

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: P123810

Luminaire Tested: **ELSG406927TBZ (50° BEAM - 0° TILT)**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P123810
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14001)
Test Lab: INNOVATION CENTER-P1
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ELSG406927TBZ (50° BEAM - 0° TILT)
Description: HALO 4 INCH RECESSED FIXTURE WITH SQUARE TUSCAN BRONZE TRIM,
TUSCAN BRONZE GIMBAL, NARROW UPPER REFLECTOR AND CLEAR LENS.
Light Source: (1)SURFACE MOUNT LED, 2700K CCT, 90CRI
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 670.0 lumens
Efficiency: N/A
Efficacy: 51.5 lumens/watt
Spacing Criteria (0/90/45): 0.88 / 0.89 / 0.82
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

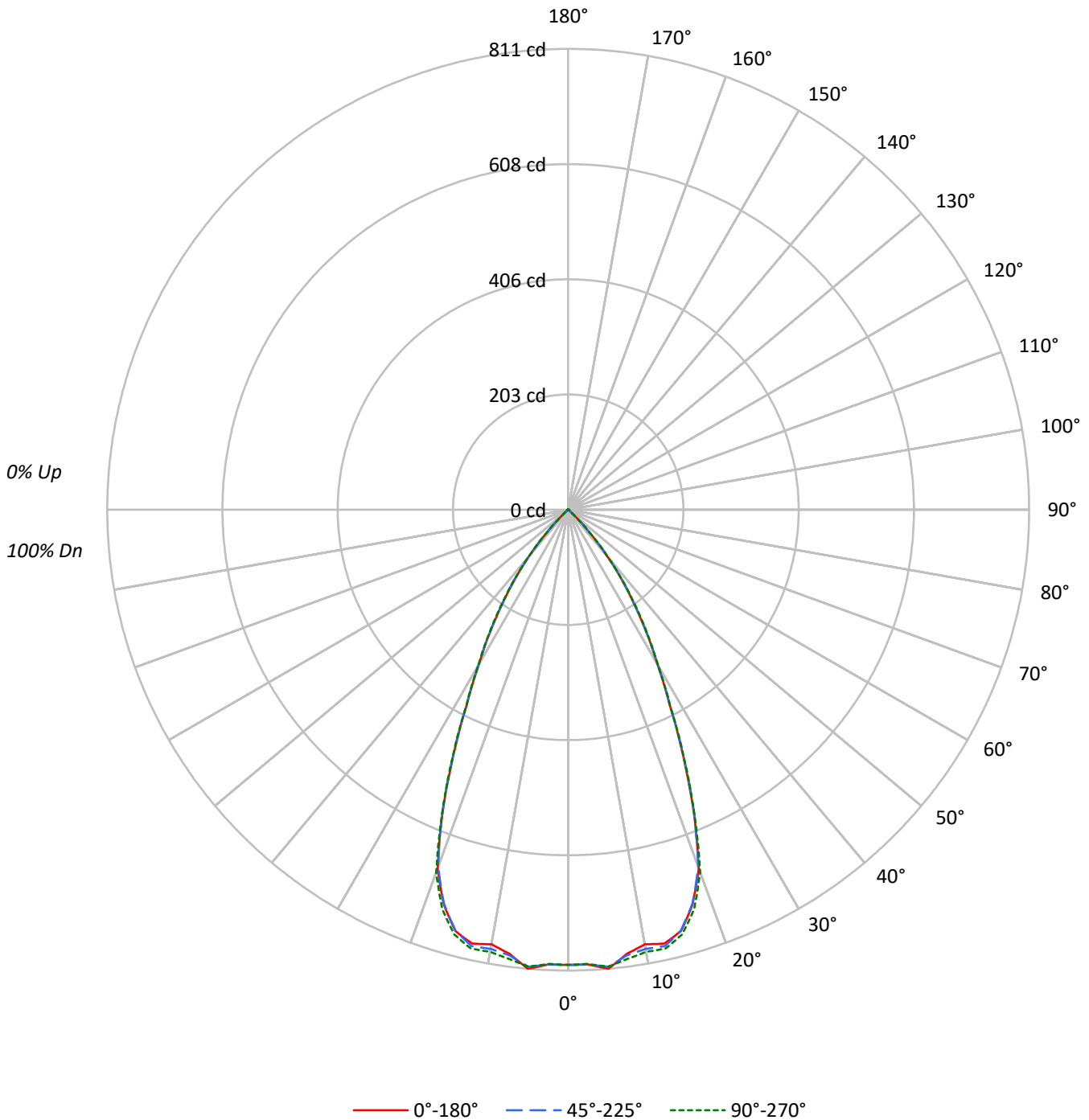
Input Watts (W): 13
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 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 | 100 | 100 | 100 | 100 | 100 | | |
| 1 | 114 | 111 | 109 | 106 | 111 | 109 | 107 | 105 | 105 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | 96 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | | |
| 2 | 108 | 104 | 100 | 97 | 106 | 102 | 98 | 95 | 99 | 96 | 93 | 96 | 93 | 91 | 93 | 91 | 90 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | | |
| 3 | 103 | 97 | 92 | 88 | 101 | 96 | 91 | 88 | 93 | 89 | 86 | 91 | 88 | 85 | 88 | 86 | 84 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | | |
| 4 | 98 | 91 | 86 | 82 | 96 | 90 | 85 | 81 | 88 | 84 | 80 | 86 | 82 | 79 | 84 | 81 | 78 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | | |
| 5 | 94 | 86 | 80 | 76 | 92 | 85 | 79 | 75 | 83 | 78 | 75 | 81 | 77 | 74 | 80 | 76 | 74 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | | |
| 6 | 89 | 81 | 75 | 71 | 88 | 80 | 74 | 70 | 78 | 74 | 70 | 77 | 73 | 69 | 76 | 72 | 69 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | | |
| 7 | 85 | 76 | 70 | 66 | 84 | 75 | 70 | 66 | 74 | 69 | 66 | 73 | 69 | 65 | 72 | 68 | 65 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | | |
| 8 | 81 | 72 | 66 | 62 | 80 | 71 | 66 | 62 | 70 | 65 | 62 | 69 | 65 | 61 | 68 | 64 | 61 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | |
| 9 | 77 | 68 | 62 | 58 | 76 | 68 | 62 | 58 | 67 | 62 | 58 | 66 | 61 | 58 | 65 | 61 | 58 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | | |
| 10 | 74 | 64 | 59 | 55 | 73 | 64 | 59 | 55 | 63 | 58 | 55 | 63 | 58 | 55 | 62 | 58 | 55 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 395197 | 395197 | 395197 |
| 5° | 401610 | 399827 | 399827 |
| 10° | 389069 | 393127 | 395833 |
| 15° | 392027 | 391567 | 395296 |
| 20° | 352672 | 351254 | 356452 |
| 25° | 260869 | 261849 | 262339 |
| 30° | 179229 | 179229 | 180255 |
| 35° | 120883 | 121967 | 124135 |
| 40° | 69881 | 69881 | 69881 |
| 45° | 20793 | 20793 | 20165 |
| 50° | 4836 | 4836 | 4836 |
| 55° | 2322 | 1548 | 2322 |
| 60° | 2664 | 2664 | 1776 |
| 65° | 2101 | 2101 | 1051 |
| 70° | 0 | 0 | 0 |
| 75° | 0 | 0 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 5095 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 76.0 | 11.3 |
| 10°-20° | 212.0 | 31.7 |
| 20°-30° | 219.4 | 32.7 |
| 30°-40° | 127.4 | 19.0 |
| 40°-50° | 30.2 | 4.5 |
| 50°-60° | 3.1 | 0.5 |
| 60°-70° | 1.2 | 0.2 |
| 70°-80° | 0.4 | 0.1 |
| 80°-90° | 0.2 | 0.0 |
| 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° | 507.4 | 75.7 |
| 0°-40° | 634.9 | 94.8 |
| 0°-60° | 668.2 | 99.7 |
| 0°-90° | 670.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 670.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 801 | 801 | 801 | 801 | 801 | |
| 5° | 811 | 811 | 807 | 807 | 807 | 76 |
| 15° | 768 | 768 | 767 | 774 | 774 | 211 |
| 25° | 479 | 478 | 481 | 479 | 482 | 219 |
| 35° | 201 | 202 | 202 | 205 | 206 | 127 |
| 45° | 30 | 30 | 30 | 30 | 29 | 30 |
| 55° | 3 | 3 | 2 | 3 | 3 | 3 |
| 65° | 2 | 2 | 2 | 2 | 1 | 1 |
| 75° | 0 | 0 | 0 | 0 | 0 | 1 |
| 85° | 0 | 0 | 1 | 1 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P123810

