

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: P580087

Luminaire Tested: **HCC4W20D010BZ-HM40525935-41WDW**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580087  
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: HCC4W20D010BZ-HM40525935-41WDW  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WIDE DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

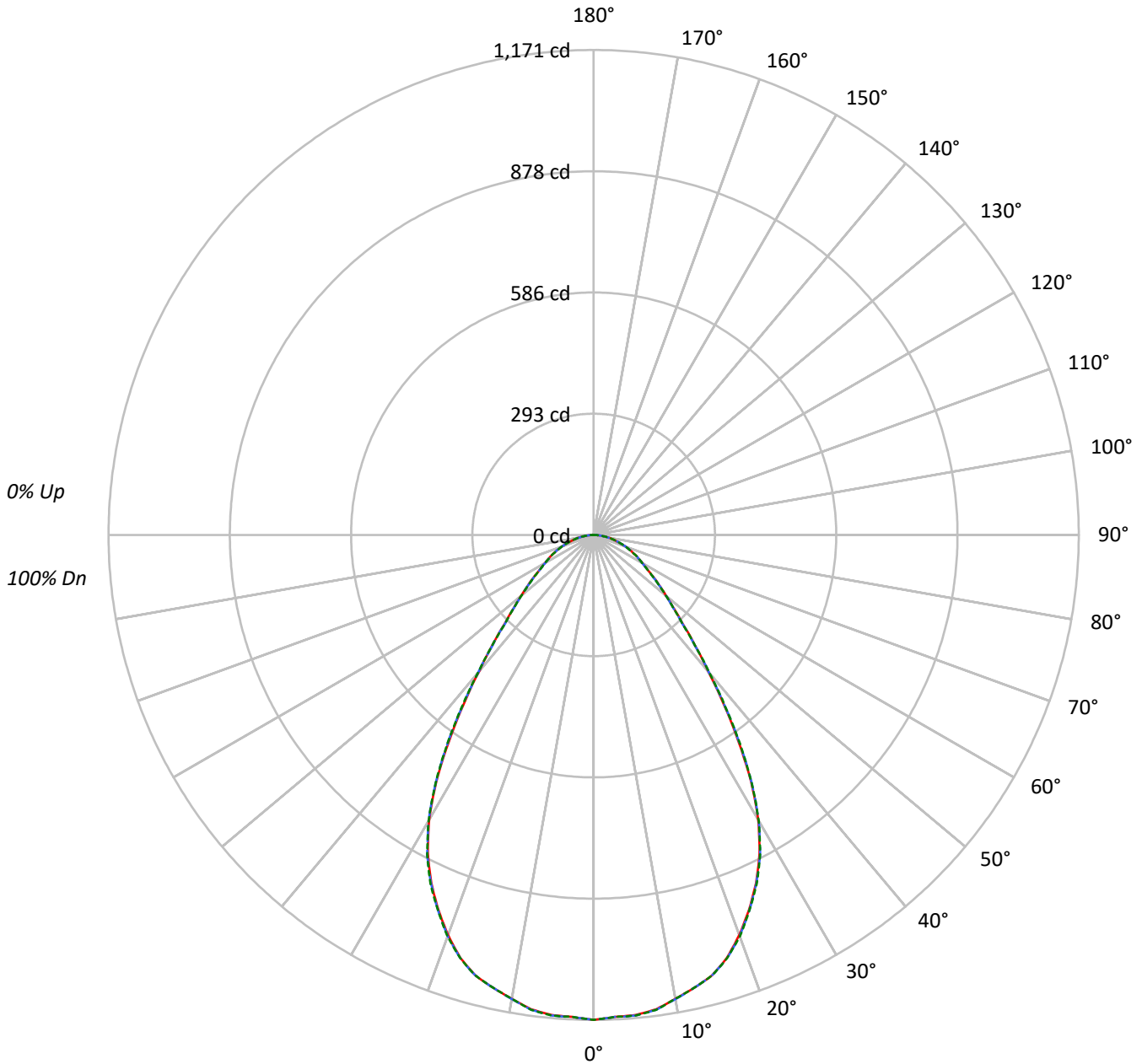
Lumens per Lamp: N/A  
Luminaire Lumens: 1806.7 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.07 / 1.04  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 20  
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   | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 94  | 92  | 90  | 89  |    |    |    |  |  |  |  |   |
| 2   | 103 | 97  | 91  | 87  | 101 | 95  | 90  | 86  | 91  | 87  | 84  | 88  | 85  | 82  | 85  | 83  | 80  | 78  |    |    |    |  |  |  |  |   |
| 3   | 96  | 87  | 81  | 76  | 94  | 86  | 80  | 75  | 83  | 78  | 74  | 81  | 76  | 72  | 78  | 74  | 71  | 69  |    |    |    |  |  |  |  |   |
| 4   | 90  | 80  | 72  | 67  | 87  | 78  | 72  | 66  | 76  | 70  | 66  | 74  | 69  | 65  | 72  | 68  | 64  | 62  |    |    |    |  |  |  |  |   |
| 5   | 84  | 73  | 65  | 60  | 82  | 72  | 65  | 59  | 70  | 64  | 59  | 68  | 63  | 58  | 66  | 62  | 58  | 56  |    |    |    |  |  |  |  |   |
| 6   | 78  | 67  | 59  | 54  | 77  | 66  | 59  | 54  | 64  | 58  | 53  | 63  | 57  | 53  | 61  | 56  | 53  | 51  |    |    |    |  |  |  |  |   |
| 7   | 73  | 62  | 54  | 49  | 72  | 61  | 54  | 49  | 60  | 53  | 49  | 58  | 53  | 48  | 57  | 52  | 48  | 46  |    |    |    |  |  |  |  |   |
| 8   | 69  | 57  | 50  | 45  | 68  | 57  | 50  | 45  | 55  | 49  | 45  | 54  | 49  | 44  | 53  | 48  | 44  | 42  |    |    |    |  |  |  |  |   |
| 9   | 65  | 53  | 46  | 41  | 64  | 53  | 46  | 41  | 52  | 45  | 41  | 51  | 45  | 41  | 50  | 45  | 41  | 39  |    |    |    |  |  |  |  |   |
| 10  | 61  | 50  | 43  | 38  | 60  | 49  | 43  | 38  | 48  | 42  | 38  | 48  | 42  | 38  | 47  | 42  | 38  | 36  |    |    |    |  |  |  |  |   |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 144438 | 144438 | 144438 |
