

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: P579930

Luminaire Tested: **HC415D010-HM40525930-41WDW**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P579930  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-9)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC415D010-HM40525930-41WDW  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WIDE DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1261.0 lumens  
Efficiency: N/A  
Efficacy: 90.1 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.07 / 1.04  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

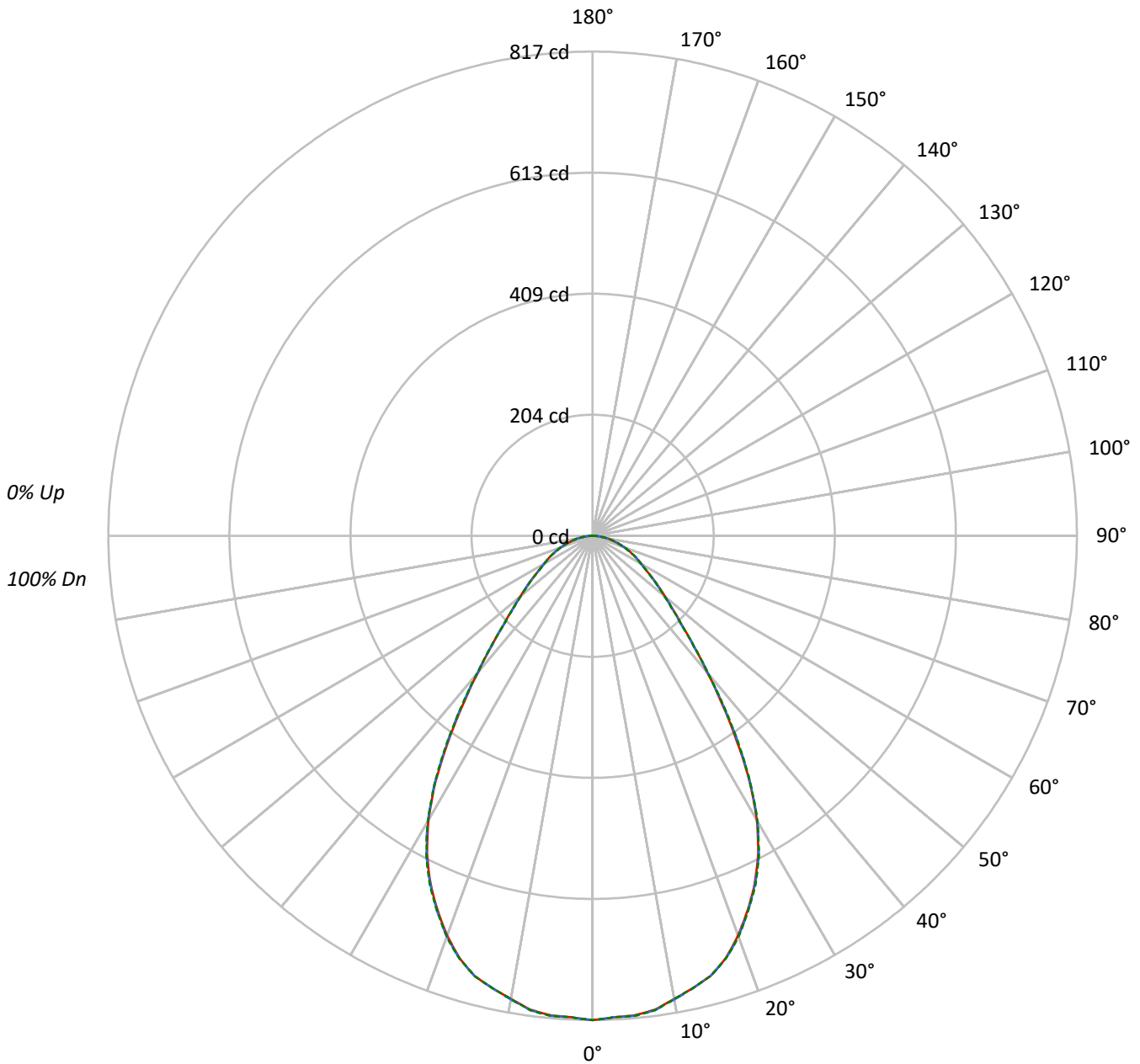
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 100 | 100 |
| 1   | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 94  | 92  | 90  | 89  | 89  | 89  | 89  |
| 2   | 103 | 97  | 91  | 87  | 101 | 95  | 90  | 86  | 91  | 87  | 84  | 88  | 85  | 82  | 85  | 83  | 80  | 78  | 78  | 78  | 78  |
| 3   | 96  | 87  | 81  | 76  | 94  | 86  | 80  | 75  | 83  | 78  | 74  | 81  | 76  | 72  | 78  | 74  | 71  | 69  | 69  | 69  | 69  |
| 4   | 90  | 80  | 72  | 67  | 87  | 78  | 72  | 66  | 76  | 70  | 66  | 74  | 69  | 65  | 72  | 68  | 64  | 62  | 62  | 62  | 62  |
| 5   | 84  | 73  | 65  | 60  | 82  | 72  | 65  | 59  | 70  | 64  | 59  | 68  | 63  | 58  | 66  | 62  | 58  | 56  | 56  | 56  | 56  |
| 6   | 78  | 67  | 59  | 54  | 77  | 66  | 59  | 54  | 64  | 58  | 53  | 63  | 57  | 53  | 61  | 56  | 53  | 51  | 51  | 51  | 51  |
| 7   | 73  | 62  | 54  | 49  | 72  | 61  | 54  | 49  | 60  | 53  | 49  | 58  | 53  | 48  | 57  | 52  | 48  | 46  | 46  | 46  | 46  |
| 8   | 69  | 57  | 50  | 45  | 68  | 57  | 50  | 45  | 55  | 49  | 45  | 54  | 49  | 44  | 53  | 48  | 44  | 42  | 42  | 42  | 42  |
| 9   | 65  | 53  | 46  | 41  | 64  | 53  | 46  | 41  | 52  | 45  | 41  | 51  | 45  | 41  | 50  | 45  | 41  | 39  | 39  | 39  | 39  |
