

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: P582387

Luminaire Tested: **HC635D010-HM63040935-61RWWH**

Issue Date: 9/16/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P582387  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2105-241-15)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/16/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC635D010-HM63040935-61RWWH  
Description: HALO COMMERCIAL 6" ROUND, NEW CONSTRUCTION FRAME, WITH 6" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3616.1 lumens  
Efficiency: N/A  
Efficacy: 107.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.12 / 1.19  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

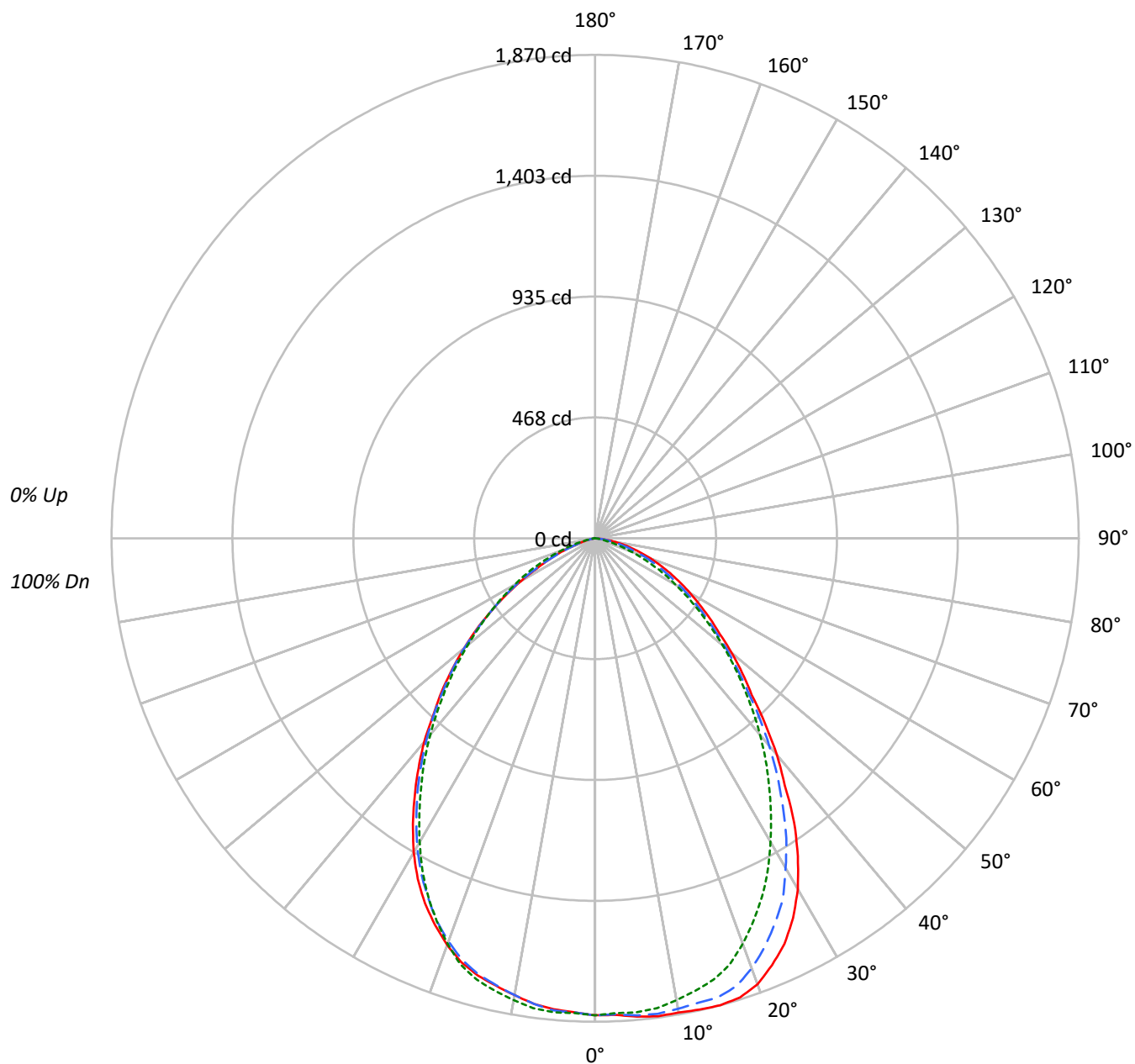
Input Watts (W): 33.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  |
| RCR |     |     |     |     |     |     |     |     |  |     |     |     |  |     |     |     |  |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 |  | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 | 102 | 102 |
| 1   | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99  |  | 101 | 98  | 96  |  | 97  | 95  | 93  |  | 93  | 92  | 90  |
| 2   | 103 | 96  | 90  | 85  | 100 | 94  | 89  | 84  |  | 91  | 86  | 83  |  | 87  | 84  | 81  |  | 85  | 82  | 79  |
| 3   | 95  | 86  | 79  | 74  | 93  | 84  | 78  | 73  |  | 82  | 76  | 72  |  | 79  | 74  | 70  |  | 77  | 73  | 69  |
| 4   | 88  | 78  | 70  | 64  | 86  | 76  | 69  | 64  |  | 74  | 68  | 63  |  | 72  | 66  | 62  |  | 70  | 65  | 61  |
| 5   | 82  | 70  | 62  | 57  | 80  | 69  | 62  | 56  |  | 67  | 61  | 56  |  | 65  | 60  | 55  |  | 64  | 59  | 55  |
| 6   | 76  | 64  | 56  | 50  | 74  | 63  | 56  | 50  |  | 61  | 55  | 50  |  | 60  | 54  | 49  |  | 58  | 53  | 49  |
| 7   | 71  | 59  | 51  | 45  | 69  | 58  | 50  | 45  |  | 56  | 50  | 45  |  | 55  | 49  | 44  |  | 54  | 48  | 44  |
| 8   | 66  | 54  | 46  | 41  | 65  | 53  | 46  | 41  |  | 52  | 45  | 41  |  | 51  | 45  | 40  |  | 50  | 44  | 40  |
| 9   | 62  | 50  | 42  | 37  | 61  | 49  | 42  | 37  |  | 48  | 42  | 37  |  | 47  | 41  | 37  |  | 46  | 41  | 37  |
| 10  | 59  | 46  | 39  | 34  | 57  | 46  | 39  | 34  |  | 45  | 38  | 34  |  | 44  | 38  | 34  |  | 43  | 38  | 34  |

