

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: P123669

Luminaire Tested: **EL406927-TL410SC**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P123669
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P13976)
Test Lab: INNOVATION CENTER-P1
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: EL406927-TL410SC
Description: HALO 4-INCH RECESSED LED DOWNLIGHT
SPECULAR REFLECTOR, DIFFUSE DROP LENS AND WHITE TRIM RING
Light Source: (1)SURFACE MOUNT LED, 2700K CCT, 90CRI
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 660.0 lumens
Efficiency: N/A
Efficacy: 50.8 lumens/watt
Spacing Criteria (0/90/45): 1.29 / 1.29 / 1.25
Luminous Opening: Circular (Dia: 0.29' x H: 0')
CIE Type: Direct

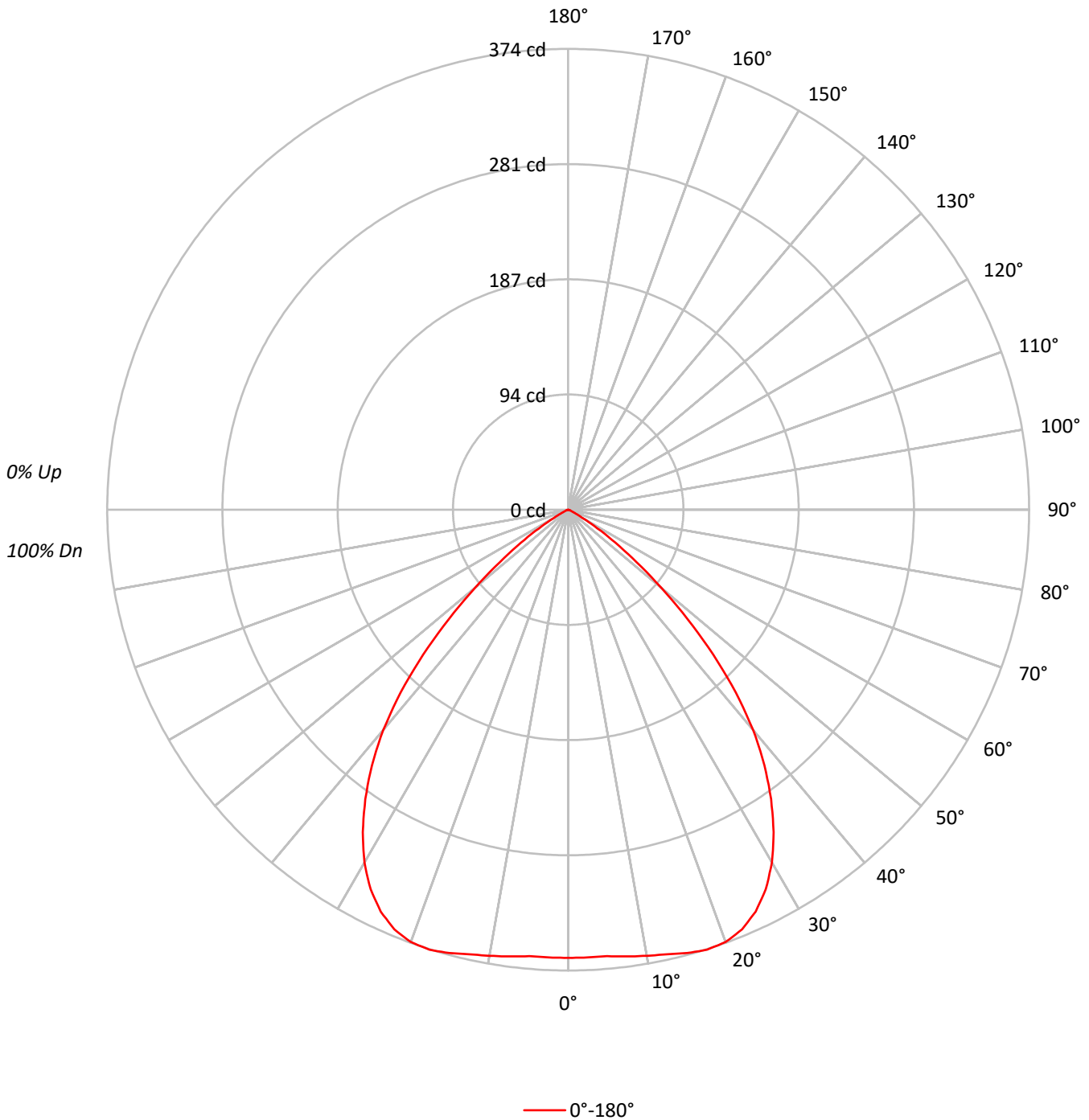
Input Watts (W): 13
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 112 | 109 | 106 | 104 | 110 | 107 | 104 | 102 | 103 | 101 | 99 | 99 | 97 | 96 | 96 | 94 | 93 | 91 |
| 2 | 105 | 100 | 95 | 91 | 103 | 98 | 93 | 90 | 94 | 91 | 88 | 91 | 88 | 86 | 89 | 86 | 84 | 82 |
| 3 | 99 | 91 | 85 | 80 | 96 | 89 | 84 | 79 | 87 | 82 | 78 | 84 | 80 | 77 | 82 | 78 | 76 | 74 |
| 4 | 92 | 83 | 76 | 71 | 90 | 82 | 76 | 71 | 79 | 74 | 70 | 77 | 73 | 69 | 75 | 71 | 68 | 66 |
| 5 | 86 | 76 | 69 | 64 | 84 | 75 | 68 | 63 | 73 | 67 | 63 | 71 | 66 | 62 | 70 | 65 | 62 | 60 |
| 6 | 80 | 70 | 62 | 57 | 79 | 69 | 62 | 57 | 67 | 61 | 57 | 66 | 60 | 56 | 64 | 60 | 56 | 54 |
| 7 | 75 | 64 | 57 | 52 | 74 | 63 | 57 | 52 | 62 | 56 | 51 | 61 | 55 | 51 | 60 | 55 | 51 | 49 |
| 8 | 71 | 59 | 52 | 47 | 69 | 59 | 52 | 47 | 57 | 51 | 47 | 56 | 51 | 47 | 55 | 50 | 46 | 45 |
| 9 | 66 | 55 | 48 | 43 | 65 | 54 | 48 | 43 | 53 | 47 | 43 | 52 | 47 | 43 | 51 | 46 | 43 | 41 |
