

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: P561297

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-82-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561297
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-12-4-LD4-1STD-50-UNV-82-84-EDD
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3173.0 lumens
Efficiency: N/A
Efficacy: 95.3 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

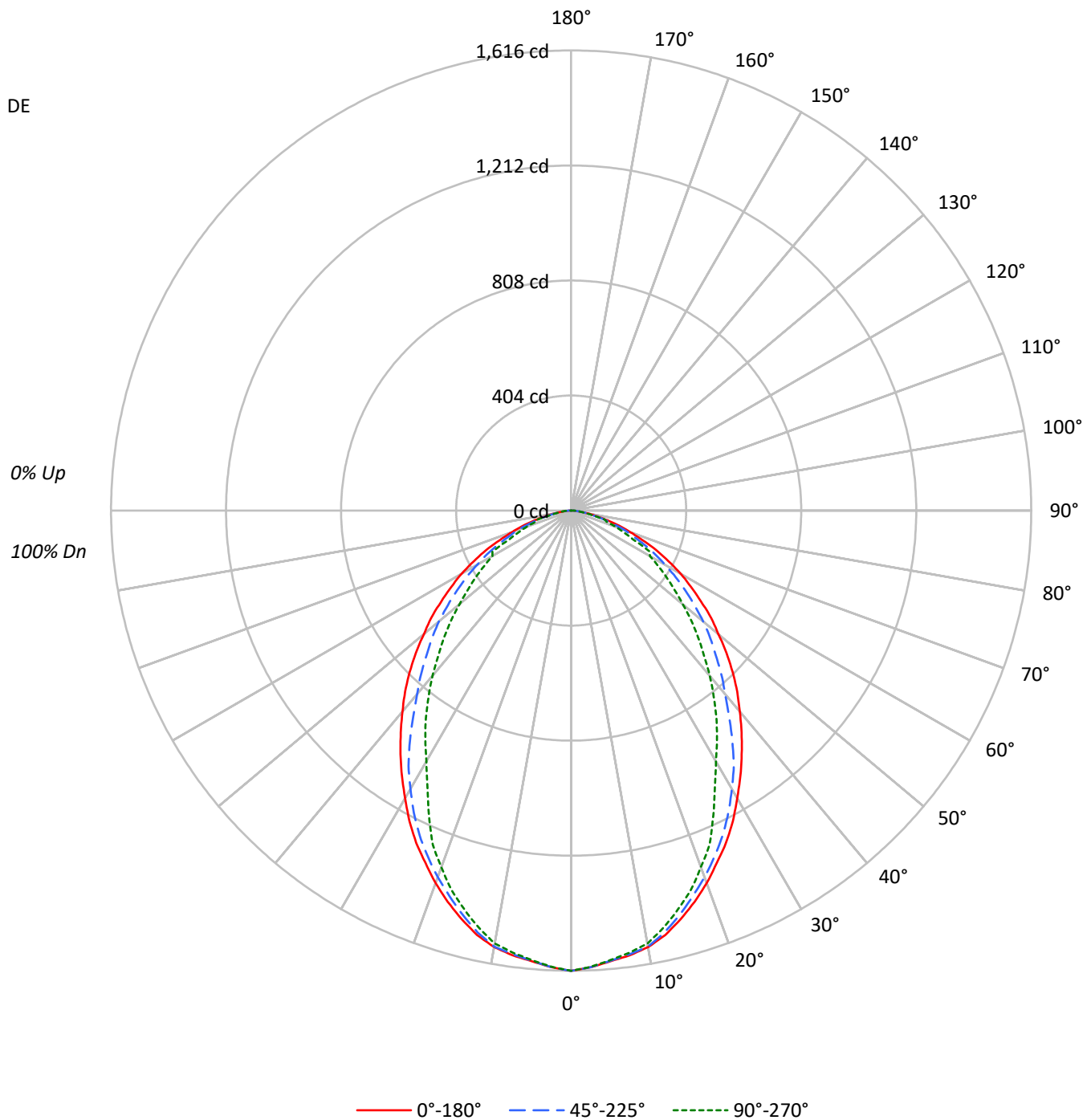
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4349 | 4349 | 4349 |
| 5° | 4290 | 4285 | 4280 |
| 10° | 4253 | 4248 | 4217 |
| 15° | 4138 | 4097 | 4040 |
| 20° | 3987 | 3922 | 3815 |
| 25° | 3823 | 3739 | 3506 |
| 30° | 3623 | 3507 | 3159 |
| 35° | 3431 | 3241 | 2922 |
| 40° | 3236 | 2954 | 2659 |
| 45° | 3051 | 2731 | 2404 |
| 50° | 2824 | 2534 | 2143 |
| 55° | 2612 | 2297 | 1920 |
| 60° | 2393 | 2052 | 1720 |
| 65° | 2106 | 1796 | 1523 |
| 70° | 1735 | 1573 | 1293 |
| 75° | 1380 | 1204 | 1263 |
| 80° | 927 | 869 | 810 |
| 85° | 577 | 692 | 809 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3051 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 150.5 | 4.7 |
| 10°-20° | 412.9 | 13.0 |
| 20°-30° | 571.6 | 18.0 |
| 30°-40° | 609.5 | 19.2 |
| 40°-50° | 556.1 | 17.5 |
| 50°-60° | 435.6 | 13.7 |
| 60°-70° | 283.9 | 8.9 |
| 70°-80° | 125.8 | 4.0 |
| 80°-90° | 27.0 | 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° | 1135.0 | 35.8 |
| 0°-40° | 1744.5 | 55.0 |
| 0°-60° | 2736.3 | 86.2 |
| 0°-90° | 3173.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3173.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1616 | 1616 | 1616 | 1616 | 1616 | |
| 5° | 1588 | 1586 | 1586 | 1584 | 1584 | 151 |
| 15° | 1486 | 1486 | 1470 | 1456 | 1450 | 418 |
| 25° | 1287 | 1280 | 1259 | 1214 | 1181 | 591 |
| 35° | 1044 | 1037 | 987 | 912 | 889 | 653 |
| 45° | 802 | 785 | 718 | 658 | 632 | 617 |
| 55° | 557 | 540 | 490 | 432 | 409 | 499 |
| 65° | 331 | 312 | 282 | 288 | 239 | 326 |
| 75° | 133 | 123 | 116 | 110 | 122 | 142 |
| 85° | 19 | 21 | 22 | 24 | 26 | 26 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561297

