

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: P582782

Luminaire Tested: **HC650D010-HM64560927-61RWWC**

Issue Date: 9/16/2021

Test Information

Test Method: LM-41-14
Report Number: P582782
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2105-241-14)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/16/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC650D010-HM64560927-61RWWC
Description: HALO COMMERCIAL 6" ROUND, NEW CONSTRUCTION FRAME, WITH 6" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4000.6 lumens
Efficiency: N/A
Efficacy: 83.3 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.15 / 1.2
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

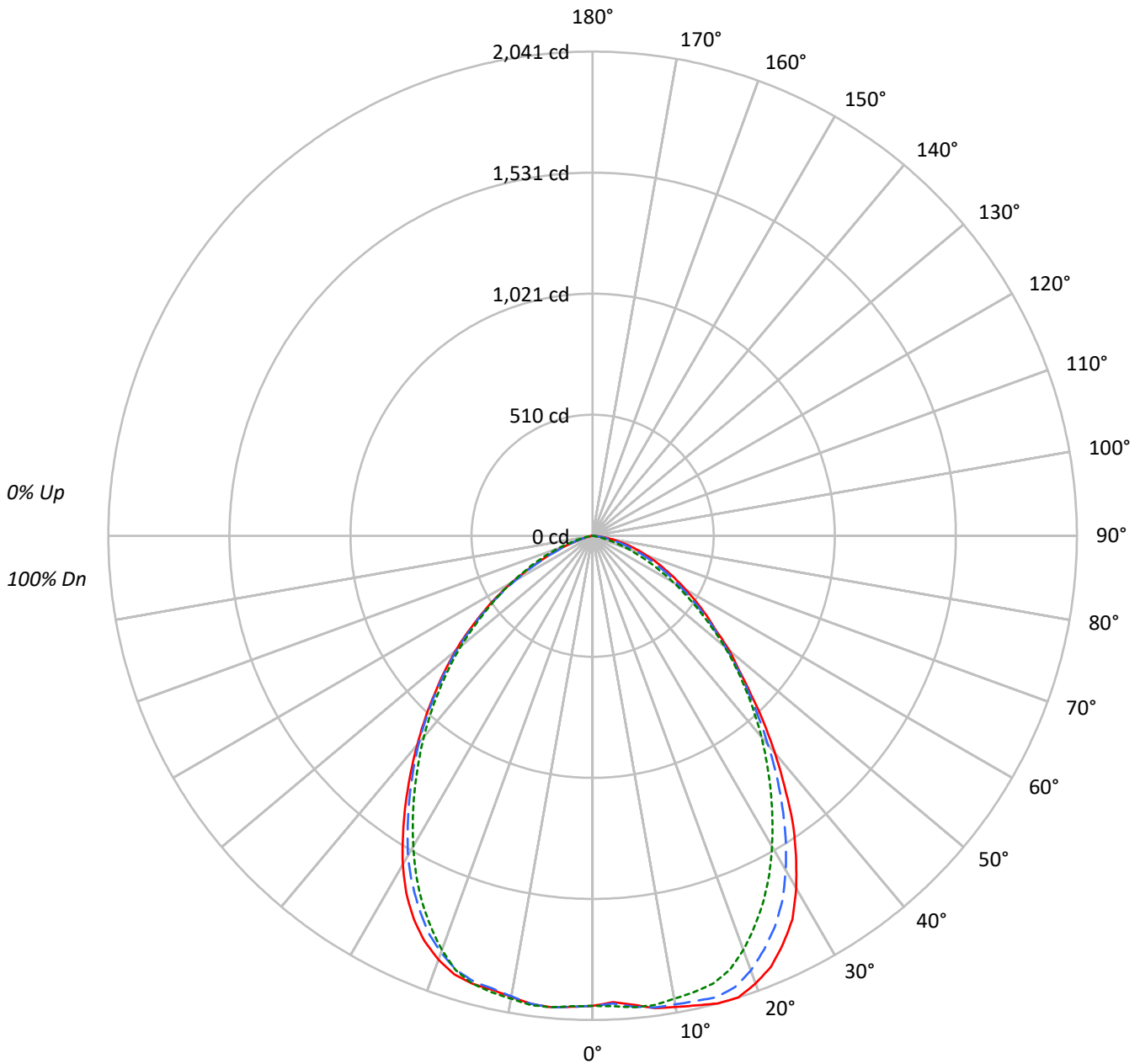
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 94 | 92 | 90 | 88 | | | 88 |
| 2 | 103 | 96 | 90 | 86 | 100 | 94 | 89 | 85 | 91 | 86 | 83 | 88 | 84 | 81 | 85 | 82 | 79 | 77 | | | 77 |
| 3 | 95 | 86 | 79 | 74 | 93 | 85 | 78 | 73 | 82 | 76 | 72 | 79 | 75 | 71 | 77 | 73 | 69 | 68 | | | 68 |
| 4 | 88 | 78 | 70 | 64 | 86 | 76 | 69 | 64 | 74 | 68 | 63 | 72 | 67 | 62 | 70 | 65 | 61 | 60 | | | 60 |
| 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 | 62 | 55 | 50 | 60 | 54 | 49 | 58 | 53 | 49 | 47 | | | 47 |
| 7 | 71 | 59 | 51 | 45 | 69 | 58 | 50 | 45 | 56 | 50 | 45 | 55 | 49 | 45 | 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° | 108632 | 108632 | 108632 |
| 5° | 109195 | 109790 | 109790 |
| 10° | 112256 | 110307 | 109862 |
| 15° | 115812 | 110943 | 110943 |
| 20° | 117167 | 108399 | 110907 |
| 25° | 114823 | 102974 | 107849 |
| 30° | 108612 | 95692 | 101307 |
| 35° | 98297 | 87509 | 91825 |
| 40° | 85503 | 79163 | 82240 |
| 45° | 73062 | 70565 | 73062 |
| 50° | 64117 | 61832 | 64348 |
| 55° | 55941 | 52089 | 54144 |
| 60° | 49459 | 43275 | 42694 |
| 65° | 43896 | 34128 | 29264 |
| 70° | 38724 | 24091 | 17647 |
| 75° | 33000 | 13662 | 8536 |
| 80° | 24561 | 4262 | 2526 |
| 85° | 13523 | 1698 | 1698 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 190.1 | 4.8 |
