

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: P358703

Luminaire Tested: **HL36AR13WFLD2WED010TL3PINMWWB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P358703
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-462-29)
Test Lab: INNOVATION CENTER (G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL36AR13WFLD2WED010TL3PINMWWB
Description: HL3 13W Round, Wide Flood optic with pin-hole trim, No Lens, Matte White
Light Source: (1) 3100K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 973.9 lumens
Efficiency: N/A
Efficacy: 67.6 lumens/watt
Spacing Criteria (0/90/45): 0.75 / 0.75 / 0.8
Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')
CIE Type: Direct

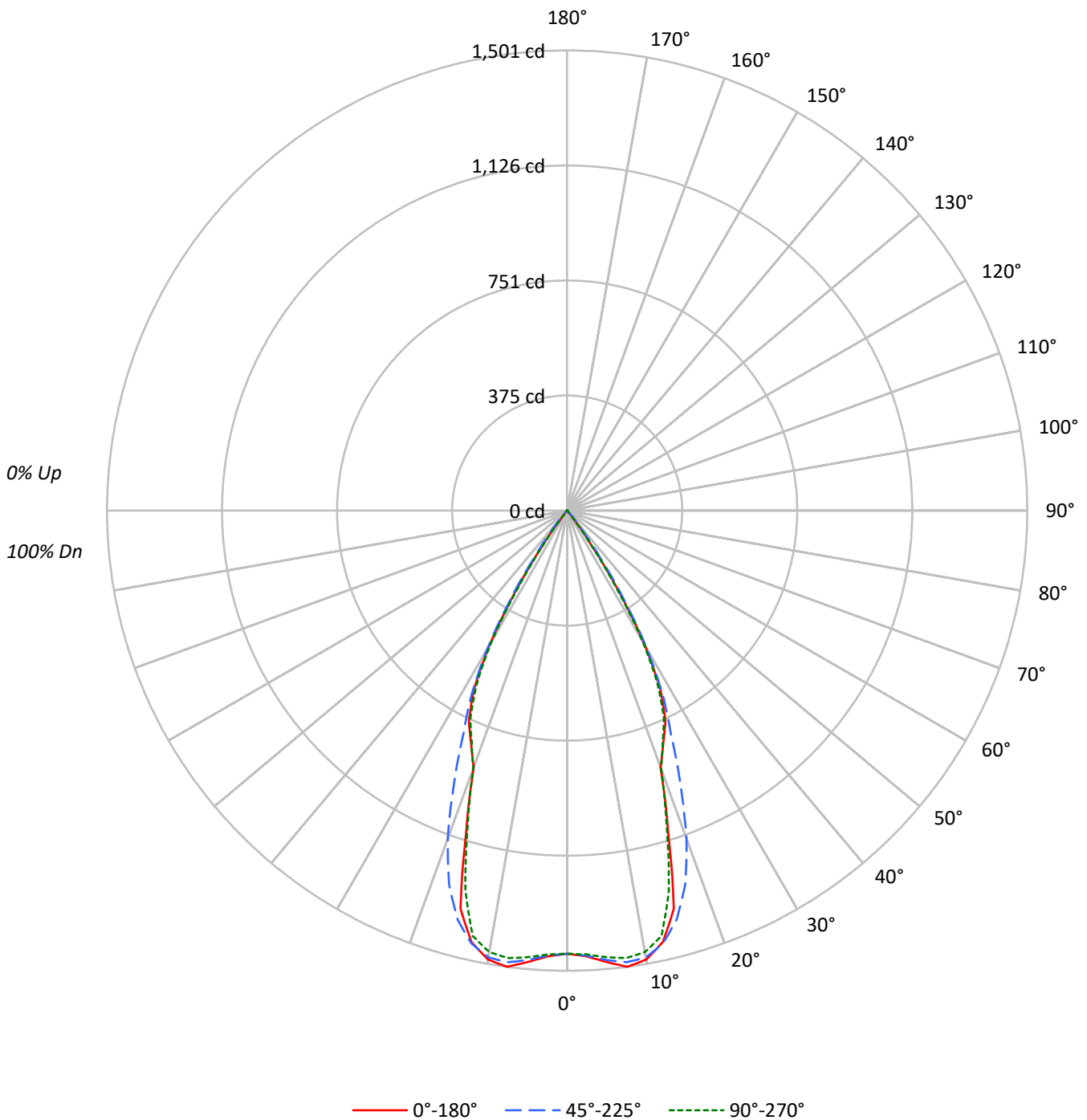
Input Watts (W): 14.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 114 | 112 | 109 | 107 | 112 | 109 | 107 | 106 | 105 | 104 | 102 | 102 | 101 | 99 | 98 | 97 | 97 | 95 |
| 2 | 109 | 105 | 101 | 98 | 107 | 103 | 100 | 97 | 100 | 97 | 95 | 97 | 95 | 93 | 94 | 93 | 91 | 90 |
| 3 | 105 | 99 | 95 | 91 | 103 | 98 | 94 | 90 | 95 | 92 | 89 | 93 | 90 | 88 | 91 | 88 | 86 | 85 |
| 4 | 100 | 94 | 89 | 85 | 99 | 92 | 88 | 85 | 90 | 87 | 84 | 88 | 85 | 83 | 87 | 84 | 82 | 80 |
| 5 | 96 | 89 | 84 | 80 | 94 | 88 | 83 | 79 | 86 | 82 | 79 | 84 | 81 | 78 | 83 | 80 | 77 | 76 |
| 6 | 92 | 84 | 79 | 75 | 91 | 83 | 78 | 75 | 82 | 78 | 74 | 81 | 77 | 74 | 79 | 76 | 73 | 72 |
| 7 | 88 | 80 | 75 | 71 | 87 | 79 | 74 | 71 | 78 | 74 | 70 | 77 | 73 | 70 | 76 | 72 | 70 | 69 |
| 8 | 85 | 76 | 71 | 67 | 83 | 76 | 71 | 67 | 75 | 70 | 67 | 74 | 70 | 67 | 73 | 69 | 66 | 65 |
| 9 | 81 | 73 | 67 | 64 | 80 | 72 | 67 | 64 | 71 | 67 | 64 | 70 | 66 | 63 | 70 | 66 | 63 | 62 |
| 10 | 78 | 69 | 64 | 61 | 77 | 69 | 64 | 61 | 68 | 64 | 61 | 67 | 63 | 60 | 67 | 63 | 60 | 59 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 560053 | 560053 | 560053 |
| 5° | 574834 | 572306 | 568688 |
| 10° | 585140 | 582189 | 575264 |
| 15° | 539291 | 553774 | 514379 |
| 20° | 367379 | 469481 | 368905 |
| 25° | 324260 | 341277 | 319472 |
| 30° | 226900 | 233119 | 221083 |
| 35° | 66227 | 89028 | 62253 |
| 40° | 961 | 17806 | 1872 |
| 45° | 493 | 1041 | 493 |
| 50° | 543 | 543 | 543 |
| 55° | 608 | 608 | 608 |
| 60° | 697 | 697 | 697 |
| 65° | 825 | 825 | 825 |
| 70° | 1020 | 1020 | 1020 |
| 75° | 1347 | 1347 | 1347 |
| 80° | 2008 | 2008 | 2008 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 140.8 | 14.5 |
| 10°-20° | 362.1 | 37.2 |
| 20°-30° | 345.0 | 35.4 |
| 30°-40° | 120.5 | 12.4 |
| 40°-50° | 2.4 | 0.3 |
| 50°-60° | 0.8 | 0.1 |
