

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P239185

Luminaire Tested: **HDF-4-LD4-UNV-2-HI-30-IK12-EDC-1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P239185
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-4)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: HDF-4-LD4-UNV-2-HI-30-IK12-EDC-1
Description: FAILSAFE HDF LED FIXTURE
4FT, 2-ROW LED BOARDS, CLEAR LENS
Light Source: (168) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

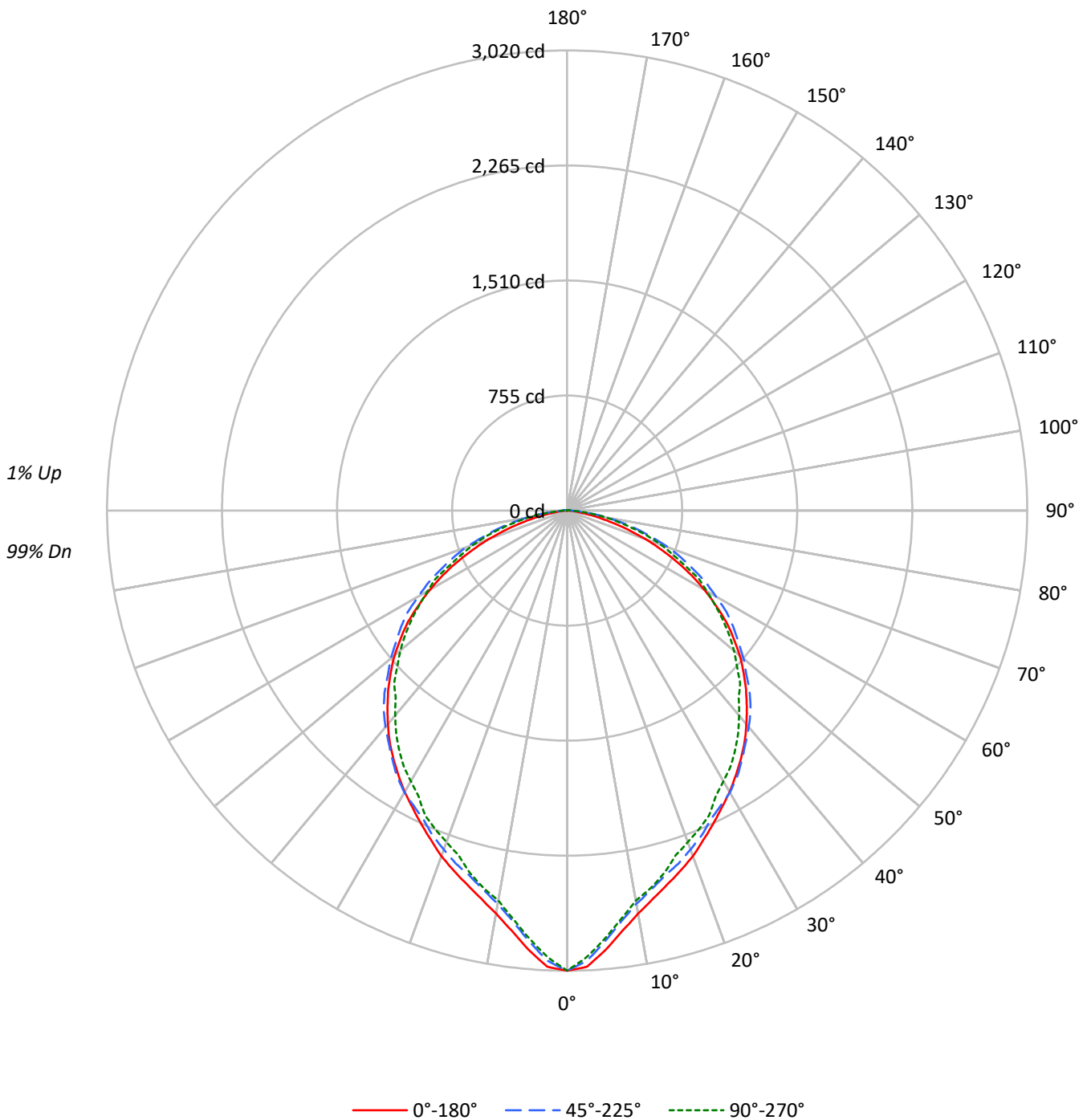
Lumens per Lamp: N/A
Luminaire Lumens: 7117.7 lumens
Efficiency: N/A
Efficacy: 80.2 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.02 / 1.25
Luminous Opening: Rectangular (W 0.58' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 88.7
Input Voltage (V): 120
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 | 106 | 106 | 106 | 102 | 102 | 102 | 99 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 95 | 97 | 94 | 91 | 93 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 78 | 96 | 89 | 83 | 77 | 85 | 80 | 76 | 82 | 78 | 74 | 79 | 75 | 72 | 70 |
| 3 | 90 | 80 | 72 | 65 | 88 | 78 | 71 | 65 | 75 | 69 | 63 | 72 | 67 | 62 | 70 | 65 | 61 | 59 |
| 4 | 83 | 71 | 62 | 55 | 80 | 69 | 61 | 55 | 67 | 60 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 50 |
| 5 | 76 | 63 | 54 | 48 | 74 | 62 | 54 | 47 | 60 | 53 | 47 | 58 | 51 | 46 | 56 | 50 | 46 | 44 |
| 6 | 70 | 57 | 48 | 42 | 68 | 56 | 48 | 42 | 54 | 47 | 41 | 52 | 46 | 41 | 51 | 45 | 40 | 38 |
| 7 | 65 | 52 | 43 | 37 | 63 | 51 | 43 | 37 | 49 | 42 | 36 | 48 | 41 | 36 | 46 | 40 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 38 | 33 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 30 |
| 9 | 57 | 43 | 35 | 30 | 55 | 43 | 35 | 30 | 42 | 34 | 29 | 40 | 34 | 29 | 39 | 33 | 29 | 27 |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 26 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 13929 | 13929 | 13929 |
| 5° | 13402 | 13144 | 13066 |
| 10° | 12579 | 12275 | 12173 |