| 10°-20° | 556.1 | 13.9 |
| 20°-30° | 812.3 | 20.3 |
| 30°-40° | 851.9 | 21.3 |
| 40°-50° | 717.7 | 17.9 |
| 50°-60° | 502.8 | 12.6 |
| 60°-70° | 269.6 | 6.7 |
| 70°-80° | 90.4 | 2.3 |
| 80°-90° | 9.8 | 0.2 |
| 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° | 1558.5 | 39.0 |
| 0°-40° | 2410.3 | 60.2 |
| 0°-60° | 3630.8 | 90.8 |
| 0°-90° | 4000.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4000.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1982 | 1982 | 1982 | 1982 | 1982 | |
| 5° | 1984 | 1992 | 1995 | 1995 | 1995 | 191 |
| 15° | 2041 | 2014 | 1955 | 1944 | 1955 | 576 |
| 25° | 1898 | 1818 | 1702 | 1732 | 1783 | 870 |
| 35° | 1469 | 1394 | 1308 | 1345 | 1372 | 912 |
| 45° | 942 | 926 | 910 | 934 | 942 | 734 |
| 55° | 585 | 566 | 545 | 556 | 566 | 527 |
| 65° | 338 | 309 | 263 | 218 | 226 | 338 |
| 75° | 156 | 121 | 64 | 40 | 40 | 165 |
| 85° | 22 | 11 | 3 | 3 | 3 | 30 |
| 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° | 1981.6 | 1981.6 | 1981.6 | 1981.6 | 1981.6 | 1981.6 | 1981.6 | 1981.6 | 1981.6 |
| 2.5° | 1968.1 | 1968.1 | 1973.6 | 1978.9 | 1984.3 | 1984.3 | 1987.0 | 1989.6 | 1987.0 |
| 5° | 1984.3 | 1984.3 | 1992.3 | 1995.1 | 1995.1 | 1992.3 | 1995.1 | 1995.1 | 1995.1 |
| 7.5° | 2008.4 | 2003.1 | 2005.8 | 2000.4 | 1995.1 | 1992.3 | 1989.6 | 1989.6 | 1989.6 |
| 10° | 2016.6 | 2011.1 | 2005.8 | 1995.1 | 1981.6 | 1973.6 | 1970.9 | 1973.6 | 1973.6 |
| 12.5° | 2027.3 | 2021.9 | 2008.4 | 1987.0 | 1970.9 | 1957.5 | 1954.8 | 1960.1 | 1960.1 |
| 15° | 2040.6 | 2035.3 | 2013.8 | 1978.9 | 1954.8 | 1941.3 | 1944.0 | 1949.4 | 1954.8 |
| 17.5° | 2040.6 | 2029.9 | 1995.1 | 1949.4 | 1919.8 | 1906.5 | 1917.1 | 1930.6 | 1938.6 |
| 20° | 2008.4 | 1997.8 | 1949.4 | 1893.0 | 1858.1 | 1850.0 | 1868.8 | 1893.0 | 1901.1 |
| 22.5° | 1965.5 | 1944.0 | 1887.6 | 1820.5 | 1783.0 | 1783.0 | 1809.8 | 1839.3 | 1850.0 |
| 25° | 1898.3 | 1882.3 | 1817.8 | 1740.0 | 1702.4 | 1699.7 | 1731.9 | 1772.2 | 1783.0 |
| 27.5° | 1823.2 | 1801.7 | 1731.9 | 1651.4 | 1611.1 | 1613.7 | 1648.7 | 1688.9 | 1699.7 |
