

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: P580018

Luminaire Tested: **HCC4W20D010BZ-HM40525835-41WWBB**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580018
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: HCC4W20D010BZ-HM40525835-41WWBB
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

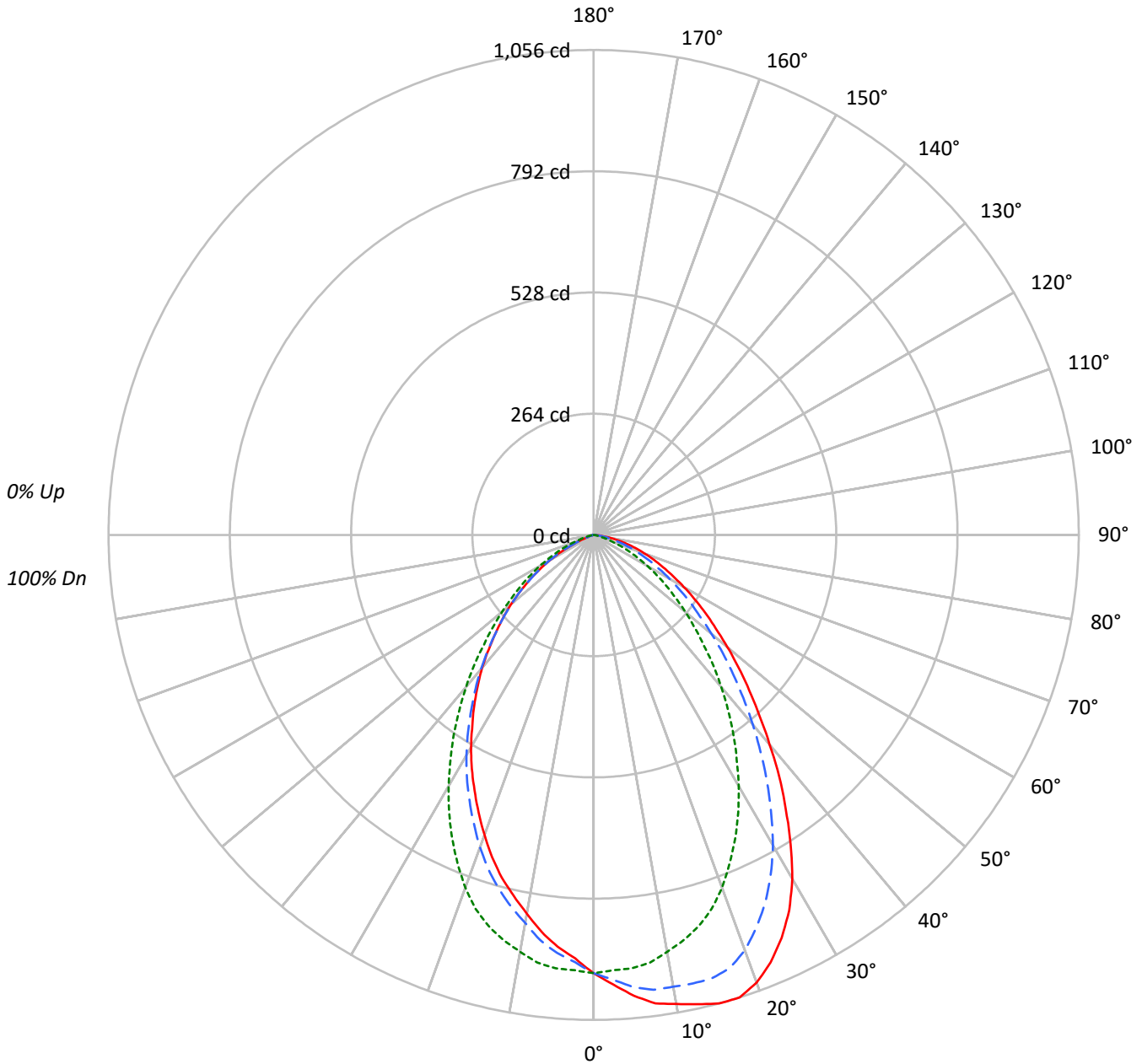
Lumens per Lamp: N/A
Luminaire Lumens: 1648.4 lumens
Efficiency: N/A
Efficacy: 82.4 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.04 / 1.12
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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° | 117709 | 117709 | 117709 |
| 5° | 124708 | 117316 | 111423 |
| 10° | 129895 | 115441 | 104896 |
| 15° | 134848 | 112680 | 98633 |
| 20° | 136131 | 107267 | 91227 |
| 25° | 131715 | 99201 | 83495 |
| 30° | 123157 | 89900 | 75985 |
| 35° | 109756 | 79911 | 68272 |
| 40° | 95950 | 69495 | 60768 |
| 45° | 83590 | 58960 | 52558 |
| 50° | 72938 | 50007 | 45056 |
| 55° | 63933 | 41461 | 36472 |
| 60° | 55900 | 33476 | 26791 |
| 65° | 48741 | 24983 | 15060 |
| 70° | 42591 | 16157 | 4869 |
| 75° | 34933 | 8435 | 1334 |
| 80° | 26069 | 3836 | 994 |
| 85° | 15426 | 1981 | 1981 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 90.1 | 5.5 |
| 10°-20° | 252.1 | 15.3 |
| 20°-30° | 348.5 | 21.1 |
| 30°-40° | 350.4 | 21.3 |
| 40°-50° | 282.8 | 17.2 |
| 50°-60° | 191.2 | 11.6 |
| 60°-70° | 97.3 | 5.9 |
| 70°-80° | 31.2 | 1.9 |
| 80°-90° | 4.8 | 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° | 690.6 | 41.9 |
| 0°-40° | 1041.1 | 63.2 |
| 0°-60° | 1515.1 | 91.9 |
| 0°-90° | 1648.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1648.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|-----|-----|------|------|------|
