

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: P563255

Luminaire Tested: FSR-24-4-LD4-3LO-35-UNV-80-87-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563255
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-35-UNV-80-87-EDD
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRONM
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8197.0 lumens
Efficiency: N/A
Efficacy: 116.8 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

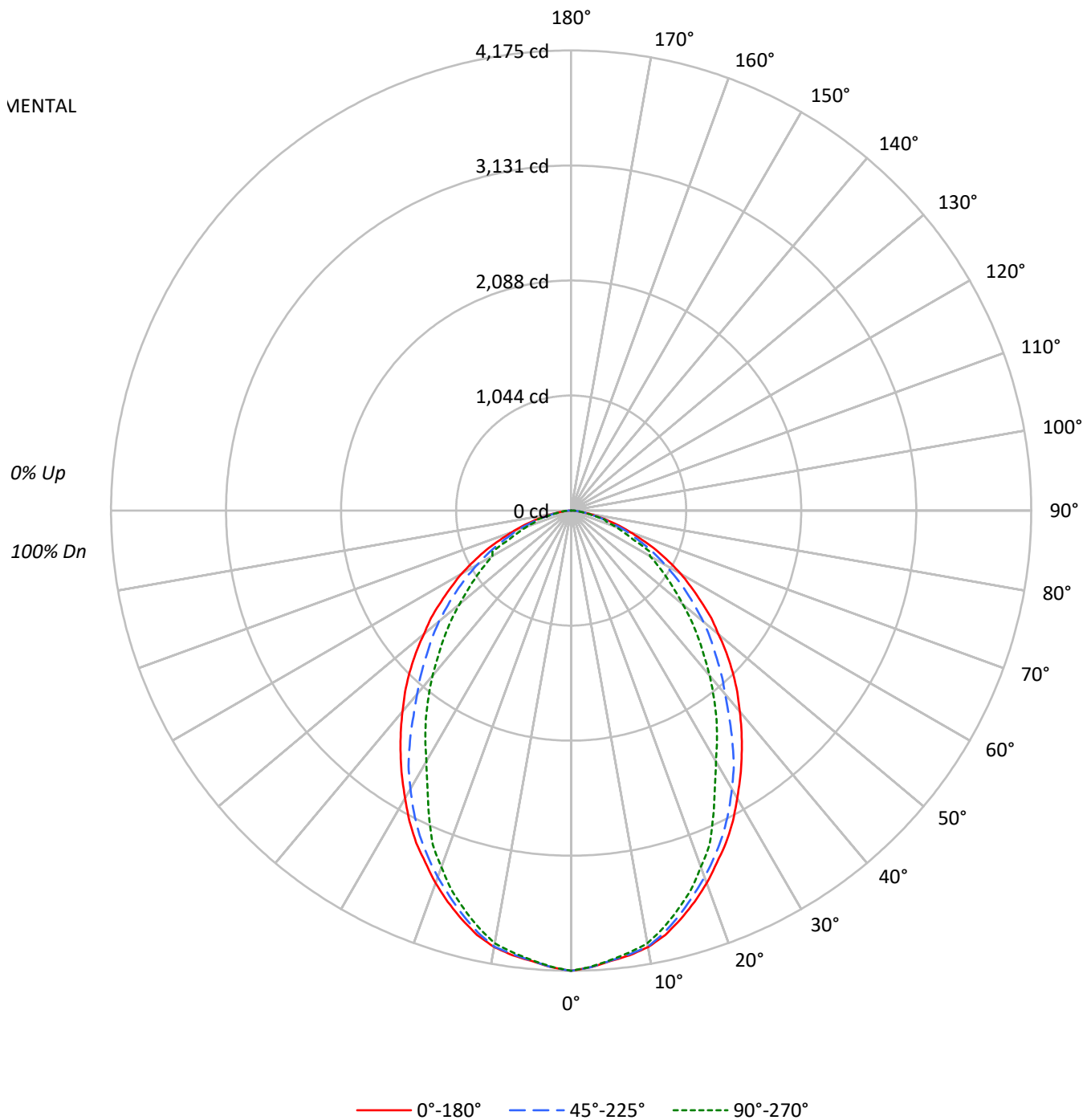
Input Watts (W): 70.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563255

