

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: P581208

Luminaire Tested: **HC455D010-HM44560927-41WWWB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P581208  
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: HC455D010-HM44560927-41WWWB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3866.3 lumens  
Efficiency: N/A  
Efficacy: 74.4 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

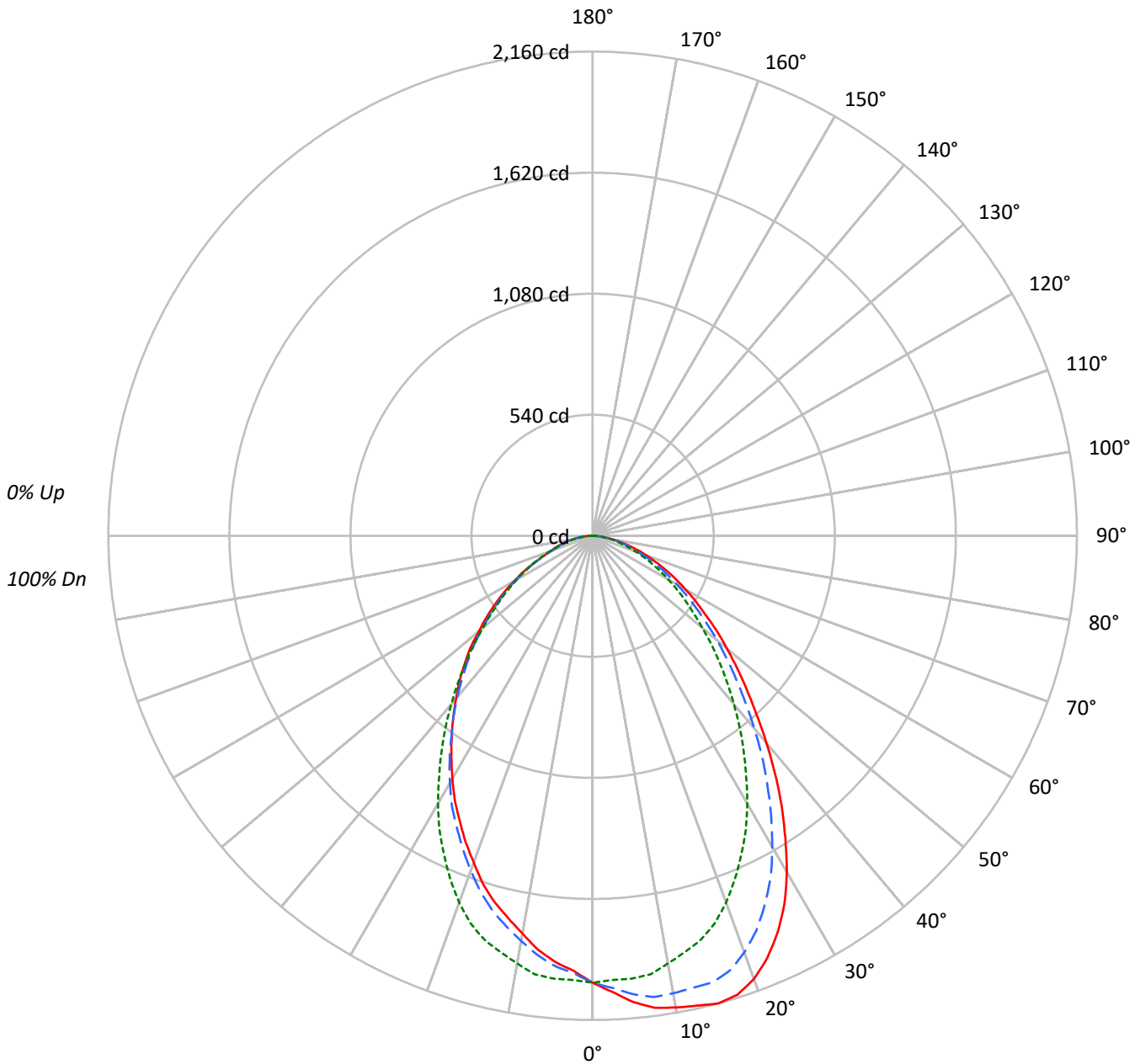
Input Watts (W): 52  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 245902 | 245902 | 245902 |
| 5°  | 258567 | 245578 | 236379 |
| 10° | 267643 | 242656 | 225660 |
| 15° | 275825 | 238244 | 216025 |
| 20° | 276122 | 228435 | 203574 |
| 25° | 265756 | 213509 | 190862 |
| 30° | 246769 | 196464 | 178233 |
| 35° | 221198 | 176883 | 164927 |
| 40° | 194089 | 157828 | 152466 |
| 45° | 169623 | 139724 | 140631 |
| 50° | 149771 | 122273 | 126706 |
| 55° | 132082 | 108405 | 113932 |
| 60° | 118066 | 95963  | 99737  |
| 65° | 104574 | 84406  | 84406  |
| 70° | 91386  | 71983  | 71983  |
| 75° | 78062  | 60953  | 68293  |
| 80° | 61798  | 54481  | 61798  |
| 85° | 39768  | 47127  | 57883  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 188.9  | 4.9       |
| 10°-20°   | 531.9  | 13.8      |
| 20°-30°   | 745.2  | 19.3      |
| 30°-40°   | 767.8  | 19.9      |
| 40°-50°   | 653.6  | 16.9      |
| 50°-60°   | 484.3  | 12.5      |
| 60°-70°   | 303.9  | 7.9       |
| 70°-80°   | 151.0  | 3.9       |
| 80°-90°   | 39.6   | 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°    | 1466.0 | 37.9      |
| 0°-40°    | 2233.8 | 57.8      |
| 0°-60°    | 3371.7 | 87.2      |
| 0°-90°    | 3866.3 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3866.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1994 | 1994 | 1994 | 1994 | 1994 |      |
| 5°  | 2088 | 2052 | 1983 | 1927 | 1909 | 201  |
