

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: P579842

Luminaire Tested: **HC415D010-HM40525827-41RWWH**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P579842
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: HC415D010-HM40525827-41RWWH
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1364.0 lumens
Efficiency: N/A
Efficacy: 97.4 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

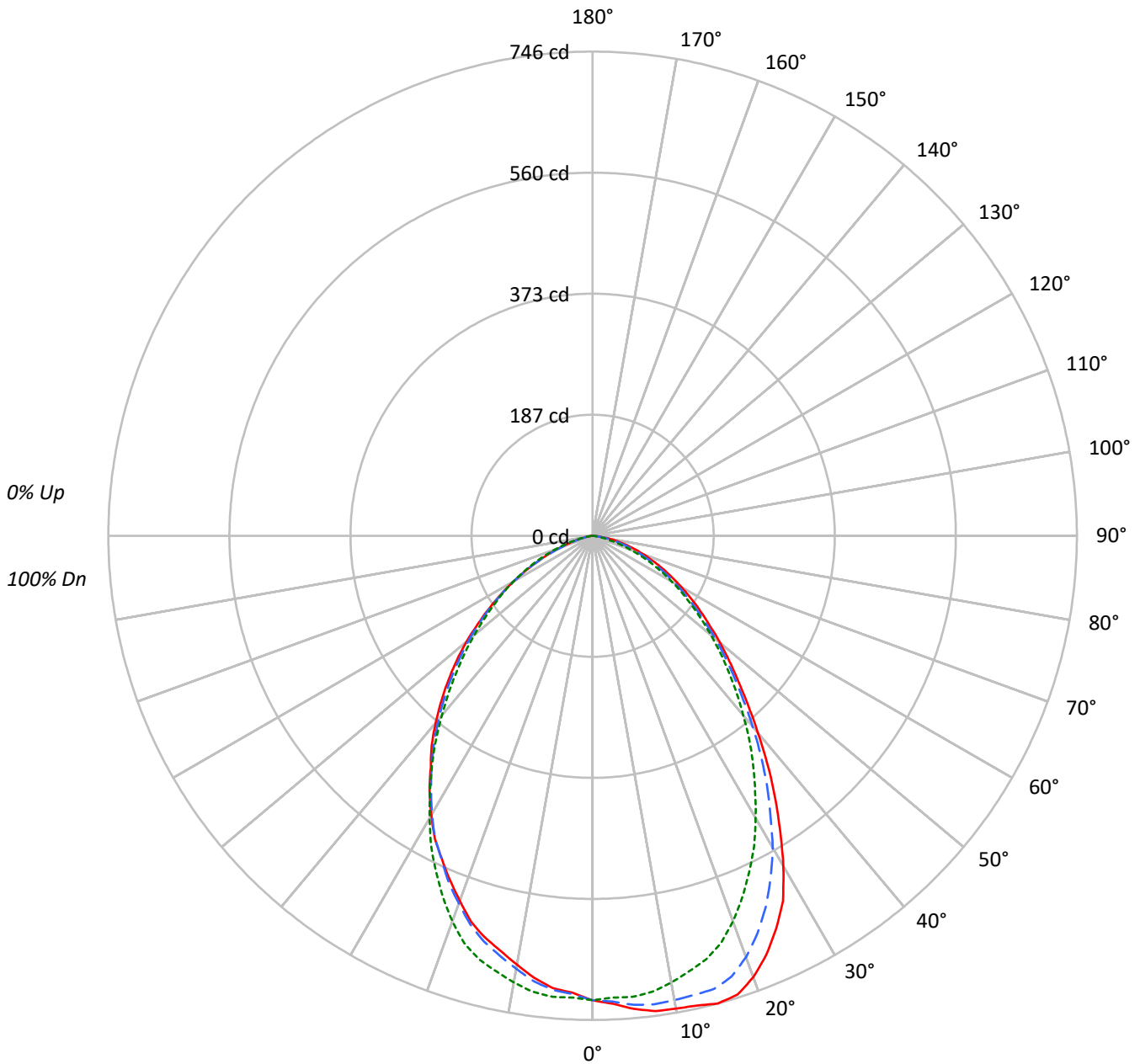
Input Watts (W): 14
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 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 | | | 100 |
| 1 | 111 | 107 | 104 | 100 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 88 | | | 88 |
| 2 | 103 | 96 | 90 | 85 | 100 | 94 | 89 | 84 | 90 | 86 | 82 | 87 | 84 | 80 | 84 | 81 | 79 | 77 | | | 77 |
| 3 | 95 | 86 | 79 | 73 | 92 | 84 | 78 | 73 | 81 | 76 | 71 | 79 | 74 | 70 | 76 | 72 | 69 | 67 | | | 67 |
| 4 | 88 | 77 | 70 | 64 | 86 | 76 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 62 | 69 | 65 | 61 | 59 | | | 59 |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 55 | 63 | 58 | 54 | 52 | | | 52 |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 60 | 54 | 49 | 58 | 53 | 49 | 47 | | | 47 |
| 7 | 71 | 58 | 51 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 45 | 55 | 49 | 44 | 54 | 48 | 44 | 42 | | | 42 |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | 38 |
| 9 | 62 | 50 | 42 | 37 | 61 | 49 | 42 | 37 | 48 | 41 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | 35 |
| 10 | 58 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 | | | 32 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|-------|-------|-------|
| 0° | 88266 | 88266 | 88266 |
| 5° | 90597 | 88281 | 86622 |
| 10° | 92634 | 87524 | 84067 |
| 15° | 95249 | 86272 | 81841 |
| 20° | 94994 | 82971 | 78534 |
| 25° | 90994 | 77684 | 74772 |
| 30° | 83690 | 71541 | 70786 |
| 35° | 73617 | 64929 | 65456 |
| 40° | 63698 | 58111 | 60542 |
| 45° | 55349 | 51651 | 54738 |
| 50° | 49143 | 45555 | 48606 |
| 55° | 43590 | 39956 | 41698 |
