

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: P581657

Luminaire Tested: **HC610D010-HM60525930-61WWWB**

Issue Date: 9/16/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P581657  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2105-241-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/16/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC610D010-HM60525930-61WWWB  
Description: HALO COMMERCIAL 6" ROUND, NEW CONSTRUCTION FRAME, WITH 6" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 958.7 lumens  
Efficiency: N/A  
Efficacy: 96.8 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.09 / 1.17  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

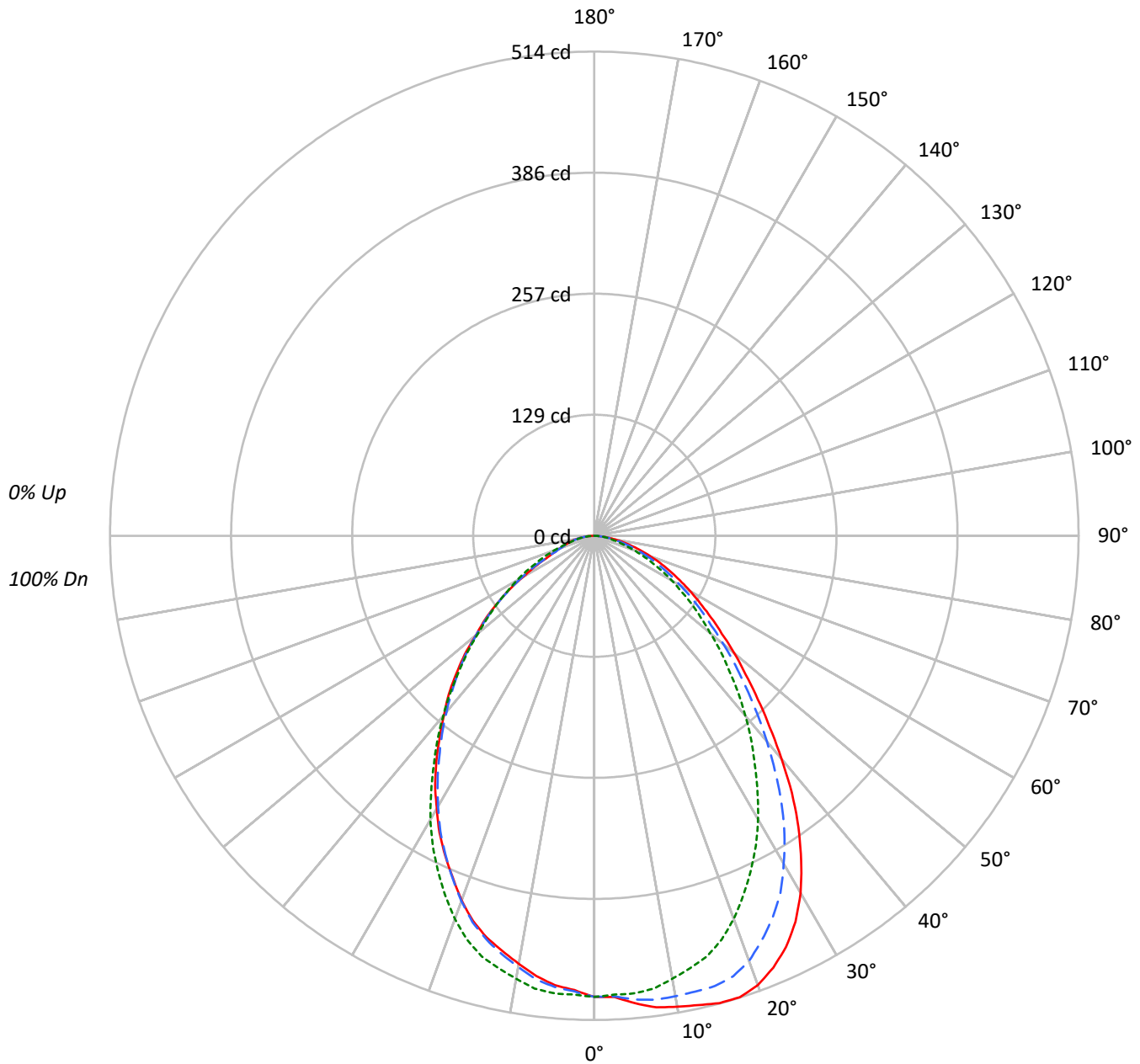
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |
| 1   | 111 | 107 | 103 | 100 | 108 | 104 | 101 | 98  | 100 | 97  | 95  | 96  | 94  | 92  | 93  | 91  | 89  | 87  |    |    |
| 2   | 102 | 95  | 89  | 84  | 100 | 93  | 88  | 83  | 90  | 85  | 81  | 87  | 83  | 80  | 84  | 81  | 78  | 76  |    |    |
| 3   | 94  | 85  | 78  | 72  | 92  | 84  | 77  | 72  | 81  | 75  | 71  | 78  | 73  | 69  | 76  | 72  | 68  | 66  |    |    |
| 4   | 87  | 77  | 69  | 63  | 85  | 75  | 68  | 63  | 73  | 67  | 62  | 71  | 65  | 61  | 69  | 64  | 60  | 58  |    |    |
| 5   | 81  | 70  | 61  | 56  | 79  | 68  | 61  | 55  | 66  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 52  |    |    |
| 6   | 75  | 63  | 55  | 49  | 74  | 62  | 55  | 49  | 61  | 54  | 49  | 59  | 53  | 48  | 58  | 52  | 48  | 46  |    |    |
| 7   | 70  | 58  | 50  | 44  | 69  | 57  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 44  | 53  | 48  | 43  | 42  |    |    |
| 8   | 66  | 53  | 46  | 40  | 64  | 53  | 45  | 40  | 51  | 45  | 40  | 50  | 44  | 40  | 49  | 44  | 39  | 38  |    |    |
| 9   | 62  | 49  | 42  | 37  | 60  | 49  | 42  | 37  | 48  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 36  | 34  |    |    |
| 10  | 58  | 46  | 38  | 34  | 57  | 45  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 43  | 37  | 33  | 31  |    |    |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 90°   | 180°  |
|-----|-------|-------|-------|
| 0°  | 26834 | 26834 | 26834 |
| 5°  | 27416 | 26832 | 26348 |
| 10° | 28256 | 26580 | 25684 |
| 15° | 29149 | 26226 | 25051 |
| 20° | 29613 | 25243 | 24030 |
| 25° | 29131 | 23747 | 22653 |
