

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: P580055

Luminaire Tested: **HCC4W20D010MB-HM40525927-41WWW**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580055
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: HCC4W20D010MB-HM40525927-41WWW
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

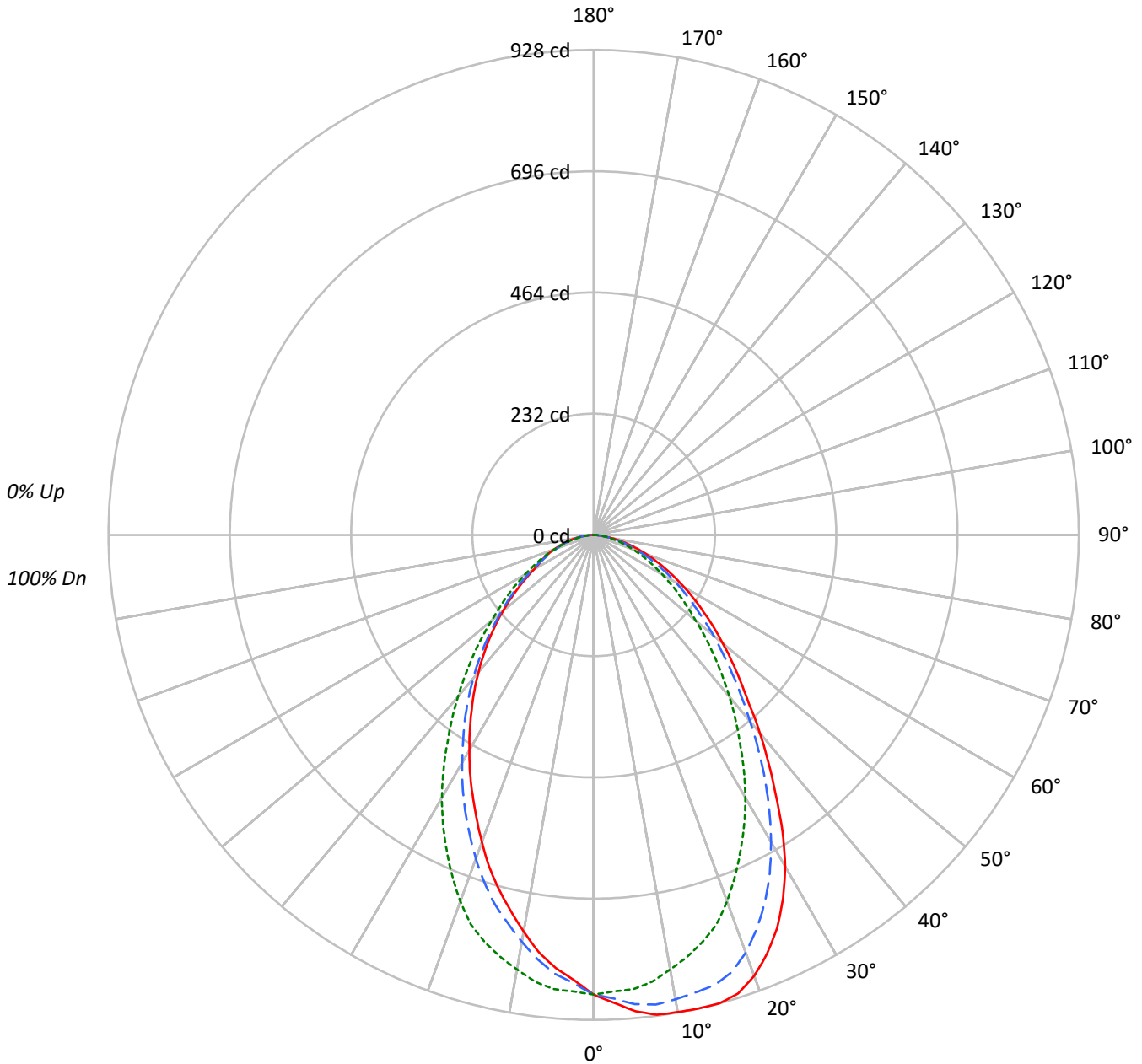
Lumens per Lamp: N/A
Luminaire Lumens: 1570.6 lumens
Efficiency: N/A
Efficacy: 78.5 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 108482 | 108482 | 108482 |
| 5° | 113255 | 108005 | 103003 |
| 10° | 116118 | 105747 | 96554 |
| 15° | 118528 | 102936 | 89579 |
| 20° | 117886 | 97921 | 82039 |
| 25° | 112947 | 90559 | 74636 |
| 30° | 104342 | 82679 | 67653 |
| 35° | 91446 | 73542 | 61225 |
| 40° | 79639 | 64970 | 55148 |
| 45° | 69304 | 56675 | 49278 |
| 50° | 61751 | 48836 | 43483 |
| 55° | 55181 | 42945 | 37612 |
| 60° | 49264 | 37522 | 32415 |
| 65° | 43779 | 32922 | 30791 |
| 70° | 38444 | 28382 | 28743 |
| 75° | 32502 | 24162 | 26640 |
| 80° | 25003 | 20599 | 24293 |
| 85° | 14577 | 16134 | 20521 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 82.4 | 5.2 |
| 10°-20° | 227.4 | 14.5 |
| 20°-30° | 310.7 | 19.8 |
| 30°-40° | 312.0 | 19.9 |
| 40°-50° | 258.1 | 16.4 |
| 50°-60° | 187.0 | 11.9 |
| 60°-70° | 118.5 | 7.5 |
| 70°-80° | 59.9 | 3.8 |
| 80°-90° | 14.6 | 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° | 620.5 | 39.5 |
| 0°-40° | 932.5 | 59.4 |
| 0°-60° | 1377.6 | 87.7 |
| 0°-90° | 1570.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1570.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0° | 880 | 880 | 880 | 880 | 880 | |
| 5° | 915 | 901 | 872 | 843 | 832 | 88 |
