

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P563345

Luminaire Tested: FSR-24-4-LD4-3LO-40-UNV-82-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563345
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)
Test Lab: INNOVATION CENTER
Issue Date: 7/20/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-24-4-LD4-3LO-40-UNV-82-84-EDD
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8211.0 lumens
Efficiency: N/A
Efficacy: 117.0 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

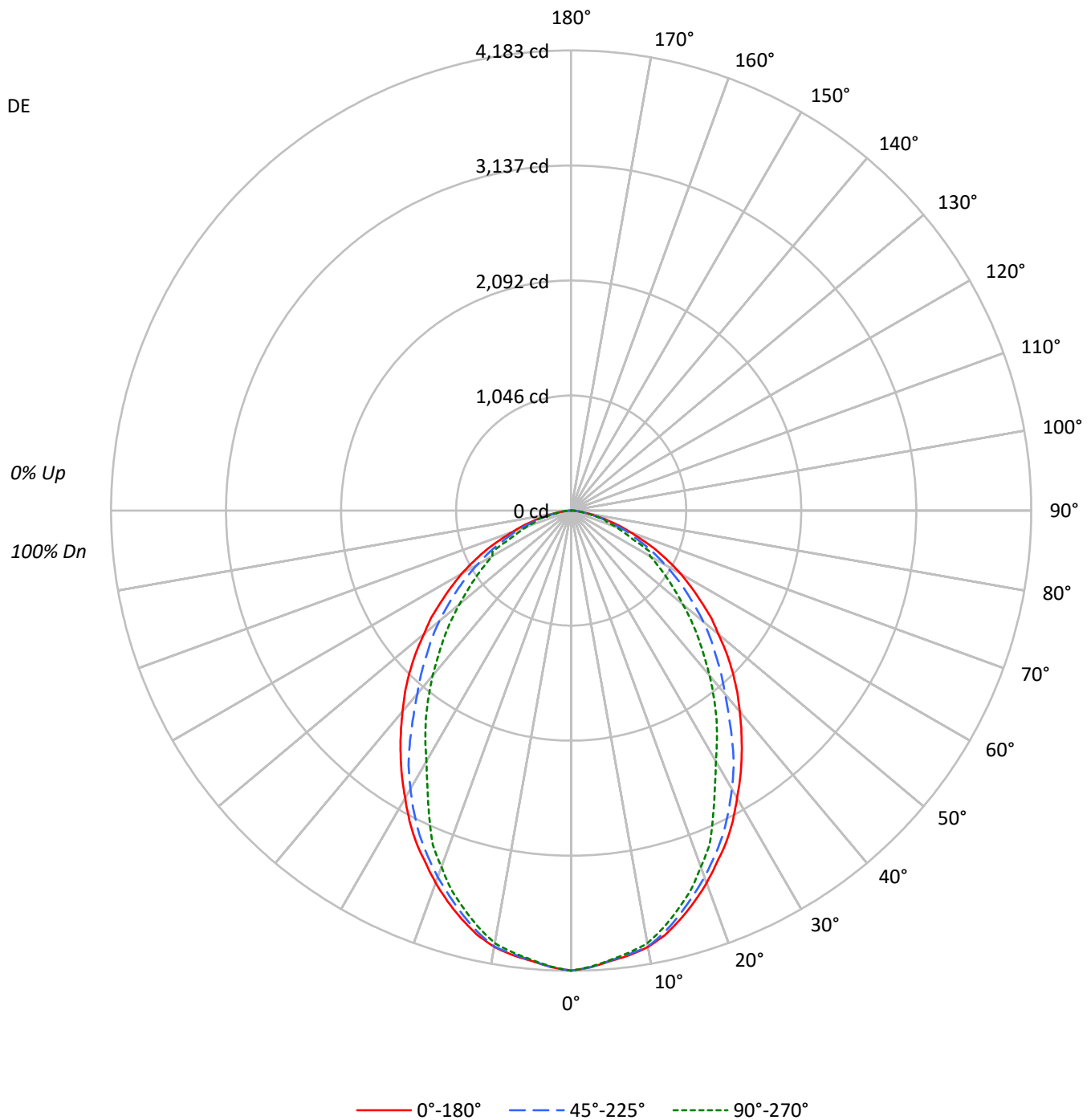
Input Watts (W): 70.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563345

