

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: P592689

Luminaire Tested: **HC420D010-HM40525950-41WWBB**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P592689
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: HC420D010-HM40525950-41WWBB
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1525.4 lumens
Efficiency: N/A
Efficacy: 76.3 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

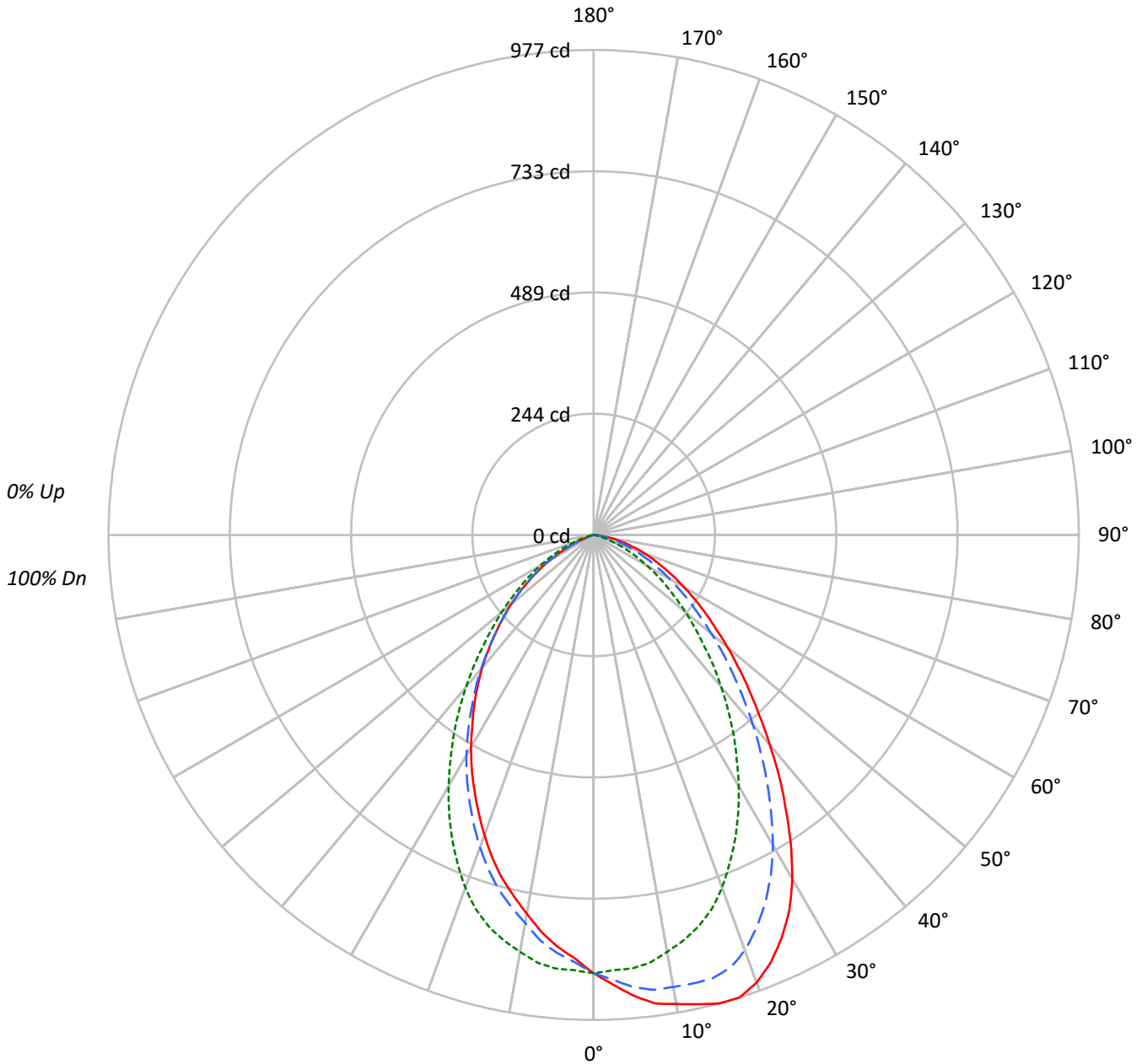
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 108927 | 108927 | 108927 |
| 5° | 115410 | 108563 | 103115 |
| 10° | 120201 | 106824 | 97068 |
| 15° | 124785 | 104264 | 91265 |
| 20° | 125972 | 99260 | 84414 |
| 25° | 121902 | 91811 | 77276 |
| 30° | 113956 | 83206 | 70316 |
| 35° | 101579 | 73948 | 63182 |
| 40° | 88800 | 64326 | 56243 |
| 45° | 77345 | 54564 | 48633 |
| 50° | 67488 | 46284 | 41717 |
| 55° | 59159 | 38364 | 33762 |
| 60° | 51756 | 30984 | 24792 |
| 65° | 45092 | 23086 | 13922 |
| 70° | 39418 | 14930 | 4544 |
| 75° | 32312 | 7768 | 1191 |
