

Classified
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: P580523

Luminaire Tested: **HCC4W35D010MB-HM43040935-41WWW**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580523
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-16)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HCC4W35D010MB-HM43040935-41WWW
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

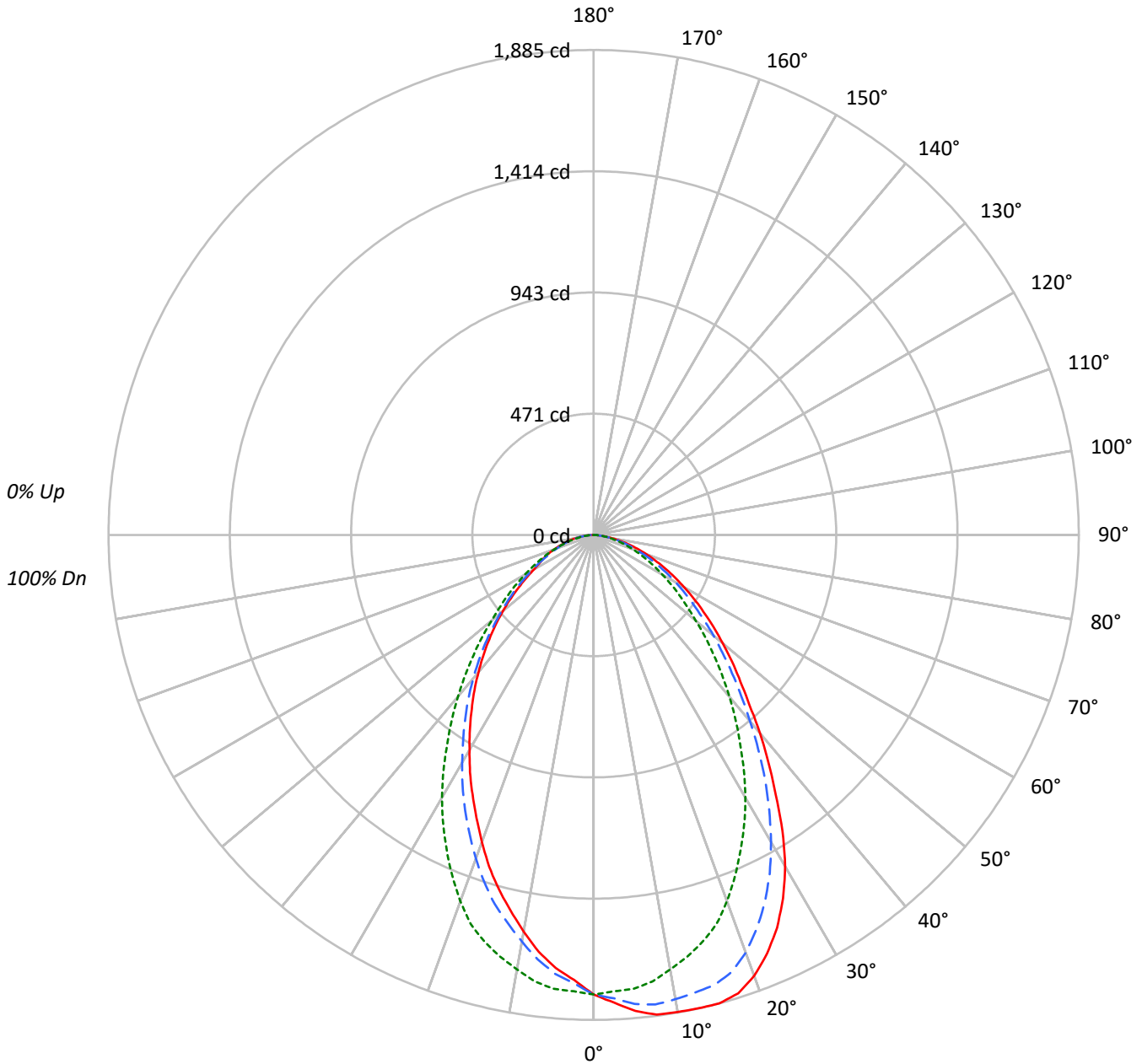
Lumens per Lamp: N/A
Luminaire Lumens: 3189.7 lumens
Efficiency: N/A
Efficacy: 94.7 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 33.7
Input Voltage (V): NR
Input Current (A_{in}): 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 | 111 | 106 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | 87 | | | | | | | | |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 81 | 87 | 83 | 80 | 84 | 81 | 78 | 76 | | | | | | | | |
| 3 | 94 | 85 | 78 | 72 | 92 | 84 | 77 | 72 | 81 | 75 | 71 | 78 | 73 | 69 | 76 | 72 | 68 | 66 | | | | | | | | |
| 4 | 87 | 77 | 69 | 63 | 85 | 76 | 68 | 63 | 73 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 | | | | | | | | |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 52 | | | | | | | | |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 59 | 53 | 49 | 58 | 53 | 48 | 47 | | | | | | | | |
| 7 | 71 | 58 | 50 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 44 | 55 | 49 | 44 | 53 | 48 | 44 | 42 | | | | | | | | |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | | | | | | |
| 9 | 62 | 50 | 42 | 37 | 61 | 49 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | | | | | | |
| 10 | 59 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 220308 | 220308 | 220308 |
| 5° | 230002 | 219329 | 209188 |
| 10° | 235818 | 214763 | 196076 |
| 15° | 240696 | 209040 | 181942 |
| 20° | 239421 | 198861 | 166597 |
| 25° | 229364 | 183894 | 151585 |
| 30° | 211889 | 167907 | 137371 |
| 35° | 185737 | 149342 | 124347 |
| 40° | 161725 | 131953 | 111987 |
| 45° | 140753 | 115094 | 100075 |
| 50° | 125401 | 99189 | 88309 |
| 55° | 112061 | 87201 | 76385 |
| 60° | 100033 | 76203 | 65817 |
| 65° | 88930 | 66865 | 62546 |
| 70° | 78078 | 57594 | 58387 |
| 75° | 66100 | 49087 | 54091 |