| 60° | 38829 | 34635 | 34635 |
| 65° | 34498 | 28807 | 26968 |
| 70° | 29825 | 21819 | 19222 |
| 75° | 24972 | 14392 | 11867 |
| 80° | 18966 | 6961 | 6322 |
| 85° | 10190 | 2547 | 2547 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 67.8 | 5.0 |
| 10°-20° | 192.1 | 14.1 |
| 20°-30° | 271.0 | 19.9 |
| 30°-40° | 279.9 | 20.5 |
| 40°-50° | 237.3 | 17.4 |
| 50°-60° | 172.6 | 12.7 |
| 60°-70° | 100.9 | 7.4 |
| 70°-80° | 37.5 | 2.7 |
| 80°-90° | 4.9 | 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° | 530.9 | 38.9 |
| 0°-40° | 810.8 | 59.4 |
| 0°-60° | 1220.7 | 89.5 |
| 0°-90° | 1364.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1364.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0° | 716 | 716 | 716 | 716 | 716 | |
| 5° | 732 | 725 | 713 | 702 | 700 | 70 |
| 15° | 746 | 723 | 676 | 647 | 641 | 210 |
| 25° | 669 | 631 | 571 | 550 | 549 | 306 |
| 35° | 489 | 468 | 431 | 432 | 435 | 305 |
| 45° | 317 | 308 | 296 | 307 | 314 | 247 |
| 55° | 203 | 193 | 186 | 192 | 194 | 182 |
| 65° | 118 | 108 | 99 | 92 | 92 | 117 |
| 75° | 52 | 44 | 30 | 24 | 25 | 56 |
| 85° | 7 | 4 | 2 | 2 | 2 | 10 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P579842

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0° | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 |
| 2.5° | 721.9 | 720.1 | 718.4 | 715.6 | 712.1 | 709.4 | 706.8 | 704.9 | 704.9 |
| 5° | 731.7 | 728.9 | 725.4 | 719.2 | 713.0 | 707.7 | 702.3 | 699.6 | 699.6 |
| 7.5° | 738.7 | 735.2 | 728.1 | 719.2 | 708.6 | 700.5 | 692.5 | 689.0 | 687.2 |
| 10° | 739.6 | 736.1 | 726.3 | 713.0 | 698.8 | 686.3 | 677.4 | 672.1 | 671.2 |
| 12.5° | 741.4 | 737.0 | 724.5 | 705.8 | 687.2 | 672.1 | 662.3 | 657.0 | 655.1 |
| 15° | 745.9 | 739.6 | 722.8 | 698.8 | 675.6 | 657.9 | 647.2 | 642.7 | 640.9 |
| 17.5° | 741.4 | 732.6 | 712.1 | 683.7 | 657.9 | 638.3 | 627.6 | 623.2 | 623.2 |
| 20° | 723.7 | 714.7 | 690.7 | 659.7 | 632.1 | 613.4 | 602.7 | 600.1 | 598.3 |
| 22.5° | 698.8 | 689.0 | 663.2 | 630.4 | 602.7 | 585.9 | 578.7 | 575.2 | 574.3 |