| 15° | 2160 | 2063 | 1866 | 1730 | 1692 | 607  |
| 25° | 1953 | 1817 | 1569 | 1433 | 1402 | 893  |
| 35° | 1469 | 1359 | 1175 | 1098 | 1095 | 916  |
| 45° | 972  | 906  | 801  | 786  | 806  | 755  |
| 55° | 614  | 566  | 504  | 514  | 530  | 555  |
| 65° | 358  | 322  | 289  | 284  | 289  | 357  |
| 75° | 164  | 146  | 128  | 138  | 143  | 175  |
| 85° | 28   | 28   | 33   | 38   | 41   | 36   |
| 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°    | 1993.6 | 1993.6 | 1993.6 | 1993.6 | 1993.6 | 1993.6 | 1993.6 | 1993.6 | 1993.6 |
| 2.5°  | 2037.2 | 2029.5 | 2019.3 | 2001.3 | 1983.4 | 1968.1 | 1952.7 | 1945.0 | 1942.4 |
| 5°    | 2088.3 | 2072.9 | 2052.5 | 2019.3 | 1983.4 | 1952.7 | 1927.1 | 1914.3 | 1909.1 |
| 7.5°  | 2124.1 | 2108.8 | 2075.5 | 2024.3 | 1973.1 | 1927.1 | 1886.2 | 1868.2 | 1863.1 |
| 10°   | 2136.9 | 2119.0 | 2072.9 | 2003.8 | 1937.4 | 1881.0 | 1835.0 | 1811.9 | 1801.7 |
| 12.5° | 2147.2 | 2124.1 | 2065.3 | 1983.4 | 1901.5 | 1832.4 | 1783.8 | 1753.1 | 1745.4 |
| 15°   | 2160.0 | 2134.4 | 2062.7 | 1962.9 | 1865.7 | 1783.8 | 1730.0 | 1701.9 | 1691.7 |
| 17.5° | 2147.2 | 2119.0 | 2034.6 | 1922.0 | 1811.9 | 1722.4 | 1663.5 | 1637.9 | 1627.6 |
| 20°   | 2103.6 | 2072.9 | 1978.3 | 1857.9 | 1740.3 | 1648.1 | 1589.3 | 1563.6 | 1550.9 |
| 22.5° | 2037.2 | 2003.8 | 1906.6 | 1778.6 | 1658.4 | 1568.8 | 1512.4 | 1486.9 | 1479.3 |
| 25°   | 1952.7 | 1919.4 | 1817.1 | 1686.5 | 1568.8 | 1481.7 | 1433.1 | 1410.1 | 1402.4 |
| 27.5° | 1852.9 | 1819.6 | 1719.8 | 1591.9 | 1479.3 | 1397.4 | 1359.0 | 1335.9 | 1330.8 |
| 30°   | 1732.6 | 1699.3 | 1602.1 | 1484.3 | 1379.4 | 1302.6 | 1271.9 | 1254.0 | 1251.4 |
| 32.5° | 1599.5 | 1571.4 | 1481.7 | 1374.3 | 1274.5 | 1210.5 | 1187.4 | 1174.7 | 1172.1 |
| 35°   | 1469.0 | 1438.3 | 1359.0 | 1261.7 | 1174.7 | 1118.4 | 1097.9 | 1095.3 | 1095.3 |
| 37.5° | 1335.9 | 1305.2 | 1241.2 | 1151.7 | 1077.4 | 1026.2 | 1018.6 | 1021.2 | 1021.2 |
