

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: P232050

Luminaire Tested: **FVS4M-3-LD4-40-1HI-PA187-UNV-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P232050
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1706-121-25)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FVS4M-3-LD4-40-1HI-PA187-UNV-EDC1
Description: FAILSAFE FVS LED FIXTURE
3FT LENGTH, 1-MODULE LED WITH PA187 LENS
Light Source: (84) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

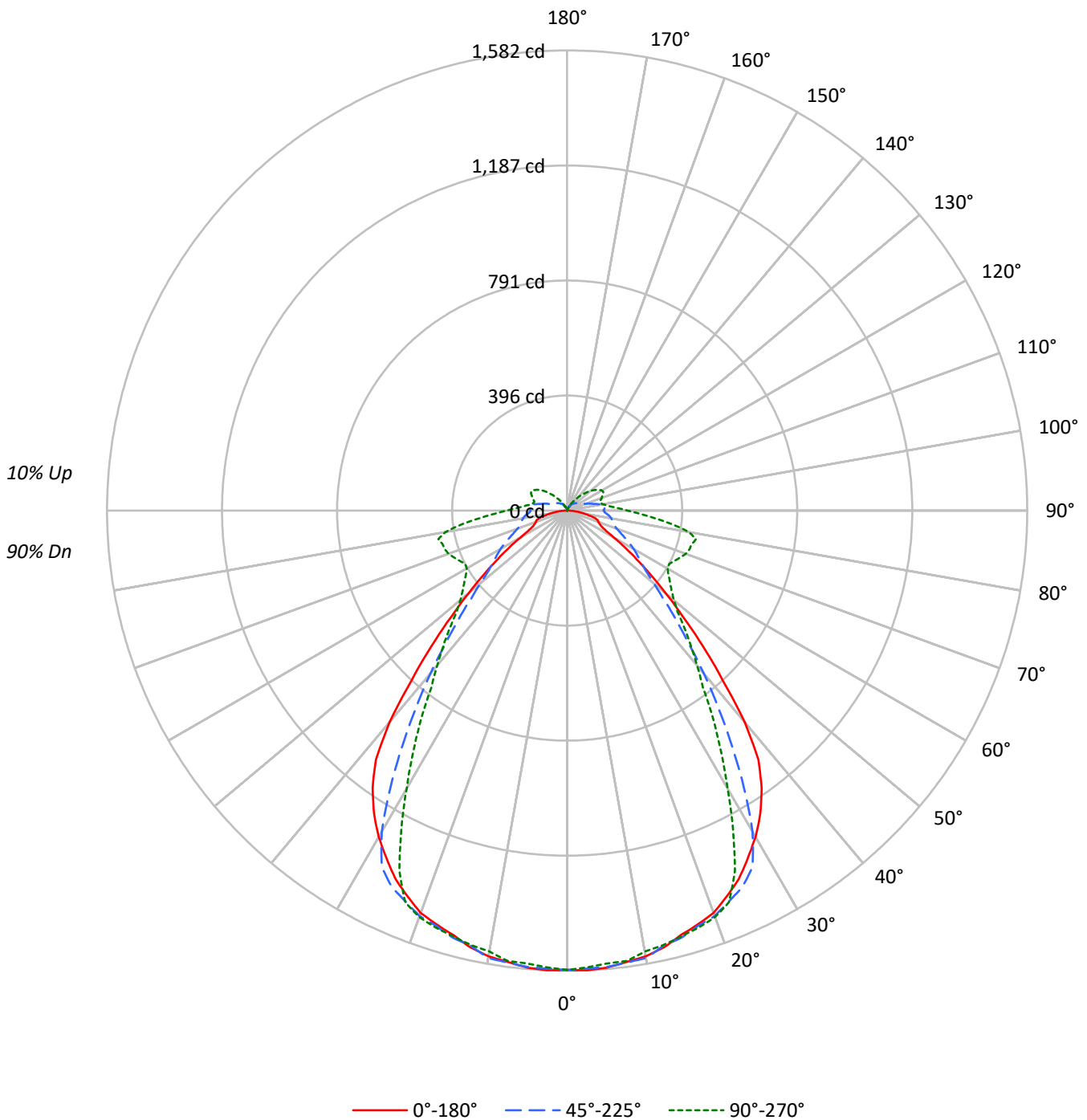
Lumens per Lamp: N/A
Luminaire Lumens: 3635.0 lumens
Efficiency: N/A
Efficacy: 100.1 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.1 / 1.11
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 2.92' x H: 0.19')
CIE Type: Semi-Direct

Input Watts (W): 36.3
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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Luminous Intensity Polar Plot