| 0° | 954 | 954 | 954 | 954 | 954 | |
| 5° | 1007 | 988 | 948 | 914 | 900 | 97 |
| 15° | 1056 | 999 | 882 | 798 | 772 | 297 |
| 25° | 968 | 884 | 729 | 639 | 614 | 443 |
| 35° | 729 | 658 | 531 | 464 | 453 | 455 |
| 45° | 479 | 429 | 338 | 301 | 301 | 371 |
| 55° | 297 | 257 | 193 | 168 | 170 | 267 |
| 65° | 167 | 136 | 86 | 56 | 52 | 167 |
| 75° | 73 | 52 | 18 | 4 | 3 | 79 |
| 85° | 11 | 5 | 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° | 954.3 | 954.3 | 954.3 | 954.3 | 954.3 | 954.3 | 954.3 | 954.3 | 954.3 |
| 2.5° | 980.1 | 974.6 | 969.2 | 959.7 | 948.8 | 938.0 | 931.2 | 925.7 | 923.1 |
| 5° | 1007.2 | 1000.4 | 988.3 | 967.8 | 947.5 | 928.5 | 913.6 | 904.1 | 899.9 |
| 7.5° | 1029.0 | 1019.5 | 999.0 | 970.6 | 939.4 | 909.5 | 890.5 | 876.9 | 871.5 |
| 10° | 1037.1 | 1026.2 | 999.0 | 961.1 | 921.7 | 885.0 | 858.0 | 844.3 | 837.5 |
| 12.5° | 1046.6 | 1034.4 | 1000.4 | 952.9 | 904.1 | 860.6 | 829.4 | 811.7 | 805.0 |
| 15° | 1056.0 | 1039.8 | 999.0 | 940.7 | 882.4 | 832.1 | 798.2 | 780.5 | 772.4 |
| 17.5° | 1056.0 | 1037.1 | 988.3 | 920.4 | 853.8 | 800.8 | 762.9 | 742.6 | 735.7 |
| 20° | 1037.1 | 1015.3 | 962.4 | 887.8 | 817.2 | 760.1 | 723.5 | 703.1 | 695.0 |
| 22.5° | 1007.2 | 982.7 | 925.7 | 848.4 | 773.8 | 718.1 | 681.4 | 662.4 | 654.2 |
| 25° | 967.8 | 943.4 | 883.6 | 803.6 | 728.9 | 673.3 | 639.3 | 621.7 | 613.5 |
| 27.5° | 921.7 | 894.5 | 834.8 | 754.7 | 681.4 | 628.4 | 597.2 | 581.0 | 574.2 |
| 30° | 864.7 | 838.9 | 780.5 | 701.8 | 631.2 | 582.3 | 553.9 | 538.9 | 533.5 |
| 32.5° | 798.2 | 776.4 | 719.4 | 646.1 | 579.6 | 534.8 | 509.0 | 496.9 | 491.4 |
| 35° | 728.9 | 708.6 | 658.4 | 590.5 | 530.7 | 488.7 | 464.2 | 456.0 | 453.4 |