| 40°   | 1205.4 | 1177.2 | 1121.0 | 1046.7 | 980.2  | 941.7  | 939.3  | 944.3  | 946.9  |
| 42.5° | 1082.6 | 1059.5 | 1008.3 | 944.3  | 888.1  | 857.4  | 860.0  | 870.2  | 877.8  |
| 45°   | 972.4  | 952.0  | 906.0  | 849.7  | 801.0  | 778.1  | 785.7  | 798.5  | 806.2  |
| 47.5° | 872.7  | 854.8  | 811.2  | 760.1  | 719.1  | 703.8  | 714.0  | 729.3  | 739.6  |
| 50°   | 780.5  | 765.2  | 724.3  | 670.5  | 637.2  | 627.0  | 639.8  | 655.2  | 660.3  |
| 52.5° | 698.6  | 683.3  | 639.8  | 593.8  | 568.1  | 563.1  | 575.8  | 588.6  | 596.2  |
| 55°   | 614.2  | 601.4  | 565.5  | 524.6  | 504.1  | 501.6  | 514.4  | 524.6  | 529.8  |
| 57.5° | 545.1  | 532.4  | 499.0  | 463.2  | 445.3  | 442.8  | 455.5  | 463.2  | 465.8  |
| 60°   | 478.6  | 465.8  | 435.0  | 401.8  | 389.0  | 389.0  | 396.7  | 401.8  | 404.3  |
| 62.5° | 417.2  | 404.3  | 376.2  | 348.1  | 337.8  | 337.8  | 337.8  | 340.4  | 348.1  |
| 65°   | 358.3  | 348.1  | 322.4  | 296.9  | 289.2  | 284.1  | 284.1  | 284.1  | 289.2  |
| 67.5° | 304.5  | 294.3  | 273.8  | 250.8  | 243.1  | 235.5  | 232.9  | 238.0  | 238.0  |
| 70°   | 253.4  | 245.7  | 225.2  | 207.3  | 199.6  | 191.9  | 189.3  | 199.6  | 199.6  |
| 72.5° | 207.3  | 199.6  | 186.9  | 168.9  | 161.2  | 158.6  | 163.8  | 168.9  | 171.5  |
| 75°   | 163.8  | 156.2  | 145.9  | 135.7  | 127.9  | 130.5  | 138.2  | 140.7  | 143.3  |
| 77.5° | 122.8  | 120.3  | 110.0  | 102.4  | 102.4  | 105.0  | 110.0  | 115.2  | 117.7  |
| 80°   | 87.0   | 84.5   | 79.3   | 74.2   | 76.7   | 81.9   | 84.5   | 89.6   | 87.0   |
| 82.5° | 53.8   | 53.8   | 51.2   | 51.2   | 53.8   | 58.8   | 61.4   | 64.0   | 66.5   |
| 85°   | 28.1   | 28.1   | 28.1   | 30.7   | 33.3   | 35.8   | 38.4   | 40.9   | 40.9   |
| 87.5° | 7.6    | 10.2   | 10.2   | 12.8   | 15.3   | 15.3   | 17.9   | 17.9   | 17.9   |
| 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)