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-82-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1616.3 | 1616.3 | 1616.3 | 1616.3 | 1616.3 |
| 2.5° | 1605.1 | 1605.1 | 1605.1 | 1603.2 | 1603.2 |
| 5° | 1588.3 | 1586.4 | 1586.4 | 1584.5 | 1584.5 |
| 7.5° | 1575.2 | 1573.3 | 1571.4 | 1569.6 | 1565.8 |
| 10° | 1556.5 | 1556.5 | 1554.6 | 1545.3 | 1543.4 |
| 12.5° | 1526.6 | 1524.7 | 1517.3 | 1504.2 | 1500.4 |
| 15° | 1485.5 | 1485.5 | 1470.5 | 1455.6 | 1450.0 |
| 17.5° | 1440.6 | 1438.8 | 1420.1 | 1405.1 | 1397.7 |
| 20° | 1392.1 | 1388.3 | 1369.6 | 1345.3 | 1332.3 |
| 22.5° | 1337.9 | 1337.9 | 1315.4 | 1283.7 | 1270.6 |
| 25° | 1287.4 | 1279.9 | 1259.4 | 1214.5 | 1180.9 |
| 27.5° | 1229.5 | 1218.3 | 1195.9 | 1132.3 | 1093.1 |
| 30° | 1166.0 | 1160.4 | 1128.6 | 1046.4 | 1016.5 |
| 32.5° | 1106.2 | 1096.8 | 1063.2 | 977.2 | 953.0 |
| 35° | 1044.5 | 1037.0 | 986.6 | 911.8 | 889.4 |
| 37.5° | 982.9 | 973.5 | 910.0 | 850.2 | 822.2 |
| 40° | 921.2 | 910.0 | 840.8 | 786.7 | 756.8 |
| 42.5° | 863.3 | 848.3 | 781.0 | 723.1 | 689.5 |
| 45° | 801.6 | 784.8 | 717.5 | 657.7 | 631.6 |
| 47.5° | 739.9 | 725.0 | 663.3 | 601.7 | 571.8 |
| 50° | 674.5 | 661.5 | 605.4 | 543.7 | 512.0 |
| 52.5° | 620.4 | 599.8 | 545.6 | 484.0 | 457.8 |
| 55° | 556.8 | 540.0 | 489.6 | 431.6 | 409.2 |
| 57.5° | 498.9 | 482.1 | 435.4 | 381.2 | 362.5 |
| 60° | 444.7 | 420.4 | 381.2 | 334.5 | 319.5 |
| 62.5° | 384.9 | 366.2 | 332.6 | 293.4 | 312.0 |
| 65° | 330.7 | 312.0 | 282.1 | 287.8 | 239.2 |
| 67.5° | 270.9 | 261.6 | 235.4 | 209.3 | 201.8 |
| 70° | 220.5 | 209.3 | 199.9 | 171.9 | 164.4 |
| 72.5° | 175.6 | 164.4 | 151.4 | 136.4 | 130.8 |
| 75° | 132.7 | 123.3 | 115.8 | 110.2 | 121.5 |
| 77.5° | 91.6 | 87.8 | 82.2 | 76.6 | 74.7 |
| 80° | 59.8 | 57.9 | 56.1 | 54.2 | 52.3 |
| 82.5° | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 |
| 85° | 18.7 | 20.6 | 22.4 | 24.3 | 26.2 |
| 87.5° | 11.2 | 11.2 | 13.1 | 14.9 | 16.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)