

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: P580035

Luminaire Tested: **HCC4W20D010MB-HM40525840-41RWWH**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580035
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: HCC4W20D010MB-HM40525840-41RWWH
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

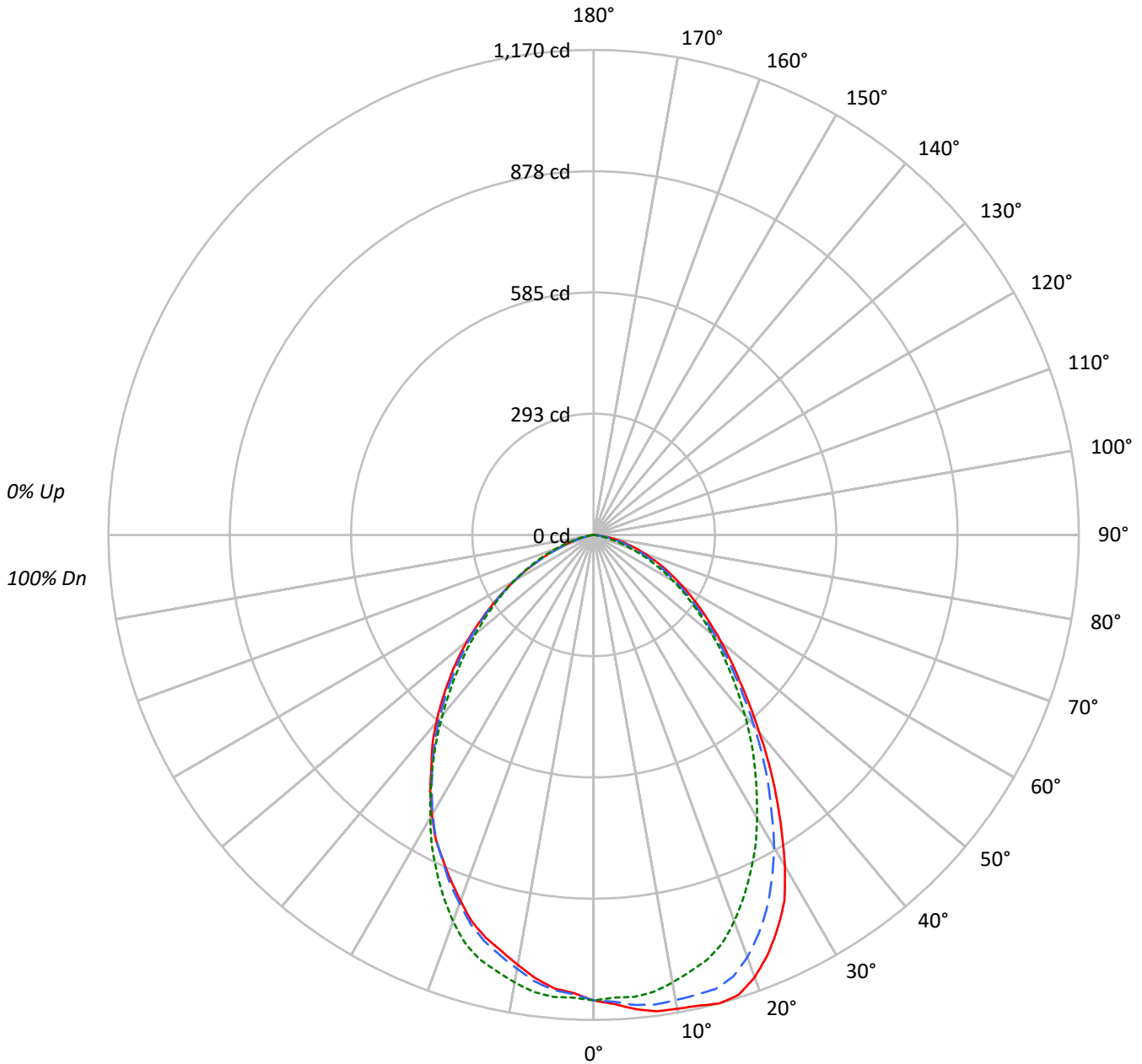
Lumens per Lamp: N/A
Luminaire Lumens: 2140.4 lumens
Efficiency: N/A
Efficacy: 107.0 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.08 / 1.16
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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 | | | | | | | | | 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° | 138505 | 138505 | 138505 |
| 5° | 142142 | 138526 | 135926 |
| 10° | 145363 | 137322 | 131912 |
| 15° | 149456 | 135384 | 128437 |
| 20° | 149048 | 130185 | 123228 |
| 25° | 142766 | 121888 | 117329 |
| 30° | 131332 | 112247 | 111051 |
| 35° | 115523 | 101865 | 102709 |
| 40° | 99959 | 91200 | 95000 |
| 45° | 86870 | 81026 | 85893 |
| 50° | 77102 | 71460 | 76296 |
| 55° | 68406 | 62708 | 65396 |
| 60° | 60908 | 54395 | 54395 |
| 65° | 54169 | 45180 | 42349 |
| 70° | 46775 | 34225 | 30185 |
| 75° | 39269 | 22637 | 18634 |
| 80° | 29762 | 10939 | 9944 |
| 85° | 15709 | 3963 | 3963 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 106.3 | 5.0 |
| 10°-20° | 301.5 | 14.1 |
| 20°-30° | 425.2 | 19.9 |
| 30°-40° | 439.2 | 20.5 |
| 40°-50° | 372.3 | 17.4 |
| 50°-60° | 270.9 | 12.7 |
| 60°-70° | 158.3 | 7.4 |
| 70°-80° | 58.8 | 2.7 |
| 80°-90° | 7.7 | 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° | 833.0 | 38.9 |
| 0°-40° | 1272.3 | 59.4 |
| 0°-60° | 1915.5 | 89.5 |
| 0°-90° | 2140.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2140.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1123 | 1123 | 1123 | 1123 | 1123 | |
