

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: P563253

Luminaire Tested: FSR-24-4-LD4-3LO-35-UNV-80-86-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563253
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-80-86-EDD
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRONM
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8472.0 lumens
Efficiency: N/A
Efficacy: 120.7 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

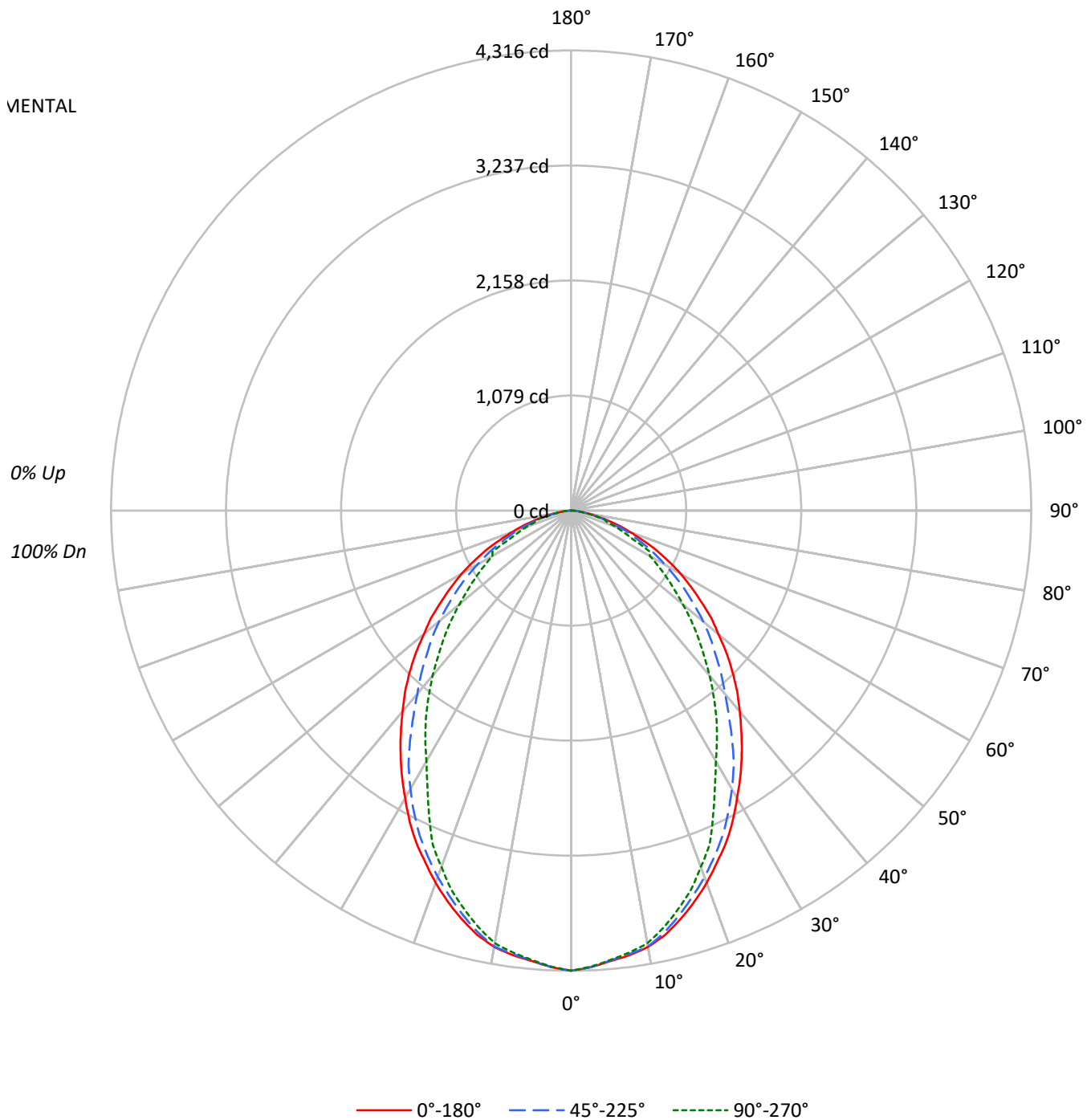
Input Watts (W): 70.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563253

