

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: P592623

Luminaire Tested: **HC415D010-HM40525850-41NDH**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P592623  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC415D010-HM40525850-41NDH  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" NARROW DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1423.8 lumens  
Efficiency: N/A  
Efficacy: 101.7 lumens/watt  
Spacing Criteria (0/90/45): 0.89 / 0.89 / 0.91  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

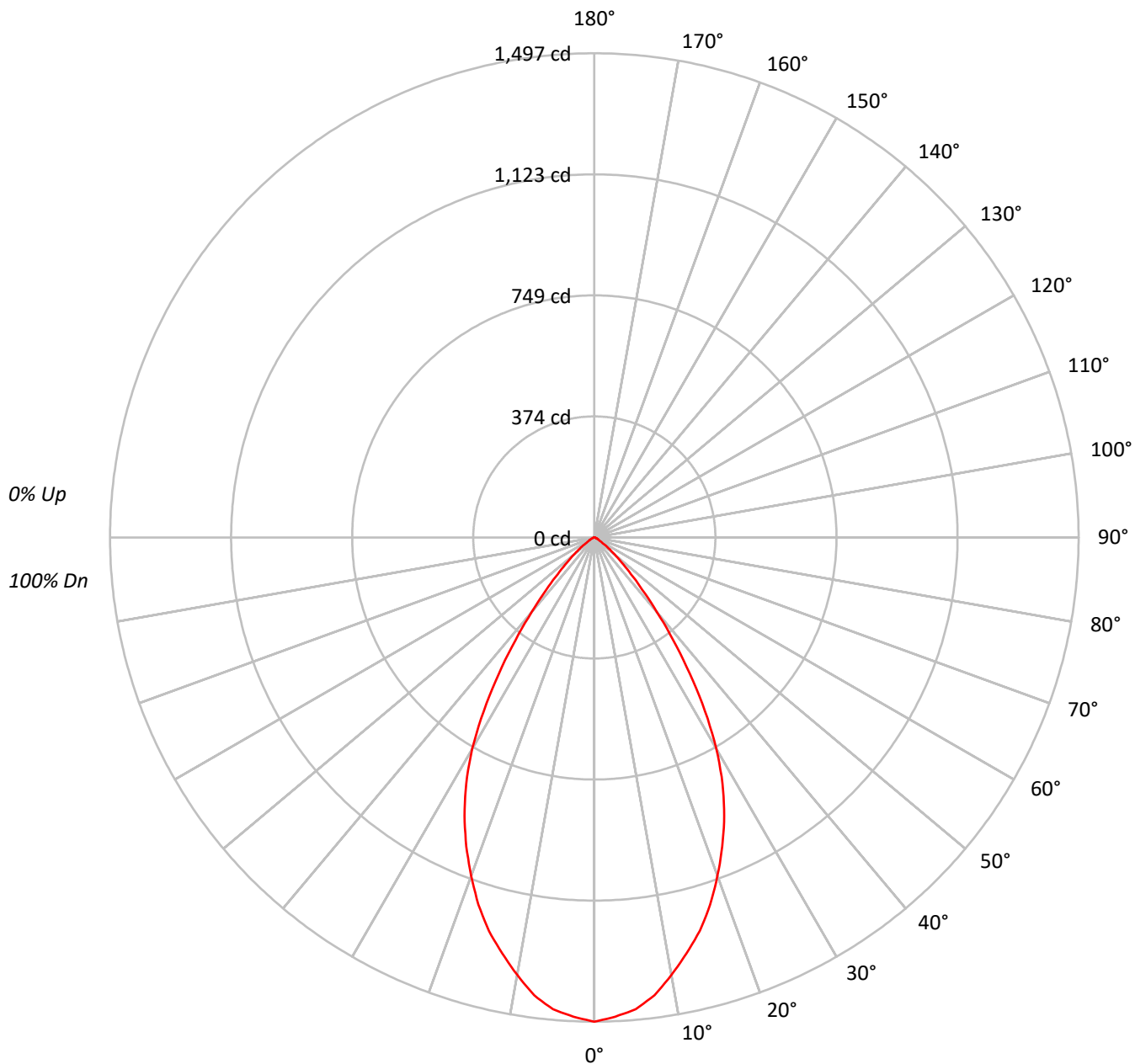
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 |
| 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   | 113 | 110 | 108 | 105 | 111 | 108 | 106 | 104 | 104 | 102 | 100 | 100 | 99  | 97  | 97  | 96  | 95  | 93  |    |    |
| 2   | 107 | 102 | 98  | 94  | 105 | 100 | 96  | 93  | 97  | 94  | 91  | 94  | 91  | 89  | 91  | 89  | 87  | 86  |    |    |
| 3   | 101 | 95  | 89  | 85  | 99  | 93  | 88  | 84  | 91  | 86  | 83  | 88  | 85  | 82  | 86  | 83  | 81  | 79  |    |    |
| 4   | 96  | 88  | 82  | 78  | 94  | 87  | 81  | 77  | 85  | 80  | 76  | 83  | 79  | 75  | 81  | 77  | 74  | 73  |    |    |
| 5   | 91  | 82  | 76  | 71  | 89  | 81  | 75  | 71  | 79  | 74  | 70  | 77  | 73  | 70  | 76  | 72  | 69  | 67  |    |    |
| 6   | 86  | 76  | 70  | 66  | 84  | 76  | 70  | 65  | 74  | 69  | 65  | 73  | 68  | 64  | 71  | 67  | 64  | 63  |    |    |
| 7   | 81  | 72  | 65  | 61  | 80  | 71  | 65  | 61  | 70  | 64  | 60  | 68  | 64  | 60  | 67  | 63  | 60  | 58  |    |    |
| 8   | 77  | 67  | 61  | 57  | 76  | 67  | 61  | 56  | 65  | 60  | 56  | 64  | 59  | 56  | 63  | 59  | 56  | 54  |    |    |
| 9   | 73  | 63  | 57  | 53  | 72  | 63  | 57  | 53  | 62  | 56  | 52  | 61  | 56  | 52  | 60  | 55  | 52  | 51  |    |    |
| 10  | 70  | 59  | 53  | 49  | 69  | 59  | 53  | 49  | 58  | 53  | 49  | 57  | 52  | 49  | 57  | 52  | 49  | 48  |    |    |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 184685 |