| 30° | 1715.8 | 1688.9 | 1627.2 | 1549.4 | 1511.7 | 1522.4 | 1557.4 | 1586.9 | 1600.4 |
| 32.5° | 1594.9 | 1570.8 | 1514.4 | 1441.9 | 1409.6 | 1420.4 | 1449.9 | 1476.8 | 1487.6 |
| 35° | 1468.8 | 1441.9 | 1393.6 | 1329.1 | 1307.6 | 1318.4 | 1345.3 | 1366.8 | 1372.1 |
| 37.5° | 1326.5 | 1307.6 | 1272.8 | 1221.7 | 1205.6 | 1219.0 | 1240.5 | 1254.0 | 1259.3 |
| 40° | 1194.8 | 1178.8 | 1149.2 | 1111.7 | 1106.2 | 1117.0 | 1138.5 | 1146.5 | 1149.2 |
| 42.5° | 1066.0 | 1052.5 | 1033.7 | 1006.9 | 1006.9 | 1017.7 | 1036.4 | 1041.9 | 1044.5 |
| 45° | 942.4 | 934.4 | 926.4 | 904.9 | 910.2 | 923.7 | 934.4 | 942.4 | 942.4 |
| 47.5° | 835.1 | 837.8 | 827.1 | 810.9 | 816.3 | 829.7 | 837.8 | 845.8 | 845.8 |
| 50° | 751.8 | 743.8 | 733.0 | 716.9 | 725.0 | 735.8 | 746.5 | 751.8 | 754.5 |
| 52.5° | 655.2 | 652.5 | 644.5 | 625.6 | 631.0 | 636.3 | 647.1 | 655.2 | 657.8 |
| 55° | 585.3 | 577.3 | 566.5 | 545.0 | 545.0 | 550.5 | 555.8 | 561.2 | 566.5 |
| 57.5° | 518.2 | 510.2 | 494.0 | 469.9 | 467.2 | 467.2 | 464.5 | 469.9 | 478.0 |
| 60° | 451.1 | 448.4 | 424.2 | 402.7 | 394.7 | 386.7 | 375.9 | 378.6 | 389.4 |
| 62.5° | 392.0 | 386.7 | 365.2 | 338.4 | 322.2 | 308.8 | 295.4 | 292.7 | 303.4 |
| 65° | 338.4 | 332.9 | 308.8 | 281.9 | 263.1 | 238.9 | 217.5 | 217.5 | 225.6 |
| 67.5° | 289.9 | 279.3 | 257.8 | 228.3 | 204.1 | 174.6 | 153.1 | 158.4 | 161.1 |
| 70° | 241.6 | 233.6 | 209.4 | 179.9 | 150.3 | 120.8 | 107.4 | 110.1 | 110.1 |
| 72.5° | 198.6 | 188.0 | 163.8 | 134.3 | 104.8 | 77.8 | 72.5 | 69.8 | 69.8 |
| 75° | 155.8 | 145.0 | 120.8 | 91.3 | 64.5 | 45.7 | 40.3 | 40.3 | 40.3 |
| 77.5° | 112.8 | 104.8 | 83.3 | 56.3 | 35.0 | 21.5 | 18.8 | 16.1 | 16.1 |
| 80° | 77.8 | 69.8 | 51.0 | 29.5 | 13.5 | 8.0 | 8.0 | 8.0 | 8.0 |
| 82.5° | 45.7 | 37.6 | 24.2 | 13.5 | 5.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| 85° | 21.5 | 16.1 | 10.7 | 5.3 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| 87.5° | 2.7 | 2.7 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 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)