

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: P580005

Luminaire Tested: **HCC4W20D010SL-HM40525830-41WWBB**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580005
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: HCC4W20D010SL-HM40525830-41WWBB
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

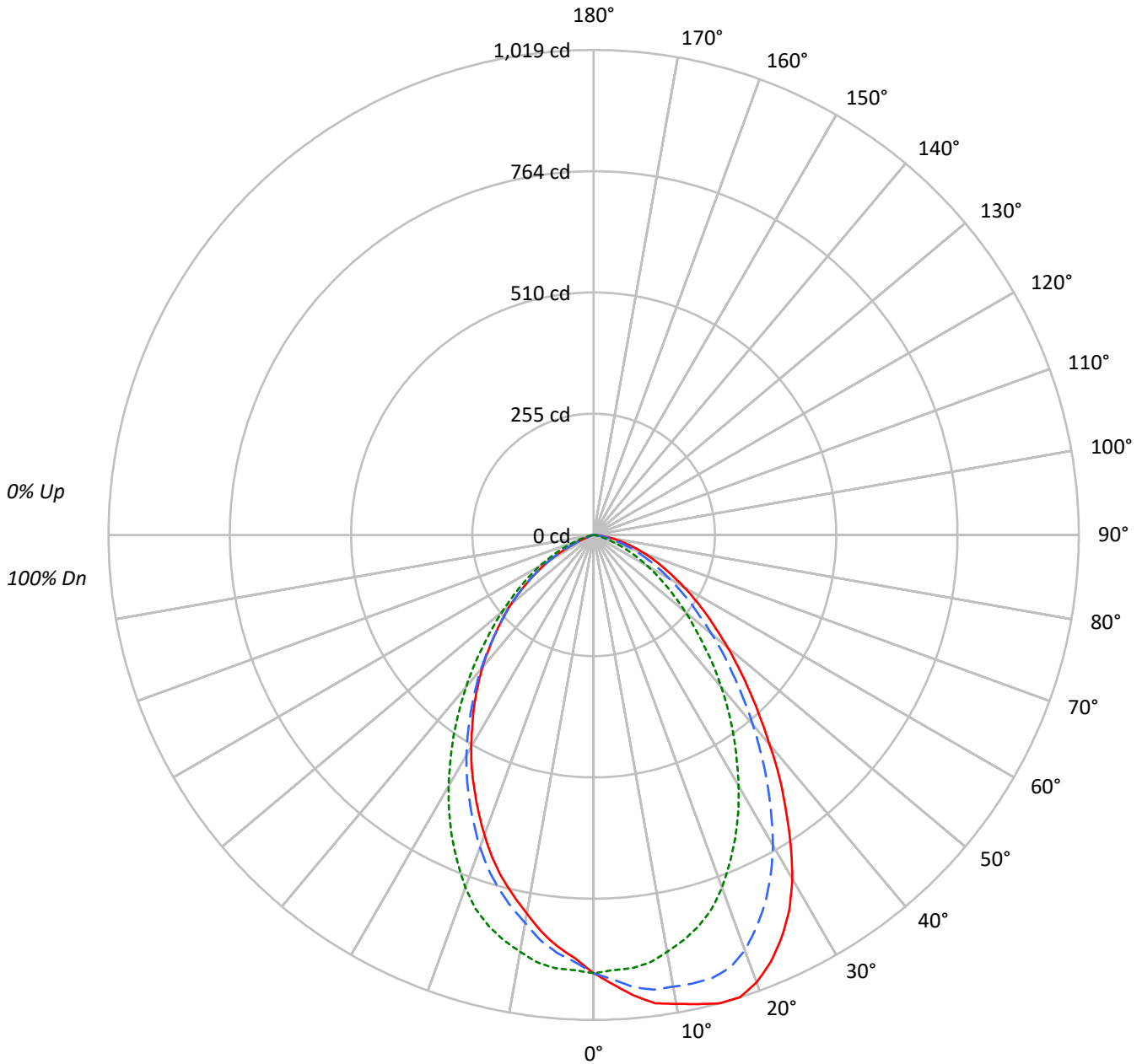
Lumens per Lamp: N/A
Luminaire Lumens: 1590.2 lumens
Efficiency: N/A
Efficacy: 79.5 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.04 / 1.12
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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 | 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 | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 | 101 | 99 | 97 | 97 | 95 | 94 | 94 | 92 | 91 | 89 | | | | | 89 | | | |
| 2 | 103 | 97 | 91 | 87 | 101 | 95 | 90 | 86 | 92 | 87 | 84 | 88 | 85 | 82 | 85 | 83 | 80 | 78 | | | | | 78 | | | |
| 3 | 96 | 87 | 80 | 75 | 94 | 86 | 79 | 74 | 83 | 78 | 73 | 80 | 76 | 72 | 78 | 74 | 71 | 69 | | | | | 69 | | | |
| 4 | 89 | 79 | 72 | 66 | 87 | 78 | 71 | 65 | 75 | 69 | 65 | 73 | 68 | 64 | 71 | 67 | 63 | 61 | | | | | 61 | | | |
| 5 | 83 | 72 | 64 | 58 | 81 | 71 | 64 | 58 | 69 | 62 | 58 | 67 | 61 | 57 | 65 | 60 | 56 | 55 | | | | | 55 | | | |
| 6 | 77 | 66 | 58 | 52 | 75 | 65 | 57 | 52 | 63 | 57 | 52 | 61 | 56 | 51 | 60 | 55 | 51 | 49 | | | | | 49 | | | |
| 7 | 72 | 60 | 53 | 47 | 71 | 59 | 52 | 47 | 58 | 51 | 47 | 57 | 51 | 46 | 55 | 50 | 46 | 44 | | | | | 44 | | | |
| 8 | 68 | 56 | 48 | 43 | 66 | 55 | 48 | 43 | 54 | 47 | 42 | 53 | 47 | 42 | 51 | 46 | 42 | 40 | | | | | 40 | | | |
| 9 | 64 | 52 | 44 | 39 | 62 | 51 | 44 | 39 | 50 | 43 | 39 | 49 | 43 | 39 | 48 | 43 | 39 | 37 | | | | | 37 | | | |
| 10 | 60 | 48 | 41 | 36 | 59 | 47 | 41 | 36 | 46 | 40 | 36 | 46 | 40 | 36 | 45 | 39 | 36 | 34 | | | | | 34 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 113564 | 113564 | 113564 |
| 5° | 120313 | 113169 | 107510 |
| 10° | 125311 | 111383 | 101213 |
| 15° | 130110 | 108696 | 95160 |
| 20° | 131327 | 103474 | 88011 |
| 25° | 127087 | 95703 | 80569 |
| 30° | 118813 | 86724 | 73307 |
| 35° | 105886 | 77096 | 65862 |
| 40° | 92568 | 67063 | 58626 |
