
| 10° | 284326 | 257761 | 239725 |
| 15° | 293013 | 253082 | 229484 |
| 20° | 293330 | 242677 | 216254 |
| 25° | 282319 | 226819 | 202757 |
| 30° | 262152 | 208713 | 189343 |
| 35° | 234976 | 187905 | 175212 |
| 40° | 206181 | 167666 | 161966 |
| 45° | 180211 | 148446 | 149370 |
| 50° | 159117 | 129911 | 134593 |
| 55° | 140318 | 115179 | 121007 |
| 60° | 125418 | 101933 | 105979 |
| 65° | 111082 | 89689 | 89689 |
| 70° | 97084 | 76491 | 76491 |
| 75° | 82923 | 64814 | 72534 |
| 80° | 65705 | 57962 | 65705 |
| 85° | 42315 | 49958 | 61563 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 200.7 | 4.9 |
| 10°-20° | 565.1 | 13.8 |
| 20°-30° | 791.6 | 19.3 |
| 30°-40° | 815.6 | 19.9 |
| 40°-50° | 694.4 | 16.9 |
| 50°-60° | 514.5 | 12.5 |
| 60°-70° | 322.9 | 7.9 |
| 70°-80° | 160.4 | 3.9 |
| 80°-90° | 42.1 | 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° | 1557.4 | 37.9 |
| 0°-40° | 2373.0 | 57.8 |
| 0°-60° | 3581.9 | 87.2 |
| 0°-90° | 4107.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4107.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2118 | 2118 | 2118 | 2118 | 2118 | |
| 5° | 2218 | 2180 | 2107 | 2047 | 2028 | 213 |
| 15° | 2295 | 2191 | 1982 | 1838 | 1797 | 645 |
| 25° | 2074 | 1930 | 1667 | 1522 | 1490 | 949 |
| 35° | 1560 | 1444 | 1248 | 1166 | 1164 | 973 |
| 45° | 1033 | 962 | 851 | 835 | 856 | 802 |
| 55° | 652 | 601 | 536 | 546 | 563 | 590 |
| 65° | 381 | 343 | 307 | 302 | 307 | 380 |
| 75° | 174 | 155 | 136 | 147 | 152 | 186 |
| 85° | 30 | 30 | 35 | 41 | 44 | 38 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P580578

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2117.9 | 2117.9 | 2117.9 | 2117.9 | 2117.9 | 2117.9 | 2117.9 | 2117.9 | 2117.9 |
| 2.5° | 2164.1 | 2155.9 | 2145.0 | 2126.0 | 2107.0 | 2090.7 | 2074.4 | 2066.2 | 2063.5 |
| 5° | 2218.5 | 2202.1 | 2180.3 | 2145.0 | 2107.0 | 2074.4 | 2047.2 | 2033.6 | 2028.1 |
| 7.5° | 2256.5 | 2240.2 | 2204.9 | 2150.5 | 2096.2 | 2047.2 | 2003.7 | 1984.6 | 1979.2 |
| 10° | 2270.1 | 2251.1 | 2202.1 | 2128.8 | 2058.0 | 1998.2 | 1949.3 | 1924.9 | 1914.0 |
| 12.5° | 2281.0 | 2256.5 | 2194.0 | 2107.0 | 2019.9 | 1946.6 | 1894.9 | 1862.3 | 1854.1 |
| 15° | 2294.6 | 2267.3 | 2191.2 | 2085.3 | 1981.9 | 1894.9 | 1837.9 | 1807.9 | 1797.1 |
| 17.5° | 2281.0 | 2251.1 | 2161.4 | 2041.7 | 1924.9 | 1829.7 | 1767.1 | 1739.9 | 1729.0 |