| 15° | 928 | 892 | 806 | 732 | 702 | 261 |
| 25° | 830 | 775 | 665 | 582 | 548 | 379 |
| 35° | 607 | 571 | 488 | 428 | 407 | 381 |
| 45° | 397 | 375 | 325 | 293 | 282 | 309 |
| 55° | 257 | 234 | 200 | 182 | 175 | 231 |
| 65° | 150 | 134 | 113 | 101 | 106 | 149 |
| 75° | 68 | 59 | 51 | 53 | 56 | 73 |
| 85° | 10 | 10 | 11 | 13 | 14 | 14 |
| 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° | 879.5 | 879.5 | 879.5 | 879.5 | 879.5 | 879.5 | 879.5 | 879.5 | 879.5 |
| 2.5° | 896.0 | 892.9 | 887.8 | 881.6 | 874.4 | 866.1 | 858.9 | 854.7 | 852.7 |
| 5° | 914.7 | 910.6 | 901.3 | 887.8 | 872.3 | 856.8 | 843.3 | 835.0 | 831.9 |
| 7.5° | 926.1 | 919.9 | 906.5 | 885.7 | 862.0 | 839.1 | 819.5 | 808.2 | 805.1 |
| 10° | 927.1 | 919.9 | 902.3 | 874.4 | 844.3 | 814.4 | 790.5 | 774.0 | 770.9 |
| 12.5° | 928.2 | 918.9 | 897.1 | 864.0 | 826.8 | 789.5 | 760.6 | 740.8 | 735.7 |
| 15° | 928.2 | 918.9 | 891.9 | 852.7 | 806.1 | 763.7 | 731.6 | 708.8 | 701.5 |
| 17.5° | 919.9 | 909.6 | 877.5 | 831.9 | 781.2 | 733.6 | 696.3 | 672.6 | 665.4 |
| 20° | 898.1 | 886.7 | 850.5 | 800.8 | 746.0 | 696.3 | 659.2 | 634.3 | 625.0 |
| 22.5° | 867.1 | 853.7 | 815.4 | 761.6 | 706.8 | 656.0 | 619.8 | 593.9 | 585.7 |
| 25° | 829.9 | 816.4 | 775.0 | 722.3 | 665.4 | 617.8 | 581.5 | 557.7 | 548.4 |
| 27.5° | 784.3 | 769.9 | 729.5 | 676.7 | 624.0 | 576.4 | 543.2 | 521.5 | 512.3 |
| 30° | 732.6 | 717.1 | 678.8 | 628.1 | 580.5 | 535.0 | 502.8 | 485.3 | 475.0 |
| 32.5° | 672.6 | 659.2 | 625.0 | 579.5 | 535.0 | 491.5 | 464.6 | 449.1 | 440.8 |
| 35° | 607.3 | 600.1 | 571.2 | 531.9 | 488.4 | 452.1 | 428.4 | 414.0 | 406.6 |
| 37.5° | 549.4 | 542.2 | 517.4 | 484.3 | 446.0 | 412.8 | 393.2 | 380.8 | 374.6 |