| 5°  | 144086 | 144247 | 144247 |
| 10° | 142420 | 142570 | 142420 |
| 15° | 140709 | 140709 | 140709 |
| 20° | 134924 | 135252 | 135410 |
| 25° | 126203 | 126380 | 126706 |
| 30° | 113101 | 113443 | 113443 |
| 35° | 91807  | 92545  | 92725  |
| 40° | 69301  | 69688  | 69881  |
| 45° | 53081  | 52854  | 52854  |
| 50° | 43732  | 43483  | 43483  |
| 55° | 37547  | 37268  | 37268  |
| 60° | 33501  | 33180  | 33180  |
| 65° | 31492  | 31492  | 31492  |
| 70° | 29284  | 29284  | 29284  |
| 75° | 26545  | 27165  | 26545  |
| 80° | 24932  | 24151  | 24932  |
| 85° | 20662  | 20662  | 20662  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 110.3  | 6.1       |
| 10°-20°   | 308.8  | 17.1      |
| 20°-30°   | 424.3  | 23.5      |
| 30°-40°   | 381.5  | 21.1      |
| 40°-50°   | 241.0  | 13.3      |
| 50°-60°   | 157.4  | 8.7       |
| 60°-70°   | 106.6  | 5.9       |
| 70°-80°   | 60.0   | 3.3       |
| 80°-90°   | 16.9   | 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°    | 843.4  | 46.7      |
| 0°-40°    | 1224.8 | 67.8      |
| 0°-60°    | 1623.2 | 89.8      |
| 0°-90°    | 1806.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1806.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1171 | 1171  | 1171 | 1171  | 1171 |      |
| 5°  | 1164 | 1164  | 1165 | 1165  | 1165 | 110  |
| 15° | 1102 | 1102  | 1102 | 1102  | 1102 | 309  |
| 25° | 927  | 929   | 929  | 931   | 931  | 423  |
| 35° | 610  | 612   | 615  | 617   | 616  | 380  |
| 45° | 304  | 303   | 303  | 303   | 303  | 241  |
| 55° | 175  | 175   | 173  | 175   | 173  | 158  |
| 65° | 108  | 108   | 108  | 108   | 108  | 107  |
| 75° | 56   | 57    | 57   | 57    | 56   | 60   |
| 85° | 15   | 15    | 15   | 15    | 15   | 17   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1171.0 | 1171.0 | 1171.0 | 1171.0 | 1171.0 |
| 2.5°  | 1165.0 | 1165.0 | 1165.0 | 1165.0 | 1165.0 |
| 5°    | 1163.7 | 1163.7 | 1165.0 | 1165.0 | 1165.0 |