| 45° | 80625 | 56884 | 50726 |
| 50° | 70367 | 48242 | 43463 |
| 55° | 61675 | 39977 | 35203 |
| 60° | 53951 | 32317 | 25829 |
| 65° | 46990 | 24079 | 14535 |
| 70° | 41077 | 15580 | 4724 |
| 75° | 33741 | 8102 | 1239 |
| 80° | 25074 | 3765 | 923 |
| 85° | 14718 | 1840 | 1840 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 86.9 | 5.5 |
| 10°-20° | 243.2 | 15.3 |
| 20°-30° | 336.2 | 21.1 |
| 30°-40° | 338.1 | 21.3 |
| 40°-50° | 272.8 | 17.2 |
| 50°-60° | 184.5 | 11.6 |
| 60°-70° | 93.9 | 5.9 |
| 70°-80° | 30.1 | 1.9 |
| 80°-90° | 4.6 | 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° | 666.3 | 41.9 |
| 0°-40° | 1004.4 | 63.2 |
| 0°-60° | 1461.7 | 91.9 |
| 0°-90° | 1590.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1590.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|-----|-----|------|------|------|
| 0° | 921 | 921 | 921 | 921 | 921 | |
| 5° | 972 | 953 | 914 | 881 | 868 | 94 |
| 15° | 1019 | 964 | 851 | 770 | 745 | 287 |
| 25° | 934 | 853 | 703 | 617 | 592 | 427 |
| 35° | 703 | 635 | 512 | 448 | 437 | 439 |
| 45° | 462 | 414 | 326 | 291 | 291 | 358 |
| 55° | 287 | 248 | 186 | 162 | 164 | 258 |
| 65° | 161 | 131 | 82 | 54 | 50 | 161 |
| 75° | 71 | 50 | 17 | 4 | 3 | 76 |
| 85° | 10 | 5 | 1 | 1 | 1 | 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° | 920.7 | 920.7 | 920.7 | 920.7 | 920.7 | 920.7 | 920.7 | 920.7 | 920.7 |
| 2.5° | 945.5 | 940.3 | 935.0 | 925.9 | 915.4 | 905.0 | 898.3 | 893.2 | 890.5 |
| 5° | 971.7 | 965.2 | 953.4 | 933.8 | 914.0 | 895.8 | 881.4 | 872.2 | 868.3 |
| 7.5° | 992.6 | 983.6 | 963.8 | 936.4 | 906.2 | 877.5 | 859.1 | 846.0 | 840.8 |
| 10° | 1000.5 | 990.1 | 963.8 | 927.2 | 889.3 | 853.8 | 827.7 | 814.6 | 808.1 |
| 12.5° | 1009.7 | 997.9 | 965.2 | 919.3 | 872.2 | 830.3 | 800.1 | 783.2 | 776.6 |
| 15° | 1018.9 | 1003.2 | 963.8 | 907.5 | 851.2 | 802.8 | 770.1 | 753.0 | 745.2 |
| 17.5° | 1018.9 | 1000.5 | 953.4 | 887.9 | 823.8 | 772.6 | 736.0 | 716.3 | 709.8 |
| 20° | 1000.5 | 979.5 | 928.5 | 856.5 | 788.3 | 733.4 | 698.1 | 678.3 | 670.5 |
| 22.5° | 971.7 | 948.1 | 893.2 | 818.5 | 746.5 | 692.8 | 657.5 | 639.1 | 631.2 |
| 25° | 933.8 | 910.1 | 852.6 | 775.3 | 703.2 | 649.5 | 616.9 | 599.8 | 592.0 |