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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 | 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 | 99 | 108 | 104 | 100 | 97 | 100 | 97 | 94 | 96 | 94 | 91 | 92 | 90 | 89 | | | | | 87 | | | | |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 79 | 77 | | | | | 75 | | | | |
| 3 | 93 | 84 | 77 | 71 | 91 | 82 | 76 | 70 | 79 | 74 | 69 | 77 | 72 | 68 | 74 | 70 | 67 | | | | | 65 | | | | |
| 4 | 86 | 75 | 67 | 61 | 84 | 74 | 66 | 61 | 72 | 65 | 60 | 69 | 64 | 59 | 67 | 62 | 58 | | | | | 56 | | | | |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 53 | 65 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 52 | | | | | 50 | | | | |
| 6 | 74 | 62 | 53 | 48 | 72 | 61 | 53 | 47 | 59 | 52 | 47 | 57 | 51 | 47 | 56 | 50 | 46 | | | | | 44 | | | | |
| 7 | 69 | 56 | 48 | 43 | 67 | 56 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 42 | | | | | 40 | | | | |
| 8 | 65 | 52 | 44 | 38 | 63 | 51 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 38 | | | | | 36 | | | | |
| 9 | 61 | 48 | 40 | 35 | 59 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | | | | | 33 | | | | |
| 10 | 57 | 44 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 41 | 36 | 32 | | | | | 30 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5628 | 5628 | 5628 |
| 5° | 5551 | 5545 | 5538 |
| 10° | 5503 | 5496 | 5457 |
| 15° | 5355 | 5301 | 5227 |
| 20° | 5158 | 5075 | 4936 |
| 25° | 4946 | 4838 | 4537 |
| 30° | 4688 | 4537 | 4087 |
| 35° | 4440 | 4194 | 3780 |
| 40° | 4187 | 3822 | 3440 |
| 45° | 3947 | 3533 | 3110 |
| 50° | 3654 | 3279 | 2773 |
| 55° | 3380 | 2972 | 2484 |
| 60° | 3097 | 2654 | 2225 |
| 65° | 2725 | 2324 | 1970 |
| 70° | 2245 | 2035 | 1674 |
| 75° | 1785 | 1559 | 1634 |
| 80° | 1199 | 1124 | 1049 |
| 85° | 747 | 895 | 1045 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3947 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 389.3 | 4.7 |
| 10°-20° | 1068.5 | 13.0 |
| 20°-30° | 1479.3 | 18.0 |
| 30°-40° | 1577.3 | 19.2 |
| 40°-50° | 1439.0 | 17.5 |
| 50°-60° | 1127.3 | 13.7 |
| 60°-70° | 734.7 | 8.9 |
| 70°-80° | 325.5 | 4.0 |
| 80°-90° | 69.9 | 0.9 |
| 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° | 2937.1 | 35.8 |
| 0°-40° | 4514.5 | 55.0 |
| 0°-60° | 7080.8 | 86.2 |
| 0°-90° | 8211.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 8211.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4183 | 4183 | 4183 | 4183 | 4183 | |
| 5° | 4110 | 4105 | 4105 | 4100 | 4100 | 390 |
| 15° | 3844 | 3844 | 3805 | 3767 | 3752 | 1081 |
| 25° | 3332 | 3312 | 3259 | 3143 | 3056 | 1530 |
| 35° | 2703 | 2684 | 2553 | 2360 | 2302 | 1690 |
| 45° | 2074 | 2031 | 1857 | 1702 | 1634 | 1598 |
| 55° | 1441 | 1397 | 1267 | 1117 | 1059 | 1292 |
| 65° | 856 | 808 | 730 | 745 | 619 | 843 |
| 75° | 343 | 319 | 300 | 285 | 314 | 368 |
| 85° | 48 | 53 | 58 | 63 | 68 | 67 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563345

