

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: P239207

Luminaire Tested: **HDF-4-LD4-UNV-2-LO-40-OPL-EDC-1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P239207
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-5)
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-LO-40-OPL-EDC-1
Description: FAILSAFE HDF LED FIXTURE
4FT, 2-ROW LED BOARDS, OPAL LENS
Light Source: (168) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

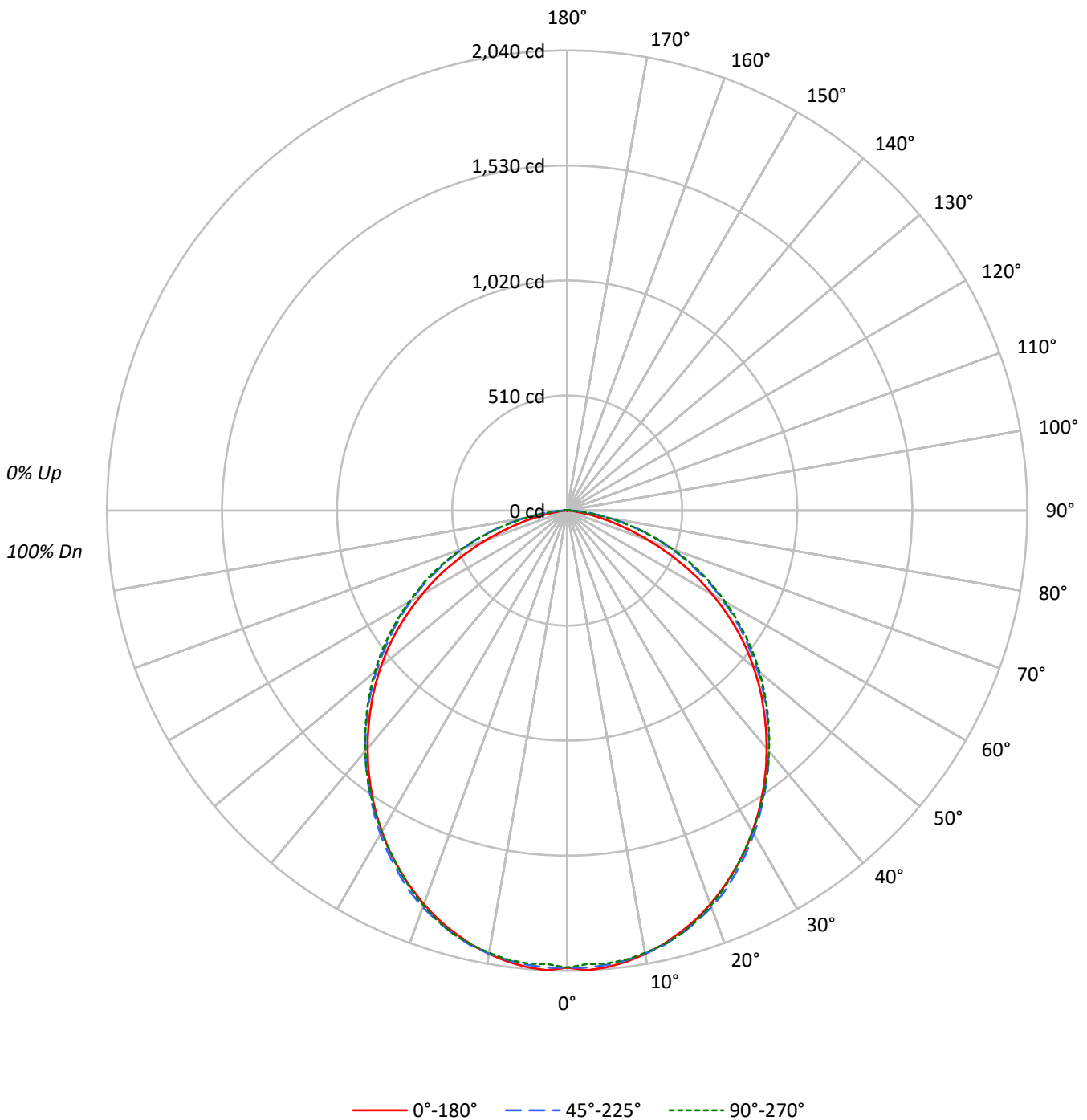
Lumens per Lamp: N/A
Luminaire Lumens: 5357.1 lumens
Efficiency: N/A
Efficacy: 113.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.32
Luminous Opening: Rectangular (W 0.58' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 47.2
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 | 100 |
| 1 | 109 | 104 | 100 | 96 | 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 | 70 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 65 | 76 | 69 | 64 | 73 | 67 | 63 | 70 | 66 | 62 | 60 |
| 4 | 83 | 71 | 63 | 56 | 81 | 70 | 62 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 53 | 51 |
| 5 | 77 | 64 | 55 | 48 | 74 | 63 | 54 | 48 | 61 | 53 | 48 | 59 | 52 | 47 | 57 | 51 | 46 | 44 |
| 6 | 71 | 58 | 49 | 42 | 69 | 57 | 48 | 42 | 55 | 47 | 42 | 53 | 46 | 41 | 51 | 46 | 41 | 39 |
| 7 | 66 | 52 | 44 | 38 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 36 | 34 |
| 8 | 61 | 48 | 39 | 34 | 60 | 47 | 39 | 33 | 46 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 31 |
| 9 | 57 | 44 | 36 | 30 | 56 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 41 | 33 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 9346 | 9346 | 9346 |
| 5° | 9410 | 9363 | 9336 |
| 10° | 9350 | 9340 | 9326 |
| 15° | 9246 | 9284 | 9284 |
| 20° | 9116 | 9185 | 9146 |
