

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

Report Number: P123780

Luminaire Tested: **ELSG406935SN (25° BEAM - 0° TILT)**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P123780  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P13997)  
Test Lab: INNOVATION CENTER-P1  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: ELSG406935SN (25° BEAM - 0° TILT)  
Description: HALO 4 INCH RECESSED FIXTURE WITH SQUARE SATIN NICKEL TRIM,  
SATIN NICKEL GIMBAL, NARROW UPPER REFLECTOR AND CLEAR LENS.  
Light Source: (1)SURFACE MOUNT LED, 3500K CCT, 90CRI  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 830.0 lumens  
Efficiency: N/A  
Efficacy: 63.8 lumens/watt  
Spacing Criteria (0/90/45): 0.5 / 0.5 / 0.56  
Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')  
CIE Type: Direct

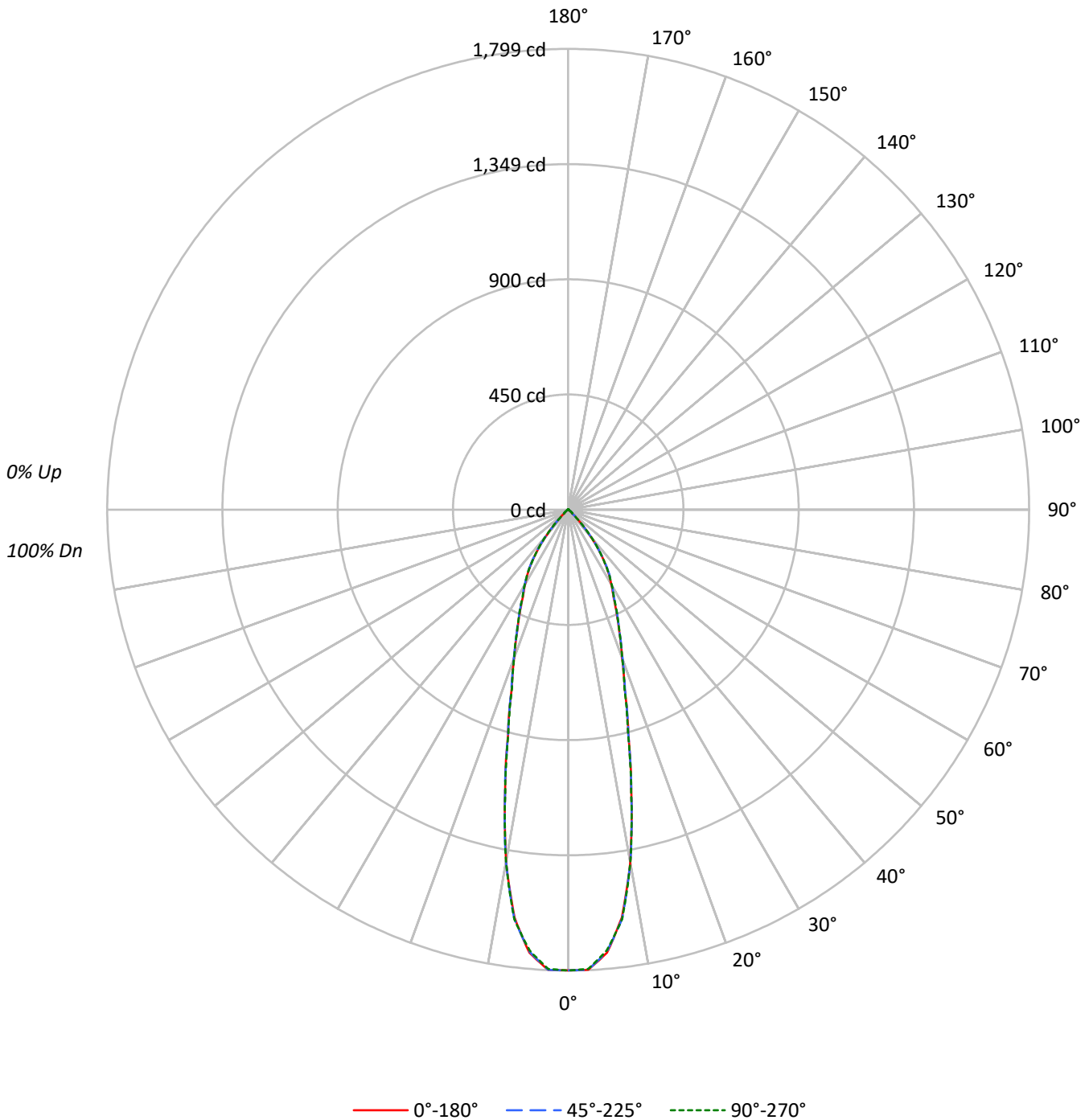
Input Watts (W): 13  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|
| RF  | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |    |    | 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 |    |    |    | 100 |
| 1   | 114 | 111 | 109 | 107 | 111 | 109 | 107 | 105 | 105 | 103 | 102 | 101 | 100 | 99  | 98  | 97  | 96  | 94  |    |    |    | 94  |
| 2   | 109 | 104 | 100 | 97  | 107 | 102 | 99  | 96  | 99  | 96  | 94  | 96  | 94  | 92  | 94  | 92  | 90  | 88  |    |    |    | 88  |
| 3   | 104 | 98  | 93  | 89  | 102 | 96  | 92  | 89  | 94  | 90  | 87  | 91  | 88  | 86  | 89  | 87  | 85  | 83  |    |    |    | 83  |
| 4   | 99  | 92  | 87  | 83  | 97  | 91  | 86  | 82  | 89  | 85  | 81  | 87  | 83  | 80  | 85  | 82  | 80  | 78  |    |    |    | 78  |
| 5   | 95  | 87  | 81  | 77  | 93  | 86  | 81  | 77  | 84  | 80  | 76  | 82  | 79  | 76  | 81  | 78  | 75  | 74  |    |    |    | 74  |
| 6   | 90  | 82  | 77  | 73  | 89  | 81  | 76  | 72  | 80  | 75  | 72  | 79  | 74  | 71  | 77  | 74  | 71  | 70  |    |    |    | 70  |
| 7   | 86  | 78  | 72  | 68  | 85  | 77  | 72  | 68  | 76  | 71  | 68  | 75  | 71  | 68  | 74  | 70  | 67  | 66  |    |    |    | 66  |
