

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: P554016

Luminaire Tested: **FUSL-12-2-LD4-1HI-40-UNV-93-84-EDD-90**

Issue Date: 7/16/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P554016
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2105-257-2)
Test Lab: INNOVATION CENTER
Issue Date: 7/16/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FUSL-12-2-LD4-1HI-40-UNV-93-84-EDD-90
Description: 2FT FUSL SURFACE MOUNT WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

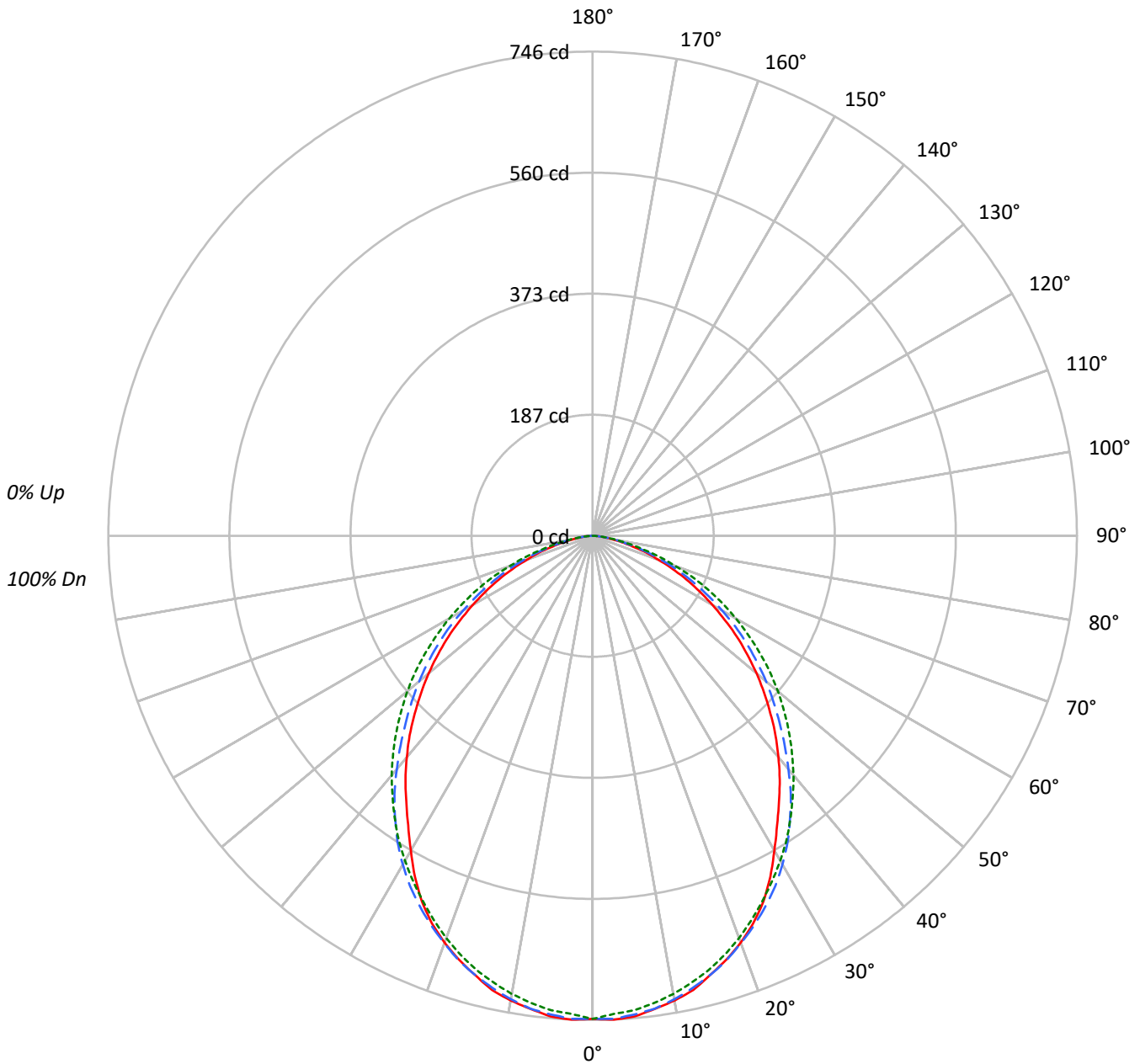
Lumens per Lamp: N/A
Luminaire Lumens: 1721.0 lumens
Efficiency: N/A
Efficacy: 79.7 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.16 / 1.26
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 21.6
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