| 27.5° | 889.3 | 863.0 | 805.4 | 728.1 | 657.5 | 606.3 | 576.3 | 560.5 | 554.0 |
| 30° | 834.2 | 809.3 | 753.0 | 677.1 | 608.9 | 561.8 | 534.3 | 519.9 | 514.7 |
| 32.5° | 770.1 | 749.1 | 694.0 | 623.4 | 559.2 | 516.0 | 491.1 | 479.3 | 474.1 |
| 35° | 703.2 | 683.6 | 635.2 | 569.7 | 512.0 | 471.4 | 447.9 | 440.0 | 437.4 |
| 37.5° | 640.4 | 623.4 | 576.3 | 516.0 | 463.6 | 428.3 | 407.3 | 402.0 | 399.4 |
| 40° | 574.9 | 563.2 | 519.9 | 464.9 | 416.5 | 385.0 | 368.0 | 364.1 | 364.1 |
| 42.5° | 516.0 | 502.8 | 464.9 | 415.1 | 372.0 | 340.5 | 328.7 | 324.8 | 326.1 |
| 45° | 462.2 | 449.2 | 413.8 | 368.0 | 326.1 | 299.9 | 290.8 | 290.8 | 290.8 |
| 47.5° | 412.6 | 400.8 | 368.0 | 320.8 | 286.8 | 265.9 | 256.7 | 256.7 | 258.0 |
| 50° | 366.7 | 358.8 | 322.2 | 281.6 | 251.4 | 231.8 | 225.3 | 223.9 | 226.5 |
| 52.5° | 323.5 | 314.3 | 281.6 | 244.9 | 216.1 | 200.4 | 193.8 | 192.5 | 193.8 |
| 55° | 286.8 | 276.3 | 247.5 | 212.2 | 185.9 | 170.2 | 162.4 | 161.0 | 163.7 |
| 57.5° | 251.4 | 243.6 | 213.5 | 182.0 | 157.1 | 141.4 | 134.9 | 132.2 | 133.6 |
| 60° | 218.7 | 210.8 | 183.3 | 153.2 | 131.0 | 115.3 | 106.1 | 103.5 | 104.7 |
| 62.5° | 188.6 | 182.0 | 155.9 | 127.1 | 104.7 | 90.4 | 81.2 | 74.7 | 77.3 |
| 65° | 161.0 | 154.5 | 131.0 | 102.2 | 82.5 | 66.8 | 53.7 | 48.4 | 49.8 |
| 67.5° | 137.5 | 129.6 | 107.4 | 81.2 | 61.6 | 44.5 | 30.2 | 27.5 | 27.5 |
| 70° | 113.9 | 106.1 | 86.5 | 62.9 | 43.2 | 23.6 | 13.1 | 13.1 | 13.1 |
| 72.5° | 91.6 | 85.1 | 66.8 | 47.1 | 27.5 | 10.4 | 5.3 | 5.3 | 5.3 |
| 75° | 70.8 | 65.5 | 49.8 | 32.7 | 17.0 | 5.3 | 3.9 | 2.6 | 2.6 |
| 77.5° | 52.4 | 47.1 | 35.3 | 22.3 | 10.4 | 2.6 | 2.6 | 2.6 | 2.6 |
| 80° | 35.3 | 31.4 | 23.6 | 13.1 | 5.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 82.5° | 21.0 | 18.4 | 13.1 | 6.5 | 2.6 | 1.3 | 1.3 | 1.3 | 1.3 |
| 85° | 10.4 | 7.9 | 5.3 | 2.6 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 87.5° | 2.6 | 1.3 | 1.3 | 1.3 | 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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Scaled Data Report



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

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