| 25° | 668.6 | 658.8 | 631.1 | 597.4 | 570.8 | 556.6 | 550.3 | 550.3 | 549.4 |
| 27.5° | 634.8 | 622.3 | 593.9 | 564.5 | 538.7 | 528.0 | 525.4 | 525.4 | 526.3 |
| 30° | 587.6 | 578.7 | 554.7 | 526.3 | 502.3 | 495.2 | 495.2 | 497.0 | 497.0 |
| 32.5° | 537.0 | 530.8 | 509.4 | 484.5 | 465.8 | 461.4 | 463.2 | 466.7 | 467.6 |
| 35° | 488.9 | 481.9 | 467.6 | 445.4 | 431.2 | 429.3 | 432.1 | 434.7 | 434.7 |
| 37.5° | 441.8 | 434.7 | 424.9 | 407.2 | 396.5 | 397.4 | 400.9 | 404.5 | 407.2 |
| 40° | 395.6 | 390.2 | 383.2 | 369.0 | 360.9 | 364.5 | 369.0 | 372.5 | 376.0 |
| 42.5° | 354.7 | 349.4 | 344.1 | 333.4 | 328.0 | 332.5 | 337.8 | 341.3 | 345.0 |
| 45° | 317.3 | 313.8 | 308.5 | 299.6 | 296.1 | 300.5 | 306.6 | 310.3 | 313.8 |
| 47.5° | 285.4 | 283.6 | 276.5 | 268.4 | 266.7 | 271.2 | 276.5 | 281.0 | 283.6 |
| 50° | 256.1 | 253.3 | 247.2 | 239.1 | 237.4 | 244.5 | 248.0 | 250.7 | 253.3 |
| 52.5° | 227.6 | 224.9 | 217.8 | 210.7 | 210.7 | 216.0 | 218.6 | 219.6 | 222.3 |
| 55° | 202.7 | 200.0 | 192.9 | 187.6 | 185.8 | 190.2 | 192.0 | 192.0 | 193.9 |
| 57.5° | 179.5 | 176.9 | 169.8 | 163.6 | 162.7 | 165.3 | 165.3 | 165.3 | 166.2 |
| 60° | 157.4 | 154.6 | 147.6 | 142.2 | 140.4 | 141.3 | 140.4 | 139.6 | 140.4 |
| 62.5° | 136.9 | 134.3 | 127.1 | 120.9 | 119.2 | 119.2 | 116.4 | 115.5 | 116.4 |
| 65° | 118.2 | 113.8 | 108.5 | 102.2 | 98.7 | 96.0 | 92.4 | 92.4 | 92.4 |
| 67.5° | 99.6 | 96.0 | 89.8 | 83.6 | 79.1 | 74.7 | 69.4 | 71.2 | 72.0 |
| 70° | 82.7 | 80.0 | 72.9 | 66.6 | 60.5 | 55.1 | 50.7 | 52.4 | 53.3 |
| 72.5° | 67.5 | 64.0 | 57.8 | 50.7 | 45.4 | 38.2 | 35.6 | 37.3 | 37.3 |
| 75° | 52.4 | 48.9 | 43.5 | 36.5 | 30.2 | 24.0 | 24.0 | 24.9 | 24.9 |
| 77.5° | 39.1 | 35.6 | 30.2 | 24.0 | 18.6 | 14.2 | 15.1 | 15.1 | 15.1 |
| 80° | 26.7 | 24.0 | 19.6 | 14.2 | 9.8 | 8.0 | 8.0 | 8.0 | 8.9 |
| 82.5° | 15.1 | 13.3 | 10.7 | 7.2 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| 85° | 7.2 | 5.3 | 4.4 | 2.6 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 87.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 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)