

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: P592688

Luminaire Tested: **HCC4S20D010MB-HM40525950-41RWWH**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P592688
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-15)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HCC4S20D010MB-HM40525950-41RWWH
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

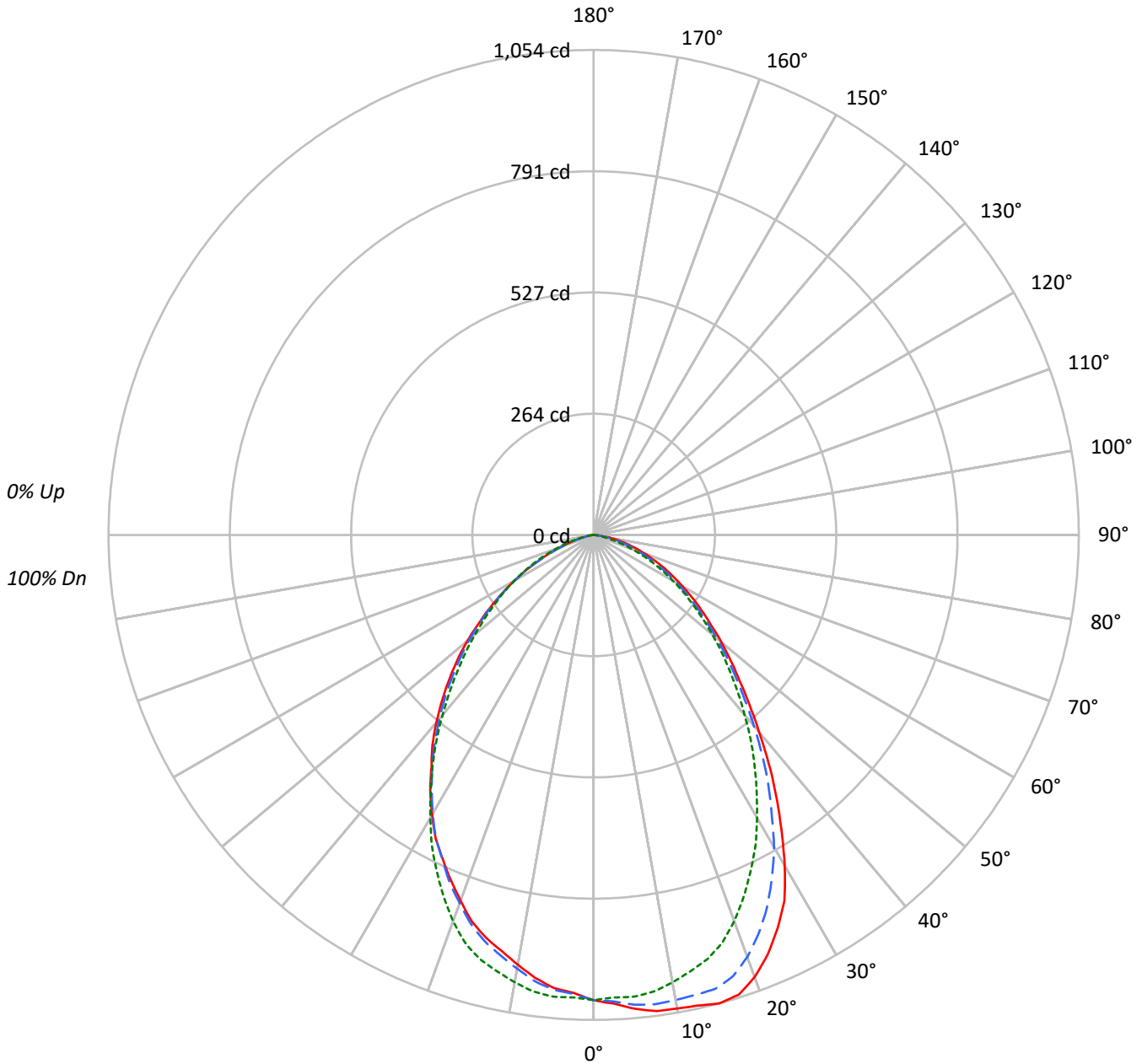
Lumens per Lamp: N/A
Luminaire Lumens: 1927.5 lumens
Efficiency: N/A
Efficacy: 96.4 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.08 / 1.16
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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 | 0 | | | | | |
| RCR | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | | | | | |
| 1 | 111 | 107 | 104 | 100 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 88 | | | | | | | | |
| 2 | 103 | 96 | 90 | 85 | 100 | 94 | 89 | 84 | 90 | 86 | 82 | 87 | 84 | 80 | 84 | 81 | 79 | 77 | | | | | | | | |
| 3 | 95 | 86 | 79 | 73 | 92 | 84 | 78 | 73 | 81 | 76 | 71 | 79 | 74 | 70 | 76 | 72 | 69 | 67 | | | | | | | | |
| 4 | 88 | 77 | 70 | 64 | 86 | 76 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 62 | 69 | 65 | 61 | 59 | | | | | | | | |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 55 | 63 | 58 | 54 | 52 | | | | | | | | |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 60 | 54 | 49 | 58 | 53 | 49 | 47 | | | | | | | | |
| 7 | 71 | 58 | 51 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 45 | 55 | 49 | 44 | 54 | 48 | 44 | 42 | | | | | | | | |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | | | | | | |
| 9 | 62 | 50 | 42 | 37 | 61 | 49 | 42 | 37 | 48 | 41 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | | | | | | |
| 10 | 58 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 124727 | 124727 | 124727 |
| 5° | 128002 | 124733 | 122405 |
| 10° | 130897 | 123658 | 118798 |
| 15° | 134592 | 121899 | 115655 |
| 20° | 134228 | 117243 | 110982 |
| 25° | 128571 | 109762 | 105652 |
| 30° | 118257 | 101095 | 100012 |
| 35° | 104049 | 91747 | 92485 |
| 40° | 90008 | 82118 | 85564 |
| 45° | 78235 | 72967 | 77345 |