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

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 101165 | 101165 | 101165 |
| 5°  | 102217 | 101287 | 100622 |
| 10° | 103667 | 100978 | 99898  |
| 15° | 106113 | 100341 | 99382  |
| 20° | 107092 | 97355  | 97641  |
| 25° | 104746 | 92455  | 94215  |
| 30° | 99211  | 85893  | 88805  |
| 35° | 89838  | 78507  | 81419  |
| 40° | 78232  | 70962  | 73559  |
| 45° | 66379  | 62813  | 65069  |
| 50° | 58787  | 54872  | 56314  |
| 55° | 51774  | 46928  | 46698  |
| 60° | 46411  | 39514  | 36324  |
| 65° | 41418  | 31690  | 26034  |
| 70° | 36432  | 22872  | 16269  |
| 75° | 30755  | 13852  | 9214   |
| 80° | 23646  | 6125   | 3820   |
| 85° | 13712  | 1572   | 1572   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 175.2  | 4.8       |
| 10°-20°   | 503.5  | 13.9      |
| 20°-30°   | 727.8  | 20.1      |
| 30°-40°   | 765.8  | 21.2      |
| 40°-50°   | 643.7  | 17.8      |
| 50°-60°   | 451.8  | 12.5      |
| 60°-70°   | 248.5  | 6.9       |
| 70°-80°   | 88.2   | 2.4       |
| 80°-90°   | 11.6   | 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°    | 1406.4 | 38.9      |
| 0°-40°    | 2172.2 | 60.1      |
| 0°-60°    | 3267.7 | 90.4      |
| 0°-90°    | 3616.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3616.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1845 | 1845 | 1845 | 1845 | 1845 |      |
| 5°  | 1858 | 1853 | 1841 | 1833 | 1828 | 177  |
| 15° | 1870 | 1838 | 1768 | 1746 | 1751 | 528  |
| 25° | 1732 | 1645 | 1528 | 1531 | 1558 | 792  |
| 35° | 1342 | 1265 | 1173 | 1197 | 1217 | 832  |
| 45° | 856  | 832  | 810  | 830  | 839  | 672  |
| 55° | 542  | 513  | 491  | 491  | 489  | 488  |
| 65° | 319  | 285  | 244  | 201  | 201  | 318  |
| 75° | 145  | 116  | 65   | 44   | 44   | 156  |
| 85° | 22   | 12   | 2    | 2    | 2    | 30   |
| 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°    | 1845.4 | 1845.4 | 1845.4 | 1845.4 | 1845.4 | 1845.4 | 1845.4 | 1845.4 | 1845.4 |
| 2.5°  | 1845.4 | 1845.4 | 1843.0 | 1843.0 | 1838.1 | 1838.1 | 1835.7 | 1835.7 | 1835.7 |
| 5°    | 1857.5 | 1857.5 | 1852.7 | 1845.4 | 1840.6 | 1833.4 | 1833.4 | 1830.9 | 1828.5 |
| 7.5°  | 1864.7 | 1862.3 | 1855.1 | 1845.4 | 1833.4 | 1821.2 | 1816.4 | 1818.8 | 1816.4 |
| 10°   | 1862.3 | 1857.5 | 1847.8 | 1828.5 | 1814.0 | 1797.1 | 1794.6 | 1792.2 | 1794.6 |
| 12.5° | 1867.2 | 1860.0 | 1840.6 | 1816.4 | 1792.2 | 1772.9 | 1770.5 | 1770.5 | 1772.9 |
| 15°   | 1869.7 | 1862.3 | 1838.1 | 1801.8 | 1768.0 | 1748.6 | 1746.3 | 1748.6 | 1751.1 |
| 17.5° | 1862.3 | 1852.7 | 1816.4 | 1768.0 | 1729.4 | 1710.0 | 1710.0 | 1714.8 | 1719.7 |
