

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: P580036

Luminaire Tested: **HCC4W20D010MB-HM40525840-41WWBB**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580036
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: HCC4W20D010MB-HM40525840-41WWBB
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

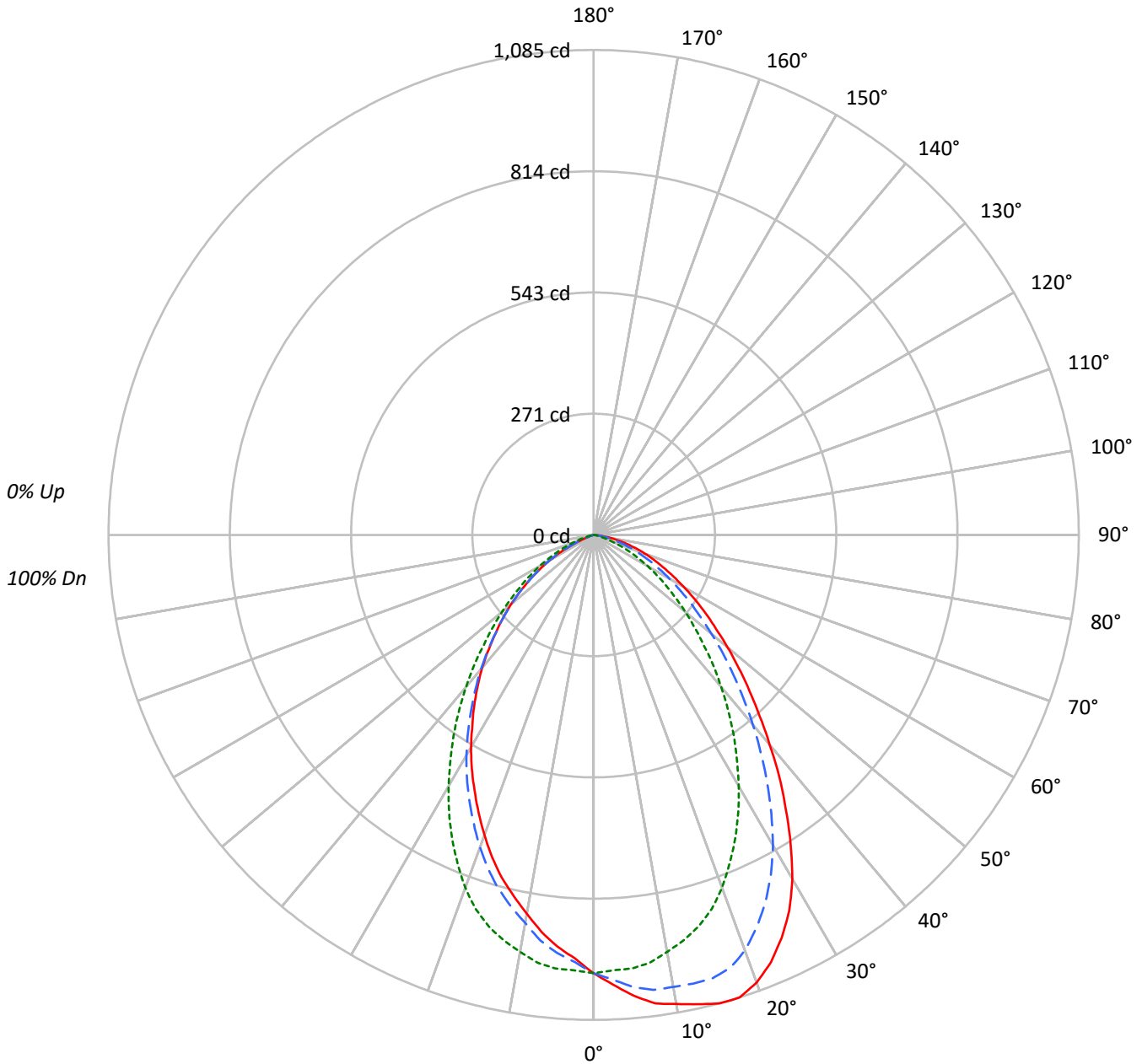
Lumens per Lamp: N/A
Luminaire Lumens: 1693.8 lumens
Efficiency: N/A
Efficacy: 84.7 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.04 / 1.12
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 20
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 | 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° | 120965 | 120965 | 120965 |
| 5° | 128163 | 120560 | 114506 |
| 10° | 133477 | 118635 | 107801 |
| 15° | 138589 | 115783 | 101353 |
| 20° | 139886 | 110220 | 93747 |
| 25° | 135362 | 101950 | 85809 |
| 30° | 126561 | 92378 | 78079 |
| 35° | 112797 | 82125 | 70154 |
| 40° | 98606 | 71411 | 62442 |
| 45° | 85893 | 60582 | 54023 |
| 50° | 74953 | 51389 | 46303 |
| 55° | 65675 | 42601 | 37483 |
| 60° | 57479 | 34413 | 27531 |
| 65° | 50083 | 25655 | 15469 |
| 70° | 43782 | 16589 | 5049 |
| 75° | 35933 | 8626 | 1334 |
| 80° | 26708 | 3978 | 994 |
| 85° | 15709 | 1981 | 1981 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 92.6 | 5.5 |
| 10°-20° | 259.0 | 15.3 |
| 20°-30° | 358.1 | 21.1 |
| 30°-40° | 360.1 | 21.3 |
| 40°-50° | 290.6 | 17.2 |
| 50°-60° | 196.5 | 11.6 |
| 60°-70° | 100.0 | 5.9 |
| 70°-80° | 32.0 | 1.9 |
| 80°-90° | 4.9 | 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° | 709.7 | 41.9 |
| 0°-40° | 1069.8 | 63.2 |
| 0°-60° | 1556.9 | 91.9 |
| 0°-90° | 1693.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1693.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|-----|------|------|------|