| 50° | 69426 | 64360 | 68697 |
| 55° | 61589 | 56450 | 58901 |
| 60° | 54839 | 48944 | 48944 |
| 65° | 48770 | 40715 | 38117 |
| 70° | 42159 | 30835 | 27192 |
| 75° | 35314 | 20350 | 16775 |
| 80° | 26779 | 9802 | 8950 |
| 85° | 14294 | 3538 | 3538 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 95.8 | 5.0 |
| 10°-20° | 271.5 | 14.1 |
| 20°-30° | 382.9 | 19.9 |
| 30°-40° | 395.5 | 20.5 |
| 40°-50° | 335.3 | 17.4 |
| 50°-60° | 244.0 | 12.7 |
| 60°-70° | 142.5 | 7.4 |
| 70°-80° | 53.0 | 2.7 |
| 80°-90° | 7.0 | 0.4 |
| 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° | 750.2 | 38.9 |
| 0°-40° | 1145.7 | 59.4 |
| 0°-60° | 1725.0 | 89.5 |
| 0°-90° | 1927.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1927.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1011 | 1011 | 1011 | 1011 | 1011 | |
| 5° | 1034 | 1025 | 1007 | 992 | 989 | 99 |
| 15° | 1054 | 1021 | 955 | 914 | 906 | 296 |
| 25° | 945 | 892 | 806 | 778 | 776 | 432 |
| 35° | 691 | 661 | 609 | 610 | 614 | 432 |
| 45° | 448 | 436 | 418 | 433 | 443 | 349 |
| 55° | 286 | 273 | 262 | 271 | 274 | 258 |
| 65° | 167 | 153 | 140 | 131 | 131 | 166 |
| 75° | 74 | 62 | 43 | 34 | 35 | 80 |
| 85° | 10 | 6 | 2 | 2 | 2 | 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° | 1011.2 | 1011.2 | 1011.2 | 1011.2 | 1011.2 | 1011.2 | 1011.2 | 1011.2 | 1011.2 |
| 2.5° | 1020.0 | 1017.5 | 1015.0 | 1011.2 | 1006.1 | 1002.5 | 998.7 | 996.2 | 996.2 |
| 5° | 1033.8 | 1030.1 | 1025.1 | 1016.2 | 1007.4 | 1000.0 | 992.4 | 988.6 | 988.6 |
| 7.5° | 1043.9 | 1038.8 | 1028.9 | 1016.2 | 1001.2 | 989.9 | 978.6 | 973.6 | 971.1 |
| 10° | 1045.1 | 1040.1 | 1026.3 | 1007.4 | 987.3 | 969.8 | 957.2 | 949.7 | 948.5 |
| 12.5° | 1047.7 | 1041.4 | 1023.8 | 997.4 | 971.1 | 949.7 | 935.8 | 928.3 | 925.9 |
| 15° | 1054.0 | 1045.1 | 1021.3 | 987.3 | 954.6 | 929.5 | 914.5 | 908.2 | 905.7 |
| 17.5° | 1047.7 | 1035.1 | 1006.1 | 966.0 | 929.5 | 901.9 | 886.9 | 880.6 | 880.6 |
| 20° | 1022.6 | 1009.9 | 976.1 | 932.1 | 893.2 | 866.8 | 851.6 | 848.0 | 845.5 |
| 22.5° | 987.3 | 973.6 | 937.1 | 890.6 | 851.6 | 827.8 | 817.8 | 812.8 | 811.5 |