| 25° | 8943 | 9014 | 8953 |
| 30° | 8752 | 8821 | 8757 |
| 35° | 8526 | 8594 | 8577 |
| 40° | 8286 | 8377 | 8383 |
| 45° | 8024 | 8155 | 8188 |
| 50° | 7744 | 7916 | 7988 |
| 55° | 7375 | 7649 | 7753 |
| 60° | 6864 | 7372 | 7473 |
| 65° | 6156 | 6997 | 7161 |
| 70° | 5166 | 6623 | 6690 |
| 75° | 3903 | 6042 | 5935 |
| 80° | 2417 | 5101 | 4808 |
| 85° | 1164 | 3864 | 3282 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 191.7 | 3.6 |
| 10°-20° | 545.9 | 10.2 |
| 20°-30° | 810.3 | 15.1 |
| 30°-40° | 950.2 | 17.7 |
| 40°-50° | 959.6 | 17.9 |
| 50°-60° | 843.1 | 15.7 |
| 60°-70° | 620.3 | 11.6 |
| 70°-80° | 331.0 | 6.2 |
| 80°-90° | 79.7 | 1.5 |
| 90°-100° | 12.4 | 0.2 |
| 100°-110° | 6.3 | 0.1 |
| 110°-120° | 3.1 | 0.1 |
| 120°-130° | 2.2 | 0.0 |
| 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° | 1548.0 | 28.9 |
| 0°-40° | 2498.2 | 46.6 |
| 0°-60° | 4300.9 | 80.3 |
| 0°-90° | 5331.9 | 99.5 |
| 90°-120° | 21.9 | 0.4 |
| 90°-150° | 25.1 | 0.5 |
| 90°-180° | 25.0 | 0.5 |
| 0°-180° | 5357.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 2026 | 2026 | 2026 | 2026 | 2026 | |
| 5° | 2032 | 2010 | 2022 | 2015 | 2016 | 193 |
| 15° | 1936 | 1923 | 1944 | 1941 | 1944 | 546 |
| 25° | 1757 | 1753 | 1771 | 1756 | 1759 | 809 |
| 35° | 1514 | 1516 | 1526 | 1515 | 1523 | 947 |
| 45° | 1230 | 1235 | 1250 | 1248 | 1255 | 949 |
| 55° | 917 | 924 | 951 | 959 | 964 | 818 |
| 65° | 564 | 600 | 641 | 654 | 656 | 558 |
| 75° | 219 | 291 | 339 | 339 | 333 | 238 |
| 85° | 22 | 66 | 73 | 67 | 62 | 32 |
| 90° | 0 | 17 | 18 | 15 | 13 | 1 |
| 95° | 0 | 10 | 16 | 14 | 13 | 0 |
| 105° | 1 | 3 | 7 | 9 | 9 | 1 |
| 115° | 1 | 2 | 3 | 4 | 4 | 1 |
| 125° | 2 | 2 | 3 | 3 | 3 | 2 |
| 135° | 2 | 2 | 2 | 2 | 3 | 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: P239207