CATALOG NUMBER: FSR-24-4-LD4-3LO-40-UNV-82-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 4182.6 | 4182.6 | 4182.6 | 4182.6 | 4182.6 |
| 2.5° | 4153.6 | 4153.6 | 4153.6 | 4148.7 | 4148.7 |
| 5° | 4110.0 | 4105.2 | 4105.2 | 4100.4 | 4100.4 |
| 7.5° | 4076.2 | 4071.4 | 4066.5 | 4061.7 | 4052.0 |
| 10° | 4027.8 | 4027.8 | 4023.0 | 3998.8 | 3994.0 |
| 12.5° | 3950.5 | 3945.6 | 3926.3 | 3892.5 | 3882.8 |
| 15° | 3844.1 | 3844.1 | 3805.4 | 3766.7 | 3752.2 |
| 17.5° | 3728.1 | 3723.2 | 3674.9 | 3636.2 | 3616.8 |
| 20° | 3602.3 | 3592.7 | 3544.3 | 3481.4 | 3447.6 |
| 22.5° | 3462.1 | 3462.1 | 3404.1 | 3321.9 | 3288.0 |
| 25° | 3331.6 | 3312.2 | 3259.0 | 3143.0 | 3055.9 |
| 27.5° | 3181.7 | 3152.6 | 3094.6 | 2930.2 | 2828.7 |
| 30° | 3017.3 | 3002.7 | 2920.5 | 2707.8 | 2630.4 |
| 32.5° | 2862.5 | 2838.3 | 2751.3 | 2528.9 | 2466.0 |
| 35° | 2703.0 | 2683.6 | 2553.1 | 2359.6 | 2301.6 |
| 37.5° | 2543.4 | 2519.2 | 2354.8 | 2200.1 | 2127.6 |
| 40° | 2383.8 | 2354.8 | 2175.9 | 2035.7 | 1958.3 |
| 42.5° | 2233.9 | 2195.2 | 2021.2 | 1871.3 | 1784.2 |
| 45° | 2074.4 | 2030.8 | 1856.8 | 1702.0 | 1634.3 |
| 47.5° | 1914.8 | 1876.1 | 1716.5 | 1557.0 | 1479.6 |
| 50° | 1745.6 | 1711.7 | 1566.7 | 1407.1 | 1324.9 |
| 52.5° | 1605.3 | 1552.1 | 1411.9 | 1252.4 | 1184.7 |
| 55° | 1440.9 | 1397.4 | 1266.9 | 1117.0 | 1058.9 |
| 57.5° | 1291.0 | 1247.5 | 1126.6 | 986.4 | 938.1 |
| 60° | 1150.8 | 1088.0 | 986.4 | 865.5 | 826.8 |
| 62.5° | 996.1 | 947.7 | 860.7 | 759.1 | 807.5 |
| 65° | 855.9 | 807.5 | 730.1 | 744.6 | 618.9 |
| 67.5° | 701.1 | 676.9 | 609.3 | 541.6 | 522.2 |
| 70° | 570.6 | 541.6 | 517.4 | 444.9 | 425.5 |
| 72.5° | 454.5 | 425.5 | 391.7 | 353.0 | 338.5 |
| 75° | 343.3 | 319.1 | 299.8 | 285.3 | 314.3 |
| 77.5° | 236.9 | 227.3 | 212.8 | 198.2 | 193.4 |
| 80° | 154.7 | 149.9 | 145.1 | 140.2 | 135.4 |
| 82.5° | 91.9 | 91.9 | 91.9 | 91.9 | 91.9 |
| 85° | 48.4 | 53.2 | 58.0 | 62.9 | 67.7 |
| 87.5° | 29.0 | 29.0 | 33.8 | 38.7 | 43.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)