

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: P580452

Luminaire Tested: **HC435D010-HM43040835-41WWWB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580452  
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: HC435D010-HM43040835-41WWWB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

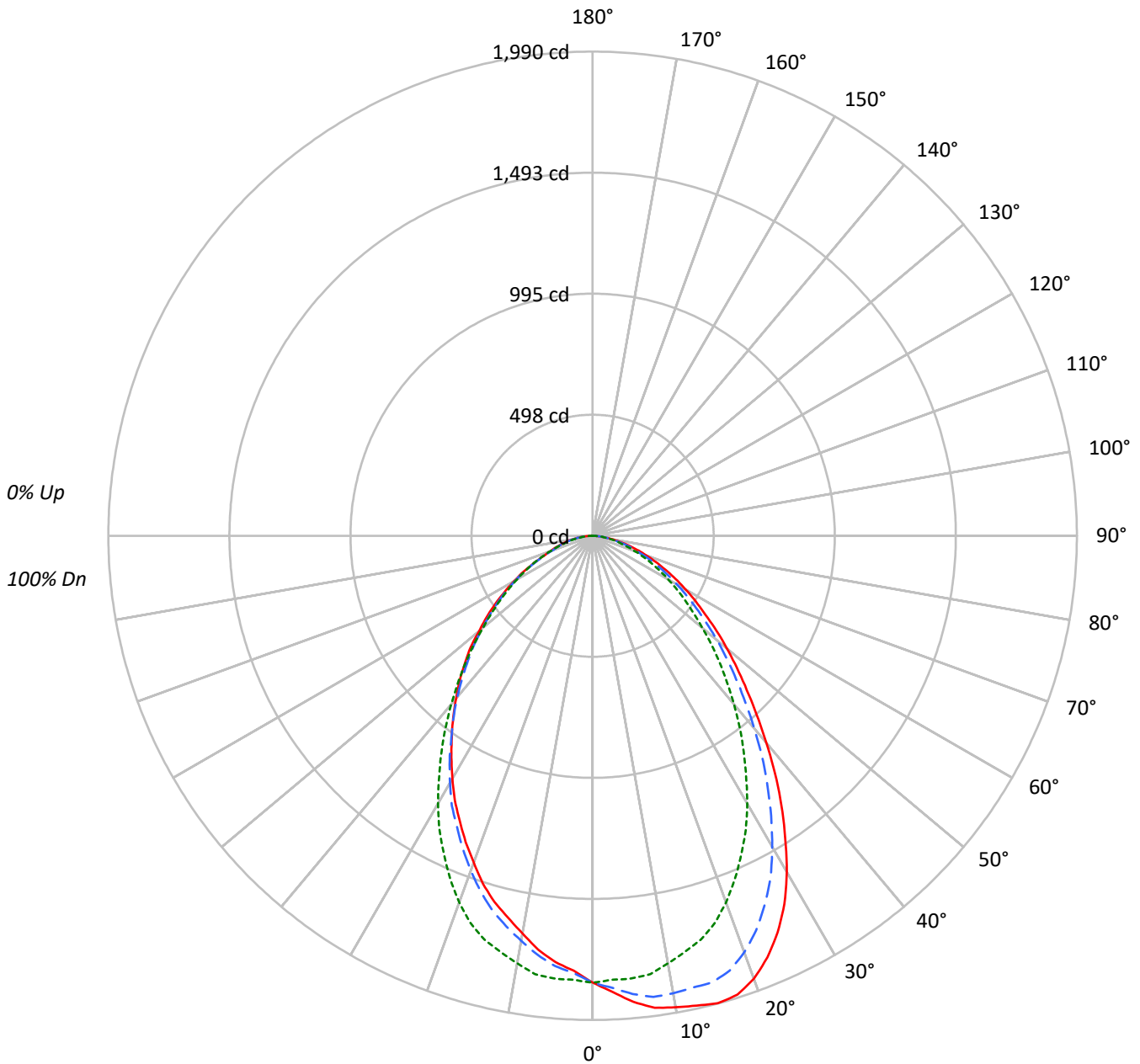
Lumens per Lamp: N/A  
Luminaire Lumens: 3561.2 lumens  
Efficiency: N/A  
Efficacy: 105.7 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.15  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P580452

