

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: P580774

Luminaire Tested: **HC445D010-HM44560927-41WWBB**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580774
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-17)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC445D010-HM44560927-41WWBB
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2805.1 lumens
Efficiency: N/A
Efficacy: 63.8 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.04 / 1.12
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

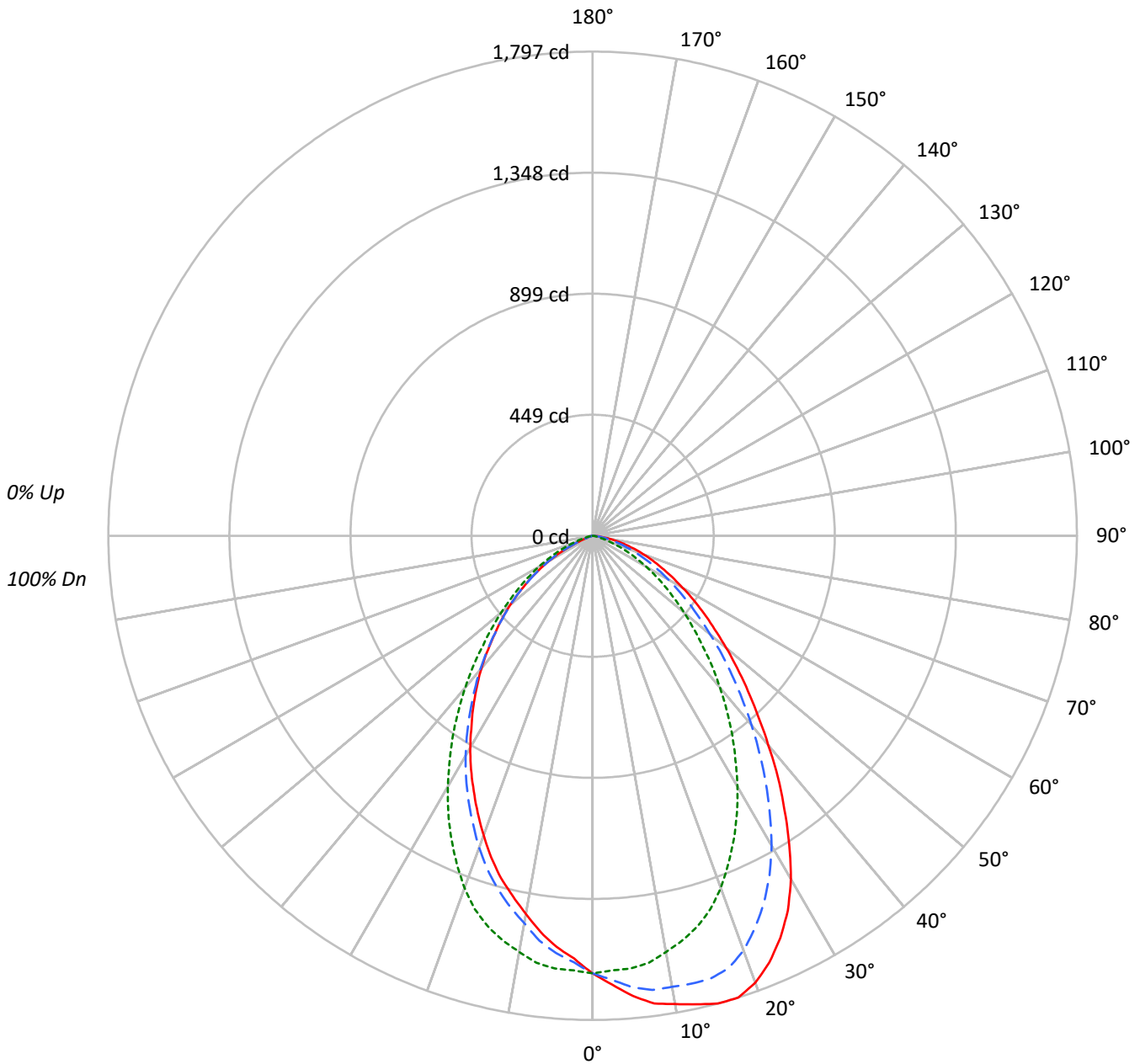
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 100 | 100 |
| 1 | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 | 101 | 99 | 97 | 97 | 95 | 94 | 94 | 92 | 91 | 89 | 89 | 89 | 89 |
| 2 | 103 | 97 | 91 | 87 | 101 | 95 | 90 | 86 | 92 | 87 | 84 | 88 | 85 | 82 | 85 | 83 | 80 | 78 | 78 | 78 | 78 |
| 3 | 96 | 87 | 80 | 75 | 94 | 86 | 79 | 74 | 83 | 78 | 73 | 80 | 76 | 72 | 78 | 74 | 71 | 69 | 69 | 69 | 69 |
| 4 | 89 | 79 | 72 | 66 | 87 | 78 | 71 | 65 | 75 | 69 | 65 | 73 | 68 | 64 | 71 | 67 | 63 | 61 | 61 | 61 | 61 |
| 5 | 83 | 72 | 64 | 58 | 81 | 71 | 64 | 58 | 69 | 62 | 58 | 67 | 61 | 57 | 65 | 60 | 56 | 55 | 55 | 55 | 55 |
| 6 | 77 | 66 | 58 | 52 | 75 | 65 | 57 | 52 | 63 | 57 | 52 | 61 | 56 | 51 | 60 | 55 | 51 | 49 | 49 | 49 | 49 |
| 7 | 72 | 60 | 53 | 47 | 71 | 59 | 52 | 47 | 58 | 51 | 47 | 57 | 51 | 46 | 55 | 50 | 46 | 44 | 44 | 44 | 44 |
| 8 | 68 | 56 | 48 | 43 | 66 | 55 | 48 | 43 | 54 | 47 | 42 | 53 | 47 | 42 | 51 | 46 | 42 | 40 | 40 | 40 | 40 |
| 9 | 64 | 52 | 44 | 39 | 62 | 51 | 44 | 39 | 50 | 43 | 39 | 49 | 43 | 39 | 48 | 43 | 39 | 37 | 37 | 37 | 37 |