| 80° | 50788 | 41767 | 49296 |
| 85° | 29720 | 32833 | 41608 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 167.4 | 5.2 |
| 10°-20° | 461.8 | 14.5 |
| 20°-30° | 631.0 | 19.8 |
| 30°-40° | 633.6 | 19.9 |
| 40°-50° | 524.1 | 16.4 |
| 50°-60° | 379.8 | 11.9 |
| 60°-70° | 240.6 | 7.5 |
| 70°-80° | 121.6 | 3.8 |
| 80°-90° | 29.8 | 0.9 |
| 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° | 1260.2 | 39.5 |
| 0°-40° | 1893.8 | 59.4 |
| 0°-60° | 2797.7 | 87.7 |
| 0°-90° | 3189.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3189.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1786 | 1786 | 1786 | 1786 | 1786 | |
| 5° | 1858 | 1830 | 1771 | 1713 | 1690 | 178 |
| 15° | 1885 | 1811 | 1637 | 1486 | 1425 | 530 |
| 25° | 1685 | 1574 | 1351 | 1181 | 1114 | 770 |
| 35° | 1234 | 1160 | 992 | 870 | 826 | 773 |
| 45° | 807 | 761 | 660 | 595 | 574 | 628 |
| 55° | 521 | 475 | 406 | 370 | 355 | 469 |
| 65° | 305 | 271 | 229 | 206 | 214 | 303 |
| 75° | 139 | 120 | 103 | 107 | 114 | 148 |
| 85° | 21 | 21 | 23 | 27 | 29 | 29 |
| 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° | 1786.1 | 1786.1 | 1786.1 | 1786.1 | 1786.1 | 1786.1 | 1786.1 | 1786.1 | 1786.1 |
| 2.5° | 1819.8 | 1813.5 | 1803.0 | 1790.4 | 1775.7 | 1758.8 | 1744.1 | 1735.7 | 1731.5 |
| 5° | 1857.6 | 1849.2 | 1830.3 | 1803.0 | 1771.4 | 1740.0 | 1712.6 | 1695.8 | 1689.5 |
| 7.5° | 1880.7 | 1868.1 | 1840.8 | 1798.7 | 1750.4 | 1704.2 | 1664.3 | 1641.2 | 1634.9 |
| 10° | 1882.8 | 1868.1 | 1832.3 | 1775.7 | 1714.7 | 1653.7 | 1605.4 | 1571.8 | 1565.5 |
| 12.5° | 1884.9 | 1866.1 | 1821.9 | 1754.7 | 1679.0 | 1603.4 | 1544.5 | 1504.6 | 1494.0 |
| 15° | 1884.9 | 1866.1 | 1811.3 | 1731.5 | 1637.0 | 1550.8 | 1485.7 | 1439.4 | 1424.8 |
| 17.5° | 1868.1 | 1847.1 | 1782.0 | 1689.5 | 1586.5 | 1489.9 | 1414.2 | 1365.9 | 1351.2 |
| 20° | 1824.0 | 1800.9 | 1727.4 | 1626.4 | 1515.0 | 1414.2 | 1338.6 | 1288.1 | 1269.2 |
| 22.5° | 1761.0 | 1733.7 | 1655.9 | 1546.6 | 1435.2 | 1332.3 | 1258.8 | 1206.2 | 1189.4 |
| 25° | 1685.3 | 1658.0 | 1573.9 | 1466.7 | 1351.2 | 1254.5 | 1181.0 | 1132.7 | 1113.8 |
| 27.5° | 1592.8 | 1563.4 | 1481.4 | 1374.3 | 1267.1 | 1170.4 | 1103.2 | 1059.0 | 1040.1 |