TEST NUMBER: P554016

CATALOG NUMBER: FUSL-12-2-LD4-1HI-40-UNV-93-84-EDD-90

Luminous Intensity Polar Plot





TEST NUMBER: P554016

CATALOG NUMBER: FUSL-12-2-LD4-1HI-40-UNV-93-84-EDD-90

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|
| RF | 20 | | | | 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 | 50 | 30 | 10 | 0 | |
| RCR | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | 100 |
| 1 | 110 | 106 | 102 | 98 | 107 | 103 | 100 | 97 | 99 | 96 | 94 | 95 | 93 | 91 | 92 | 90 | 88 | 86 | | | | 86 |
| 2 | 101 | 93 | 87 | 82 | 98 | 91 | 86 | 81 | 88 | 83 | 79 | 85 | 81 | 77 | 82 | 78 | 75 | 73 | | | | 73 |
| 3 | 92 | 83 | 75 | 69 | 90 | 81 | 74 | 68 | 78 | 72 | 67 | 75 | 70 | 66 | 73 | 69 | 65 | 63 | | | | 63 |
| 4 | 85 | 74 | 65 | 59 | 83 | 72 | 65 | 59 | 70 | 63 | 58 | 68 | 62 | 57 | 65 | 61 | 56 | 54 | | | | 54 |
| 5 | 78 | 66 | 58 | 51 | 76 | 65 | 57 | 51 | 63 | 56 | 51 | 61 | 55 | 50 | 59 | 54 | 50 | 47 | | | | 47 |
| 6 | 73 | 60 | 51 | 45 | 71 | 59 | 51 | 45 | 57 | 50 | 45 | 56 | 49 | 44 | 54 | 48 | 44 | 42 | | | | 42 |
| 7 | 68 | 55 | 46 | 40 | 66 | 54 | 46 | 40 | 52 | 45 | 40 | 51 | 44 | 40 | 49 | 44 | 39 | 37 | | | | 37 |
| 8 | 63 | 50 | 42 | 36 | 61 | 49 | 41 | 36 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 35 | 34 | | | | 34 |
| 9 | 59 | 46 | 38 | 33 | 58 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 30 | | | | 30 |
| 10 | 55 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 29 | 39 | 33 | 29 | 28 | | | | 28 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4006 | 4006 | 4006 |
| 5° | 4016 | 3999 | 3965 |
| 10° | 3974 | 3963 | 3917 |
| 15° | 3903 | 3903 | 3858 |
| 20° | 3821 | 3825 | 3777 |
| 25° | 3695 | 3741 | 3681 |
| 30° | 3480 | 3636 | 3591 |
| 35° | 3288 | 3485 | 3491 |
| 40° | 3128 | 3296 | 3383 |
| 45° | 2949 | 3097 | 3256 |
| 50° | 2761 | 2919 | 3117 |
| 55° | 2547 | 2715 | 2948 |
| 60° | 2293 | 2478 | 2743 |
| 65° | 2025 | 2203 | 2495 |
| 70° | 1687 | 1876 | 2120 |
| 75° | 1327 | 1499 | 1659 |
| 80° | 948 | 1054 | 1168 |
| 85° | 618 | 618 | 580 |



TEST NUMBER: P554016

CATALOG NUMBER: FUSL-12-2-LD4-1HI-40-UNV-93-84-EDD-90

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 70.1 | 4.1 |
| 10°-20° | 196.9 | 11.4 |
| 20°-30° | 287.7 | 16.7 |
| 30°-40° | 326.6 | 19.0 |
| 40°-50° | 315.2 | 18.3 |
| 50°-60° | 260.1 | 15.1 |
| 60°-70° | 173.2 | 10.1 |
| 70°-80° | 77.5 | 4.5 |
| 80°-90° | 13.9 | 0.8 |
| 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° | 554.6 | 32.2 |
| 0°-40° | 881.2 | 51.2 |
| 0°-60° | 1456.5 | 84.6 |
| 0°-90° | 1721.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1721.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 744 | 744 | 744 | 744 | 744 | |
| 5° | 743 | 743 | 740 | 736 | 734 | 70 |
| 15° | 700 | 702 | 700 | 697 | 692 | 197 |
| 25° | 622 | 627 | 630 | 625 | 620 | 285 |
| 35° | 500 | 507 | 530 | 533 | 531 | 314 |
| 45° | 387 | 394 | 407 | 426 | 428 | 299 |
| 55° | 271 | 276 | 289 | 305 | 314 | 242 |
| 65° | 159 | 163 | 173 | 185 | 196 | 158 |
| 75° | 64 | 67 | 72 | 76 | 80 | 70 |
| 85° | 10 | 10 | 10 | 9 | 9 | 13 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P554016