| 0° | 981 | 981 | 981 | 981 | 981 | |
| 5° | 1035 | 1016 | 974 | 939 | 925 | 100 |
| 15° | 1085 | 1027 | 907 | 820 | 794 | 306 |
| 25° | 995 | 908 | 749 | 657 | 630 | 455 |
| 35° | 749 | 676 | 545 | 477 | 466 | 468 |
| 45° | 492 | 441 | 347 | 310 | 310 | 382 |
| 55° | 305 | 264 | 198 | 173 | 174 | 274 |
| 65° | 172 | 140 | 88 | 57 | 53 | 172 |
| 75° | 75 | 53 | 18 | 4 | 3 | 81 |
| 85° | 11 | 6 | 1 | 1 | 1 | 15 |
| 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° | 980.7 | 980.7 | 980.7 | 980.7 | 980.7 | 980.7 | 980.7 | 980.7 | 980.7 |
| 2.5° | 1007.2 | 1001.6 | 995.9 | 986.2 | 975.1 | 963.9 | 956.9 | 951.3 | 948.6 |
| 5° | 1035.1 | 1028.1 | 1015.6 | 994.6 | 973.7 | 954.1 | 938.8 | 929.1 | 924.8 |
| 7.5° | 1057.3 | 1047.6 | 1026.7 | 997.4 | 965.3 | 934.6 | 915.1 | 901.1 | 895.6 |
| 10° | 1065.7 | 1054.6 | 1026.7 | 987.6 | 947.2 | 909.5 | 881.6 | 867.6 | 860.7 |
| 12.5° | 1075.5 | 1062.9 | 1028.1 | 979.2 | 929.1 | 884.3 | 852.3 | 834.2 | 827.2 |
| 15° | 1085.3 | 1068.5 | 1026.7 | 966.7 | 906.7 | 855.1 | 820.2 | 802.1 | 793.7 |
| 17.5° | 1085.3 | 1065.7 | 1015.6 | 945.8 | 877.5 | 823.0 | 784.0 | 763.0 | 756.1 |
| 20° | 1065.7 | 1043.4 | 989.1 | 912.3 | 839.7 | 781.1 | 743.5 | 722.6 | 714.2 |
| 22.5° | 1035.1 | 1009.9 | 951.3 | 871.8 | 795.1 | 737.9 | 700.2 | 680.7 | 672.4 |
| 25° | 994.6 | 969.4 | 908.1 | 825.8 | 749.1 | 691.9 | 657.0 | 638.9 | 630.5 |
| 27.5° | 947.2 | 919.2 | 857.8 | 775.6 | 700.2 | 645.9 | 613.8 | 597.0 | 590.0 |
| 30° | 888.6 | 862.1 | 802.1 | 721.2 | 648.6 | 598.4 | 569.1 | 553.8 | 548.2 |
| 32.5° | 820.2 | 797.9 | 739.4 | 664.0 | 595.6 | 549.6 | 523.1 | 510.5 | 504.9 |
| 35° | 749.1 | 728.1 | 676.5 | 606.8 | 545.4 | 502.2 | 477.0 | 468.7 | 465.9 |