| 7.5°  | 1155.3 | 1156.5 | 1156.5 | 1156.5 | 1156.5 |
| 10°   | 1137.1 | 1137.1 | 1138.3 | 1138.3 | 1137.1 |
| 12.5° | 1120.2 | 1120.2 | 1120.2 | 1121.3 | 1120.2 |
| 15°   | 1101.9 | 1101.9 | 1101.9 | 1101.9 | 1101.9 |
| 17.5° | 1070.4 | 1071.6 | 1071.6 | 1071.6 | 1071.6 |
| 20°   | 1027.9 | 1030.4 | 1030.4 | 1031.6 | 1031.6 |
| 22.5° | 979.5  | 980.7  | 981.9  | 983.1  | 981.9  |
| 25°   | 927.3  | 928.6  | 928.6  | 931.0  | 931.0  |
| 27.5° | 866.8  | 867.9  | 870.3  | 870.3  | 870.3  |
| 30°   | 794.1  | 795.2  | 796.5  | 796.5  | 796.5  |
| 32.5° | 707.9  | 707.9  | 710.3  | 711.6  | 710.3  |
| 35°   | 609.7  | 612.2  | 614.6  | 617.1  | 615.8  |
| 37.5° | 516.4  | 518.8  | 520.0  | 520.0  | 521.3  |
| 40°   | 430.4  | 432.8  | 432.8  | 435.2  | 434.0  |
| 42.5° | 362.5  | 361.2  | 361.2  | 363.7  | 362.5  |
| 45°   | 304.3  | 303.0  | 303.0  | 303.0  | 303.0  |
| 47.5° | 261.9  | 260.6  | 260.6  | 260.6  | 260.6  |
| 50°   | 227.9  | 226.6  | 226.6  | 226.6  | 226.6  |
| 52.5° | 200.0  | 198.8  | 198.8  | 198.8  | 197.6  |
| 55°   | 174.6  | 174.6  | 173.3  | 174.6  | 173.3  |
| 57.5° | 151.5  | 151.5  | 151.5  | 151.5  | 151.5  |
| 60°   | 135.8  | 134.5  | 134.5  | 134.5  | 134.5  |
| 62.5° | 121.2  | 121.2  | 121.2  | 121.2  | 121.2  |
| 65°   | 107.9  | 107.9  | 107.9  | 107.9  | 107.9  |
| 67.5° | 94.5   | 93.4   | 94.5   | 94.5   | 93.4   |
| 70°   | 81.2   | 80.1   | 81.2   | 81.2   | 81.2   |
| 72.5° | 67.9   | 67.9   | 67.9   | 69.0   | 67.9   |
| 75°   | 55.7   | 57.0   | 57.0   | 57.0   | 55.7   |
| 77.5° | 44.8   | 46.1   | 44.8   | 44.8   | 44.8   |
| 80°   | 35.1   | 34.0   | 34.0   | 34.0   | 35.1   |
| 82.5° | 24.2   | 24.2   | 24.2   | 24.2   | 24.2   |
| 85°   | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   |
| 87.5° | 6.1    | 6.1    | 6.1    | 6.1    | 6.1    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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Scaled Data Report



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

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