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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 | 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° | 5806 | 5806 | 5806 |
| 5° | 5728 | 5721 | 5714 |
| 10° | 5678 | 5671 | 5630 |
| 15° | 5525 | 5469 | 5393 |
| 20° | 5322 | 5236 | 5093 |
| 25° | 5103 | 4992 | 4681 |
| 30° | 4837 | 4682 | 4217 |
| 35° | 4581 | 4327 | 3901 |
| 40° | 4320 | 3943 | 3549 |
| 45° | 4073 | 3645 | 3209 |
| 50° | 3770 | 3384 | 2861 |
| 55° | 3487 | 3066 | 2563 |
| 60° | 3195 | 2739 | 2296 |
| 65° | 2812 | 2398 | 2033 |
| 70° | 2316 | 2100 | 1727 |
| 75° | 1841 | 1608 | 1686 |
| 80° | 1237 | 1160 | 1082 |
| 85° | 770 | 925 | 1078 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4073 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 401.7 | 4.7 |
| 10°-20° | 1102.5 | 13.0 |
| 20°-30° | 1526.3 | 18.0 |
| 30°-40° | 1627.5 | 19.2 |
| 40°-50° | 1484.7 | 17.5 |
| 50°-60° | 1163.2 | 13.7 |
| 60°-70° | 758.1 | 8.9 |
| 70°-80° | 335.9 | 4.0 |
| 80°-90° | 72.1 | 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° | 3030.5 | 35.8 |
| 0°-40° | 4658.0 | 55.0 |
| 0°-60° | 7305.9 | 86.2 |
| 0°-90° | 8472.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 8472.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4316 | 4316 | 4316 | 4316 | 4316 | |
| 5° | 4241 | 4236 | 4236 | 4231 | 4231 | 403 |
| 15° | 3966 | 3966 | 3926 | 3886 | 3872 | 1115 |
| 25° | 3438 | 3418 | 3363 | 3243 | 3153 | 1578 |
| 35° | 2789 | 2769 | 2634 | 2435 | 2375 | 1744 |
| 45° | 2140 | 2095 | 1916 | 1756 | 1686 | 1649 |
| 55° | 1487 | 1442 | 1307 | 1152 | 1093 | 1333 |
| 65° | 883 | 833 | 753 | 768 | 639 | 870 |
| 75° | 354 | 329 | 309 | 294 | 324 | 380 |
| 85° | 50 | 55 | 60 | 65 | 70 | 69 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563253

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 4315.5 | 4315.5 | 4315.5 | 4315.5 | 4315.5 |
| 2.5° | 4285.6 | 4285.6 | 4285.6 | 4280.6 | 4280.6 |
| 5° | 4240.7 | 4235.7 | 4235.7 | 4230.7 | 4230.7 |
| 7.5° | 4205.8 | 4200.8 | 4195.8 | 4190.8 | 4180.8 |
| 10° | 4155.9 | 4155.9 | 4150.9 | 4125.9 | 4121.0 |
| 12.5° | 4076.0 | 4071.1 | 4051.1 | 4016.2 | 4006.2 |
| 15° | 3966.3 | 3966.3 | 3926.4 | 3886.5 | 3871.5 |
| 17.5° | 3846.6 | 3841.6 | 3791.7 | 3751.8 | 3731.8 |
| 20° | 3716.8 | 3706.9 | 3657.0 | 3592.1 | 3557.2 |
| 22.5° | 3572.2 | 3572.2 | 3512.3 | 3427.5 | 3392.6 |
| 25° | 3437.5 | 3417.5 | 3362.6 | 3242.9 | 3153.1 |
| 27.5° | 3282.8 | 3252.9 | 3193.0 | 3023.4 | 2918.6 |
| 30° | 3113.2 | 3098.2 | 3013.4 | 2793.9 | 2714.0 |
| 32.5° | 2953.5 | 2928.6 | 2838.8 | 2609.3 | 2544.4 |
| 35° | 2788.9 | 2768.9 | 2634.2 | 2434.7 | 2374.8 |
| 37.5° | 2624.2 | 2599.3 | 2429.7 | 2270.0 | 2195.2 |
| 40° | 2459.6 | 2429.7 | 2245.1 | 2100.4 | 2020.6 |
| 42.5° | 2304.9 | 2265.0 | 2085.4 | 1930.8 | 1841.0 |
| 45° | 2140.3 | 2095.4 | 1915.8 | 1756.1 | 1686.3 |
| 47.5° | 1975.7 | 1935.7 | 1771.1 | 1606.5 | 1526.6 |
| 50° | 1801.0 | 1766.1 | 1616.5 | 1451.8 | 1367.0 |
| 52.5° | 1656.4 | 1601.5 | 1456.8 | 1292.2 | 1222.3 |
| 55° | 1486.7 | 1441.8 | 1307.1 | 1152.5 | 1092.6 |
| 57.5° | 1332.1 | 1287.2 | 1162.4 | 1017.8 | 967.9 |
| 60° | 1187.4 | 1122.5 | 1017.8 | 893.0 | 853.1 |
| 62.5° | 1027.7 | 977.9 | 888.0 | 783.3 | 833.2 |
| 65° | 883.1 | 833.2 | 753.3 | 768.3 | 638.6 |
| 67.5° | 723.4 | 698.5 | 628.6 | 558.8 | 538.8 |
| 70° | 588.7 | 558.8 | 533.8 | 459.0 | 439.0 |
| 72.5° | 469.0 | 439.0 | 404.1 | 364.2 | 349.2 |
| 75° | 354.2 | 329.3 | 309.3 | 294.4 | 324.3 |
| 77.5° | 244.5 | 234.5 | 219.5 | 204.6 | 199.6 |
| 80° | 159.6 | 154.7 | 149.7 | 144.7 | 139.7 |
| 82.5° | 94.8 | 94.8 | 94.8 | 94.8 | 94.8 |
| 85° | 49.9 | 54.9 | 59.9 | 64.9 | 69.8 |
| 87.5° | 29.9 | 29.9 | 34.9 | 39.9 | 44.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)