

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: P580074

Luminaire Tested: **HCC4S20D010MW-HM40525930-41WWWB**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580074
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-18)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HCC4S20D010MW-HM40525930-41WWWB
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

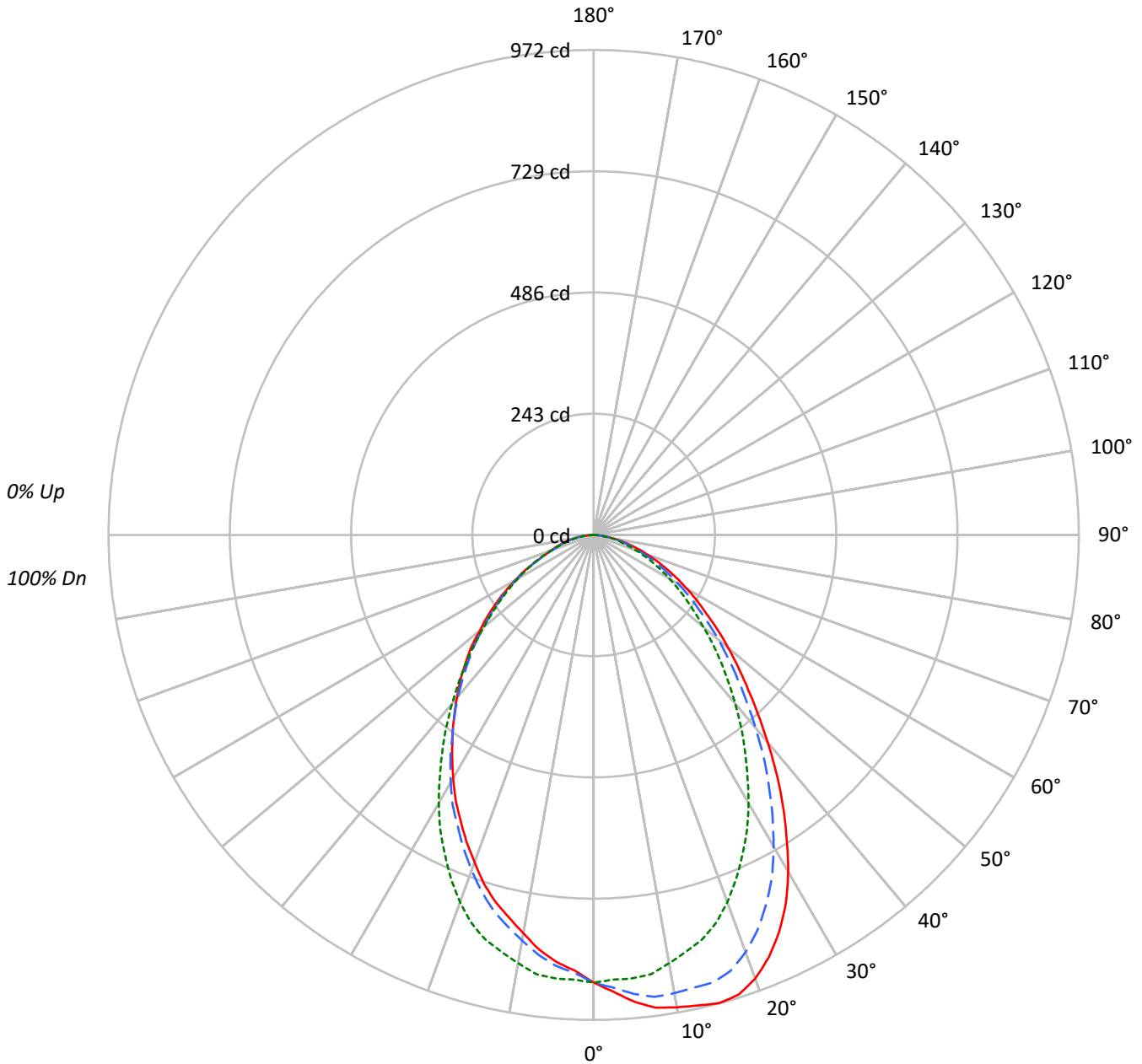
Lumens per Lamp: N/A
Luminaire Lumens: 1739.4 lumens
Efficiency: N/A
Efficacy: 87.0 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.15
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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 | | | | | | | | | | |
| 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 | 100 | 100 | 100 | 100 | | |
| | 1 | 110 | 106 | 103 | 99 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 92 | 91 | 89 | 87 | 87 | 87 | 87 | 87 | 87 | | |
| | 2 | 102 | 95 | 89 | 84 | 99 | 93 | 87 | 83 | 89 | 85 | 81 | 86 | 82 | 79 | 83 | 80 | 77 | 75 | 75 | 75 | 75 | 75 | 75 | | |
| | 3 | 94 | 85 | 77 | 72 | 92 | 83 | 76 | 71 | 80 | 75 | 70 | 78 | 73 | 69 | 75 | 71 | 68 | 66 | 66 | 66 | 66 | 66 | 66 | | |
| | 4 | 87 | 76 | 68 | 62 | 85 | 75 | 68 | 62 | 72 | 66 | 61 | 70 | 65 | 60 | 68 | 63 | 60 | 58 | 58 | 58 | 58 | 58 | 58 | | |
| | 5 | 81 | 69 | 61 | 55 | 79 | 68 | 60 | 55 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 51 | 51 | 51 | 51 | 51 | 51 | | |
| | 6 | 75 | 63 | 55 | 49 | 73 | 62 | 54 | 49 | 60 | 53 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 46 | 46 | 46 | 46 | 46 | 46 | | |
| | 7 | 70 | 58 | 50 | 44 | 68 | 57 | 49 | 44 | 55 | 48 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 | 41 | 41 | 41 | 41 | 41 | | |
| | 8 | 65 | 53 | 45 | 40 | 64 | 52 | 45 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 49 | 43 | 39 | 37 | 37 | 37 | 37 | 37 | 37 | | |
| | 9 | 61 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 36 | 45 | 40 | 36 | 34 | 34 | 34 | 34 | 34 | 34 | | |
| | 10 | 58 | 45 | 38 | 33 | 57 | 45 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 42 | 37 | 33 | 31 | 31 | 31 | 31 | 31 | 31 | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 110641 | 110641 | 110641 |
| 5° | 116326 | 110482 | 106346 |