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|-----|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 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 | 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° | 5618 | 5618 | 5618 |
| 5° | 5542 | 5535 | 5529 |
| 10° | 5494 | 5487 | 5447 |
| 15° | 5345 | 5292 | 5218 |
| 20° | 5149 | 5066 | 4928 |
| 25° | 4938 | 4830 | 4529 |
| 30° | 4680 | 4530 | 4080 |
| 35° | 4432 | 4186 | 3774 |
| 40° | 4180 | 3815 | 3434 |
| 45° | 3940 | 3527 | 3105 |
| 50° | 3648 | 3274 | 2768 |
| 55° | 3374 | 2967 | 2480 |
| 60° | 3092 | 2650 | 2221 |
| 65° | 2720 | 2321 | 1967 |
| 70° | 2241 | 2032 | 1671 |
| 75° | 1782 | 1556 | 1631 |
| 80° | 1197 | 1122 | 1048 |
| 85° | 746 | 894 | 1044 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3940 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 388.7 | 4.7 |
| 10°-20° | 1066.7 | 13.0 |
| 20°-30° | 1476.8 | 18.0 |
| 30°-40° | 1574.7 | 19.2 |
| 40°-50° | 1436.5 | 17.5 |
| 50°-60° | 1125.4 | 13.7 |
| 60°-70° | 733.5 | 8.9 |
| 70°-80° | 325.0 | 4.0 |
| 80°-90° | 69.8 | 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° | 2932.1 | 35.8 |
| 0°-40° | 4506.8 | 55.0 |
| 0°-60° | 7068.7 | 86.2 |
| 0°-90° | 8197.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 8197.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4175 | 4175 | 4175 | 4175 | 4175 | |
| 5° | 4103 | 4098 | 4098 | 4093 | 4093 | 389 |
| 15° | 3838 | 3838 | 3799 | 3760 | 3746 | 1079 |
| 25° | 3326 | 3307 | 3254 | 3138 | 3051 | 1527 |
| 35° | 2698 | 2679 | 2549 | 2356 | 2298 | 1687 |
| 45° | 2071 | 2027 | 1854 | 1699 | 1632 | 1595 |
| 55° | 1438 | 1395 | 1265 | 1115 | 1057 | 1290 |
| 65° | 854 | 806 | 729 | 743 | 618 | 842 |
| 75° | 343 | 319 | 299 | 285 | 314 | 367 |
| 85° | 48 | 53 | 58 | 63 | 68 | 67 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563255

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 4175.4 | 4175.4 | 4175.4 | 4175.4 | 4175.4 |
| 2.5° | 4146.5 | 4146.5 | 4146.5 | 4141.7 | 4141.7 |
| 5° | 4103.0 | 4098.2 | 4098.2 | 4093.4 | 4093.4 |
| 7.5° | 4069.2 | 4064.4 | 4059.6 | 4054.8 | 4045.1 |
| 10° | 4021.0 | 4021.0 | 4016.1 | 3992.0 | 3987.2 |
| 12.5° | 3943.7 | 3938.9 | 3919.6 | 3885.8 | 3876.2 |
| 15° | 3837.5 | 3837.5 | 3798.9 | 3760.3 | 3745.8 |
| 17.5° | 3721.7 | 3716.9 | 3668.6 | 3630.0 | 3610.7 |
| 20° | 3596.2 | 3586.5 | 3538.3 | 3475.5 | 3441.7 |
| 22.5° | 3456.2 | 3456.2 | 3398.3 | 3316.2 | 3282.4 |
| 25° | 3325.9 | 3306.6 | 3253.5 | 3137.6 | 3050.7 |
| 27.5° | 3176.2 | 3147.3 | 3089.3 | 2925.2 | 2823.9 |
| 30° | 3012.1 | 2997.6 | 2915.6 | 2703.2 | 2625.9 |
| 32.5° | 2857.6 | 2833.5 | 2746.6 | 2524.6 | 2461.8 |
| 35° | 2698.3 | 2679.0 | 2548.7 | 2355.6 | 2297.7 |
| 37.5° | 2539.1 | 2514.9 | 2350.8 | 2196.3 | 2123.9 |
| 40° | 2379.8 | 2350.8 | 2172.2 | 2032.2 | 1955.0 |
| 42.5° | 2230.1 | 2191.5 | 2017.7 | 1868.1 | 1781.2 |
| 45° | 2070.8 | 2027.4 | 1853.6 | 1699.1 | 1631.6 |
| 47.5° | 1911.5 | 1872.9 | 1713.6 | 1554.3 | 1477.1 |
| 50° | 1742.6 | 1708.8 | 1564.0 | 1404.7 | 1322.6 |
| 52.5° | 1602.6 | 1549.5 | 1409.5 | 1250.2 | 1182.6 |
| 55° | 1438.5 | 1395.0 | 1264.7 | 1115.1 | 1057.1 |
| 57.5° | 1288.8 | 1245.4 | 1124.7 | 984.7 | 936.5 |
| 60° | 1148.9 | 1086.1 | 984.7 | 864.1 | 825.4 |
| 62.5° | 994.4 | 946.1 | 859.2 | 757.9 | 806.1 |
| 65° | 854.4 | 806.1 | 728.9 | 743.4 | 617.9 |
| 67.5° | 699.9 | 675.8 | 608.2 | 540.6 | 521.3 |
| 70° | 569.6 | 540.6 | 516.5 | 444.1 | 424.8 |
| 72.5° | 453.7 | 424.8 | 391.0 | 352.4 | 337.9 |
| 75° | 342.7 | 318.6 | 299.3 | 284.8 | 313.8 |
| 77.5° | 236.5 | 226.9 | 212.4 | 197.9 | 193.1 |
| 80° | 154.5 | 149.6 | 144.8 | 140.0 | 135.2 |
| 82.5° | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 |
| 85° | 48.3 | 53.1 | 57.9 | 62.8 | 67.6 |
| 87.5° | 29.0 | 29.0 | 33.8 | 38.6 | 43.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)