| 10  | 61  | 50  | 43  | 38  | 60  | 49  | 43  | 38  | 48  | 42  | 38  | 48  | 42  | 38  | 47  | 42  | 38  | 36  | 36  | 36  | 36  |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 100823 | 100823 | 100823 |
| 5°  | 100576 | 100688 | 100688 |
| 10° | 99397  | 99510  | 99397  |
| 15° | 98224  | 98224  | 98224  |
| 20° | 94193  | 94417  | 94522  |
| 25° | 88095  | 88204  | 88436  |
| 30° | 78933  | 79175  | 79175  |
| 35° | 64086  | 64598  | 64718  |
| 40° | 48369  | 48643  | 48772  |
| 45° | 37050  | 36893  | 36893  |
| 50° | 30530  | 30376  | 30376  |
| 55° | 26214  | 26021  | 26021  |
| 60° | 23362  | 23164  | 23164  |
| 65° | 21977  | 21977  | 21977  |
| 70° | 20448  | 20448  | 20448  |
| 75° | 18539  | 18968  | 18539  |
| 80° | 17474  | 16764  | 17474  |
| 85° | 14294  | 14294  | 14294  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 77.0   | 6.1       |
| 10°-20°   | 215.5  | 17.1      |
| 20°-30°   | 296.1  | 23.5      |
| 30°-40°   | 266.3  | 21.1      |
| 40°-50°   | 168.3  | 13.3      |
| 50°-60°   | 109.8  | 8.7       |
| 60°-70°   | 74.4   | 5.9       |
| 70°-80°   | 41.9   | 3.3       |
| 80°-90°   | 11.7   | 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°    | 588.7  | 46.7      |
| 0°-40°    | 854.9  | 67.8      |
| 0°-60°    | 1133.0 | 89.8      |
| 0°-90°    | 1261.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1261.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 817 | 817   | 817 | 817   | 817 |      |
| 5°  | 812 | 812   | 813 | 813   | 813 | 77   |
| 15° | 769 | 769   | 769 | 769   | 769 | 215  |
| 25° | 647 | 648   | 648 | 650   | 650 | 295  |
| 35° | 426 | 427   | 429 | 431   | 430 | 265  |
| 45° | 212 | 212   | 212 | 212   | 212 | 168  |
| 55° | 122 | 122   | 121 | 122   | 121 | 110  |
| 65° | 75  | 75    | 75  | 75    | 75  | 75   |
| 75° | 39  | 40    | 40  | 40    | 39  | 42   |
| 85° | 10  | 10    | 10  | 10    | 10  | 12   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 817.4 | 817.4 | 817.4 | 817.4 | 817.4 |