| 30° | 27732 | 22016 | 21168 |
| 35° | 25290 | 19869 | 19562 |
| 40° | 22106 | 17855 | 17755 |
| 45° | 19025 | 15707 | 16071 |
| 50° | 16537 | 13688 | 13970 |
| 55° | 14442 | 12023 | 12138 |
| 60° | 12828 | 10416 | 9528  |
| 65° | 11454 | 8769  | 7277  |
| 70° | 10066 | 7181  | 6107  |
| 75° | 8642  | 5655  | 5804  |
| 80° | 6977  | 4862  | 5714  |
| 85° | 4655  | 4214  | 5032  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 46.3   | 4.8       |
| 10°-20°   | 131.9  | 13.8      |
| 20°-30°   | 188.4  | 19.6      |
| 30°-40°   | 197.3  | 20.6      |
| 40°-50°   | 166.1  | 17.3      |
| 50°-60°   | 118.2  | 12.3      |
| 60°-70°   | 69.2   | 7.2       |
| 70°-80°   | 32.8   | 3.4       |
| 80°-90°   | 8.4    | 0.9       |
| 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°    | 366.7  | 38.2      |
| 0°-40°    | 564.0  | 58.8      |
| 0°-60°    | 848.3  | 88.5      |
| 0°-90°    | 958.7  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 958.7  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0°  | 490 | 490 | 490 | 490  | 490  |      |
| 5°  | 498 | 494 | 488 | 481  | 479  | 48   |
| 15° | 514 | 495 | 462 | 443  | 441  | 145  |
| 25° | 482 | 447 | 393 | 374  | 374  | 220  |
| 35° | 378 | 346 | 297 | 287  | 292  | 235  |
| 45° | 245 | 227 | 203 | 203  | 207  | 191  |
| 55° | 151 | 138 | 126 | 126  | 127  | 136  |
| 65° | 88  | 78  | 68  | 57   | 56   | 88   |
| 75° | 41  | 34  | 27  | 26   | 27   | 44   |
| 85° | 7   | 6   | 7   | 8    | 8    | 10   |
| 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°    | 489.5 | 489.5 | 489.5 | 489.5 | 489.5 | 489.5  | 489.5 | 489.5  | 489.5 |
| 2.5°  | 490.2 | 490.2 | 489.5 | 488.9 | 487.6 | 485.5  | 484.2 | 482.8  | 482.8 |
| 5°    | 498.2 | 496.8 | 494.2 | 490.8 | 487.6 | 483.5  | 480.9 | 478.8  | 478.8 |
| 7.5°  | 504.9 | 502.3 | 496.8 | 490.8 | 484.8 | 479.5  | 474.9 | 472.2  | 471.5 |
| 10°   | 507.6 | 504.2 | 496.3 | 486.9 | 477.5 | 470.1  | 464.8 | 461.4  | 461.4 |
| 12.5° | 510.3 | 506.2 | 495.6 | 482.1 | 470.1 | 460.2  | 454.7 | 452.1  | 451.4 |
| 15°   | 513.6 | 508.3 | 494.9 | 478.2 | 462.1 | 450.8  | 443.4 | 441.4  | 441.4 |
| 17.5° | 513.6 | 506.9 | 490.2 | 469.4 | 449.4 | 436.7  | 430.0 | 428.0  | 428.7 |
| 20°   | 507.6 | 500.2 | 480.2 | 454.7 | 432.7 | 419.3  | 412.6 | 411.3  | 411.9 |
| 22.5° | 496.3 | 487.6 | 464.8 | 437.4 | 413.3 | 399.3  | 393.3 | 393.3  | 392.6 |
