

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: P434693

Luminaire Tested: **HCM4R25935ED010MMS**

Issue Date: 11/24/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P434693  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2008-933-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 11/24/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCM4R25935ED010MMS  
Description: HALO COMMERCIAL 4INCH ADJUSTABLE MULTIPLE, 25 DEG REFLECTOR OPTIC  
Light Source: HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

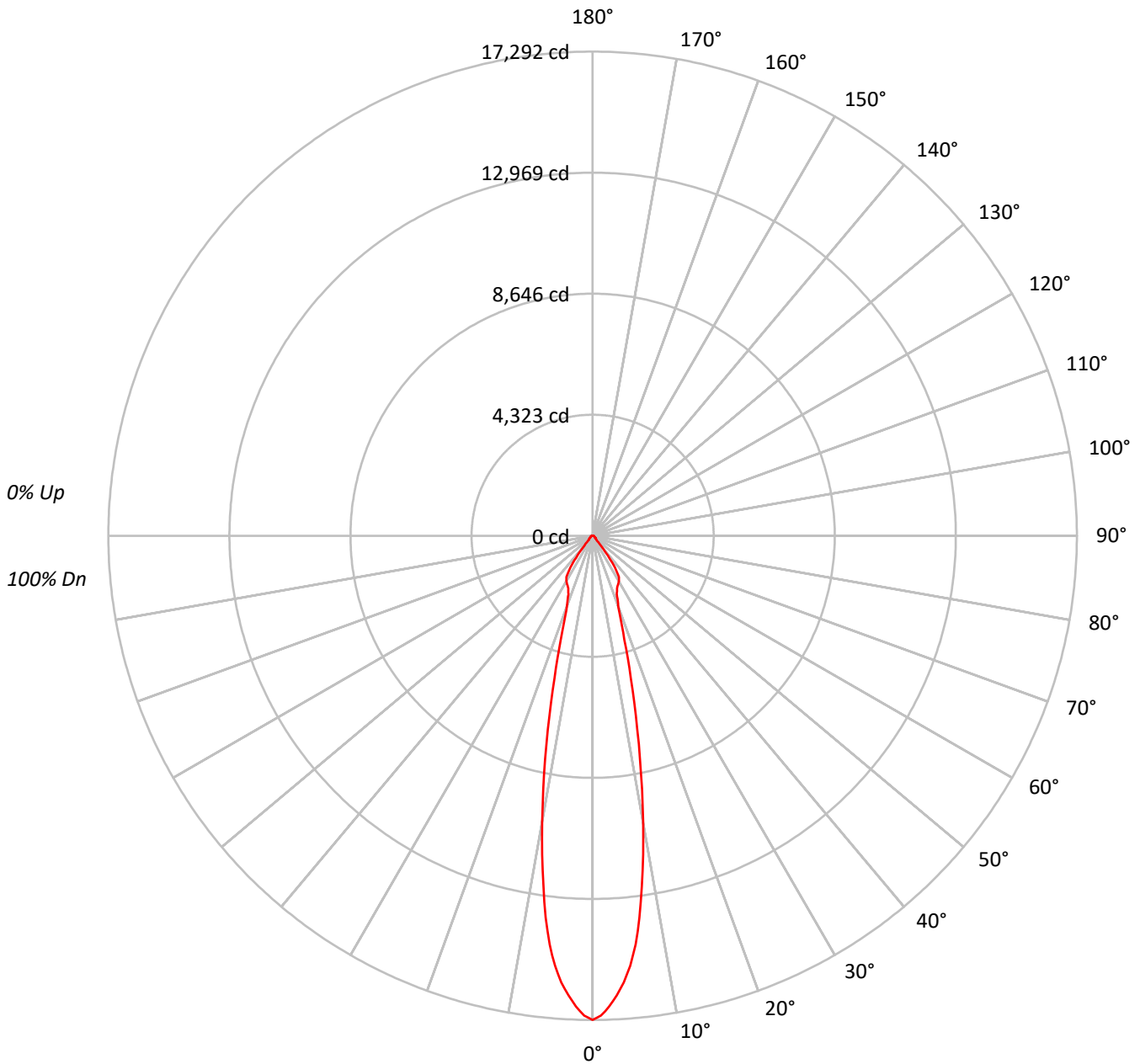
Lumens per Lamp: N/A  
Luminaire Lumens: 4974.7 lumens  
Efficiency: N/A  
Efficacy: 92.0 lumens/watt  
Spacing Criteria (0/90/45): 0.39 / 0.39 / 0.39  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 54.1  
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 |    |    |   |
| 1   | 114 | 111 | 109 | 107 | 111 | 109 | 107 | 105 | 105 | 103 | 102 | 101 | 100 | 99  | 98  | 97  | 96  | 94  |    |    |   |
| 2   | 109 | 104 | 100 | 97  | 107 | 102 | 99  | 96  | 99  | 96  | 94  | 96  | 94  | 92  | 94  | 92  | 90  | 88  |    |    |   |
| 3   | 104 | 98  | 93  | 90  | 102 | 97  | 92  | 89  | 94  | 91  | 88  | 92  | 89  | 86  | 89  | 87  | 85  | 83  |    |    |   |
| 4   | 100 | 93  | 88  | 84  | 98  | 92  | 87  | 83  | 89  | 85  | 82  | 88  | 84  | 81  | 86  | 83  | 80  | 79  |    |    |   |
| 5   | 95  | 88  | 83  | 79  | 94  | 87  | 82  | 78  | 85  | 81  | 78  | 84  | 80  | 77  | 82  | 79  | 76  | 75  |    |    |   |
| 6   | 92  | 84  | 78  | 75  | 90  | 83  | 78  | 74  | 81  | 77  | 74  | 80  | 76  | 73  | 79  | 76  | 73  | 72  |    |    |   |
| 7   | 88  | 80  | 75  | 71  | 87  | 79  | 74  | 71  | 78  | 74  | 70  | 77  | 73  | 70  | 76  | 72  | 70  | 68  |    |    |   |
| 8   | 85  | 76  | 71  | 68  | 84  | 76  | 71  | 67  | 75  | 70  | 67  | 74  | 70  | 67  | 73  | 69  | 67  | 65  |    |    |   |
| 9   | 82  | 73  | 68  | 65  | 81  | 73  | 68  | 65  | 72  | 68  | 64  | 71  | 67  | 64  | 70  | 67  | 64  | 63  |    |    |   |
| 10  | 79  | 70  | 65  | 62  | 78  | 70  | 65  | 62  | 69  | 65  | 62  | 69  | 65  | 62  | 68  | 64  | 62  | 60  |    |    |   |