| 8   | 83  | 74  | 68  | 65  | 82  | 73  | 68  | 65  | 72  | 68  | 64  | 71  | 67  | 64  | 70  | 67  | 64  | 63  |    |    |    | 63  |
| 9   | 79  | 70  | 65  | 61  | 78  | 70  | 65  | 61  | 69  | 64  | 61  | 68  | 64  | 61  | 67  | 64  | 61  | 59  |    |    |    | 59  |
| 10  | 76  | 67  | 62  | 58  | 75  | 67  | 62  | 58  | 66  | 61  | 58  | 65  | 61  | 58  | 65  | 61  | 58  | 57  |    |    |    | 57  |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 696956 | 696956 | 696956 |
| 5°  | 675307 | 673596 | 671923 |
| 10° | 549019 | 549884 | 550317 |
| 15° | 364221 | 363780 | 362055 |
| 20° | 254349 | 255668 | 254349 |
| 25° | 191332 | 193171 | 193171 |
| 30° | 150521 | 152445 | 151997 |
| 35° | 115282 | 116323 | 114762 |
| 40° | 68188  | 69807  | 69807  |
| 45° | 24222  | 25428  | 24825  |
| 50° | 11032  | 12358  | 11695  |
| 55° | 8039   | 9458   | 8039   |
| 60° | 4185   | 5037   | 5037   |
| 65° | 2017   | 2934   | 2017   |
| 70° | 4872   | 3626   | 4872   |
| 75° | 1647   | 1647   | 0      |
| 80° | 0      | 0      | 0      |
| 85° | 4891   | 9781   | 9781   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 154.9  | 18.7      |
| 10°-20°   | 256.9  | 31.0      |
| 20°-30°   | 209.0  | 25.2      |
| 30°-40°   | 149.8  | 18.0      |
| 40°-50°   | 43.7   | 5.3       |
| 50°-60°   | 11.1   | 1.3       |
| 60°-70°   | 2.4    | 0.3       |
| 70°-80°   | 1.3    | 0.2       |
| 80°-90°   | 0.8    | 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°    | 620.9  | 74.8      |
| 0°-40°    | 770.7  | 92.9      |
| 0°-60°    | 825.5  | 99.5      |
| 0°-90°    | 830.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 830.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1799 | 1799  | 1799 | 1799  | 1799 |      |
| 5°  | 1736 | 1732  | 1732 | 1727  | 1727 | 155  |
| 15° | 908  | 906   | 907  | 905   | 902  | 257  |
| 25° | 448  | 448   | 452  | 452   | 452  | 208  |
| 35° | 244  | 244   | 246  | 246   | 243  | 149  |
| 45° | 44   | 44    | 46   | 45    | 45   | 43   |
| 55° | 12   | 13    | 14   | 13    | 12   | 10   |
| 65° | 2    | 2     | 3    | 2     | 2    | 2    |