| 37.5° | 663.8 | 646.1 | 597.2 | 534.8 | 480.5 | 443.9 | 422.2 | 416.7 | 414.1 |
| 40° | 595.9 | 583.7 | 538.9 | 481.9 | 431.6 | 399.0 | 381.5 | 377.4 | 377.4 |
| 42.5° | 534.8 | 521.3 | 481.9 | 430.4 | 385.5 | 352.9 | 340.8 | 336.6 | 338.0 |
| 45° | 479.2 | 465.6 | 429.0 | 381.5 | 338.0 | 310.8 | 301.3 | 301.3 | 301.3 |
| 47.5° | 427.6 | 415.3 | 381.5 | 332.6 | 297.3 | 275.5 | 266.1 | 266.1 | 267.4 |
| 50° | 380.1 | 372.0 | 333.9 | 291.8 | 260.6 | 240.3 | 233.5 | 232.2 | 234.8 |
| 52.5° | 335.3 | 325.7 | 291.8 | 253.8 | 224.0 | 207.7 | 201.0 | 199.6 | 201.0 |
| 55° | 297.3 | 286.4 | 256.6 | 219.9 | 192.8 | 176.5 | 168.4 | 167.0 | 169.6 |
| 57.5° | 260.6 | 252.5 | 221.3 | 188.7 | 162.9 | 146.6 | 139.8 | 137.1 | 138.4 |
| 60° | 226.6 | 218.5 | 190.1 | 158.9 | 135.7 | 119.4 | 110.0 | 107.2 | 108.6 |
| 62.5° | 195.4 | 188.7 | 161.5 | 131.7 | 108.6 | 93.7 | 84.2 | 77.4 | 80.1 |
| 65° | 167.0 | 160.1 | 135.7 | 105.9 | 85.6 | 69.3 | 55.6 | 50.2 | 51.6 |
| 67.5° | 142.6 | 134.4 | 111.3 | 84.2 | 63.8 | 46.1 | 31.2 | 28.6 | 28.6 |
| 70° | 118.1 | 110.0 | 89.6 | 65.1 | 44.8 | 24.4 | 13.5 | 13.5 | 13.5 |
| 72.5° | 95.0 | 88.2 | 69.3 | 48.9 | 28.6 | 10.9 | 5.4 | 5.4 | 5.4 |
| 75° | 73.3 | 67.9 | 51.6 | 34.0 | 17.7 | 5.4 | 4.1 | 2.8 | 2.8 |
| 77.5° | 54.3 | 48.9 | 36.7 | 23.1 | 10.9 | 2.8 | 2.8 | 2.8 | 2.8 |
| 80° | 36.7 | 32.6 | 24.4 | 13.5 | 5.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| 82.5° | 21.7 | 19.0 | 13.5 | 6.8 | 2.8 | 1.4 | 1.4 | 1.4 | 1.4 |
| 85° | 10.9 | 8.1 | 5.4 | 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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Scaled Data Report



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

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