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

|     |         |
|-----|---------|
|     | 0°      |
| 0°  | 8531519 |
| 5°  | 7635835 |
| 10° | 5198280 |
| 15° | 2686775 |
| 20° | 1401551 |
| 25° | 1124970 |
| 30° | 1067742 |
| 35° | 831543  |
| 40° | 286994  |
| 45° | 124966  |
| 50° | 107305  |
| 55° | 93932   |
| 60° | 81901   |
| 65° | 76467   |
| 70° | 81937   |
| 75° | 99889   |
| 80° | 124163  |
| 85° | 24908   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 1305.7 | 26.2      |
| 10°-20°   | 1500.7 | 30.2      |
| 20°-30°   | 980.1  | 19.7      |
| 30°-40°   | 793.2  | 15.9      |
| 40°-50°   | 160.8  | 3.2       |
| 50°-60°   | 97.0   | 1.9       |
| 60°-70°   | 67.1   | 1.3       |
| 70°-80°   | 56.0   | 1.1       |
| 80°-90°   | 14.2   | 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°    | 3786.5 | 76.1      |
| 0°-40°    | 4579.7 | 92.1      |
| 0°-60°    | 4837.5 | 97.2      |
| 0°-90°    | 4974.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4974.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | Flux |
|-----|-------|------|
| 0°  | 17292 |      |
| 5°  | 15418 | ###  |
| 15° | 5260  | 1501 |
| 25° | 2066  | 980  |
| 35° | 1381  | 793  |
| 45° | 179   | 161  |
| 55° | 109   | 97   |
| 65° | 66    | 67   |
| 75° | 52    | 56   |
| 85° | 4     | 14   |
| 90° | 0     |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      |
|-------|---------|
| 0°    | 17292.0 |
| 1°    | 17139.0 |
| 2°    | 16828.9 |
| 3°    | 16440.0 |
| 4°    | 15990.0 |
| 5°    | 15417.7 |
| 6°    | 14675.0 |
| 7°    | 13735.7 |
| 8°    | 12639.1 |
| 9°    | 11520.7 |
| 10°   | 10376.0 |
| 11°   | 9235.8  |
| 12°   | 8143.6  |
| 13°   | 7099.4  |
| 14°   | 6142.6  |
| 15°   | 5260.1  |
| 16°   | 4543.6  |
| 17°   | 3883.9  |
| 18°   | 3368.4  |
| 19°   | 2966.5  |
| 20°   | 2669.4  |
| 22.5° | 2254.3  |
| 25°   | 2066.5  |
| 26°   | 2018.4  |
| 27°   | 1983.5  |
| 28°   | 1948.5  |
| 29°   | 1909.2  |
| 30°   | 1874.2  |
| 32.5° | 1743.2  |
| 35°   | 1380.6  |
| 37.5° | 886.9   |
| 40°   | 445.6   |
| 42.5° | 214.1   |
| 45°   | 179.1   |
| 47.5° | 157.3   |
| 50°   | 139.8   |
| 52.5° | 122.3   |
| 55°   | 109.2   |
| 57.5° | 91.7    |
| 60°   | 83.0    |
| 62.5° | 74.3    |
| 65°   | 65.5    |
| 67.5° | 61.2    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°   |
|-------|------|
| 75°   | 52.4 |
| 77.5° | 52.4 |
| 80°   | 43.7 |
| 82.5° | 26.2 |
| 85°   | 4.4  |
| 87.5° | 0.0  |
| 90°   | 0.0  |



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— 0°-180°







|       |  |      |
|-------|--|------|
| 70°   |  | 56.8 |
| 72.5° |  | 56.8 |



(END OF REPORT)