| 2.5°  | 813.2 | 813.2 | 813.2 | 813.2 | 813.2 |
| 5°    | 812.3 | 812.3 | 813.2 | 813.2 | 813.2 |
| 7.5°  | 806.4 | 807.3 | 807.3 | 807.3 | 807.3 |
| 10°   | 793.6 | 793.6 | 794.5 | 794.5 | 793.6 |
| 12.5° | 781.8 | 781.8 | 781.8 | 782.7 | 781.8 |
| 15°   | 769.2 | 769.2 | 769.2 | 769.2 | 769.2 |
| 17.5° | 747.1 | 748.0 | 748.0 | 748.0 | 748.0 |
| 20°   | 717.6 | 719.3 | 719.3 | 720.1 | 720.1 |
| 22.5° | 683.7 | 684.5 | 685.4 | 686.2 | 685.4 |
| 25°   | 647.3 | 648.1 | 648.1 | 649.8 | 649.8 |
| 27.5° | 605.0 | 605.8 | 607.5 | 607.5 | 607.5 |
| 30°   | 554.2 | 555.1 | 555.9 | 555.9 | 555.9 |
| 32.5° | 494.1 | 494.1 | 495.8 | 496.6 | 495.8 |
| 35°   | 425.6 | 427.3 | 429.0 | 430.7 | 429.8 |
| 37.5° | 360.4 | 362.1 | 363.0 | 363.0 | 363.8 |
| 40°   | 300.4 | 302.1 | 302.1 | 303.8 | 302.9 |
| 42.5° | 253.0 | 252.2 | 252.2 | 253.9 | 253.0 |
| 45°   | 212.4 | 211.5 | 211.5 | 211.5 | 211.5 |
| 47.5° | 182.7 | 181.9 | 181.9 | 181.9 | 181.9 |
| 50°   | 159.1 | 158.3 | 158.3 | 158.3 | 158.3 |
| 52.5° | 139.6 | 138.7 | 138.7 | 138.7 | 137.9 |
| 55°   | 121.9 | 121.9 | 121.0 | 121.9 | 121.0 |
| 57.5° | 105.7 | 105.7 | 105.7 | 105.7 | 105.7 |
| 60°   | 94.7  | 93.9  | 93.9  | 93.9  | 93.9  |
| 62.5° | 84.6  | 84.6  | 84.6  | 84.6  | 84.6  |
| 65°   | 75.3  | 75.3  | 75.3  | 75.3  | 75.3  |
| 67.5° | 65.9  | 65.2  | 65.9  | 65.9  | 65.2  |
| 70°   | 56.7  | 55.8  | 56.7  | 56.7  | 56.7  |
| 72.5° | 47.4  | 47.4  | 47.4  | 48.2  | 47.4  |
| 75°   | 38.9  | 39.8  | 39.8  | 39.8  | 38.9  |
| 77.5° | 31.3  | 32.2  | 31.3  | 31.3  | 31.3  |
| 80°   | 24.6  | 23.6  | 23.6  | 23.6  | 24.6  |
| 82.5° | 16.9  | 16.9  | 16.9  | 16.9  | 16.9  |
| 85°   | 10.1  | 10.1  | 10.1  | 10.1  | 10.1  |
| 87.5° | 4.2   | 4.2   | 4.2   | 4.2   | 4.2   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |



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







(END OF REPORT)