CATALOG NUMBER: HDF-4-LD4-UNV-2-LO-40-OPL-EDC-1

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|------|-------|------|
| 0° | 2026 | 2026 | 2026 | 2026 | 2026 |
| 2.5° | 2040 | 2018 | 2028 | 2022 | 2012 |
| 5° | 2032 | 2010 | 2022 | 2015 | 2016 |
| 7.5° | 2017 | 1998 | 2011 | 2006 | 2008 |
| 10° | 1996 | 1978 | 1994 | 1990 | 1991 |
| 12.5° | 1969 | 1953 | 1974 | 1969 | 1971 |
| 15° | 1936 | 1923 | 1944 | 1941 | 1944 |
| 17.5° | 1900 | 1889 | 1910 | 1905 | 1907 |
| 20° | 1857 | 1848 | 1871 | 1859 | 1863 |
| 22.5° | 1809 | 1803 | 1826 | 1811 | 1814 |
| 25° | 1757 | 1753 | 1771 | 1756 | 1759 |
| 27.5° | 1704 | 1698 | 1715 | 1699 | 1701 |
| 30° | 1643 | 1641 | 1656 | 1639 | 1644 |
| 32.5° | 1581 | 1581 | 1592 | 1578 | 1585 |
| 35° | 1514 | 1516 | 1526 | 1515 | 1523 |
| 37.5° | 1447 | 1449 | 1461 | 1451 | 1459 |
| 40° | 1376 | 1379 | 1391 | 1385 | 1392 |
| 42.5° | 1304 | 1309 | 1322 | 1318 | 1324 |
| 45° | 1230 | 1235 | 1250 | 1248 | 1255 |
| 47.5° | 1156 | 1160 | 1177 | 1179 | 1185 |
| 50° | 1079 | 1082 | 1103 | 1108 | 1113 |
| 52.5° | 1000 | 1004 | 1026 | 1034 | 1040 |
| 55° | 917 | 924 | 951 | 959 | 964 |
| 57.5° | 830 | 844 | 875 | 882 | 886 |
| 60° | 744 | 760 | 799 | 808 | 810 |
| 62.5° | 657 | 682 | 724 | 732 | 734 |
| 65° | 564 | 600 | 641 | 654 | 656 |
| 67.5° | 472 | 520 | 566 | 576 | 576 |
| 70° | 383 | 441 | 491 | 497 | 496 |
| 72.5° | 299 | 365 | 414 | 419 | 417 |
| 75° | 219 | 291 | 339 | 339 | 333 |
| 77.5° | 148 | 223 | 263 | 261 | 257 |
| 80° | 91 | 163 | 192 | 187 | 181 |
| 82.5° | 49 | 112 | 127 | 121 | 115 |
| 85° | 22 | 66 | 73 | 67 | 62 |
| 87.5° | 6 | 34 | 34 | 30 | 28 |
| 90° | 0 | 17 | 18 | 15 | 13 |
| 92.5° | 0 | 13 | 17 | 14 | 13 |
| 95° | 0 | 10 | 16 | 14 | 13 |
| 97.5° | 0 | 7 | 14 | 13 | 12 |
| 100° | 0 | 5 | 11 | 12 | 11 |
| 102.5° | 0 | 4 | 9 | 10 | 10 |
| 105° | 1 | 3 | 7 | 9 | 9 |
| 107.5° | 1 | 3 | 5 | 7 | 7 |
| 110° | 1 | 2 | 4 | 6 | 6 |



TEST NUMBER: P239207

CATALOG NUMBER: HDF-4-LD4-UNV-2-LO-40-OPL-EDC-1

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|----|-------|-----|-------|-----|
| 112.5° | 1 | 2 | 4 | 5 | 5 |
| 115° | 1 | 2 | 3 | 4 | 4 |
| 117.5° | 1 | 2 | 3 | 4 | 4 |
| 120° | 2 | 2 | 3 | 3 | 3 |
| 122.5° | 2 | 2 | 3 | 3 | 3 |
| 125° | 2 | 2 | 3 | 3 | 3 |
| 127.5° | 2 | 2 | 2 | 3 | 3 |
| 130° | 2 | 2 | 2 | 2 | 3 |
| 132.5° | 2 | 2 | 2 | 2 | 2 |
| 135° | 2 | 2 | 2 | 2 | 3 |
| 137.5° | 0 | 0 | 0 | 0 | 0 |
| 140° | 0 | 0 | 0 | 0 | 0 |
| 142.5° | 0 | 0 | 0 | 0 | 0 |
| 145° | 0 | 0 | 0 | 0 | 0 |
| 147.5° | 0 | 0 | 0 | 0 | 0 |
| 150° | 0 | 0 | 0 | 0 | 0 |
| 152.5° | 0 | 0 | 0 | 0 | 0 |
| 155° | 0 | 0 | 0 | 0 | 0 |
| 157.5° | 0 | 0 | 0 | 0 | 0 |
| 160° | 0 | 0 | 0 | 0 | 0 |
| 162.5° | 0 | 0 | 0 | 0 | 0 |
| 165° | 0 | 0 | 0 | 0 | 0 |
| 167.5° | 0 | 0 | 0 | 0 | 0 |
| 170° | 0 | 0 | 0 | 0 | 0 |
| 172.5° | 0 | 0 | 0 | 0 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 |
| 177.5° | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)