| 15° | 12131 | 11842 | 11761 |
| 20° | 11846 | 11619 | 11368 |
| 25° | 11543 | 11370 | 11228 |
| 30° | 11355 | 11379 | 10926 |
| 35° | 11194 | 11255 | 10819 |
| 40° | 11020 | 11169 | 10573 |
| 45° | 10828 | 11061 | 10475 |
| 50° | 10613 | 10846 | 10258 |
| 55° | 10264 | 10699 | 10028 |
| 60° | 9604 | 10390 | 9762 |
| 65° | 8661 | 9979 | 9269 |
| 70° | 7344 | 9535 | 8805 |
| 75° | 5459 | 8520 | 7858 |
| 80° | 3411 | 7069 | 6740 |
| 85° | 1556 | 5319 | 4912 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 264.1 | 3.7 |
| 10°-20° | 700.9 | 9.8 |
| 20°-30° | 1030.3 | 14.5 |
| 30°-40° | 1231.2 | 17.3 |
| 40°-50° | 1271.9 | 17.9 |
| 50°-60° | 1152.0 | 16.2 |
| 60°-70° | 860.8 | 12.1 |
| 70°-80° | 459.6 | 6.5 |
| 80°-90° | 110.6 | 1.6 |
| 90°-100° | 17.9 | 0.3 |
| 100°-110° | 9.0 | 0.1 |
| 110°-120° | 4.6 | 0.1 |
| 120°-130° | 3.2 | 0.0 |
| 130°-140° | 1.6 | 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° | 1995.4 | 28.0 |
| 0°-40° | 3226.5 | 45.3 |
| 0°-60° | 5650.5 | 79.4 |
| 0°-90° | 7081.4 | 99.5 |
| 90°-120° | 31.5 | 0.4 |
| 90°-150° | 36.3 | 0.5 |
| 90°-180° | 36.0 | 0.5 |
| 0°-180° | 7117.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 3020 | 3020 | 3020 | 3020 | 3020 | |
| 5° | 2894 | 2835 | 2838 | 2820 | 2822 | 269 |
| 15° | 2540 | 2492 | 2480 | 2460 | 2463 | 717 |
| 25° | 2268 | 2251 | 2234 | 2215 | 2206 | 1047 |
| 35° | 1988 | 1980 | 1999 | 1951 | 1921 | 1244 |
| 45° | 1660 | 1660 | 1695 | 1610 | 1606 | 1280 |
| 55° | 1276 | 1290 | 1330 | 1282 | 1247 | 1133 |
| 65° | 794 | 851 | 914 | 894 | 849 | 785 |
| 75° | 306 | 410 | 478 | 473 | 441 | 336 |
| 85° | 29 | 85 | 100 | 98 | 93 | 45 |
| 90° | 0 | 25 | 26 | 23 | 22 | 1 |
| 95° | 0 | 14 | 22 | 20 | 19 | 0 |
| 105° | 2 | 5 | 9 | 12 | 12 | 1 |
| 115° | 2 | 3 | 5 | 6 | 6 | 2 |
| 125° | 3 | 3 | 3 | 3 | 5 | 3 |
| 135° | 3 | 3 | 3 | 3 | 3 | 2 |
| 145° | 0 | 0 | 0 | 0 | 0 | 0 |
| 155° | 0 | 0 | 0 | 0 | 0 | 0 |
| 165° | 0 | 0 | 0 | 0 | 0 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 | 0 |



