

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: P239279

Luminaire Tested: **HDF-2-LD4-UNV-2-LO-40-OPL-EDC-1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P239279
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-15)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: HDF-2-LD4-UNV-2-LO-40-OPL-EDC-1
Description: FAILSAFE HDF LED FIXTURE
2FT, 2-ROW LED BOARDS, OPAL LENS
Light Source: (84) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

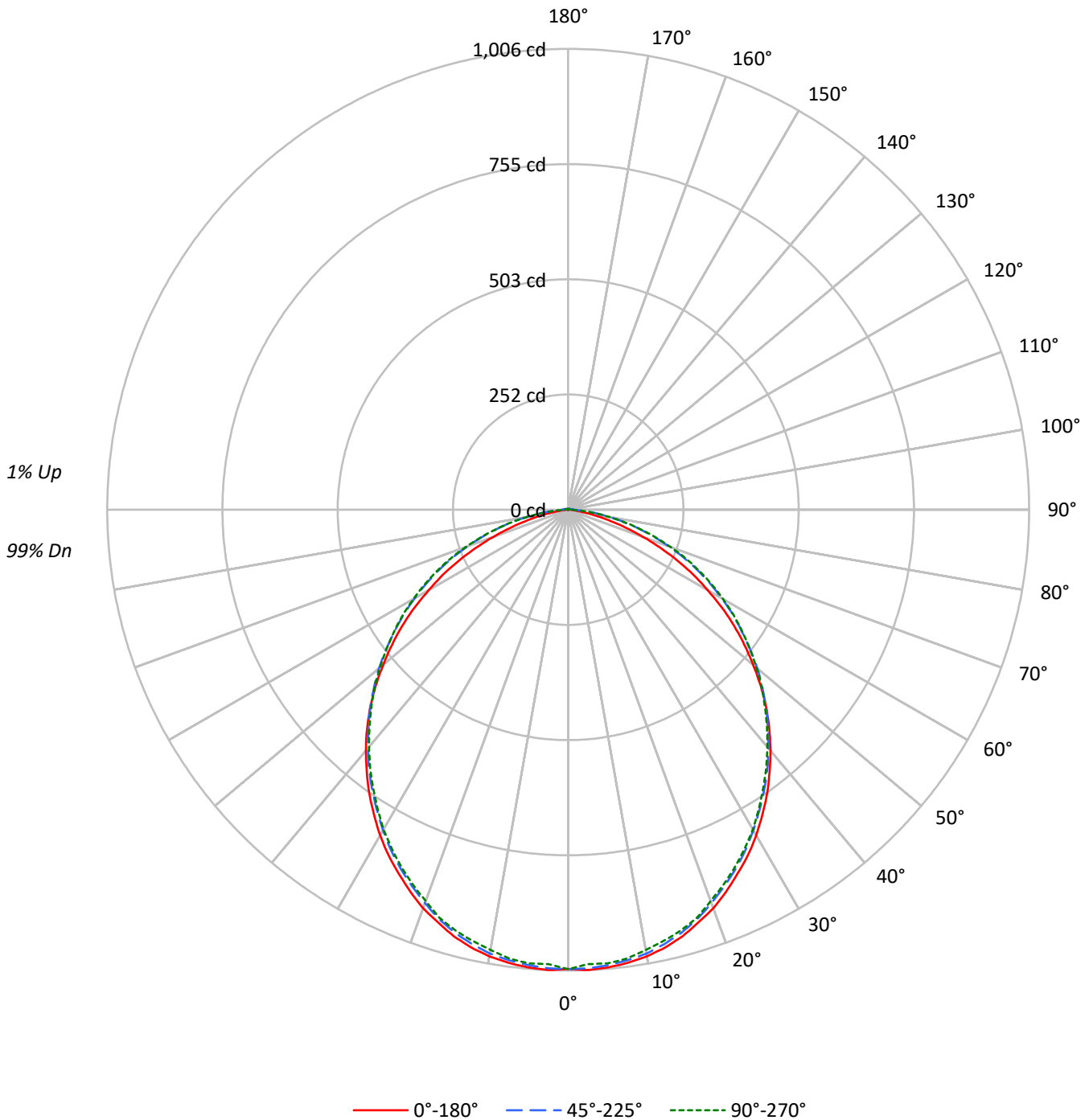
Lumens per Lamp: N/A
Luminaire Lumens: 2620.0 lumens
Efficiency: N/A
Efficacy: 112.4 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.2 / 1.32
Luminous Opening: Rectangular (W 0.58' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 23.3
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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CATALOG NUMBER: HDF-2-LD4-UNV-2-LO-40-OPL-EDC-1