CATALOG NUMBER: ELSG406927TBZ (50° BEAM - 0° TILT)

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 801.0 | 801.0 | 801.0 | 801.0 | 801.0 |
| 2.5° | 801.0 | 801.9 | 801.0 | 801.0 | 800.1 |
| 5° | 810.9 | 810.9 | 807.3 | 807.3 | 807.3 |
| 7.5° | 788.3 | 789.2 | 791.0 | 795.6 | 797.4 |
| 10° | 776.6 | 779.3 | 784.7 | 791.0 | 790.1 |
| 12.5° | 782.0 | 782.9 | 786.5 | 793.8 | 791.0 |
| 15° | 767.5 | 767.5 | 766.6 | 773.9 | 773.9 |
| 17.5° | 727.8 | 727.8 | 726.9 | 733.2 | 736.8 |
| 20° | 671.7 | 670.8 | 669.0 | 671.7 | 678.9 |
| 22.5° | 577.7 | 579.5 | 579.5 | 579.5 | 580.4 |
| 25° | 479.2 | 478.2 | 481.0 | 479.2 | 481.9 |
| 27.5° | 386.0 | 385.1 | 386.9 | 387.8 | 387.8 |
| 30° | 314.6 | 314.6 | 314.6 | 315.5 | 316.4 |
| 32.5° | 256.8 | 255.8 | 256.8 | 258.6 | 259.5 |
| 35° | 200.7 | 201.6 | 202.5 | 205.2 | 206.1 |
| 37.5° | 153.7 | 153.7 | 155.5 | 156.4 | 156.4 |
| 40° | 108.5 | 107.6 | 108.5 | 108.5 | 108.5 |
| 42.5° | 65.1 | 65.1 | 65.1 | 65.1 | 66.0 |
| 45° | 29.8 | 29.8 | 29.8 | 29.8 | 28.9 |
| 47.5° | 9.9 | 9.9 | 9.9 | 9.0 | 9.9 |
| 50° | 6.3 | 5.4 | 6.3 | 6.3 | 6.3 |
| 52.5° | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| 55° | 2.7 | 2.7 | 1.8 | 2.7 | 2.7 |
| 57.5° | 2.7 | 3.6 | 2.7 | 2.7 | 2.7 |
| 60° | 2.7 | 2.7 | 2.7 | 1.8 | 1.8 |
| 62.5° | 0.9 | 0.9 | 1.8 | 0.9 | 0.9 |
| 65° | 1.8 | 1.8 | 1.8 | 1.8 | 0.9 |
| 67.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 |
| 70° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 1.8 | 0.9 | 1.8 | 0.9 | 0.9 |
| 75° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.9 | 0.9 | 0.0 |
| 87.5° | 0.9 | 0.0 | 0.9 | 0.0 | 0.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)