| 10° | 120414 | 109167 | 101526 |
| 15° | 124083 | 107189 | 97177 |
| 20° | 124226 | 102765 | 91581 |
| 25° | 119561 | 96044 | 85877 |
| 30° | 111022 | 88376 | 80201 |
| 35° | 99516 | 79565 | 74204 |
| 40° | 87319 | 71008 | 68593 |
| 45° | 76316 | 62867 | 63268 |
| 50° | 67392 | 54996 | 57011 |
| 55° | 59417 | 48773 | 51246 |
| 60° | 53113 | 43171 | 44873 |
| 65° | 47048 | 37971 | 37971 |
| 70° | 41113 | 32385 | 32385 |
| 75° | 35076 | 27450 | 30739 |
| 80° | 27773 | 24506 | 27773 |
| 85° | 17832 | 21087 | 26182 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 85.0 | 4.9 |
| 10°-20° | 239.3 | 13.8 |
| 20°-30° | 335.3 | 19.3 |
| 30°-40° | 345.4 | 19.9 |
| 40°-50° | 294.1 | 16.9 |
| 50°-60° | 217.9 | 12.5 |
| 60°-70° | 136.7 | 7.9 |
| 70°-80° | 67.9 | 3.9 |
| 80°-90° | 17.8 | 1.0 |
| 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° | 659.5 | 37.9 |
| 0°-40° | 1004.9 | 57.8 |
| 0°-60° | 1516.9 | 87.2 |
| 0°-90° | 1739.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1739.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0° | 897 | 897 | 897 | 897 | 897 | |
| 5° | 940 | 923 | 892 | 867 | 859 | 90 |
| 15° | 972 | 928 | 839 | 778 | 761 | 273 |
| 25° | 878 | 818 | 706 | 645 | 631 | 402 |
| 35° | 661 | 611 | 528 | 494 | 493 | 412 |
| 45° | 438 | 408 | 360 | 354 | 363 | 339 |
| 55° | 276 | 254 | 227 | 232 | 238 | 250 |
| 65° | 161 | 145 | 130 | 128 | 130 | 161 |
| 75° | 74 | 66 | 58 | 62 | 64 | 79 |
| 85° | 13 | 13 | 15 | 17 | 18 | 16 |
| 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° | 897.0 | 897.0 | 897.0 | 897.0 | 897.0 | 897.0 | 897.0 | 897.0 | 897.0 |
| 2.5° | 916.5 | 913.0 | 908.4 | 900.4 | 892.3 | 885.4 | 878.5 | 875.0 | 873.9 |
| 5° | 939.5 | 932.6 | 923.3 | 908.4 | 892.3 | 878.5 | 867.0 | 861.2 | 858.9 |
| 7.5° | 955.6 | 948.7 | 933.8 | 910.7 | 887.7 | 867.0 | 848.6 | 840.5 | 838.2 |
| 10° | 961.4 | 953.3 | 932.6 | 901.5 | 871.6 | 846.3 | 825.5 | 815.2 | 810.6 |
| 12.5° | 966.0 | 955.6 | 929.2 | 892.3 | 855.4 | 824.3 | 802.4 | 788.7 | 785.2 |
| 15° | 971.7 | 960.3 | 928.0 | 883.1 | 839.4 | 802.4 | 778.4 | 765.6 | 761.0 |
| 17.5° | 966.0 | 953.3 | 915.3 | 864.7 | 815.2 | 774.9 | 748.4 | 736.8 | 732.2 |
| 20° | 946.4 | 932.6 | 890.0 | 835.9 | 782.9 | 741.4 | 715.0 | 703.5 | 697.7 |