| 80° | 24151 | 3552 | 923 |
| 85° | 14294 | 1840 | 1840 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 83.3 | 5.5 |
| 10°-20° | 233.3 | 15.3 |
| 20°-30° | 322.5 | 21.1 |
| 30°-40° | 324.3 | 21.3 |
| 40°-50° | 261.7 | 17.2 |
| 50°-60° | 176.9 | 11.6 |
| 60°-70° | 90.1 | 5.9 |
| 70°-80° | 28.8 | 1.9 |
| 80°-90° | 4.4 | 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° | 639.1 | 41.9 |
| 0°-40° | 963.4 | 63.2 |
| 0°-60° | 1402.0 | 91.9 |
| 0°-90° | 1525.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1525.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0° | 883 | 883 | 883 | 883 | 883 | |
| 5° | 932 | 914 | 877 | 845 | 833 | 90 |
| 15° | 977 | 924 | 816 | 739 | 715 | 275 |
| 25° | 896 | 818 | 675 | 592 | 568 | 410 |
| 35° | 675 | 609 | 491 | 430 | 420 | 422 |
| 45° | 443 | 397 | 313 | 279 | 279 | 344 |
| 55° | 275 | 237 | 178 | 156 | 157 | 247 |
| 65° | 154 | 126 | 79 | 52 | 48 | 155 |
| 75° | 68 | 48 | 16 | 4 | 2 | 73 |
| 85° | 10 | 5 | 1 | 1 | 1 | 14 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P592689