CATALOG NUMBER: HC435D010-HM43040835-41WWWB

### Luminous Intensity Polar Plot





TEST NUMBER: P580452

CATALOG NUMBER: HC435D010-HM43040835-41WWWB

**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°  | 226500 | 226500 | 226500 |
| 5°  | 238162 | 226189 | 217732 |
| 10° | 246514 | 223506 | 207850 |
| 15° | 254053 | 219434 | 198964 |
| 20° | 254346 | 210399 | 187507 |
| 25° | 244770 | 196660 | 175796 |
| 30° | 227300 | 180968 | 164176 |
| 35° | 203746 | 162925 | 151917 |
| 40° | 178776 | 145365 | 140438 |
| 45° | 156243 | 128700 | 129520 |
| 50° | 137951 | 112640 | 116709 |
| 55° | 121652 | 99846  | 104921 |
| 60° | 108742 | 88389  | 91892  |
| 65° | 96314  | 77752  | 77752  |
| 70° | 84137  | 66321  | 66321  |
| 75° | 71867  | 56188  | 62907  |
| 80° | 56897  | 50220  | 56897  |
| 85° | 36796  | 43448  | 53496  |



TEST NUMBER: P580452

CATALOG NUMBER: HC435D010-HM43040835-41WWWB

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 174.0  | 4.9       |
| 10°-20°   | 489.9  | 13.8      |
| 20°-30°   | 686.4  | 19.3      |
| 30°-40°   | 707.2  | 19.9      |
| 40°-50°   | 602.1  | 16.9      |
| 50°-60°   | 446.1  | 12.5      |
| 60°-70°   | 280.0  | 7.9       |
| 70°-80°   | 139.1  | 3.9       |
| 80°-90°   | 36.5   | 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°    | 1350.3 | 37.9      |
| 0°-40°    | 2057.5 | 57.8      |
| 0°-60°    | 3105.6 | 87.2      |
| 0°-90°    | 3561.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3561.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1836 | 1836 | 1836 | 1836 | 1836 |      |
| 5°  | 1924 | 1890 | 1827 | 1775 | 1758 | 185  |
| 15° | 1990 | 1900 | 1718 | 1594 | 1558 | 559  |
| 25° | 1798 | 1674 | 1445 | 1320 | 1292 | 823  |
| 35° | 1353 | 1252 | 1082 | 1011 | 1009 | 844  |
| 45° | 896  | 834  | 738  | 724  | 742  | 695  |
| 55° | 566  | 521  | 464  | 474  | 488  | 511  |
| 65° | 330  | 297  | 266  | 262  | 266  | 329  |
| 75° | 151  | 134  | 118  | 127  | 132  | 161  |
| 85° | 26   | 26   | 31   | 35   | 38   | 33   |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