| 5°  | 181330 |
| 10° | 171991 |
| 15° | 160809 |
| 20° | 146055 |
| 25° | 129238 |
| 30° | 107490 |
| 35° | 77517  |
| 40° | 48385  |
| 45° | 27910  |
| 50° | 15754  |
| 55° | 7505   |
| 60° | 4292   |
| 65° | 3298   |
| 70° | 2200   |
| 75° | 1477   |
| 80° | 1421   |
| 85° | 1415   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 136.9  | 9.6       |
| 10°-20°   | 351.3  | 24.7      |
| 20°-30°   | 432.1  | 30.3      |
| 30°-40°   | 320.9  | 22.5      |
| 40°-50°   | 130.4  | 9.2       |
| 50°-60°   | 36.1   | 2.5       |
| 60°-70°   | 11.2   | 0.8       |
| 70°-80°   | 3.7    | 0.3       |
| 80°-90°   | 1.1    | 0.1       |
| 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°    | 920.3  | 64.6      |
| 0°-40°    | 1241.1 | 87.2      |
| 0°-60°    | 1407.7 | 98.9      |
| 0°-90°    | 1423.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1423.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 1497 |      |
| 5°  | 1464 | 137  |
| 15° | 1259 | 351  |
| 25° | 950  | 432  |
| 35° | 515  | 321  |
| 45° | 160  | 130  |
| 55° | 35   | 36   |
| 65° | 11   | 11   |
| 75° | 3    | 4    |
| 85° | 1    | 1    |
| 90° | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 1497.3 |
| 2.5°  | 1482.9 |
| 5°    | 1464.5 |
| 7.5°  | 1427.5 |
| 10°   | 1373.2 |
| 12.5° | 1316.8 |
| 15°   | 1259.3 |
| 17.5° | 1190.7 |
| 20°   | 1112.7 |
| 22.5° | 1033.8 |
| 25°   | 949.6  |
| 27.5° | 858.3  |
| 30°   | 754.7  |
| 32.5° | 636.8  |
| 35°   | 514.8  |
| 37.5° | 400.0  |
| 40°   | 300.5  |
| 42.5° | 219.4  |
| 45°   | 160.0  |
| 47.5° | 114.8  |
| 50°   | 82.1   |
| 52.5° | 56.4   |
| 55°   | 34.9   |
| 57.5° | 22.5   |
| 60°   | 17.4   |
| 62.5° | 14.3   |
| 65°   | 11.3   |
| 67.5° | 8.2    |
| 70°   | 6.1    |
| 72.5° | 5.1    |
| 75°   | 3.1    |
| 77.5° | 2.0    |
| 80°   | 2.0    |
| 82.5° | 1.0    |
| 85°   | 1.0    |
| 87.5° | 1.0    |
| 90°   | 0.0    |



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— 0°-180°







(END OF REPORT)