TEST NUMBER: P239185

CATALOG NUMBER: HDF-4-LD4-UNV-2-HI-30-IK12-EDC-1

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 3019.5 | 3019.5 | 3019.5 | 3019.5 | 3019.5 |
| 2.5° | 2996.3 | 2953.0 | 2957.6 | 2948.3 | 2932.9 |
| 5° | 2894.2 | 2835.4 | 2838.5 | 2820.0 | 2821.5 |
| 7.5° | 2781.3 | 2721.0 | 2719.4 | 2690.0 | 2703.9 |
| 10° | 2685.4 | 2639.0 | 2620.4 | 2594.1 | 2598.8 |
| 12.5° | 2608.0 | 2555.4 | 2547.7 | 2515.2 | 2536.9 |
| 15° | 2540.0 | 2492.0 | 2479.6 | 2459.5 | 2462.6 |
| 17.5° | 2476.6 | 2437.9 | 2428.6 | 2402.3 | 2371.4 |
| 20° | 2413.1 | 2371.4 | 2366.7 | 2320.3 | 2315.7 |
| 22.5° | 2338.9 | 2318.8 | 2307.9 | 2277.0 | 2263.1 |
| 25° | 2267.7 | 2250.7 | 2233.7 | 2215.1 | 2205.8 |
| 27.5° | 2198.1 | 2179.6 | 2182.6 | 2156.3 | 2113.0 |
| 30° | 2131.6 | 2114.6 | 2136.2 | 2077.5 | 2051.2 |
| 32.5° | 2060.4 | 2049.6 | 2074.4 | 2020.2 | 1993.9 |
| 35° | 1987.7 | 1980.0 | 1998.6 | 1950.6 | 1921.2 |
| 37.5° | 1913.5 | 1898.0 | 1922.8 | 1862.4 | 1843.9 |
| 40° | 1830.0 | 1822.2 | 1854.7 | 1777.4 | 1755.7 |
| 42.5° | 1744.9 | 1735.6 | 1782.0 | 1689.2 | 1666.0 |
| 45° | 1659.8 | 1659.8 | 1695.4 | 1610.3 | 1605.7 |
| 47.5° | 1570.1 | 1573.2 | 1594.8 | 1554.6 | 1509.8 |
| 50° | 1478.8 | 1481.9 | 1511.3 | 1460.3 | 1429.3 |
| 52.5° | 1376.7 | 1386.0 | 1415.4 | 1376.7 | 1339.6 |
| 55° | 1276.2 | 1290.1 | 1330.3 | 1282.4 | 1246.8 |
| 57.5° | 1155.5 | 1189.5 | 1240.6 | 1191.1 | 1147.8 |
| 60° | 1041.0 | 1084.4 | 1126.1 | 1092.1 | 1058.1 |
| 62.5° | 920.4 | 971.4 | 1027.1 | 993.1 | 976.1 |
| 65° | 793.5 | 850.8 | 914.2 | 894.1 | 849.2 |
| 67.5° | 668.3 | 725.5 | 810.6 | 781.2 | 747.1 |
| 70° | 544.5 | 618.8 | 706.9 | 672.9 | 652.8 |
| 72.5° | 422.3 | 513.6 | 583.2 | 575.4 | 552.2 |
| 75° | 306.3 | 409.9 | 478.0 | 473.3 | 440.9 |
| 77.5° | 211.9 | 314.0 | 371.3 | 354.2 | 337.2 |
| 80° | 128.4 | 225.8 | 266.1 | 255.2 | 253.7 |
| 82.5° | 68.1 | 145.4 | 174.8 | 170.2 | 164.0 |
| 85° | 29.4 | 85.1 | 100.5 | 97.5 | 92.8 |
| 87.5° | 9.3 | 43.3 | 49.5 | 44.9 | 41.8 |
| 90° | 0.0 | 24.8 | 26.3 | 23.2 | 21.7 |
| 92.5° | 0.0 | 18.6 | 23.2 | 20.1 | 18.6 |
| 95° | 0.0 | 13.9 | 21.7 | 20.1 | 18.6 |
| 97.5° | 1.5 | 10.8 | 20.1 | 18.6 | 18.6 |
| 100° | 0.0 | 7.7 | 15.5 | 17.0 | 15.5 |
| 102.5° | 1.5 | 6.2 | 12.4 | 13.9 | 13.9 |
| 105° | 1.5 | 4.6 | 9.3 | 12.4 | 12.4 |
| 107.5° | 1.5 | 3.1 | 7.7 | 10.8 | 10.8 |
| 110° | 1.5 | 3.1 | 6.2 | 7.7 | 9.3 |



TEST NUMBER: P239185

CATALOG NUMBER: HDF-4-LD4-UNV-2-HI-30-IK12-EDC-1

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 1.5 | 3.1 | 6.2 | 6.2 | 7.7 |
| 115° | 1.5 | 3.1 | 4.6 | 6.2 | 6.2 |
| 117.5° | 1.5 | 3.1 | 4.6 | 4.6 | 6.2 |
| 120° | 3.1 | 3.1 | 4.6 | 4.6 | 4.6 |
| 122.5° | 3.1 | 3.1 | 4.6 | 4.6 | 4.6 |
| 125° | 3.1 | 3.1 | 3.1 | 3.1 | 4.6 |
| 127.5° | 3.1 | 3.1 | 3.1 | 3.1 | 4.6 |
| 130° | 3.1 | 3.1 | 3.1 | 3.1 | 4.6 |
| 132.5° | 3.1 | 3.1 | 3.1 | 3.1 | 4.6 |
| 135° | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)