| 10 | 62 | 51 | 44 | 40 | 61 | 51 | 44 | 40 | 50 | 44 | 39 | 49 | 43 | 39 | 48 | 43 | 39 | 38 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|-------|
| | 0° |
| 0° | 58593 |
| 5° | 58817 |
| 10° | 60135 |
| 15° | 62128 |
| 20° | 64017 |
| 25° | 63957 |
| 30° | 61500 |
| 35° | 56425 |
| 40° | 49085 |
| 45° | 37889 |
| 50° | 24612 |
| 55° | 13117 |
| 60° | 4382 |
| 65° | 1487 |
| 70° | 471 |
| 75° | 622 |
| 80° | 0 |
| 85° | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 34.9 | 5.3 |
| 10°-20° | 105.5 | 16.0 |
| 20°-30° | 164.6 | 24.9 |
| 30°-40° | 178.0 | 27.0 |
| 40°-50° | 127.2 | 19.3 |
| 50°-60° | 44.3 | 6.7 |
| 60°-70° | 4.9 | 0.7 |
| 70°-80° | 0.7 | 0.1 |
| 80°-90° | 0.0 | 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° | 305.0 | 46.2 |
| 0°-40° | 482.9 | 73.2 |
| 0°-60° | 654.5 | 99.2 |
| 0°-90° | 660.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 660.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|-----|------|
| 0° | 364 | |
| 5° | 364 | 35 |
| 15° | 372 | 105 |
| 25° | 360 | 165 |
| 35° | 287 | 178 |
| 45° | 166 | 127 |
| 55° | 47 | 44 |
| 65° | 4 | 5 |
| 75° | 1 | 1 |
| 85° | 0 | 0 |
| 90° | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° |
|-------|-------|
| 0° | 363.7 |
| 2.5° | 363.7 |
| 5° | 363.7 |
| 7.5° | 365.7 |
| 10° | 367.6 |
| 12.5° | 369.5 |
| 15° | 372.5 |
| 17.5° | 374.4 |
| 20° | 373.4 |
| 22.5° | 368.6 |
| 25° | 359.8 |
| 27.5° | 347.2 |
| 30° | 330.6 |
| 32.5° | 310.2 |
| 35° | 286.9 |
| 37.5° | 261.6 |
| 40° | 233.4 |
| 42.5° | 201.3 |
| 45° | 166.3 |
| 47.5° | 131.3 |
| 50° | 98.2 |
| 52.5° | 70.0 |
| 55° | 46.7 |
| 57.5° | 28.2 |
| 60° | 13.6 |
| 62.5° | 6.8 |
| 65° | 3.9 |
| 67.5° | 1.9 |
| 70° | 1.0 |
| 72.5° | 1.0 |
| 75° | 1.0 |
| 77.5° | 0.0 |
| 80° | 0.0 |
| 82.5° | 0.0 |
| 85° | 0.0 |
| 87.5° | 0.0 |
| 90° | 0.0 |

(END OF REPORT)