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0° | 883.1 | 883.1 | 883.1 | 883.1 | 883.1 | 883.1 | 883.1 | 883.1 | 883.1 |
| 2.5° | 906.9 | 901.9 | 896.8 | 888.1 | 878.0 | 868.0 | 861.7 | 856.7 | 854.2 |
| 5° | 932.1 | 925.7 | 914.5 | 895.7 | 876.8 | 859.2 | 845.3 | 836.6 | 832.8 |
| 7.5° | 952.1 | 943.4 | 924.5 | 898.1 | 869.3 | 841.7 | 824.0 | 811.5 | 806.5 |
| 10° | 959.7 | 949.6 | 924.5 | 889.4 | 852.9 | 819.0 | 793.8 | 781.3 | 775.0 |
| 12.5° | 968.5 | 957.2 | 925.7 | 881.8 | 836.6 | 796.4 | 767.5 | 751.2 | 744.9 |
| 15° | 977.2 | 962.2 | 924.5 | 870.5 | 816.5 | 770.0 | 738.7 | 722.3 | 714.7 |
| 17.5° | 977.2 | 959.7 | 914.5 | 851.6 | 790.2 | 741.1 | 706.0 | 687.2 | 680.9 |
| 20° | 959.7 | 939.6 | 890.6 | 821.5 | 756.2 | 703.5 | 669.5 | 650.7 | 643.1 |
| 22.5° | 932.1 | 909.5 | 856.7 | 785.1 | 716.0 | 664.5 | 630.6 | 613.0 | 605.5 |
| 25° | 895.7 | 873.0 | 817.8 | 743.6 | 674.6 | 623.1 | 591.6 | 575.3 | 567.8 |
| 27.5° | 852.9 | 827.8 | 772.5 | 698.4 | 630.6 | 581.6 | 552.7 | 537.6 | 531.4 |
| 30° | 800.1 | 776.3 | 722.3 | 649.4 | 584.2 | 538.9 | 512.5 | 498.7 | 493.7 |
| 32.5° | 738.7 | 718.5 | 665.7 | 597.9 | 536.3 | 494.9 | 471.1 | 459.7 | 454.7 |
| 35° | 674.6 | 655.7 | 609.3 | 546.4 | 491.1 | 452.3 | 429.6 | 422.1 | 419.6 |
| 37.5° | 614.2 | 597.9 | 552.7 | 494.9 | 444.7 | 410.7 | 390.7 | 385.6 | 383.1 |
| 40° | 551.5 | 540.1 | 498.7 | 446.0 | 399.5 | 369.3 | 352.9 | 349.3 | 349.3 |
| 42.5° | 494.9 | 482.3 | 446.0 | 398.2 | 356.7 | 326.6 | 315.3 | 311.5 | 312.8 |
| 45° | 443.4 | 430.8 | 397.0 | 352.9 | 312.8 | 287.7 | 278.8 | 278.8 | 278.8 |
| 47.5° | 395.7 | 384.4 | 352.9 | 307.7 | 275.1 | 255.0 | 246.3 | 246.3 | 247.4 |
| 50° | 351.7 | 344.2 | 309.0 | 270.1 | 241.2 | 222.3 | 216.1 | 214.8 | 217.4 |
| 52.5° | 310.3 | 301.4 | 270.1 | 234.9 | 207.3 | 192.2 | 185.9 | 184.7 | 185.9 |
| 55° | 275.1 | 265.1 | 237.4 | 203.5 | 178.4 | 163.3 | 155.8 | 154.5 | 157.0 |
| 57.5° | 241.2 | 233.6 | 204.7 | 174.6 | 150.7 | 135.7 | 129.4 | 126.9 | 128.1 |
| 60° | 209.8 | 202.2 | 175.8 | 146.9 | 125.6 | 110.6 | 101.7 | 99.2 | 100.5 |
| 62.5° | 180.9 | 174.6 | 149.5 | 121.8 | 100.5 | 86.7 | 77.9 | 71.6 | 74.1 |
| 65° | 154.5 | 148.2 | 125.6 | 98.0 | 79.1 | 64.1 | 51.5 | 46.5 | 47.7 |
| 67.5° | 131.9 | 124.3 | 103.0 | 77.9 | 59.1 | 42.7 | 28.9 | 26.4 | 26.4 |
| 70° | 109.3 | 101.7 | 82.9 | 60.3 | 41.4 | 22.6 | 12.6 | 12.6 | 12.6 |
| 72.5° | 88.0 | 81.7 | 64.1 | 45.2 | 26.4 | 10.1 | 5.0 | 5.0 | 5.0 |
| 75° | 67.8 | 62.9 | 47.7 | 31.4 | 16.3 | 5.0 | 3.8 | 2.5 | 2.5 |
| 77.5° | 50.2 | 45.2 | 34.0 | 21.3 | 10.1 | 2.5 | 2.5 | 2.5 | 2.5 |
| 80° | 34.0 | 30.2 | 22.6 | 12.6 | 5.0 | 1.3 | 1.3 | 1.3 | 1.3 |
| 82.5° | 20.1 | 17.5 | 12.6 | 6.3 | 2.5 | 1.3 | 1.3 | 1.3 | 1.3 |
| 85° | 10.1 | 7.6 | 5.0 | 2.5 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 87.5° | 2.5 | 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 |



Report Generated By 670245859 / DESKTOP-HRDQ47P





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







(END OF REPORT)