

Classified  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P592619

Luminaire Tested: **HCC4S10D010MB-HM40525850-41WWWB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P592619  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCC4S10D010MB-HM40525850-41WWWB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

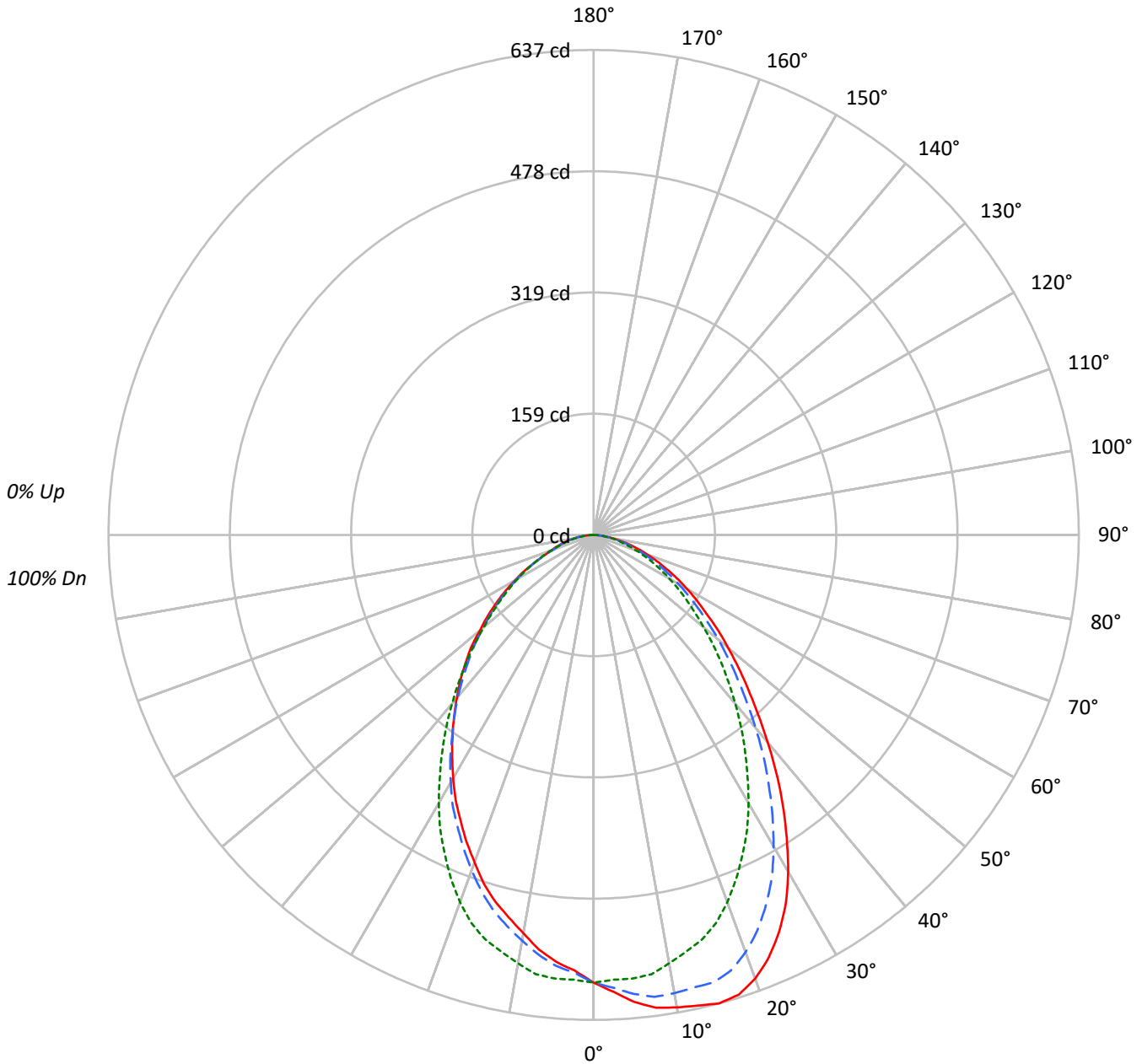
Lumens per Lamp: N/A  
Luminaire Lumens: 1140.1 lumens  
Efficiency: N/A  
Efficacy: 115.2 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.15  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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  |     |     |     |     | 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 |    |    |    |  |  |  |  |   |
| 1   | 110 | 106 | 103 | 99  | 108 | 104 | 101 | 98  | 100 | 97  | 95  | 96  | 94  | 92  | 92  | 91  | 89  | 87  |    |    |    |  |  |  |  |   |
| 2   | 102 | 95  | 89  | 84  | 99  | 93  | 87  | 83  | 89  | 85  | 81  | 86  | 82  | 79  | 83  | 80  | 77  | 75  |    |    |    |  |  |  |  |   |
| 3   | 94  | 85  | 77  | 72  | 92  | 83  | 76  | 71  | 80  | 75  | 70  | 78  | 73  | 69  | 75  | 71  | 68  | 66  |    |    |    |  |  |  |  |   |
| 4   | 87  | 76  | 68  | 62  | 85  | 75  | 68  | 62  | 72  | 66  | 61  | 70  | 65  | 60  | 68  | 63  | 60  | 58  |    |    |    |  |  |  |  |   |
| 5   | 81  | 69  | 61  | 55  | 79  | 68  | 60  | 55  | 66  | 59  | 54  | 64  | 58  | 53  | 62  | 57  | 53  | 51  |    |    |    |  |  |  |  |   |
| 6   | 75  | 63  | 55  | 49  | 73  | 62  | 54  | 49  | 60  | 53  | 48  | 59  | 53  | 48  | 57  | 52  | 47  | 46  |    |    |    |  |  |  |  |   |
| 7   | 70  | 58  | 50  | 44  | 68  | 57  | 49  | 44  | 55  | 48  | 43  | 54  | 48  | 43  | 53  | 47  | 43  | 41  |    |    |    |  |  |  |  |   |
| 8   | 65  | 53  | 45  | 40  | 64  | 52  | 45  | 40  | 51  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 39  | 37  |    |    |    |  |  |  |  |   |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 36  | 45  | 40  | 36  | 34  |    |    |    |  |  |  |  |   |
| 10  | 58  | 45  | 38  | 33  | 57  | 45  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 42  | 37  | 33  | 31  |    |    |    |  |  |  |  |   |