TEST NUMBER: P580452

CATALOG NUMBER: HC435D010-HM43040835-41WWWB

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1836.3 | 1836.3 | 1836.3 | 1836.3 | 1836.3 | 1836.3 | 1836.3 | 1836.3 | 1836.3 |
| 2.5°  | 1876.3 | 1869.3 | 1859.9 | 1843.4 | 1826.8 | 1812.7 | 1798.5 | 1791.4 | 1789.2 |
| 5°    | 1923.5 | 1909.3 | 1890.5 | 1859.9 | 1826.8 | 1798.5 | 1775.0 | 1763.2 | 1758.5 |
| 7.5°  | 1956.4 | 1942.4 | 1911.7 | 1864.6 | 1817.4 | 1775.0 | 1737.3 | 1720.7 | 1716.0 |
| 10°   | 1968.2 | 1951.8 | 1909.3 | 1845.7 | 1784.5 | 1732.5 | 1690.2 | 1668.9 | 1659.5 |
| 12.5° | 1977.7 | 1956.4 | 1902.3 | 1826.8 | 1751.4 | 1687.8 | 1643.0 | 1614.7 | 1607.7 |
| 15°   | 1989.5 | 1965.9 | 1899.9 | 1808.0 | 1718.4 | 1643.0 | 1593.5 | 1567.5 | 1558.1 |
| 17.5° | 1977.7 | 1951.8 | 1873.9 | 1770.3 | 1668.9 | 1586.4 | 1532.2 | 1508.6 | 1499.2 |
| 20°   | 1937.7 | 1909.3 | 1822.1 | 1711.3 | 1602.9 | 1518.1 | 1463.8 | 1440.3 | 1428.5 |
| 22.5° | 1876.3 | 1845.7 | 1756.1 | 1638.2 | 1527.5 | 1445.0 | 1393.1 | 1369.6 | 1362.5 |
| 25°   | 1798.5 | 1767.9 | 1673.6 | 1553.4 | 1445.0 | 1364.9 | 1320.0 | 1298.8 | 1291.7 |
| 27.5° | 1706.6 | 1676.0 | 1584.1 | 1466.1 | 1362.5 | 1287.1 | 1251.7 | 1230.4 | 1225.7 |
| 30°   | 1595.9 | 1565.2 | 1475.6 | 1367.2 | 1270.6 | 1199.9 | 1171.5 | 1155.0 | 1152.7 |
| 32.5° | 1473.2 | 1447.4 | 1364.9 | 1265.8 | 1173.9 | 1115.0 | 1093.8 | 1082.0 | 1079.6 |
| 35°   | 1353.1 | 1324.7 | 1251.7 | 1162.1 | 1082.0 | 1030.1 | 1011.3 | 1008.9 | 1008.9 |
| 37.5° | 1230.4 | 1202.2 | 1143.2 | 1060.7 | 992.4  | 945.3  | 938.2  | 940.6  | 940.6  |
| 40°   | 1110.3 | 1084.3 | 1032.5 | 964.1  | 902.8  | 867.5  | 865.1  | 869.9  | 872.2  |
| 42.5° | 997.1  | 975.9  | 928.8  | 869.9  | 817.9  | 789.7  | 792.0  | 801.4  | 808.5  |
| 45°   | 895.7  | 876.8  | 834.5  | 782.6  | 737.8  | 716.6  | 723.6  | 735.4  | 742.5  |
| 47.5° | 803.8  | 787.4  | 747.2  | 700.1  | 662.4  | 648.2  | 657.7  | 671.8  | 681.3  |
| 50°   | 718.9  | 704.9  | 667.1  | 617.6  | 587.0  | 577.5  | 589.3  | 603.5  | 608.2  |
| 52.5° | 643.5  | 629.3  | 589.3  | 546.8  | 523.3  | 518.6  | 530.4  | 542.1  | 549.2  |
| 55°   | 565.7  | 553.9  | 521.0  | 483.2  | 464.3  | 462.0  | 473.8  | 483.2  | 487.9  |
| 57.5° | 502.1  | 490.3  | 459.6  | 426.7  | 410.1  | 407.8  | 419.6  | 426.7  | 429.0  |
| 60°   | 440.8  | 429.0  | 400.7  | 370.1  | 358.3  | 358.3  | 365.4  | 370.1  | 372.5  |
| 62.5° | 384.2  | 372.5  | 346.5  | 320.6  | 311.1  | 311.1  | 311.1  | 313.5  | 320.6  |
| 65°   | 330.0  | 320.6  | 297.0  | 273.5  | 266.4  | 261.7  | 261.7  | 261.7  | 266.4  |
| 67.5° | 280.6  | 271.1  | 252.2  | 231.0  | 223.9  | 216.8  | 214.5  | 219.2  | 219.2  |
| 70°   | 233.3  | 226.3  | 207.5  | 191.0  | 183.9  | 176.8  | 174.4  | 183.9  | 183.9  |
| 72.5° | 191.0  | 183.9  | 172.1  | 155.6  | 148.5  | 146.1  | 150.8  | 155.6  | 157.9  |
| 75°   | 150.8  | 143.8  | 134.3  | 124.9  | 117.9  | 120.3  | 127.2  | 129.6  | 132.0  |
| 77.5° | 113.2  | 110.8  | 101.4  | 94.3   | 94.3   | 96.7   | 101.4  | 106.1  | 108.5  |
| 80°   | 80.1   | 77.8   | 73.1   | 68.3   | 70.7   | 75.4   | 77.8   | 82.5   | 80.1   |
| 82.5° | 49.5   | 49.5   | 47.1   | 47.1   | 49.5   | 54.2   | 56.5   | 58.9   | 61.3   |
| 85°   | 26.0   | 26.0   | 26.0   | 28.3   | 30.7   | 33.0   | 35.4   | 37.8   | 37.8   |
| 87.5° | 7.1    | 9.4    | 9.4    | 11.8   | 14.2   | 14.2   | 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    |



Report Generated By 670245859 / DESKTOP-HRDQ47P







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







(END OF REPORT)