| 30° | 1487.7 | 1456.3 | 1378.5 | 1275.5 | 1178.9 | 1086.5 | 1021.3 | 985.5 | 964.5 |
| 32.5° | 1365.9 | 1338.6 | 1269.2 | 1176.7 | 1086.5 | 998.1 | 943.5 | 912.0 | 895.2 |
| 35° | 1233.5 | 1218.8 | 1160.0 | 1080.1 | 991.8 | 918.3 | 870.0 | 840.5 | 825.8 |
| 37.5° | 1115.8 | 1101.1 | 1050.7 | 983.4 | 905.7 | 838.4 | 798.5 | 773.3 | 760.7 |
| 40° | 1004.4 | 991.8 | 943.5 | 886.7 | 819.5 | 760.7 | 727.1 | 708.1 | 695.5 |
| 42.5° | 895.2 | 888.9 | 849.0 | 796.5 | 737.6 | 687.1 | 659.8 | 645.1 | 634.6 |
| 45° | 806.9 | 798.5 | 760.7 | 710.3 | 659.8 | 617.8 | 594.7 | 584.1 | 573.7 |
| 47.5° | 729.1 | 718.7 | 678.8 | 634.6 | 588.4 | 550.5 | 529.5 | 519.1 | 514.8 |
| 50° | 653.5 | 643.0 | 607.3 | 563.1 | 516.9 | 489.6 | 472.8 | 462.3 | 460.2 |
| 52.5° | 586.3 | 575.8 | 535.8 | 493.8 | 458.1 | 435.0 | 420.3 | 409.8 | 405.5 |
| 55° | 521.1 | 508.5 | 474.9 | 435.0 | 405.5 | 384.5 | 369.8 | 359.3 | 355.2 |
| 57.5° | 462.3 | 449.7 | 420.3 | 382.5 | 355.2 | 336.2 | 323.6 | 313.1 | 308.9 |
| 60° | 405.5 | 395.1 | 367.8 | 332.0 | 308.9 | 292.1 | 279.4 | 271.1 | 266.8 |
| 62.5° | 353.0 | 344.6 | 317.3 | 285.8 | 266.8 | 252.1 | 241.7 | 233.2 | 237.5 |
| 65° | 304.7 | 296.3 | 271.1 | 243.8 | 229.1 | 214.3 | 205.9 | 205.9 | 214.3 |
| 67.5° | 258.5 | 250.1 | 229.1 | 205.9 | 193.3 | 182.9 | 176.5 | 182.9 | 189.2 |
| 70° | 216.5 | 208.1 | 189.2 | 170.2 | 159.7 | 151.3 | 151.3 | 157.6 | 161.9 |
| 72.5° | 176.5 | 168.2 | 153.4 | 138.7 | 130.3 | 124.0 | 130.3 | 134.5 | 138.7 |
| 75° | 138.7 | 132.4 | 119.8 | 109.3 | 103.0 | 100.8 | 107.1 | 111.4 | 113.5 |
| 77.5° | 103.0 | 98.8 | 90.4 | 81.9 | 77.8 | 79.8 | 86.2 | 88.2 | 90.4 |
| 80° | 71.5 | 69.4 | 63.1 | 58.8 | 58.8 | 60.9 | 65.2 | 67.2 | 69.4 |
| 82.5° | 44.2 | 44.2 | 39.9 | 37.9 | 39.9 | 44.2 | 46.2 | 48.3 | 48.3 |
| 85° | 21.0 | 23.2 | 21.0 | 21.0 | 23.2 | 27.3 | 27.3 | 29.4 | 29.4 |
| 87.5° | 6.3 | 6.3 | 8.4 | 8.4 | 10.5 | 10.5 | 10.5 | 10.5 | 12.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report



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Scaled Data Report



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

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