TEST NUMBER: P232050

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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 | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 106 | 106 | 106 | 99 | 99 | 99 | 93 | 93 | 93 | 90 |
| 1 | 106 | 101 | 97 | 93 | 102 | 98 | 94 | 90 | 92 | 88 | 86 | 86 | 84 | 81 | 81 | 79 | 77 | 74 |
| 2 | 97 | 89 | 83 | 77 | 94 | 86 | 80 | 75 | 81 | 76 | 72 | 77 | 73 | 69 | 72 | 69 | 66 | 63 |
| 3 | 89 | 79 | 72 | 66 | 86 | 77 | 70 | 64 | 73 | 67 | 62 | 69 | 64 | 60 | 65 | 61 | 57 | 55 |
| 4 | 83 | 71 | 63 | 57 | 80 | 70 | 62 | 56 | 66 | 59 | 54 | 62 | 57 | 52 | 59 | 55 | 51 | 48 |
| 5 | 77 | 65 | 56 | 50 | 74 | 63 | 55 | 49 | 60 | 53 | 48 | 57 | 51 | 47 | 54 | 49 | 45 | 43 |
| 6 | 71 | 59 | 51 | 45 | 69 | 58 | 50 | 44 | 55 | 48 | 43 | 52 | 46 | 42 | 50 | 45 | 41 | 39 |
| 7 | 67 | 54 | 46 | 40 | 64 | 53 | 45 | 40 | 50 | 44 | 39 | 48 | 42 | 38 | 46 | 41 | 37 | 35 |
| 8 | 62 | 50 | 42 | 36 | 60 | 49 | 41 | 36 | 47 | 40 | 35 | 45 | 39 | 34 | 43 | 38 | 34 | 32 |
| 9 | 59 | 46 | 38 | 33 | 57 | 45 | 38 | 33 | 43 | 37 | 32 | 42 | 36 | 32 | 40 | 35 | 31 | 29 |
| 10 | 55 | 43 | 35 | 30 | 53 | 42 | 35 | 30 | 40 | 34 | 30 | 39 | 33 | 29 | 37 | 32 | 28 | 27 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 18647 | 18647 | 18647 |
| 5° | 18590 | 17934 | 17605 |
| 10° | 18450 | 17298 | 16690 |
| 15° | 18161 | 16506 | 15957 |
| 20° | 18076 | 15916 | 15338 |
| 25° | 17674 | 15253 | 13898 |
| 30° | 17027 | 13677 | 11181 |
| 35° | 16086 | 10718 | 8883 |
| 40° | 13896 | 8072 | 7116 |
| 45° | 10357 | 6000 | 5939 |
| 50° | 7543 | 4570 | 5131 |
| 55° | 5488 | 3820 | 4790 |
| 60° | 3932 | 3451 | 4610 |
| 65° | 3193 | 3021 | 4986 |
| 70° | 3345 | 2728 | 5658 |
| 75° | 3606 | 2735 | 6254 |
| 80° | 2891 | 2858 | 6565 |
| 85° | 1953 | 2936 | 5225 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 149.4 | 4.1 |
| 10°-20° | 428.8 | 11.8 |
| 20°-30° | 638.6 | 17.6 |
| 30°-40° | 628.1 | 17.3 |
| 40°-50° | 440.2 | 12.1 |
| 50°-60° | 307.6 | 8.5 |
| 60°-70° | 258.5 | 7.1 |
| 70°-80° | 236.4 | 6.5 |
| 80°-90° | 182.4 | 5.0 |
| 90°-100° | 111.0 | 3.1 |
| 100°-110° | 82.4 | 2.3 |
| 110°-120° | 69.7 | 1.9 |
| 120°-130° | 50.6 | 1.4 |
| 130°-140° | 30.0 | 0.8 |
| 140°-150° | 15.0 | 0.4 |
| 150°-160° | 5.5 | 0.2 |
| 160°-170° | 0.9 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 1216.8 | 33.5 |
| 0°-40° | 1845.0 | 50.8 |
| 0°-60° | 2592.7 | 71.3 |
| 0°-90° | 3270.0 | 90.0 |
| 90°-120° | 263.1 | 7.2 |
| 90°-150° | 358.7 | 9.9 |
| 90°-180° | 365.0 | 10.0 |
| 0°-180° | 3635.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1579 | 1579 | 1579 | 1579 | 1579 | |
| 5° | 1577 | 1579 | 1575 | 1570 | 1563 | 150 |
| 15° | 1511 | 1515 | 1520 | 1519 | 1515 | 428 |
| 25° | 1397 | 1401 | 1427 | 1410 | 1365 | 641 |
| 35° | 1166 | 1154 | 988 | 899 | 875 | 719 |
| 45° | 660 | 578 | 528 | 526 | 569 | 515 |
| 55° | 291 | 301 | 310 | 380 | 432 | 267 |
| 65° | 130 | 185 | 217 | 366 | 408 | 136 |
| 75° | 98 | 102 | 165 | 357 | 444 | 98 |
| 85° | 25 | 54 | 138 | 321 | 303 | 27 |
| 90° | 0 | 31 | 125 | 225 | 207 | 1 |
| 95° | 0 | 30 | 131 | 161 | 153 | 0 |
| 105° | 0 | 29 | 90 | 129 | 117 | 0 |
| 115° | 0 | 27 | 56 | 132 | 137 | 0 |
| 125° | 0 | 22 | 45 | 97 | 124 | 0 |
| 135° | 0 | 18 | 35 | 59 | 82 | 0 |
| 145° | 0 | 14 | 26 | 34 | 41 | 0 |
| 155° | 0 | 7 | 13 | 17 | 16 | 0 |
| 165° | 1 | 3 | 3 | 3 | 5 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 | 0 |



