

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: P434777

Luminaire Tested: **HCMR2R40935ED010MMS**

Issue Date: 11/24/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P434777  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2008-933-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 11/24/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCMR2R40935ED010MMS  
Description: HALO COMMERCIAL 4INCH ADJUSTABLE MULTIPLE, 40 DEG REFLECTOR OPTIC  
Light Source: HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2338.8 lumens  
Efficiency: N/A  
Efficacy: 82.4 lumens/watt  
Spacing Criteria (0/90/45): 0.72 / 0.72 / 0.76  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

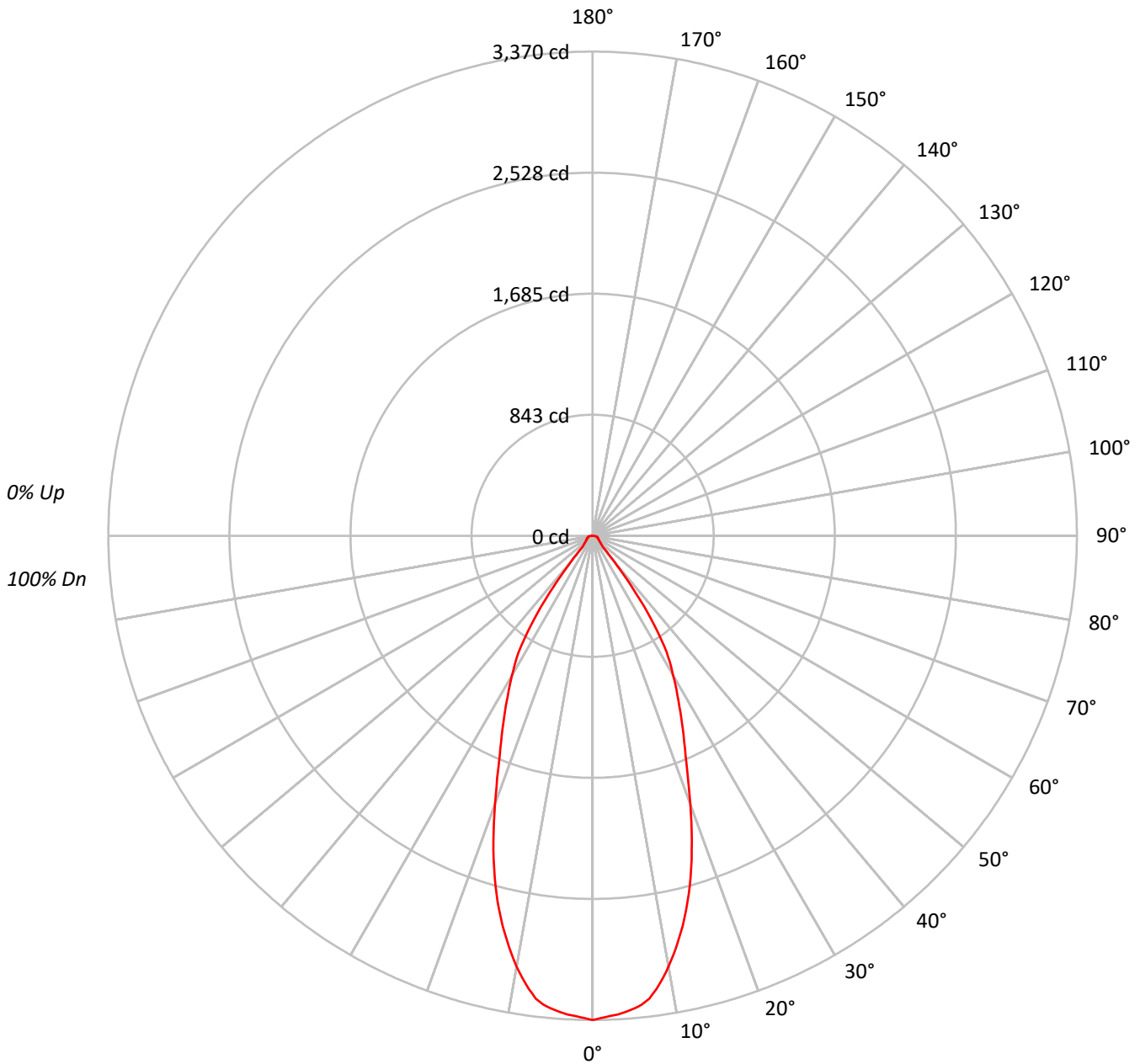
Input Watts (W): 28.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P434777