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

|     | 0°    | 90°   | 180°  |
|-----|-------|-------|-------|
| 0°  | 72515 | 72515 | 72515 |
| 5°  | 76246 | 72408 | 69709 |
| 10° | 78919 | 71554 | 66532 |
| 15° | 81330 | 70246 | 63695 |
| 20° | 81422 | 67350 | 60039 |
| 25° | 78365 | 62958 | 56276 |
| 30° | 72752 | 57925 | 52570 |
| 35° | 65215 | 52160 | 48636 |
| 40° | 57225 | 46550 | 44972 |
| 45° | 50029 | 41202 | 41464 |
| 50° | 44173 | 36056 | 37361 |
| 55° | 38966 | 31956 | 33590 |
| 60° | 34808 | 28295 | 29430 |
| 65° | 30820 | 24867 | 24867 |
| 70° | 26940 | 21206 | 21206 |
| 75° | 23018 | 18014 | 20111 |
| 80° | 18184 | 16053 | 18184 |
| 85° | 11746 | 13869 | 17124 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 55.7   | 4.9       |
| 10°-20°   | 156.9  | 13.8      |
| 20°-30°   | 219.7  | 19.3      |
| 30°-40°   | 226.4  | 19.9      |
| 40°-50°   | 192.7  | 16.9      |
| 50°-60°   | 142.8  | 12.5      |
| 60°-70°   | 89.6   | 7.9       |
| 70°-80°   | 44.5   | 3.9       |
| 80°-90°   | 11.7   | 1.0       |
| 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°    | 432.3  | 37.9      |
| 0°-40°    | 658.7  | 57.8      |
| 0°-60°    | 994.2  | 87.2      |
| 0°-90°    | 1140.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1140.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0°  | 588 | 588 | 588 | 588  | 588  |      |
| 5°  | 616 | 605 | 585 | 568  | 563  | 59   |
| 15° | 637 | 608 | 550 | 510  | 499  | 179  |
| 25° | 576 | 536 | 463 | 423  | 414  | 263  |
| 35° | 433 | 401 | 346 | 324  | 323  | 270  |
| 45° | 287 | 267 | 236 | 232  | 238  | 223  |
| 55° | 181 | 167 | 149 | 152  | 156  | 164  |
| 65° | 106 | 95  | 85  | 84   | 85   | 105  |
| 75° | 48  | 43  | 38  | 41   | 42   | 52   |
| 85° | 8   | 8   | 10  | 11   | 12   | 11   |
| 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°    | 587.9 | 587.9 | 587.9 | 587.9 | 587.9 | 587.9  | 587.9 | 587.9  | 587.9 |
| 2.5°  | 600.8 | 598.5 | 595.4 | 590.2 | 584.8 | 580.3  | 575.8 | 573.6  | 572.8 |
| 5°    | 615.8 | 611.2 | 605.2 | 595.4 | 584.8 | 575.8  | 568.2 | 564.4  | 563.0 |
| 7.5°  | 626.4 | 621.8 | 612.0 | 596.9 | 581.9 | 568.2  | 556.1 | 550.9  | 549.4 |
| 10°   | 630.1 | 624.9 | 611.2 | 590.8 | 571.3 | 554.7  | 541.1 | 534.3  | 531.2 |
| 12.5° | 633.2 | 626.4 | 608.9 | 584.8 | 560.7 | 540.3  | 526.0 | 516.9  | 514.7 |
| 15°   | 636.9 | 629.4 | 608.3 | 578.8 | 550.1 | 526.0  | 510.2 | 501.9  | 498.8 |
| 17.5° | 633.2 | 624.9 | 600.0 | 566.7 | 534.3 | 507.9  | 490.5 | 483.0  | 480.0 |
| 20°   | 620.3 | 611.2 | 583.3 | 547.8 | 513.1 | 486.0  | 468.6 | 461.1  | 457.4 |