| 25° | 944.7 | 930.8 | 891.9 | 844.2 | 806.5 | 786.4 | 777.6 | 777.6 | 776.3 |
| 27.5° | 897.0 | 879.3 | 839.1 | 797.6 | 761.3 | 746.1 | 742.5 | 742.5 | 743.7 |
| 30° | 830.3 | 817.8 | 783.9 | 743.7 | 709.8 | 699.7 | 699.7 | 702.2 | 702.2 |
| 32.5° | 758.7 | 749.9 | 719.7 | 684.6 | 658.3 | 652.0 | 654.5 | 659.5 | 660.8 |
| 35° | 691.0 | 680.9 | 660.8 | 629.4 | 609.3 | 606.8 | 610.5 | 614.2 | 614.2 |
| 37.5° | 624.3 | 614.2 | 600.5 | 575.3 | 560.3 | 561.5 | 566.5 | 571.6 | 575.3 |
| 40° | 559.0 | 551.5 | 541.4 | 521.3 | 510.0 | 515.0 | 521.3 | 526.4 | 531.4 |
| 42.5° | 501.2 | 493.7 | 486.1 | 471.1 | 463.5 | 469.8 | 477.4 | 482.4 | 487.4 |
| 45° | 448.5 | 443.4 | 435.9 | 423.4 | 418.3 | 424.6 | 433.3 | 438.4 | 443.4 |
| 47.5° | 403.3 | 400.8 | 390.7 | 379.3 | 376.9 | 383.1 | 390.7 | 397.0 | 400.8 |
| 50° | 361.8 | 358.0 | 349.3 | 337.9 | 335.4 | 345.5 | 350.5 | 354.2 | 358.0 |
| 52.5° | 321.6 | 317.8 | 307.7 | 297.8 | 297.8 | 305.2 | 309.0 | 310.3 | 314.0 |
| 55° | 286.4 | 282.6 | 272.6 | 265.1 | 262.5 | 268.9 | 271.4 | 271.4 | 273.9 |
| 57.5° | 253.7 | 249.9 | 240.0 | 231.1 | 229.9 | 233.6 | 233.6 | 233.6 | 234.9 |
| 60° | 222.3 | 218.6 | 208.5 | 201.0 | 198.4 | 199.7 | 198.4 | 197.2 | 198.4 |
| 62.5° | 193.5 | 189.7 | 179.6 | 170.8 | 168.4 | 168.4 | 164.6 | 163.3 | 164.6 |
| 65° | 167.1 | 160.8 | 153.2 | 144.4 | 139.5 | 135.7 | 130.6 | 130.6 | 130.6 |
| 67.5° | 140.7 | 135.7 | 126.9 | 118.0 | 111.8 | 105.5 | 98.0 | 100.5 | 101.7 |
| 70° | 116.9 | 113.1 | 103.0 | 94.2 | 85.5 | 77.9 | 71.6 | 74.1 | 75.4 |
| 72.5° | 95.4 | 90.5 | 81.7 | 71.6 | 64.1 | 54.0 | 50.2 | 52.8 | 52.8 |
| 75° | 74.1 | 69.0 | 61.6 | 51.5 | 42.7 | 34.0 | 34.0 | 35.2 | 35.2 |
| 77.5° | 55.3 | 50.2 | 42.7 | 34.0 | 26.4 | 20.1 | 21.3 | 21.3 | 21.3 |
| 80° | 37.7 | 34.0 | 27.6 | 20.1 | 13.8 | 11.4 | 11.4 | 11.4 | 12.6 |
| 82.5° | 21.3 | 18.8 | 15.0 | 10.1 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 |
| 85° | 10.1 | 7.6 | 6.3 | 3.8 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 87.5° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 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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