

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: P563898

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-80-94-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563898
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-LD4-4LO-40-UNV-80-94-EDD-90
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9915.0 lumens
Efficiency: N/A
Efficacy: 105.9 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

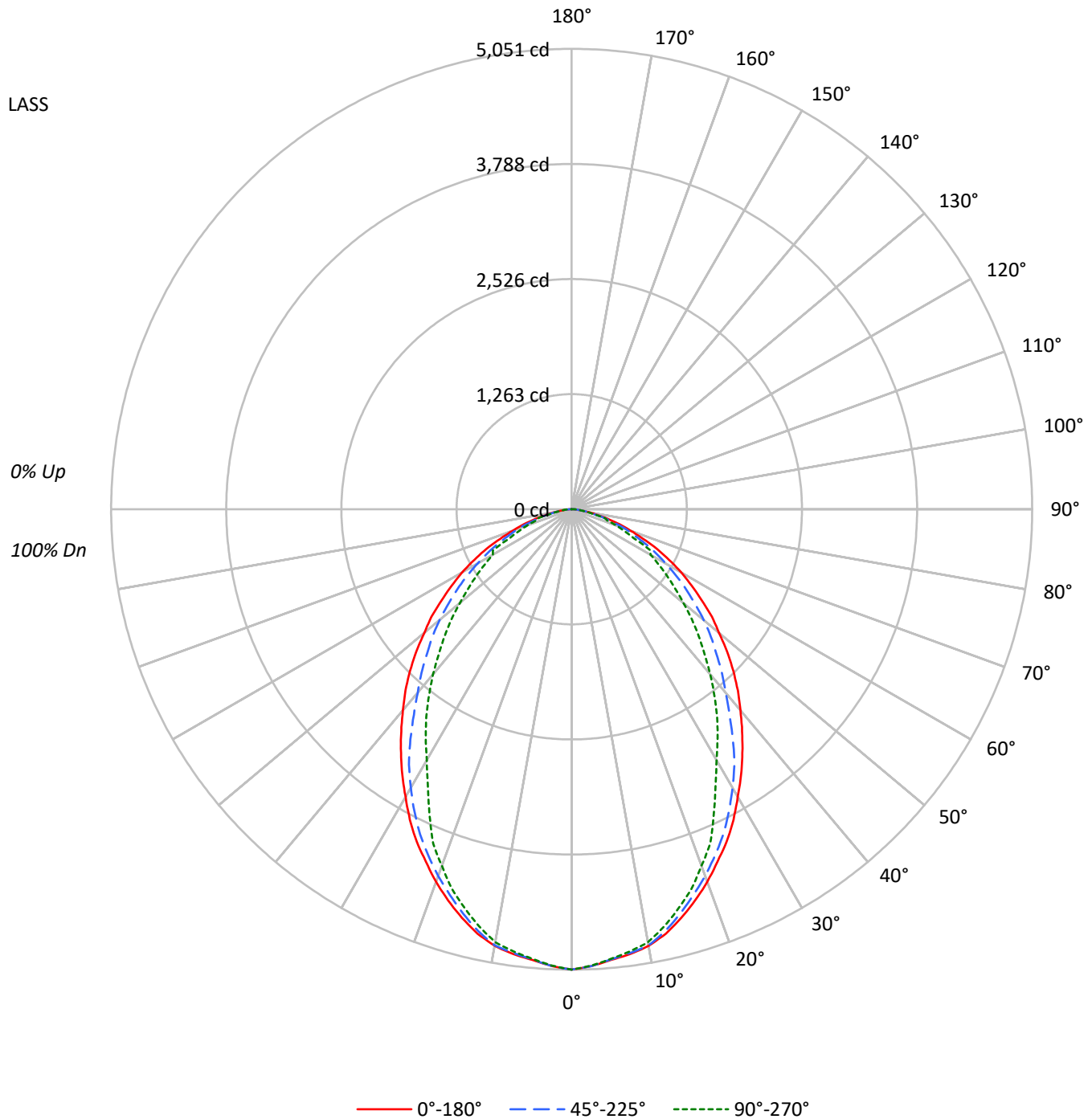
Input Watts (W): 93.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563898