| 20°   | 1835.7 | 1821.2 | 1770.5 | 1712.3 | 1668.8 | 1654.3 | 1659.2 | 1668.8 | 1673.7 |
| 22.5° | 1787.4 | 1770.5 | 1712.3 | 1647.1 | 1601.1 | 1589.1 | 1601.1 | 1613.3 | 1618.0 |
| 25°   | 1731.7 | 1712.3 | 1644.7 | 1577.0 | 1528.5 | 1514.1 | 1531.0 | 1550.4 | 1557.6 |
| 27.5° | 1656.8 | 1635.0 | 1572.1 | 1494.7 | 1446.4 | 1439.1 | 1458.4 | 1480.2 | 1485.0 |
| 30°   | 1567.3 | 1543.1 | 1473.0 | 1400.4 | 1356.9 | 1354.4 | 1376.2 | 1395.5 | 1402.9 |
| 32.5° | 1458.4 | 1436.7 | 1376.2 | 1303.7 | 1264.9 | 1264.9 | 1286.7 | 1303.7 | 1310.9 |
| 35°   | 1342.4 | 1318.1 | 1264.9 | 1204.5 | 1173.1 | 1175.4 | 1197.2 | 1209.4 | 1216.6 |
| 37.5° | 1204.5 | 1197.2 | 1156.1 | 1105.3 | 1083.6 | 1088.3 | 1105.3 | 1115.0 | 1122.3 |
| 40°   | 1093.2 | 1073.9 | 1047.3 | 1006.2 | 991.6  | 996.5  | 1013.4 | 1023.1 | 1027.9 |
| 42.5° | 972.3  | 960.2  | 938.4  | 909.4  | 899.8  | 907.0  | 921.5  | 928.8  | 926.4  |
| 45°   | 856.2  | 853.8  | 832.0  | 815.0  | 810.2  | 819.9  | 829.6  | 836.9  | 839.3  |
| 47.5° | 771.5  | 761.8  | 742.6  | 730.4  | 725.6  | 735.2  | 744.9  | 749.8  | 749.8  |
| 50°   | 689.3  | 679.7  | 660.3  | 648.2  | 643.4  | 653.1  | 660.3  | 665.1  | 660.3  |
| 52.5° | 607.1  | 597.4  | 580.5  | 566.0  | 563.5  | 568.3  | 570.8  | 573.2  | 578.0  |
| 55°   | 541.7  | 532.2  | 512.8  | 495.9  | 491.0  | 493.4  | 491.0  | 491.0  | 488.6  |
| 57.5° | 478.9  | 469.3  | 449.9  | 430.5  | 423.3  | 420.8  | 413.6  | 411.1  | 408.8  |
| 60°   | 423.3  | 411.1  | 391.8  | 370.1  | 360.4  | 350.7  | 338.7  | 331.3  | 331.3  |
| 62.5° | 370.1  | 357.9  | 336.2  | 316.8  | 302.4  | 285.4  | 266.1  | 256.4  | 256.4  |
| 65°   | 319.3  | 309.6  | 285.4  | 263.6  | 244.3  | 222.5  | 200.7  | 195.9  | 200.7  |
| 67.5° | 270.9  | 261.2  | 237.0  | 215.3  | 191.0  | 164.4  | 145.2  | 145.2  | 150.0  |
| 70°   | 227.3  | 217.6  | 195.9  | 169.3  | 142.7  | 116.1  | 101.5  | 101.5  | 101.5  |
| 72.5° | 186.3  | 176.6  | 152.4  | 128.1  | 101.5  | 74.9   | 67.7   | 70.1   | 67.7   |
| 75°   | 145.2  | 137.8  | 116.1  | 89.5   | 65.4   | 46.0   | 43.5   | 41.1   | 43.5   |
| 77.5° | 108.9  | 101.5  | 82.3   | 58.0   | 36.3   | 26.6   | 24.2   | 24.2   | 24.2   |
| 80°   | 74.9   | 67.7   | 53.2   | 33.8   | 19.4   | 12.1   | 12.1   | 12.1   | 12.1   |
| 82.5° | 46.0   | 38.7   | 29.1   | 16.9   | 7.2    | 7.2    | 7.2    | 7.2    | 7.2    |
| 85°   | 21.8   | 16.9   | 12.1   | 4.8    | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    |
| 87.5° | 4.8    | 4.8    | 2.5    | 2.5    | 0.0    | 2.5    | 2.5    | 0.0    | 0.0    |
| 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)