| 22.5° | 600.8 | 590.8 | 562.2 | 524.5 | 489.0 | 462.6  | 446.0 | 438.5  | 436.2 |
| 25°   | 575.8 | 565.9 | 535.8 | 497.3 | 462.6 | 437.0  | 422.7 | 415.8  | 413.5 |
| 27.5° | 546.4 | 536.6 | 507.1 | 469.4 | 436.2 | 412.1  | 400.7 | 394.0  | 392.4 |
| 30°   | 510.8 | 501.1 | 472.4 | 437.7 | 406.7 | 384.1  | 375.1 | 369.7  | 369.1 |
| 32.5° | 471.7 | 463.4 | 437.0 | 405.2 | 375.8 | 357.0  | 350.2 | 346.4  | 345.6 |
| 35°   | 433.1 | 424.1 | 400.7 | 372.0 | 346.4 | 329.8  | 323.8 | 323.0  | 323.0 |
| 37.5° | 394.0 | 384.9 | 366.0 | 339.6 | 317.7 | 302.6  | 300.3 | 301.1  | 301.1 |
| 40°   | 355.4 | 347.1 | 330.6 | 308.6 | 289.1 | 277.7  | 277.0 | 278.5  | 279.3 |
| 42.5° | 319.2 | 312.4 | 297.4 | 278.5 | 261.9 | 252.7  | 253.5 | 256.6  | 258.9 |
| 45°   | 286.8 | 280.7 | 267.1 | 250.6 | 236.2 | 229.4  | 231.7 | 235.5  | 237.7 |
| 47.5° | 257.3 | 252.1 | 239.2 | 224.1 | 212.0 | 207.6  | 210.5 | 215.1  | 218.0 |
| 50°   | 230.2 | 225.7 | 213.6 | 197.7 | 187.9 | 184.9  | 188.7 | 193.2  | 194.7 |
| 52.5° | 206.0 | 201.5 | 188.7 | 175.0 | 167.5 | 166.0  | 169.8 | 173.5  | 175.8 |
| 55°   | 181.2 | 177.3 | 166.8 | 154.7 | 148.6 | 147.9  | 151.7 | 154.7  | 156.2 |
| 57.5° | 160.7 | 156.9 | 147.1 | 136.6 | 131.3 | 130.5  | 134.3 | 136.6  | 137.4 |
| 60°   | 141.1 | 137.4 | 128.3 | 118.5 | 114.7 | 114.7  | 117.0 | 118.5  | 119.3 |
| 62.5° | 123.0 | 119.3 | 111.0 | 102.6 | 99.6  | 99.6   | 99.6  | 100.4  | 102.6 |
| 65°   | 105.6 | 102.6 | 95.1  | 87.5  | 85.2  | 83.8   | 83.8  | 83.8   | 85.2  |
| 67.5° | 89.8  | 86.8  | 80.8  | 74.0  | 71.7  | 69.4   | 68.6  | 70.2   | 70.2  |
| 70°   | 74.7  | 72.5  | 66.5  | 61.1  | 58.8  | 56.6   | 55.9  | 58.8   | 58.8  |
| 72.5° | 61.1  | 58.8  | 55.1  | 49.8  | 47.6  | 46.8   | 48.3  | 49.8   | 50.5  |
| 75°   | 48.3  | 46.1  | 43.0  | 39.9  | 37.8  | 38.5   | 40.7  | 41.5   | 42.2  |
| 77.5° | 36.2  | 35.5  | 32.4  | 30.2  | 30.2  | 31.0   | 32.4  | 33.9   | 34.7  |
| 80°   | 25.6  | 24.9  | 23.4  | 21.8  | 22.6  | 24.1   | 24.9  | 26.4   | 25.6  |
| 82.5° | 15.8  | 15.8  | 15.1  | 15.1  | 15.8  | 17.4   | 18.1  | 18.9   | 19.6  |
| 85°   | 8.3   | 8.3   | 8.3   | 9.1   | 9.8   | 10.6   | 11.3  | 12.1   | 12.1  |
| 87.5° | 2.3   | 3.1   | 3.1   | 3.8   | 4.6   | 4.6    | 5.2   | 5.2    | 5.2   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |

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Scaled Data Report



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Scaled Data Report



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

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