| 20° | 2234.7 | 2202.1 | 2101.5 | 1973.7 | 1848.8 | 1750.8 | 1688.3 | 1661.1 | 1647.5 |
| 22.5° | 2164.1 | 2128.8 | 2025.4 | 1889.4 | 1761.8 | 1666.6 | 1606.7 | 1579.6 | 1571.4 |
| 25° | 2074.4 | 2039.0 | 1930.2 | 1791.6 | 1666.6 | 1574.1 | 1522.4 | 1498.0 | 1489.8 |
| 27.5° | 1968.4 | 1932.9 | 1827.0 | 1691.0 | 1571.4 | 1484.4 | 1443.6 | 1419.2 | 1413.7 |
| 30° | 1840.6 | 1805.3 | 1701.9 | 1576.8 | 1465.4 | 1383.8 | 1351.1 | 1332.2 | 1329.4 |
| 32.5° | 1699.2 | 1669.3 | 1574.1 | 1460.0 | 1353.9 | 1285.9 | 1261.5 | 1247.9 | 1245.2 |
| 35° | 1560.5 | 1527.9 | 1443.6 | 1340.3 | 1247.9 | 1188.0 | 1166.3 | 1163.6 | 1163.6 |
| 37.5° | 1419.2 | 1386.6 | 1318.5 | 1223.5 | 1144.5 | 1090.2 | 1082.0 | 1084.8 | 1084.8 |
| 40° | 1280.5 | 1250.6 | 1190.8 | 1111.9 | 1041.3 | 1000.5 | 997.8 | 1003.2 | 1005.9 |
| 42.5° | 1150.0 | 1125.5 | 1071.1 | 1003.2 | 943.4 | 910.8 | 913.5 | 924.4 | 932.6 |
| 45° | 1033.1 | 1011.4 | 962.4 | 902.6 | 851.0 | 826.5 | 834.6 | 848.3 | 856.3 |
| 47.5° | 927.1 | 908.0 | 861.8 | 807.5 | 764.0 | 747.6 | 758.5 | 774.8 | 785.7 |
| 50° | 829.2 | 812.8 | 769.3 | 712.3 | 677.0 | 666.1 | 679.7 | 696.0 | 701.4 |
| 52.5° | 742.2 | 725.8 | 679.7 | 630.8 | 603.5 | 598.2 | 611.7 | 625.3 | 633.5 |
| 55° | 652.5 | 638.9 | 600.9 | 557.4 | 535.6 | 532.8 | 546.5 | 557.4 | 562.7 |
| 57.5° | 579.1 | 565.4 | 530.1 | 492.1 | 473.1 | 470.4 | 483.9 | 492.1 | 494.8 |
| 60° | 508.4 | 494.8 | 462.2 | 426.9 | 413.2 | 413.2 | 421.4 | 426.9 | 429.6 |
| 62.5° | 443.1 | 429.6 | 399.6 | 369.7 | 358.8 | 358.8 | 358.8 | 361.6 | 369.7 |
| 65° | 380.6 | 369.7 | 342.6 | 315.3 | 307.3 | 301.8 | 301.8 | 301.8 | 307.3 |
| 67.5° | 323.5 | 312.6 | 290.9 | 266.5 | 258.3 | 250.1 | 247.4 | 252.8 | 252.8 |
| 70° | 269.2 | 261.0 | 239.2 | 220.2 | 212.1 | 203.9 | 201.2 | 212.1 | 212.1 |
| 72.5° | 220.2 | 212.1 | 198.4 | 179.5 | 171.3 | 168.6 | 174.0 | 179.5 | 182.2 |
| 75° | 174.0 | 165.8 | 154.9 | 144.0 | 136.0 | 138.7 | 146.9 | 149.5 | 152.2 |
| 77.5° | 130.5 | 127.8 | 116.9 | 108.7 | 108.7 | 111.4 | 116.9 | 122.3 | 125.1 |
| 80° | 92.5 | 89.7 | 84.3 | 78.8 | 81.6 | 87.0 | 89.7 | 95.2 | 92.5 |
| 82.5° | 57.1 | 57.1 | 54.4 | 54.4 | 57.1 | 62.6 | 65.2 | 67.9 | 70.7 |
| 85° | 29.9 | 29.9 | 29.9 | 32.6 | 35.3 | 38.1 | 40.8 | 43.5 | 43.5 |
| 87.5° | 8.2 | 10.9 | 10.9 | 13.6 | 16.4 | 16.4 | 19.1 | 19.1 | 19.1 |
| 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)