CATALOG NUMBER: HCMR2R40935ED010MMS

### Luminous Intensity Polar Plot





TEST NUMBER: P434777

CATALOG NUMBER: HCMR2R40935ED010MMS

**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  | 0   |
| 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  | 95  | 105 | 101 | 97  | 94  | 97  | 94  | 92  | 94  | 92  | 90  | 92  | 90  | 88  | 86  |
| 3   | 102 | 95  | 90  | 86  | 100 | 94  | 89  | 86  | 91  | 88  | 84  | 89  | 86  | 83  | 87  | 84  | 82  | 80  |
| 4   | 97  | 89  | 84  | 80  | 95  | 88  | 83  | 79  | 86  | 82  | 78  | 84  | 80  | 77  | 82  | 79  | 76  | 75  |
| 5   | 92  | 84  | 78  | 74  | 91  | 83  | 78  | 73  | 81  | 76  | 73  | 80  | 75  | 72  | 78  | 74  | 72  | 70  |
| 6   | 88  | 79  | 73  | 69  | 86  | 78  | 73  | 69  | 77  | 72  | 68  | 75  | 71  | 68  | 74  | 70  | 67  | 66  |
| 7   | 84  | 75  | 69  | 65  | 82  | 74  | 68  | 64  | 73  | 68  | 64  | 72  | 67  | 64  | 70  | 66  | 63  | 62  |
| 8   | 80  | 71  | 65  | 61  | 79  | 70  | 64  | 61  | 69  | 64  | 60  | 68  | 63  | 60  | 67  | 63  | 60  | 58  |
| 9   | 76  | 67  | 61  | 57  | 75  | 66  | 61  | 57  | 66  | 61  | 57  | 65  | 60  | 57  | 64  | 60  | 57  | 55  |
| 10  | 73  | 64  | 58  | 54  | 72  | 63  | 58  | 54  | 62  | 57  | 54  | 62  | 57  | 54  | 61  | 57  | 54  | 52  |

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

|     |         |
|-----|---------|
|     | 0°      |
| 0°  | 1662936 |
| 5°  | 1636204 |
| 10° | 1525417 |
| 15° | 1319457 |
| 20° | 1042736 |
| 25° | 807158  |
| 30° | 638868  |
| 35° | 430166  |
| 40° | 141243  |
| 45° | 59727   |
| 50° | 51273   |
| 55° | 46708   |
| 60° | 45292   |
| 65° | 48799   |
| 70° | 51210   |
| 75° | 63669   |
| 80° | 76998   |
| 85° | 11888   |



TEST NUMBER: P434777

CATALOG NUMBER: HCMR2R40935ED010MMS

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 307.6  | 13.2      |
| 10°-20°   | 709.0  | 30.3      |
| 20°-30°   | 684.9  | 29.3      |
| 30°-40°   | 426.2  | 18.2      |
| 40°-50°   | 77.8   | 3.3       |
| 50°-60°   | 49.0   | 2.1       |
| 60°-70°   | 40.6   | 1.7       |
| 70°-80°   | 34.7   | 1.5       |
| 80°-90°   | 8.8    | 0.4       |
| 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°    | 1701.6 | 72.8      |
| 0°-40°    | 2127.8 | 91.0      |
| 0°-60°    | 2254.6 | 96.4      |
| 0°-90°    | 2338.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2338.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 3370 |      |
| 5°  | 3304 | 308  |
| 15° | 2583 | 709  |
| 25° | 1483 | 685  |
| 35° | 714  | 426  |
| 45° | 86   | 78   |
| 55° | 54   | 49   |
| 65° | 42   | 41   |
| 75° | 33   | 35   |
| 85° | 2    | 9    |
| 90° | 0    |      |



TEST NUMBER: P434777

CATALOG NUMBER: HCMR2R40935ED010MMS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     |
|-------|--------|
| 0°    | 3370.5 |
| 1°    | 3358.0 |
| 2°    | 3345.5 |
| 3°    | 3337.1 |
| 4°    | 3322.5 |
| 5°    | 3303.7 |
| 6°    | 3280.7 |
| 7°    | 3245.2 |
| 8°    | 3186.8 |
| 9°    | 3117.8 |
| 10°   | 3044.8 |
| 11°   | 2963.3 |
| 12°   | 2875.6 |
| 13°   | 2785.8 |
| 14°   | 2687.7 |
| 15°   | 2583.2 |
| 16°   | 2472.6 |
| 17°   | 2355.6 |
| 18°   | 2234.5 |
| 19°   | 2111.3 |
| 20°   | 1986.0 |
| 21°   | 1867.0 |
| 22°   | 1754.2 |
| 23°   | 1653.9 |
| 24°   | 1566.2 |
| 25°   | 1482.7 |
| 26°   | 1405.4 |
| 27°   | 1330.3 |
| 28°   | 1257.2 |
| 29°   | 1188.2 |
| 30°   | 1121.4 |
| 32.5° | 958.5  |
| 35°   | 714.2  |
| 37.5° | 444.8  |
| 40°   | 219.3  |
| 42.5° | 104.4  |
| 45°   | 85.6   |
| 47.5° | 75.2   |
| 50°   | 66.8   |
| 52.5° | 58.5   |
| 55°   | 54.3   |
| 57.5° | 50.1   |
| 60°   | 45.9   |



TEST NUMBER: P434777

CATALOG NUMBER: HCMR2R40935ED010MMS

**CANDELA DISTRIBUTION (continued):**

|       | 0°   |
|-------|------|
| 67.5° | 37.6 |
| 70°   | 35.5 |
| 72.5° | 35.5 |
| 75°   | 33.4 |
| 77.5° | 31.3 |
| 80°   | 27.1 |
| 82.5° | 16.7 |
| 85°   | 2.1  |
| 87.5° | 0.0  |
| 90°   | 0.0  |



Report Generated By E9808895 / USPTCWHP6082093







— 0°-180°







|       |  |      |
|-------|--|------|
| 62.5° |  | 43.9 |
| 65°   |  | 41.8 |



(END OF REPORT)