

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: P20154

Luminaire Tested: **ML712835TUNVD010-494H06**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P20154
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML712835TUNVD010-494H06
Description: HALO 6" RECESSED LED DOWNLIGHT WITH HAZE FINISH TRIM
REFLECTOR WITH MODULE ML712835TUNVD010
Light Source: (1)SURFACE MOUNT LED ON HEAT SINK MODULE
(1)24 WATTS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: 1473 (1 lamp)
Luminaire Lumens: 1474.7 lumens
Efficiency: 100.1%
Efficacy: 55.9 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.28 / 1.34
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

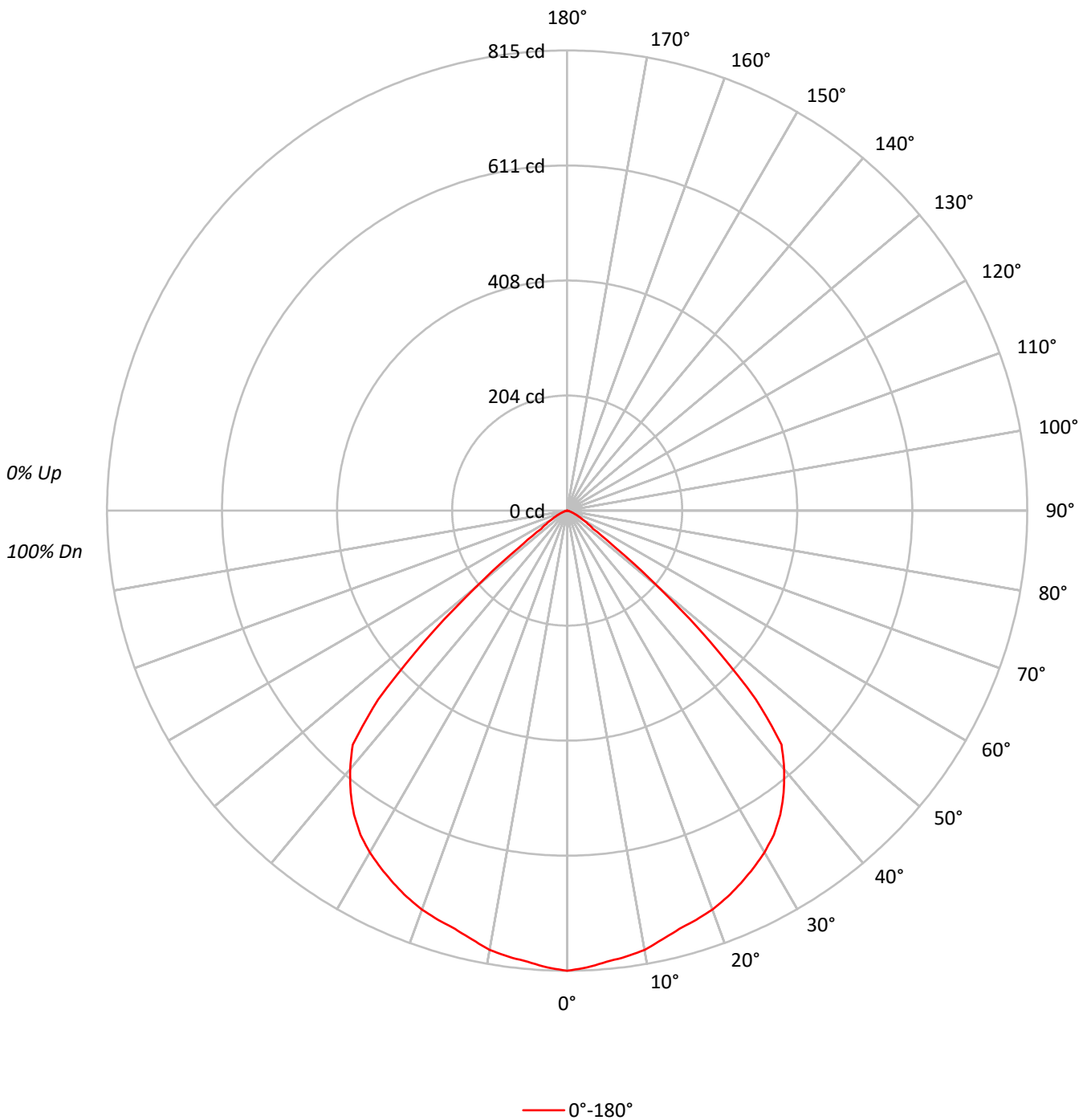
Input Watts (W): 26.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 107 | 107 | 107 | 102 | 102 | 102 | 100 |
| 1 | 112 | 109 | 106 | 103 | 110 | 107 | 104 | 102 | 103 | 101 | 99 | 99 | 97 | 96 | 96 | 94 | 93 | 91 |
| 2 | 105 | 99 | 94 | 90 | 103 | 98 | 93 | 89 | 94 | 90 | 87 | 91 | 88 | 85 | 88 | 86 | 84 | 82 |
| 3 | 98 | 90 | 84 | 79 | 96 | 89 | 83 | 79 | 86 | 81 | 77 | 84 | 80 | 76 | 81 | 78 | 75 | 73 |
| 4 | 92 | 82 | 76 | 70 | 90 | 81 | 75 | 70 | 79 | 73 | 69 | 77 | 72 | 68 | 75 | 71 | 67 | 66 |
| 5 | 86 | 75 | 68 | 63 | 84 | 74 | 68 | 62 | 72 | 66 | 62 | 71 | 65 | 61 | 69 | 64 | 61 | 59 |
| 6 | 80 | 69 | 62 | 56 | 78 | 68 | 61 | 56 | 66 | 60 | 56 | 65 | 59 | 55 | 63 | 59 | 55 | 53 |
| 7 | 75 | 63 | 56 | 51 | 73 | 63 | 56 | 51 | 61 | 55 | 50 | 60 | 54 | 50 | 59 | 54 | 50 | 48 |
| 8 | 70 | 58 | 51 | 46 | 69 | 58 | 51 | 46 | 56 | 50 | 46 | 55 | 50 | 46 | 54 | 49 | 45 | 44 |
| 9 | 66 | 54 | 47 | 42 | 64 | 53 | 47 | 42 | 52 | 46 | 42 | 51 | 46 | 42 | 50 | 45 | 41 | 40 |
| 10 | 62 | 50 | 43 | 38 | 61 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 38 | 47 | 42 | 38 | 36 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|-------|