| 75° | 1    | 1     | 1    | 1     | 0    | 1    |
| 85° | 1    | 2     | 2    | 2     | 2    | 0    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1798.6 | 1798.6 | 1798.6 | 1798.6 | 1798.6 |
| 2.5°  | 1797.5 | 1796.4 | 1797.5 | 1795.4 | 1794.3 |
| 5°    | 1736.1 | 1731.7 | 1731.7 | 1727.4 | 1727.4 |
| 7.5°  | 1605.6 | 1606.7 | 1611.0 | 1612.1 | 1612.1 |
| 10°   | 1395.3 | 1395.3 | 1397.5 | 1396.4 | 1398.6 |
| 12.5° | 1139.8 | 1140.8 | 1140.8 | 1138.7 | 1136.5 |
| 15°   | 907.9  | 905.8  | 906.8  | 904.7  | 902.5  |
| 17.5° | 733.2  | 734.3  | 736.5  | 734.3  | 731.1  |
| 20°   | 616.8  | 616.8  | 620.0  | 618.9  | 616.8  |
| 22.5° | 523.0  | 526.2  | 526.2  | 525.1  | 525.1  |
| 25°   | 447.5  | 447.5  | 451.8  | 451.8  | 451.8  |
| 27.5° | 381.7  | 383.9  | 386.0  | 386.0  | 387.1  |
| 30°   | 336.4  | 337.5  | 340.7  | 339.7  | 339.7  |
| 32.5° | 293.3  | 293.3  | 297.6  | 296.5  | 294.4  |
| 35°   | 243.7  | 243.7  | 245.9  | 245.9  | 242.6  |
| 37.5° | 190.9  | 191.9  | 193.0  | 191.9  | 190.9  |
| 40°   | 134.8  | 134.8  | 138.0  | 138.0  | 138.0  |
| 42.5° | 85.2   | 85.2   | 87.3   | 87.3   | 88.4   |
| 45°   | 44.2   | 44.2   | 46.4   | 45.3   | 45.3   |
| 47.5° | 21.6   | 22.6   | 22.6   | 22.6   | 23.7   |
| 50°   | 18.3   | 19.4   | 20.5   | 19.4   | 19.4   |
| 52.5° | 14.0   | 15.1   | 18.3   | 15.1   | 16.2   |
| 55°   | 11.9   | 12.9   | 14.0   | 12.9   | 11.9   |
| 57.5° | 7.5    | 8.6    | 8.6    | 8.6    | 7.5    |
| 60°   | 5.4    | 6.5    | 6.5    | 5.4    | 6.5    |
| 62.5° | 0.0    | 0.0    | 1.1    | 0.0    | 0.0    |
| 65°   | 2.2    | 2.2    | 3.2    | 2.2    | 2.2    |
| 67.5° | 2.2    | 2.2    | 3.2    | 2.2    | 1.1    |
| 70°   | 4.3    | 3.2    | 3.2    | 3.2    | 4.3    |
| 72.5° | 0.0    | 0.0    | 2.2    | 0.0    | 1.1    |
| 75°   | 1.1    | 1.1    | 1.1    | 1.1    | 0.0    |
| 77.5° | 1.1    | 1.1    | 2.2    | 1.1    | 1.1    |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0    | 1.1    | 1.1    | 1.1    | 1.1    |
| 85°   | 1.1    | 2.2    | 2.2    | 2.2    | 2.2    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)