| 37.5° | 682.1 | 664.0 | 613.8 | 549.6 | 493.8 | 456.2 | 433.8 | 428.3 | 425.4 |
| 40° | 612.4 | 599.8 | 553.8 | 495.2 | 443.5 | 410.1 | 391.9 | 387.8 | 387.8 |
| 42.5° | 549.6 | 535.6 | 495.2 | 442.2 | 396.2 | 362.7 | 350.2 | 345.9 | 347.3 |
| 45° | 492.4 | 478.4 | 440.8 | 391.9 | 347.3 | 319.4 | 309.7 | 309.7 | 309.7 |
| 47.5° | 439.4 | 426.8 | 391.9 | 341.8 | 305.4 | 283.2 | 273.4 | 273.4 | 274.8 |
| 50° | 390.6 | 382.2 | 343.2 | 299.9 | 267.8 | 246.9 | 240.0 | 238.6 | 241.3 |
| 52.5° | 344.6 | 334.8 | 299.9 | 260.8 | 230.2 | 213.5 | 206.5 | 205.1 | 206.5 |
| 55° | 305.4 | 294.3 | 263.7 | 226.0 | 198.1 | 181.3 | 173.0 | 171.6 | 174.3 |
| 57.5° | 267.8 | 259.5 | 227.3 | 193.8 | 167.3 | 150.6 | 143.7 | 140.9 | 142.2 |
| 60° | 233.0 | 224.6 | 195.3 | 163.2 | 139.5 | 122.7 | 113.0 | 110.2 | 111.6 |
| 62.5° | 200.8 | 193.8 | 166.0 | 135.3 | 111.6 | 96.2 | 86.5 | 79.5 | 82.4 |
| 65° | 171.6 | 164.6 | 139.5 | 108.9 | 87.9 | 71.1 | 57.2 | 51.6 | 53.0 |
| 67.5° | 146.5 | 138.1 | 114.4 | 86.5 | 65.6 | 47.4 | 32.1 | 29.2 | 29.2 |
| 70° | 121.4 | 113.0 | 92.1 | 67.0 | 46.0 | 25.1 | 14.0 | 14.0 | 14.0 |
| 72.5° | 97.6 | 90.7 | 71.1 | 50.2 | 29.2 | 11.1 | 5.6 | 5.6 | 5.6 |
| 75° | 75.4 | 69.7 | 53.0 | 34.9 | 18.1 | 5.6 | 4.1 | 2.8 | 2.8 |
| 77.5° | 55.7 | 50.2 | 37.6 | 23.7 | 11.1 | 2.8 | 2.8 | 2.8 | 2.8 |
| 80° | 37.6 | 33.5 | 25.1 | 14.0 | 5.6 | 1.4 | 1.4 | 1.4 | 1.4 |
| 82.5° | 22.4 | 19.5 | 14.0 | 7.0 | 2.8 | 1.4 | 1.4 | 1.4 | 1.4 |
| 85° | 11.1 | 8.4 | 5.6 | 2.8 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| 87.5° | 2.8 | 1.4 | 1.4 | 1.4 | 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 |

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Scaled Data Report



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

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