| 5° | 1148 | 1138 | 1119 | 1102 | 1098 | 110 |
| 15° | 1170 | 1134 | 1060 | 1016 | 1006 | 329 |
| 25° | 1049 | 990 | 896 | 864 | 862 | 480 |
| 35° | 767 | 734 | 676 | 678 | 682 | 479 |
| 45° | 498 | 484 | 464 | 481 | 492 | 388 |
| 55° | 318 | 303 | 292 | 301 | 304 | 286 |
| 65° | 186 | 170 | 155 | 145 | 145 | 184 |
| 75° | 82 | 68 | 48 | 38 | 39 | 88 |
| 85° | 11 | 7 | 3 | 3 | 3 | 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° | 1122.9 | 1122.9 | 1122.9 | 1122.9 | 1122.9 | 1122.9 | 1122.9 | 1122.9 | 1122.9 |
| 2.5° | 1132.7 | 1129.9 | 1127.2 | 1122.9 | 1117.4 | 1113.2 | 1109.0 | 1106.2 | 1106.2 |
| 5° | 1148.0 | 1143.9 | 1138.3 | 1128.5 | 1118.8 | 1110.4 | 1102.0 | 1097.8 | 1097.8 |
| 7.5° | 1159.2 | 1153.7 | 1142.5 | 1128.5 | 1111.8 | 1099.3 | 1086.7 | 1081.0 | 1078.3 |
| 10° | 1160.6 | 1155.0 | 1139.7 | 1118.8 | 1096.4 | 1076.9 | 1062.9 | 1054.6 | 1053.2 |
| 12.5° | 1163.4 | 1156.4 | 1136.9 | 1107.5 | 1078.3 | 1054.6 | 1039.3 | 1030.9 | 1028.1 |
| 15° | 1170.4 | 1160.6 | 1134.2 | 1096.4 | 1060.2 | 1032.3 | 1015.6 | 1008.6 | 1005.8 |
| 17.5° | 1163.4 | 1149.4 | 1117.4 | 1072.7 | 1032.3 | 1001.6 | 984.8 | 977.8 | 977.8 |
| 20° | 1135.5 | 1121.5 | 1083.9 | 1035.1 | 991.8 | 962.6 | 945.8 | 941.6 | 938.8 |
| 22.5° | 1096.4 | 1081.0 | 1040.7 | 989.1 | 945.8 | 919.3 | 908.1 | 902.6 | 901.2 |
| 25° | 1049.0 | 1033.7 | 990.4 | 937.4 | 895.6 | 873.2 | 863.5 | 863.5 | 862.1 |
| 27.5° | 996.1 | 976.4 | 931.8 | 885.8 | 845.3 | 828.6 | 824.5 | 824.5 | 825.8 |
| 30° | 922.1 | 908.1 | 870.5 | 825.8 | 788.1 | 777.0 | 777.0 | 779.7 | 779.7 |
| 32.5° | 842.6 | 832.8 | 799.3 | 760.2 | 731.0 | 724.0 | 726.7 | 732.4 | 733.7 |
| 35° | 767.2 | 756.1 | 733.7 | 698.9 | 676.5 | 673.7 | 678.0 | 682.1 | 682.1 |