| 10 | 60 | 48 | 41 | 36 | 59 | 47 | 41 | 36 | 46 | 40 | 36 | 46 | 40 | 36 | 45 | 39 | 36 | 34 | 34 | 34 | 34 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 200313 | 200313 | 200313 |
| 5° | 212234 | 199642 | 189625 |
| 10° | 221051 | 196465 | 178517 |
| 15° | 229497 | 191749 | 167845 |
| 20° | 231664 | 182532 | 155243 |
| 25° | 224165 | 168828 | 142099 |
| 30° | 209582 | 152995 | 129295 |
| 35° | 186791 | 136001 | 116185 |
| 40° | 163287 | 118283 | 103405 |
| 45° | 142253 | 100336 | 89469 |
| 50° | 124116 | 85104 | 76699 |
| 55° | 108792 | 70557 | 62105 |
| 60° | 95149 | 56986 | 45589 |
| 65° | 82918 | 42466 | 25596 |
| 70° | 72488 | 27481 | 8331 |
| 75° | 59476 | 14345 | 2192 |
| 80° | 44324 | 6535 | 1705 |
| 85° | 26182 | 3397 | 3397 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 153.3 | 5.5 |
| 10°-20° | 429.0 | 15.3 |
| 20°-30° | 593.1 | 21.1 |
| 30°-40° | 596.4 | 21.3 |
| 40°-50° | 481.2 | 17.2 |
| 50°-60° | 325.4 | 11.6 |
| 60°-70° | 165.6 | 5.9 |
| 70°-80° | 53.0 | 1.9 |
| 80°-90° | 8.2 | 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° | 1175.3 | 41.9 |
| 0°-40° | 1771.7 | 63.2 |
| 0°-60° | 2578.3 | 91.9 |
| 0°-90° | 2805.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2805.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1624 | 1624 | 1624 | 1624 | 1624 | |
| 5° | 1714 | 1682 | 1612 | 1555 | 1532 | 165 |
| 15° | 1797 | 1700 | 1502 | 1358 | 1314 | 506 |
| 25° | 1647 | 1504 | 1240 | 1088 | 1044 | 754 |
| 35° | 1240 | 1120 | 903 | 790 | 772 | 775 |
| 45° | 816 | 730 | 575 | 513 | 513 | 632 |
| 55° | 506 | 437 | 328 | 286 | 289 | 454 |
| 65° | 284 | 231 | 146 | 95 | 88 | 285 |
| 75° | 125 | 88 | 30 | 7 | 5 | 135 |
| 85° | 18 | 9 | 2 | 2 | 2 | 25 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P580774