| | 0° |
| 0° | 44678 |
| 5° | 44134 |
| 10° | 43976 |
| 15° | 43530 |
| 20° | 43870 |
| 25° | 44035 |
| 30° | 44247 |
| 35° | 44035 |
| 40° | 42794 |
| 45° | 36670 |
| 50° | 18080 |
| 55° | 5352 |
| 60° | 3508 |
| 65° | 2335 |
| 70° | 1282 |
| 75° | 635 |
| 80° | 316 |
| 85° | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|--------|-----------|--------|
| 0°-10° | 76.3 | 5.2 | 5.2 |
| 10°-20° | 217.4 | 14.7 | 14.8 |
| 20°-30° | 335.8 | 22.8 | 22.8 |
| 30°-40° | 409.8 | 27.8 | 27.8 |
| 40°-50° | 340.7 | 23.1 | 23.1 |
| 50°-60° | 72.2 | 4.9 | 4.9 |
| 60°-70° | 18.2 | 1.2 | 1.2 |
| 70°-80° | 3.8 | 0.3 | 0.3 |
| 80°-90° | 0.4 | 0.0 | 0.0 |
| 90°-100° | 0.0 | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 | 0.0 |
| 0°-30° | 629.5 | 42.7 | 42.7 |
| 0°-40° | 1039.4 | 70.5 | 70.6 |
| 0°-60° | 1452.3 | 98.5 | 98.6 |
| 0°-90° | 1474.7 | 100.0 | 100.1 |
| 90°-120° | 0.0 | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 | 0.0 |
| 0°-180° | 1474.7 | 100.0 | 100.1 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|-----|------|
| 0° | 815 | |
| 5° | 802 | 76 |
| 15° | 767 | 217 |
| 25° | 728 | 336 |
| 35° | 658 | 410 |
| 45° | 473 | 341 |
| 55° | 56 | 72 |
| 65° | 18 | 18 |
| 75° | 3 | 4 |
| 85° | 0 | 0 |
| 90° | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° |
|-------|-----|
| 0° | 815 |
| 2.5° | 810 |
| 5° | 802 |
| 7.5° | 797 |
| 10° | 790 |
| 12.5° | 778 |
| 15° | 767 |
| 17.5° | 760 |
| 20° | 752 |
| 22.5° | 741 |
| 25° | 728 |
| 27.5° | 714 |
| 30° | 699 |
| 32.5° | 681 |
| 35° | 658 |
| 37.5° | 630 |
| 40° | 598 |
| 42.5° | 562 |
| 45° | 473 |
| 47.5° | 342 |
| 50° | 212 |
| 52.5° | 107 |
| 55° | 56 |
| 57.5° | 43 |
| 60° | 32 |
| 62.5° | 24 |
| 65° | 18 |
| 67.5° | 12 |
| 70° | 8 |
| 72.5° | 5 |
| 75° | 3 |
| 77.5° | 2 |
| 80° | 1 |
| 82.5° | 1 |
| 85° | 0 |
| 87.5° | 0 |
| 90° | 0 |

(END OF REPORT)