| 40° | 494.6 | 488.4 | 464.6 | 436.7 | 403.5 | 374.6 | 358.0 | 348.7 | 342.5 |
| 42.5° | 440.8 | 437.7 | 418.1 | 392.2 | 363.1 | 338.4 | 324.9 | 317.7 | 312.4 |
| 45° | 397.3 | 393.2 | 374.6 | 349.7 | 324.9 | 304.2 | 292.8 | 287.7 | 282.5 |
| 47.5° | 359.0 | 353.8 | 334.2 | 312.4 | 289.7 | 271.2 | 260.7 | 255.6 | 253.5 |
| 50° | 321.8 | 316.7 | 299.0 | 277.3 | 254.5 | 241.1 | 232.8 | 227.7 | 226.6 |
| 52.5° | 288.7 | 283.5 | 263.8 | 243.2 | 225.6 | 214.1 | 206.9 | 201.8 | 199.7 |
| 55° | 256.6 | 250.4 | 233.9 | 214.1 | 199.7 | 189.4 | 182.1 | 177.0 | 174.9 |
| 57.5° | 227.7 | 221.5 | 206.9 | 188.3 | 174.9 | 165.5 | 159.3 | 154.2 | 152.1 |
| 60° | 199.7 | 194.5 | 181.1 | 163.4 | 152.1 | 143.8 | 137.6 | 133.5 | 131.4 |
| 62.5° | 173.9 | 169.6 | 156.2 | 140.7 | 131.4 | 124.2 | 118.9 | 114.8 | 116.9 |
| 65° | 150.0 | 145.9 | 133.5 | 120.0 | 112.8 | 105.5 | 101.4 | 101.4 | 105.5 |
| 67.5° | 127.3 | 123.2 | 112.8 | 101.4 | 95.2 | 90.0 | 86.9 | 90.0 | 93.1 |
| 70° | 106.6 | 102.4 | 93.1 | 83.8 | 78.7 | 74.6 | 74.6 | 77.7 | 79.7 |
| 72.5° | 86.9 | 82.8 | 75.6 | 68.2 | 64.1 | 61.0 | 64.1 | 66.2 | 68.2 |
| 75° | 68.2 | 65.1 | 59.0 | 53.8 | 50.7 | 49.7 | 52.8 | 54.8 | 55.9 |
| 77.5° | 50.7 | 48.6 | 44.5 | 40.4 | 38.3 | 39.3 | 42.4 | 43.5 | 44.5 |
| 80° | 35.2 | 34.2 | 31.1 | 29.0 | 29.0 | 30.1 | 32.1 | 33.1 | 34.2 |
| 82.5° | 21.7 | 21.7 | 19.6 | 18.6 | 19.6 | 21.7 | 22.7 | 23.7 | 23.7 |
| 85° | 10.3 | 11.4 | 10.3 | 10.3 | 11.4 | 13.4 | 13.4 | 14.5 | 14.5 |
| 87.5° | 3.1 | 3.1 | 4.1 | 4.1 | 5.2 | 5.2 | 5.2 | 5.2 | 6.2 |
| 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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