| 22.5° | 916.5 | 901.5 | 857.7 | 800.1 | 746.1 | 705.7 | 680.4 | 668.9 | 665.5 |
| 25° | 878.5 | 863.5 | 817.5 | 758.7 | 705.7 | 666.6 | 644.7 | 634.4 | 631.0 |
| 27.5° | 833.5 | 818.6 | 773.8 | 716.2 | 665.5 | 628.7 | 611.4 | 601.0 | 598.7 |
| 30° | 779.5 | 764.5 | 720.8 | 667.8 | 620.5 | 586.0 | 572.2 | 564.2 | 563.1 |
| 32.5° | 719.6 | 706.9 | 666.6 | 618.2 | 573.4 | 544.6 | 534.3 | 528.4 | 527.3 |
| 35° | 660.9 | 647.0 | 611.4 | 567.7 | 528.4 | 503.2 | 493.9 | 492.8 | 492.8 |
| 37.5° | 601.0 | 587.1 | 558.4 | 518.1 | 484.7 | 461.7 | 458.2 | 459.4 | 459.4 |
| 40° | 542.3 | 529.6 | 504.3 | 471.0 | 441.0 | 423.7 | 422.6 | 424.8 | 426.0 |
| 42.5° | 487.0 | 476.7 | 453.6 | 424.8 | 399.5 | 385.7 | 386.9 | 391.5 | 394.9 |
| 45° | 437.5 | 428.3 | 407.5 | 382.3 | 360.4 | 350.1 | 353.5 | 359.2 | 362.7 |
| 47.5° | 392.6 | 384.6 | 365.0 | 341.9 | 323.6 | 316.6 | 321.3 | 328.2 | 332.7 |
| 50° | 351.2 | 344.2 | 325.9 | 301.7 | 286.6 | 282.0 | 287.8 | 294.8 | 297.1 |
| 52.5° | 314.3 | 307.4 | 287.8 | 267.1 | 255.6 | 253.3 | 259.1 | 264.8 | 268.3 |
| 55° | 276.3 | 270.6 | 254.4 | 236.1 | 226.8 | 225.6 | 231.5 | 236.1 | 238.3 |
| 57.5° | 245.2 | 239.5 | 224.5 | 208.4 | 200.4 | 199.2 | 205.0 | 208.4 | 209.6 |
| 60° | 215.3 | 209.6 | 195.7 | 180.8 | 175.0 | 175.0 | 178.5 | 180.8 | 181.9 |
| 62.5° | 187.6 | 181.9 | 169.3 | 156.6 | 152.0 | 152.0 | 152.0 | 153.1 | 156.6 |
| 65° | 161.2 | 156.6 | 145.1 | 133.5 | 130.1 | 127.8 | 127.8 | 127.8 | 130.1 |
| 67.5° | 137.1 | 132.4 | 123.2 | 112.9 | 109.4 | 105.9 | 104.7 | 107.1 | 107.1 |
| 70° | 114.0 | 110.6 | 101.3 | 93.3 | 89.8 | 86.4 | 85.2 | 89.8 | 89.8 |
| 72.5° | 93.3 | 89.8 | 84.1 | 76.0 | 72.5 | 71.3 | 73.6 | 76.0 | 77.2 |
| 75° | 73.6 | 70.2 | 65.6 | 61.0 | 57.6 | 58.7 | 62.2 | 63.3 | 64.5 |
| 77.5° | 55.3 | 54.1 | 49.6 | 46.1 | 46.1 | 47.3 | 49.6 | 51.8 | 53.0 |
| 80° | 39.1 | 38.0 | 35.7 | 33.4 | 34.5 | 36.8 | 38.0 | 40.3 | 39.1 |
| 82.5° | 24.2 | 24.2 | 23.1 | 23.1 | 24.2 | 26.5 | 27.6 | 28.8 | 29.9 |
| 85° | 12.6 | 12.6 | 12.6 | 13.8 | 14.9 | 16.2 | 17.3 | 18.5 | 18.5 |
| 87.5° | 3.4 | 4.6 | 4.6 | 5.7 | 6.9 | 6.9 | 8.0 | 8.0 | 8.0 |
| 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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