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 | 101 | 101 | 101 | 99 |
| 1 | 109 | 104 | 100 | 97 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 85 | 79 | 97 | 89 | 83 | 78 | 86 | 81 | 76 | 82 | 78 | 74 | 79 | 76 | 73 | 71 |
| 3 | 91 | 81 | 73 | 66 | 88 | 79 | 72 | 66 | 76 | 70 | 64 | 73 | 68 | 63 | 70 | 66 | 62 | 60 |
| 4 | 83 | 72 | 63 | 56 | 81 | 70 | 62 | 56 | 68 | 61 | 55 | 65 | 59 | 54 | 63 | 58 | 53 | 51 |
| 5 | 77 | 64 | 55 | 49 | 75 | 63 | 55 | 48 | 61 | 53 | 48 | 59 | 52 | 47 | 57 | 51 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 48 | 42 | 55 | 48 | 42 | 53 | 47 | 42 | 52 | 46 | 41 | 39 |
| 7 | 66 | 52 | 44 | 38 | 64 | 52 | 43 | 38 | 50 | 43 | 37 | 49 | 42 | 37 | 47 | 41 | 37 | 35 |
| 8 | 61 | 48 | 40 | 34 | 60 | 47 | 39 | 34 | 46 | 39 | 33 | 45 | 38 | 33 | 43 | 37 | 33 | 31 |
| 9 | 57 | 44 | 36 | 30 | 56 | 43 | 36 | 30 | 42 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 52 | 40 | 33 | 28 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 9253 | 9253 | 9253 |
| 5° | 9288 | 9242 | 9205 |
| 10° | 9274 | 9218 | 9143 |
| 15° | 9207 | 9130 | 9083 |
| 20° | 9091 | 8973 | 8924 |
| 25° | 8917 | 8805 | 8764 |
| 30° | 8745 | 8607 | 8586 |
| 35° | 8525 | 8401 | 8356 |
| 40° | 8273 | 8189 | 8141 |
| 45° | 7971 | 7971 | 7919 |
| 50° | 7563 | 7735 | 7692 |
| 55° | 7108 | 7430 | 7462 |
| 60° | 6477 | 7139 | 7195 |
| 65° | 5742 | 6789 | 6877 |
| 70° | 4721 | 6285 | 6393 |
| 75° | 3458 | 5704 | 5775 |
| 80° | 2019 | 4835 | 4835 |
| 85° | 1059 | 3917 | 3599 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 94.8 | 3.6 |
| 10°-20° | 269.4 | 10.3 |
| 20°-30° | 398.9 | 15.2 |
| 30°-40° | 467.3 | 17.8 |
| 40°-50° | 470.1 | 17.9 |
| 50°-60° | 409.3 | 15.6 |
| 60°-70° | 297.2 | 11.3 |
| 70°-80° | 156.4 | 6.0 |
| 80°-90° | 39.2 | 1.5 |
| 90°-100° | 7.7 | 0.3 |
| 100°-110° | 4.4 | 0.2 |
| 110°-120° | 2.5 | 0.1 |
| 120°-130° | 1.8 | 0.1 |
| 130°-140° | 1.0 | 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° | 763.2 | 29.1 |
| 0°-40° | 1230.5 | 47.0 |
| 0°-60° | 2110.0 | 80.5 |
| 0°-90° | 2602.7 | 99.3 |
| 90°-120° | 14.6 | 0.6 |
| 90°-150° | 17.4 | 0.7 |
| 90°-180° | 17.0 | 0.6 |
| 0°-180° | 2620.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1003 | 1003 | 1003 | 1003 | 1003 | |
| 5° | 1003 | 1001 | 998 | 994 | 994 | 95 |
| 15° | 964 | 961 | 956 | 953 | 951 | 272 |
| 25° | 876 | 870 | 865 | 862 | 861 | 404 |
| 35° | 757 | 750 | 746 | 744 | 742 | 473 |
| 45° | 611 | 608 | 611 | 610 | 607 | 470 |
| 55° | 442 | 449 | 462 | 467 | 464 | 394 |
| 65° | 263 | 285 | 311 | 317 | 315 | 260 |
| 75° | 97 | 134 | 160 | 164 | 162 | 106 |
| 85° | 10 | 29 | 37 | 37 | 34 | 14 |
| 90° | 0 | 9 | 11 | 9 | 7 | 1 |
| 95° | 0 | 6 | 10 | 9 | 7 | 0 |
| 105° | 1 | 2 | 5 | 6 | 5 | 1 |
| 115° | 1 | 2 | 3 | 3 | 3 | 1 |
| 125° | 1 | 2 | 2 | 3 | 3 | 1 |
| 135° | 2 | 2 | 2 | 2 | 2 | 1 |
| 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: P239279