| 25°   | 481.6 | 472.2 | 447.4 | 418.6 | 392.6 | 378.5  | 373.8 | 374.5  | 374.5 |
| 27.5° | 462.1 | 452.8 | 428.0 | 397.2 | 371.2 | 357.1  | 353.7 | 355.1  | 355.8 |
| 30°   | 438.1 | 428.0 | 402.0 | 371.9 | 347.8 | 333.7  | 331.7 | 333.7  | 334.4 |
| 32.5° | 408.7 | 401.3 | 375.8 | 345.0 | 322.4 | 310.3  | 309.6 | 311.6  | 314.4 |
| 35°   | 377.9 | 369.8 | 346.4 | 318.3 | 296.9 | 286.8  | 286.8 | 290.2  | 292.3 |
| 37.5° | 344.4 | 336.4 | 315.0 | 291.6 | 273.5 | 264.2  | 265.5 | 268.8  | 269.5 |
| 40°   | 308.9 | 302.9 | 284.9 | 264.8 | 249.5 | 242.1  | 244.1 | 247.5  | 248.1 |
| 42.5° | 275.5 | 270.2 | 255.5 | 237.4 | 226.1 | 220.7  | 223.3 | 227.4  | 228.7 |
| 45°   | 245.4 | 239.4 | 227.4 | 212.0 | 202.6 | 199.9  | 203.3 | 206.0  | 207.3 |
| 47.5° | 218.0 | 212.7 | 202.6 | 188.6 | 181.9 | 180.6  | 184.0 | 185.2  | 186.6 |
| 50°   | 193.9 | 188.6 | 178.5 | 165.8 | 160.5 | 160.5  | 163.1 | 164.5  | 163.8 |
| 52.5° | 170.5 | 165.8 | 156.4 | 145.8 | 142.4 | 142.4  | 144.4 | 145.1  | 146.5 |
| 55°   | 151.1 | 146.5 | 138.4 | 128.4 | 125.8 | 124.4  | 125.8 | 125.8  | 127.0 |
| 57.5° | 133.1 | 129.0 | 121.7 | 112.4 | 109.0 | 107.7  | 107.0 | 106.3  | 107.7 |
| 60°   | 117.0 | 113.7 | 105.6 | 97.7  | 95.0  | 91.6   | 89.0  | 86.3   | 86.9  |
| 62.5° | 102.3 | 98.9  | 91.6  | 83.5  | 80.9  | 76.2   | 72.9  | 69.5   | 70.9  |
| 65°   | 88.3  | 84.9  | 78.2  | 71.5  | 67.6  | 62.1   | 56.8  | 54.8   | 56.1  |
| 67.5° | 75.6  | 72.9  | 66.2  | 59.5  | 56.1  | 50.1   | 44.8  | 44.8   | 45.5  |
| 70°   | 62.8  | 60.2  | 54.8  | 48.8  | 44.8  | 39.5   | 37.5  | 38.1   | 38.1  |
| 72.5° | 51.5  | 49.5  | 44.1  | 38.8  | 34.8  | 31.5   | 31.5  | 32.1   | 32.7  |
| 75°   | 40.8  | 39.5  | 34.1  | 29.4  | 26.7  | 24.8   | 26.0  | 26.7   | 27.4  |
| 77.5° | 31.5  | 29.4  | 25.4  | 22.1  | 20.0  | 20.7   | 22.1  | 22.8   | 23.4  |
| 80°   | 22.1  | 21.4  | 18.1  | 16.1  | 15.4  | 16.1   | 17.4  | 18.1   | 18.1  |
| 82.5° | 14.0  | 13.4  | 11.3  | 10.8  | 10.8  | 11.3   | 12.7  | 12.7   | 12.7  |
| 85°   | 7.4   | 6.7   | 6.0   | 6.0   | 6.7   | 7.4    | 8.0   | 8.0    | 8.0   |
| 87.5° | 2.7   | 2.0   | 2.7   | 2.7   | 3.4   | 3.4    | 3.4   | 3.4    | 3.4   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |



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







(END OF REPORT)