CATALOG NUMBER: FUSL-12-2-LD4-1HI-40-UNV-93-84-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 744.3 | 744.3 | 744.3 | 744.3 | 744.3 |
| 2.5° | 746.3 | 746.6 | 744.9 | 740.3 | 737.4 |
| 5° | 743.4 | 743.1 | 740.3 | 736.3 | 734.0 |
| 7.5° | 735.1 | 735.7 | 734.9 | 729.1 | 726.0 |
| 10° | 727.1 | 727.4 | 725.1 | 720.6 | 716.8 |
| 12.5° | 716.8 | 716.6 | 713.4 | 711.1 | 705.1 |
| 15° | 700.5 | 702.3 | 700.5 | 697.4 | 692.5 |
| 17.5° | 684.8 | 684.8 | 686.0 | 680.5 | 676.8 |
| 20° | 667.1 | 667.9 | 667.9 | 663.7 | 659.4 |
| 22.5° | 646.5 | 649.1 | 649.9 | 645.4 | 640.2 |
| 25° | 622.2 | 627.1 | 629.9 | 625.3 | 619.9 |
| 27.5° | 592.7 | 600.2 | 608.8 | 605.3 | 599.3 |
| 30° | 559.9 | 570.7 | 585.0 | 582.2 | 577.9 |
| 32.5° | 528.7 | 539.6 | 559.3 | 558.1 | 555.9 |
| 35° | 500.4 | 507.2 | 530.4 | 533.3 | 531.3 |
| 37.5° | 473.5 | 479.8 | 501.5 | 508.1 | 506.4 |
| 40° | 445.2 | 452.1 | 469.2 | 480.9 | 481.5 |
| 42.5° | 417.2 | 423.8 | 437.8 | 454.6 | 454.6 |
| 45° | 387.4 | 394.0 | 406.9 | 425.5 | 427.8 |
| 47.5° | 358.3 | 365.1 | 377.7 | 396.3 | 400.0 |
| 50° | 329.7 | 336.0 | 348.6 | 366.6 | 372.3 |
| 52.5° | 299.9 | 306.8 | 319.1 | 335.7 | 344.0 |
| 55° | 271.4 | 275.9 | 289.4 | 305.4 | 314.2 |
| 57.5° | 241.6 | 245.9 | 261.1 | 274.8 | 283.9 |
| 60° | 213.0 | 218.5 | 230.2 | 244.2 | 254.8 |
| 62.5° | 185.6 | 191.3 | 201.3 | 213.6 | 225.6 |
| 65° | 159.0 | 163.3 | 173.0 | 185.3 | 195.9 |
| 67.5° | 133.2 | 137.0 | 146.7 | 155.3 | 166.4 |
| 70° | 107.2 | 112.1 | 119.2 | 127.5 | 134.7 |
| 72.5° | 86.4 | 88.4 | 94.4 | 100.4 | 107.8 |
| 75° | 63.8 | 67.2 | 72.1 | 75.5 | 79.8 |
| 77.5° | 45.7 | 47.8 | 50.6 | 53.5 | 57.5 |
| 80° | 30.6 | 31.5 | 34.0 | 34.6 | 37.7 |
| 82.5° | 18.6 | 19.2 | 19.7 | 20.0 | 21.2 |
| 85° | 10.0 | 10.0 | 10.0 | 9.4 | 9.4 |
| 87.5° | 5.7 | 5.7 | 4.9 | 4.0 | 2.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



Report Generated By 670246072 / DESKTOP-MV3F9LC





— 0°-180° - - 45°-225° - - - - 90°-270°







(END OF REPORT)