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1624.0 | 1624.0 | 1624.0 | 1624.0 | 1624.0 | 1624.0 | 1624.0 | 1624.0 | 1624.0 |
| 2.5° | 1667.9 | 1658.7 | 1649.3 | 1633.2 | 1614.7 | 1596.3 | 1584.7 | 1575.4 | 1570.8 |
| 5° | 1714.1 | 1702.5 | 1681.8 | 1647.1 | 1612.4 | 1580.1 | 1554.6 | 1538.5 | 1531.5 |
| 7.5° | 1751.0 | 1734.8 | 1700.2 | 1651.7 | 1598.5 | 1547.7 | 1515.4 | 1492.3 | 1483.1 |
| 10° | 1764.9 | 1746.4 | 1700.2 | 1635.5 | 1568.6 | 1506.2 | 1459.9 | 1436.8 | 1425.3 |
| 12.5° | 1781.1 | 1760.3 | 1702.5 | 1621.6 | 1538.5 | 1464.5 | 1411.5 | 1381.4 | 1369.8 |
| 15° | 1797.2 | 1769.5 | 1700.2 | 1600.9 | 1501.6 | 1416.1 | 1358.3 | 1328.2 | 1314.4 |
| 17.5° | 1797.2 | 1764.9 | 1681.8 | 1566.2 | 1453.0 | 1362.9 | 1298.3 | 1263.6 | 1252.0 |
| 20° | 1764.9 | 1727.9 | 1637.8 | 1510.8 | 1390.6 | 1293.7 | 1231.3 | 1196.6 | 1182.7 |
| 22.5° | 1714.1 | 1672.5 | 1575.4 | 1443.8 | 1316.8 | 1222.0 | 1159.6 | 1127.3 | 1113.5 |
| 25° | 1647.1 | 1605.5 | 1503.8 | 1367.5 | 1240.5 | 1145.8 | 1088.0 | 1058.0 | 1044.1 |
| 27.5° | 1568.6 | 1522.3 | 1420.7 | 1284.4 | 1159.6 | 1069.6 | 1016.4 | 988.7 | 977.1 |
| 30° | 1471.5 | 1427.6 | 1328.2 | 1194.3 | 1074.2 | 991.1 | 942.5 | 917.1 | 907.8 |
| 32.5° | 1358.3 | 1321.4 | 1224.3 | 1099.6 | 986.4 | 910.2 | 866.3 | 845.4 | 836.2 |
| 35° | 1240.5 | 1205.8 | 1120.3 | 1004.9 | 903.2 | 831.6 | 790.0 | 776.2 | 771.6 |
| 37.5° | 1129.6 | 1099.6 | 1016.4 | 910.2 | 817.7 | 755.3 | 718.4 | 709.2 | 704.6 |
| 40° | 1014.1 | 993.3 | 917.1 | 820.1 | 734.6 | 679.1 | 649.1 | 642.2 | 642.2 |
| 42.5° | 910.2 | 887.1 | 820.1 | 732.3 | 656.0 | 600.6 | 579.8 | 572.9 | 575.2 |
| 45° | 815.5 | 792.4 | 730.0 | 649.1 | 575.2 | 529.0 | 512.9 | 512.9 | 512.9 |
| 47.5° | 727.6 | 706.9 | 649.1 | 565.9 | 505.9 | 468.9 | 452.7 | 452.7 | 455.1 |
| 50° | 646.8 | 632.9 | 568.3 | 496.7 | 443.5 | 408.9 | 397.3 | 395.1 | 399.7 |
| 52.5° | 570.5 | 554.4 | 496.7 | 432.0 | 381.1 | 353.4 | 341.9 | 339.6 | 341.9 |
| 55° | 505.9 | 487.4 | 436.6 | 374.2 | 328.1 | 300.4 | 286.4 | 284.1 | 288.8 |
| 57.5° | 443.5 | 429.6 | 376.5 | 321.1 | 277.2 | 249.5 | 238.0 | 233.3 | 235.6 |
| 60° | 385.7 | 371.9 | 323.4 | 270.3 | 231.0 | 203.3 | 187.1 | 182.5 | 184.8 |
| 62.5° | 332.7 | 321.1 | 274.9 | 224.1 | 184.8 | 159.4 | 143.2 | 131.7 | 136.3 |
| 65° | 284.1 | 272.5 | 231.0 | 180.2 | 145.5 | 117.8 | 94.7 | 85.5 | 87.7 |
| 67.5° | 242.6 | 228.7 | 189.4 | 143.2 | 108.6 | 78.5 | 53.2 | 48.5 | 48.5 |
| 70° | 201.0 | 187.1 | 152.5 | 110.9 | 76.2 | 41.6 | 23.1 | 23.1 | 23.1 |
| 72.5° | 161.7 | 150.1 | 117.8 | 83.1 | 48.5 | 18.5 | 9.2 | 9.2 | 9.2 |
| 75° | 124.8 | 115.5 | 87.7 | 57.8 | 30.1 | 9.2 | 7.0 | 4.6 | 4.6 |
| 77.5° | 92.5 | 83.1 | 62.4 | 39.3 | 18.5 | 4.6 | 4.6 | 4.6 | 4.6 |
| 80° | 62.4 | 55.4 | 41.6 | 23.1 | 9.2 | 2.4 | 2.4 | 2.4 | 2.4 |
| 82.5° | 36.9 | 32.3 | 23.1 | 11.6 | 4.6 | 2.4 | 2.4 | 2.4 | 2.4 |
| 85° | 18.5 | 13.9 | 9.2 | 4.6 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| 87.5° | 4.6 | 2.4 | 2.4 | 2.4 | 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 |



Report Generated By 670245859 / DESKTOP-HRDQ47P





— 0°-180° - - 45°-225° - - - - 90°-270°







(END OF REPORT)