| 60°-70° | 0.9 | 0.1 |
| 70°-80° | 1.0 | 0.1 |
| 80°-90° | 0.4 | 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° | 847.9 | 87.1 |
| 0°-40° | 968.4 | 99.4 |
| 0°-60° | 971.7 | 99.8 |
| 0°-90° | 973.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 973.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1445 | 1445 | 1445 | 1445 | 1445 | |
| 5° | 1478 | 1476 | 1471 | 1466 | 1462 | 142 |
| 15° | 1344 | 1374 | 1380 | 1333 | 1282 | 350 |
| 25° | 758 | 759 | 798 | 754 | 747 | 335 |
| 35° | 140 | 169 | 188 | 158 | 132 | 111 |
| 45° | 1 | 1 | 2 | 1 | 1 | 1 |
| 55° | 1 | 1 | 1 | 1 | 1 | 1 |
| 65° | 1 | 1 | 1 | 1 | 1 | 1 |
| 75° | 1 | 1 | 1 | 1 | 1 | 1 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1445.3 | 1445.3 | 1445.3 | 1445.3 | 1445.3 |
| 2.5° | 1455.5 | 1455.5 | 1452.8 | 1450.0 | 1449.0 |
| 5° | 1477.8 | 1475.9 | 1471.3 | 1465.7 | 1462.0 |
| 7.5° | 1501.0 | 1496.3 | 1486.1 | 1475.0 | 1472.2 |
| 10° | 1487.1 | 1486.1 | 1479.6 | 1465.7 | 1462.0 |
| 12.5° | 1441.6 | 1449.0 | 1445.3 | 1430.5 | 1421.2 |
| 15° | 1344.3 | 1374.0 | 1380.4 | 1333.2 | 1282.2 |
| 17.5° | 1093.0 | 1207.1 | 1279.4 | 1170.9 | 1080.1 |
| 20° | 890.9 | 973.4 | 1138.5 | 967.9 | 894.6 |
| 22.5° | 819.6 | 833.5 | 964.2 | 836.2 | 814.0 |
| 25° | 758.4 | 759.3 | 798.2 | 753.7 | 747.2 |
| 27.5° | 659.2 | 655.5 | 673.1 | 647.1 | 640.6 |
| 30° | 507.1 | 502.5 | 521.0 | 502.5 | 494.1 |
| 32.5° | 321.7 | 331.0 | 345.8 | 330.0 | 296.7 |
| 35° | 140.0 | 168.7 | 188.2 | 158.5 | 131.6 |
| 37.5° | 31.5 | 52.8 | 86.2 | 52.8 | 27.8 |
| 40° | 1.9 | 8.3 | 35.2 | 11.1 | 3.7 |
| 42.5° | 0.9 | 1.9 | 9.3 | 1.9 | 0.9 |
| 45° | 0.9 | 0.9 | 1.9 | 0.9 | 0.9 |
| 47.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 50° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 52.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 55° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 57.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 60° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 62.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 65° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 67.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 70° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 72.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 75° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 77.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 80° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 82.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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)