TEST NUMBER: P232050

CATALOG NUMBER: FVS4M-3-LD4-40-1HI-PA187-UNV-EDC1

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|------|-------|------|
| 0° | 1579 | 1579 | 1579 | 1579 | 1579 |
| 2.5° | 1582 | 1576 | 1576 | 1575 | 1572 |
| 5° | 1577 | 1579 | 1575 | 1570 | 1563 |
| 7.5° | 1565 | 1565 | 1567 | 1561 | 1562 |
| 10° | 1556 | 1553 | 1562 | 1539 | 1539 |
| 12.5° | 1538 | 1537 | 1532 | 1538 | 1530 |
| 15° | 1511 | 1515 | 1520 | 1519 | 1515 |
| 17.5° | 1492 | 1493 | 1497 | 1502 | 1503 |
| 20° | 1472 | 1465 | 1483 | 1496 | 1487 |
| 22.5° | 1435 | 1441 | 1454 | 1477 | 1456 |
| 25° | 1397 | 1401 | 1427 | 1410 | 1365 |
| 27.5° | 1346 | 1367 | 1381 | 1286 | 1234 |
| 30° | 1295 | 1316 | 1275 | 1146 | 1104 |
| 32.5° | 1236 | 1262 | 1132 | 1020 | 985 |
| 35° | 1166 | 1154 | 988 | 899 | 875 |
| 37.5° | 1080 | 994 | 853 | 786 | 767 |
| 40° | 950 | 827 | 730 | 692 | 694 |
| 42.5° | 792 | 688 | 616 | 601 | 630 |
| 45° | 660 | 578 | 528 | 526 | 569 |
| 47.5° | 540 | 485 | 448 | 470 | 515 |
| 50° | 442 | 410 | 388 | 424 | 479 |
| 52.5° | 359 | 346 | 341 | 396 | 452 |
| 55° | 291 | 301 | 310 | 380 | 432 |
| 57.5° | 235 | 263 | 287 | 371 | 413 |
| 60° | 185 | 232 | 265 | 366 | 398 |
| 62.5° | 151 | 207 | 239 | 366 | 396 |
| 65° | 130 | 185 | 217 | 366 | 408 |
| 67.5° | 121 | 161 | 197 | 366 | 421 |
| 70° | 114 | 139 | 181 | 360 | 434 |
| 72.5° | 111 | 117 | 170 | 358 | 441 |
| 75° | 98 | 102 | 165 | 357 | 444 |
| 77.5° | 76 | 91 | 160 | 352 | 454 |
| 80° | 58 | 80 | 154 | 357 | 425 |
| 82.5° | 42 | 67 | 147 | 356 | 367 |
| 85° | 25 | 54 | 138 | 321 | 303 |
| 87.5° | 10 | 40 | 129 | 268 | 248 |
| 90° | 0 | 31 | 125 | 225 | 207 |
| 92.5° | 0 | 30 | 128 | 190 | 177 |
| 95° | 0 | 30 | 131 | 161 | 153 |
| 97.5° | 0 | 30 | 130 | 147 | 139 |
| 100° | 0 | 30 | 120 | 134 | 124 |
| 102.5° | 0 | 29 | 104 | 129 | 120 |
| 105° | 0 | 29 | 90 | 129 | 117 |
| 107.5° | 0 | 29 | 78 | 131 | 121 |
| 110° | 0 | 28 | 68 | 133 | 126 |



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CATALOG NUMBER: FVS4M-3-LD4-40-1HI-PA187-UNV-EDC1

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|----|-------|-----|-------|-----|
| 112.5° | 0 | 27 | 61 | 136 | 131 |
| 115° | 0 | 27 | 56 | 132 | 137 |
| 117.5° | 0 | 26 | 52 | 125 | 140 |
| 120° | 0 | 25 | 49 | 117 | 138 |
| 122.5° | 0 | 23 | 47 | 107 | 132 |
| 125° | 0 | 22 | 45 | 97 | 124 |
| 127.5° | 0 | 21 | 42 | 86 | 116 |
| 130° | 0 | 20 | 40 | 76 | 106 |
| 132.5° | 0 | 19 | 37 | 67 | 94 |
| 135° | 0 | 18 | 35 | 59 | 82 |
| 137.5° | 0 | 17 | 33 | 52 | 71 |
| 140° | 0 | 16 | 31 | 45 | 60 |
| 142.5° | 0 | 15 | 29 | 39 | 50 |
| 145° | 0 | 14 | 26 | 34 | 41 |
| 147.5° | 0 | 12 | 23 | 29 | 33 |
| 150° | 0 | 11 | 19 | 24 | 26 |
| 152.5° | 0 | 9 | 16 | 21 | 20 |
| 155° | 0 | 7 | 13 | 17 | 16 |
| 157.5° | 1 | 6 | 10 | 13 | 13 |
| 160° | 1 | 5 | 8 | 9 | 10 |
| 162.5° | 1 | 4 | 5 | 6 | 8 |
| 165° | 1 | 3 | 3 | 3 | 5 |
| 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)