| 37.5° | 693.2 | 682.1 | 666.8 | 638.9 | 622.1 | 623.5 | 629.1 | 634.7 | 638.9 |
| 40° | 620.8 | 612.4 | 601.3 | 578.9 | 566.4 | 571.9 | 578.9 | 584.5 | 590.0 |
| 42.5° | 556.6 | 548.3 | 539.9 | 523.1 | 514.8 | 521.8 | 530.0 | 535.6 | 541.3 |
| 45° | 498.0 | 492.4 | 484.0 | 470.2 | 464.5 | 471.5 | 481.3 | 486.8 | 492.4 |
| 47.5° | 447.8 | 445.0 | 433.8 | 421.3 | 418.5 | 425.4 | 433.8 | 440.8 | 445.0 |
| 50° | 401.8 | 397.6 | 387.8 | 375.3 | 372.4 | 383.6 | 389.2 | 393.4 | 397.6 |
| 52.5° | 357.1 | 352.9 | 341.8 | 330.6 | 330.6 | 338.9 | 343.2 | 344.6 | 348.7 |
| 55° | 318.1 | 313.8 | 302.7 | 294.3 | 291.6 | 298.6 | 301.3 | 301.3 | 304.1 |
| 57.5° | 281.8 | 277.6 | 266.4 | 256.7 | 255.3 | 259.5 | 259.5 | 259.5 | 260.8 |
| 60° | 246.9 | 242.7 | 231.6 | 223.2 | 220.5 | 221.8 | 220.5 | 219.0 | 220.5 |
| 62.5° | 214.8 | 210.6 | 199.5 | 189.7 | 187.0 | 187.0 | 182.7 | 181.3 | 182.7 |
| 65° | 185.6 | 178.6 | 170.2 | 160.5 | 154.8 | 150.6 | 145.1 | 145.1 | 145.1 |
| 67.5° | 156.2 | 150.6 | 140.9 | 131.1 | 124.1 | 117.2 | 108.9 | 111.6 | 113.0 |
| 70° | 129.7 | 125.6 | 114.4 | 104.6 | 94.9 | 86.5 | 79.5 | 82.4 | 83.7 |
| 72.5° | 106.0 | 100.5 | 90.7 | 79.5 | 71.1 | 60.0 | 55.7 | 58.6 | 58.6 |
| 75° | 82.4 | 76.7 | 68.4 | 57.2 | 47.5 | 37.6 | 37.6 | 39.1 | 39.1 |
| 77.5° | 61.4 | 55.7 | 47.5 | 37.6 | 29.2 | 22.4 | 23.7 | 23.7 | 23.7 |
| 80° | 41.9 | 37.6 | 30.7 | 22.4 | 15.4 | 12.5 | 12.5 | 12.5 | 14.0 |
| 82.5° | 23.7 | 20.9 | 16.7 | 11.1 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| 85° | 11.1 | 8.4 | 7.0 | 4.1 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| 87.5° | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| 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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