CATALOG NUMBER: HDF-2-LD4-UNV-2-LO-40-OPL-EDC-1

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1002.9 | 1002.9 | 1002.9 | 1002.9 | 1002.9 |
| 2.5° | 1005.9 | 1005.9 | 1001.9 | 995.9 | 992.9 |
| 5° | 1002.9 | 1000.9 | 997.9 | 993.9 | 993.9 |
| 7.5° | 997.9 | 995.9 | 991.9 | 987.9 | 987.9 |
| 10° | 989.9 | 987.9 | 983.9 | 977.9 | 975.9 |
| 12.5° | 978.9 | 976.9 | 970.9 | 965.9 | 963.9 |
| 15° | 963.9 | 960.9 | 955.9 | 952.9 | 950.9 |
| 17.5° | 944.9 | 942.9 | 936.9 | 933.9 | 933.9 |
| 20° | 925.9 | 920.9 | 913.9 | 910.9 | 908.9 |
| 22.5° | 901.9 | 896.9 | 889.9 | 885.9 | 885.9 |
| 25° | 875.9 | 869.9 | 864.9 | 861.9 | 860.9 |
| 27.5° | 849.9 | 841.9 | 837.9 | 834.9 | 833.9 |
| 30° | 820.9 | 812.9 | 807.9 | 805.9 | 805.9 |
| 32.5° | 788.9 | 781.9 | 776.9 | 774.9 | 773.9 |
| 35° | 756.9 | 749.9 | 745.9 | 743.9 | 741.9 |
| 37.5° | 721.9 | 715.9 | 713.9 | 712.9 | 709.9 |
| 40° | 686.9 | 680.9 | 679.9 | 678.9 | 675.9 |
| 42.5° | 649.9 | 645.9 | 644.9 | 645.9 | 641.9 |
| 45° | 610.9 | 607.9 | 610.9 | 609.9 | 606.9 |
| 47.5° | 569.9 | 569.9 | 574.9 | 575.9 | 572.9 |
| 50° | 526.9 | 530.9 | 538.9 | 540.9 | 535.9 |
| 52.5° | 484.9 | 489.9 | 499.9 | 503.9 | 499.9 |
| 55° | 441.9 | 448.9 | 461.9 | 466.9 | 463.9 |
| 57.5° | 397.9 | 407.9 | 425.9 | 430.9 | 427.9 |
| 60° | 351.0 | 365.9 | 386.9 | 393.9 | 389.9 |
| 62.5° | 309.0 | 326.0 | 349.0 | 355.0 | 353.0 |
| 65° | 263.0 | 285.0 | 311.0 | 317.0 | 315.0 |
| 67.5° | 218.0 | 244.0 | 272.0 | 279.0 | 277.0 |
| 70° | 175.0 | 205.0 | 233.0 | 240.0 | 237.0 |
| 72.5° | 134.0 | 168.0 | 196.0 | 202.0 | 199.0 |
| 75° | 97.0 | 134.0 | 160.0 | 164.0 | 162.0 |
| 77.5° | 64.0 | 102.0 | 124.0 | 129.0 | 126.0 |
| 80° | 38.0 | 73.0 | 91.0 | 94.0 | 91.0 |
| 82.5° | 20.0 | 49.0 | 62.0 | 63.0 | 60.0 |
| 85° | 10.0 | 29.0 | 37.0 | 37.0 | 34.0 |
| 87.5° | 4.0 | 15.0 | 18.0 | 17.0 | 15.0 |
| 90° | 0.0 | 9.0 | 11.0 | 9.0 | 7.0 |
| 92.5° | 0.0 | 8.0 | 10.0 | 9.0 | 6.0 |
| 95° | 0.0 | 6.0 | 10.0 | 9.0 | 7.0 |
| 97.5° | 0.0 | 5.0 | 9.0 | 9.0 | 7.0 |
| 100° | 0.0 | 3.0 | 8.0 | 8.0 | 7.0 |
| 102.5° | 0.0 | 3.0 | 6.0 | 7.0 | 6.0 |
| 105° | 1.0 | 2.0 | 5.0 | 6.0 | 5.0 |
| 107.5° | 1.0 | 2.0 | 4.0 | 5.0 | 5.0 |
| 110° | 1.0 | 2.0 | 4.0 | 4.0 | 4.0 |



TEST NUMBER: P239279

CATALOG NUMBER: HDF-2-LD4-UNV-2-LO-40-OPL-EDC-1

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 1.0 | 2.0 | 3.0 | 4.0 | 3.0 |
| 115° | 1.0 | 2.0 | 3.0 | 3.0 | 3.0 |
| 117.5° | 1.0 | 1.0 | 3.0 | 3.0 | 3.0 |
| 120° | 1.0 | 2.0 | 2.0 | 3.0 | 3.0 |
| 122.5° | 1.0 | 1.0 | 2.0 | 3.0 | 2.0 |
| 125° | 1.0 | 2.0 | 2.0 | 3.0 | 3.0 |
| 127.5° | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| 130° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 132.5° | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 135° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 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)