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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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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° | 6796 | 6796 | 6796 |
| 5° | 6703 | 6695 | 6687 |
| 10° | 6645 | 6637 | 6589 |
| 15° | 6466 | 6401 | 6311 |
| 20° | 6228 | 6128 | 5961 |
| 25° | 5972 | 5842 | 5478 |
| 30° | 5661 | 5479 | 4935 |
| 35° | 5361 | 5064 | 4565 |
| 40° | 5056 | 4615 | 4153 |
| 45° | 4766 | 4266 | 3755 |
| 50° | 4412 | 3960 | 3349 |
| 55° | 4082 | 3589 | 3000 |
| 60° | 3739 | 3205 | 2687 |
| 65° | 3290 | 2807 | 2379 |
| 70° | 2710 | 2458 | 2021 |
| 75° | 2155 | 1882 | 1973 |
| 80° | 1447 | 1358 | 1267 |
| 85° | 902 | 1082 | 1261 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4766 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 470.1 | 4.7 |
| 10°-20° | 1290.3 | 13.0 |
| 20°-30° | 1786.3 | 18.0 |
| 30°-40° | 1904.7 | 19.2 |
| 40°-50° | 1737.6 | 17.5 |
| 50°-60° | 1361.3 | 13.7 |
| 60°-70° | 887.2 | 8.9 |
| 70°-80° | 393.1 | 4.0 |
| 80°-90° | 84.4 | 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° | 3546.7 | 35.8 |
| 0°-40° | 5451.4 | 55.0 |
| 0°-60° | 8550.3 | 86.2 |
| 0°-90° | 9915.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 9915.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 5051 | 5051 | 5051 | 5051 | 5051 | |
| 5° | 4963 | 4957 | 4957 | 4951 | 4951 | 471 |
| 15° | 4642 | 4642 | 4595 | 4548 | 4531 | 1305 |
| 25° | 4023 | 4000 | 3935 | 3795 | 3690 | 1847 |
| 35° | 3264 | 3240 | 3083 | 2849 | 2779 | 2041 |
| 45° | 2505 | 2452 | 2242 | 2055 | 1974 | 1929 |
| 55° | 1740 | 1687 | 1530 | 1349 | 1279 | 1561 |
| 65° | 1034 | 975 | 882 | 899 | 747 | 1018 |
| 75° | 415 | 385 | 362 | 344 | 380 | 444 |
| 85° | 58 | 64 | 70 | 76 | 82 | 81 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563898

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 5050.6 | 5050.6 | 5050.6 | 5050.6 | 5050.6 |
| 2.5° | 5015.5 | 5015.5 | 5015.5 | 5009.7 | 5009.7 |
| 5° | 4963.0 | 4957.1 | 4957.1 | 4951.3 | 4951.3 |
| 7.5° | 4922.1 | 4916.3 | 4910.4 | 4904.6 | 4892.9 |
| 10° | 4863.7 | 4863.7 | 4857.9 | 4828.7 | 4822.9 |
| 12.5° | 4770.3 | 4764.5 | 4741.1 | 4700.2 | 4688.6 |
| 15° | 4641.9 | 4641.9 | 4595.1 | 4548.4 | 4530.9 |
| 17.5° | 4501.7 | 4495.9 | 4437.5 | 4390.8 | 4367.4 |
| 20° | 4349.9 | 4338.2 | 4279.8 | 4203.9 | 4163.1 |
| 22.5° | 4180.6 | 4180.6 | 4110.5 | 4011.3 | 3970.4 |
| 25° | 4022.9 | 3999.6 | 3935.4 | 3795.2 | 3690.1 |
| 27.5° | 3841.9 | 3806.9 | 3736.8 | 3538.3 | 3415.7 |
| 30° | 3643.4 | 3625.9 | 3526.6 | 3269.7 | 3176.3 |
| 32.5° | 3456.6 | 3427.4 | 3322.3 | 3053.7 | 2977.8 |
| 35° | 3263.9 | 3240.5 | 3082.9 | 2849.3 | 2779.3 |
| 37.5° | 3071.2 | 3042.0 | 2843.5 | 2656.7 | 2569.1 |
| 40° | 2878.5 | 2843.5 | 2627.5 | 2458.1 | 2364.7 |
| 42.5° | 2697.5 | 2650.8 | 2440.6 | 2259.6 | 2154.5 |
| 45° | 2504.8 | 2452.3 | 2242.1 | 2055.3 | 1973.5 |
| 47.5° | 2312.2 | 2265.5 | 2072.8 | 1880.1 | 1786.7 |
| 50° | 2107.8 | 2066.9 | 1891.8 | 1699.1 | 1599.8 |
| 52.5° | 1938.5 | 1874.3 | 1704.9 | 1512.3 | 1430.5 |
| 55° | 1740.0 | 1687.4 | 1529.8 | 1348.8 | 1278.7 |
| 57.5° | 1559.0 | 1506.4 | 1360.4 | 1191.1 | 1132.7 |
| 60° | 1389.6 | 1313.7 | 1191.1 | 1045.1 | 998.4 |
| 62.5° | 1202.8 | 1144.4 | 1039.3 | 916.7 | 975.1 |
| 65° | 1033.5 | 975.1 | 881.7 | 899.2 | 747.4 |
| 67.5° | 846.6 | 817.4 | 735.7 | 653.9 | 630.6 |
| 70° | 689.0 | 653.9 | 624.8 | 537.2 | 513.8 |
| 72.5° | 548.8 | 513.8 | 472.9 | 426.2 | 408.7 |
| 75° | 414.6 | 385.4 | 362.0 | 344.5 | 379.5 |
| 77.5° | 286.1 | 274.4 | 256.9 | 239.4 | 233.6 |
| 80° | 186.8 | 181.0 | 175.2 | 169.3 | 163.5 |
| 82.5° | 110.9 | 110.9 | 110.9 | 110.9 | 110.9 |
| 85° | 58.4 | 64.2 | 70.1 | 75.9 | 81.7 |
| 87.5° | 35.0 | 35.0 | 40.9 | 46.7 | 52.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)