

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: P562628

Luminaire Tested: FSR-24-4-LD4-2HI-50-UNV-81-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562628
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-LD4-2HI-50-UNV-81-86-EDD-90
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7876.0 lumens
Efficiency: N/A
Efficacy: 91.2 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

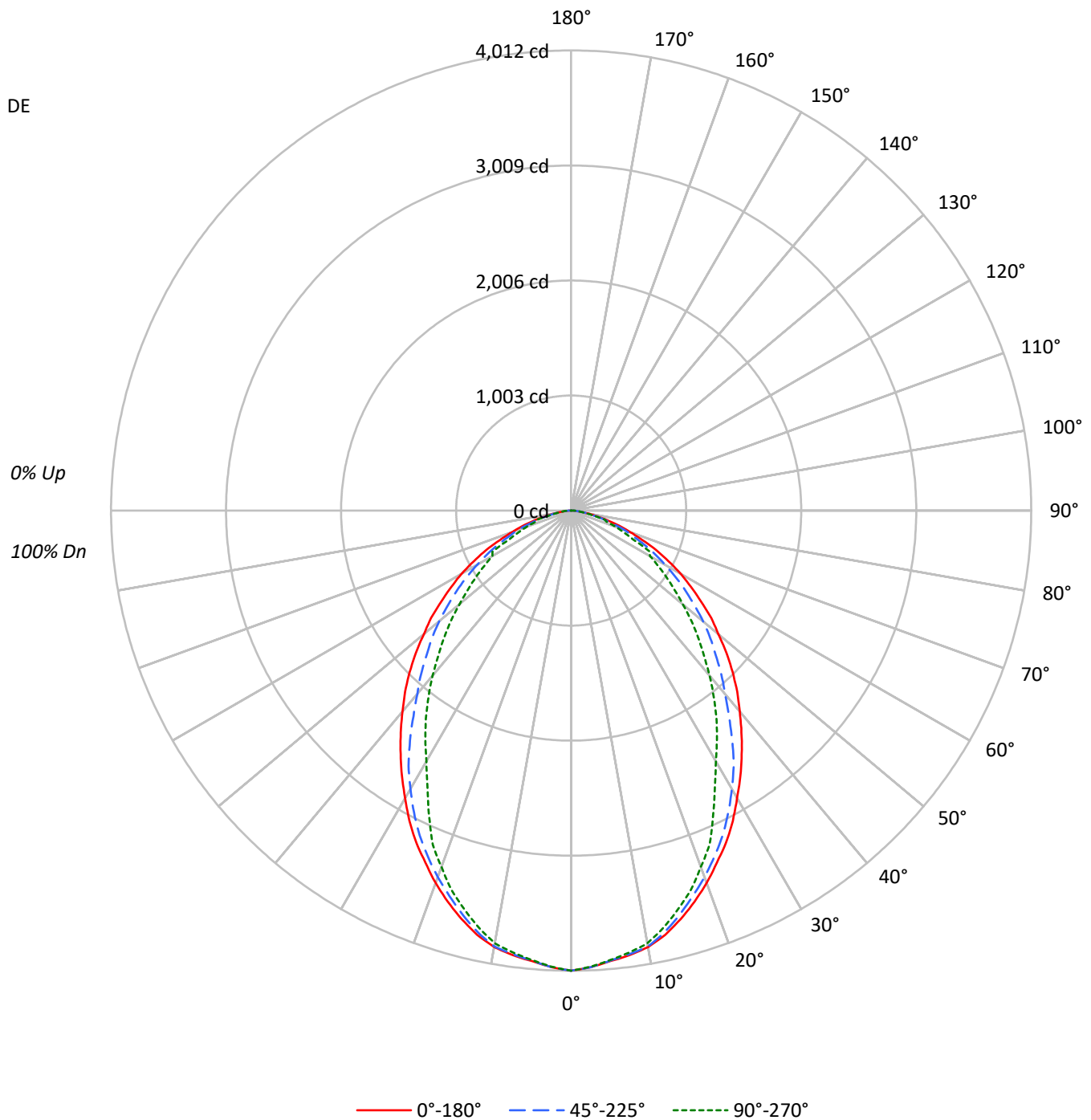
Input Watts (W): 86.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P562628

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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° | 5398 | 5398 | 5398 |
| 5° | 5325 | 5318 | 5312 |
| 10° | 5278 | 5272 | 5234 |
| 15° | 5136 | 5085 | 5013 |
| 20° | 4948 | 4868 | 4735 |
| 25° | 4744 | 4641 | 4352 |
| 30° | 4497 | 4352 | 3920 |
| 35° | 4259 | 4022 | 3626 |
| 40° | 4016 | 3666 | 3299 |
| 45° | 3786 | 3389 | 2983 |
| 50° | 3505 | 3145 | 2660 |
| 55° | 3242 | 2851 | 2383 |
| 60° | 2971 | 2546 | 2134 |
| 65° | 2613 | 2230 | 1890 |
| 70° | 2153 | 1952 | 1606 |
| 75° | 1712 | 1495 | 1567 |
| 80° | 1150 | 1078 | 1007 |
| 85° | 716 | 860 | 1002 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3786 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 373.5 | 4.7 |
| 10°-20° | 1024.9 | 13.0 |
| 20°-30° | 1418.9 | 18.0 |
| 30°-40° | 1513.0 | 19.2 |
| 40°-50° | 1380.3 | 17.5 |
| 50°-60° | 1081.4 | 13.7 |
| 60°-70° | 704.8 | 8.9 |
| 70°-80° | 312.3 | 4.0 |
| 80°-90° | 67.0 | 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° | 2817.3 | 35.8 |
| 0°-40° | 4330.3 | 55.0 |
| 0°-60° | 6791.9 | 86.2 |
| 0°-90° | 7876.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 7876.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4012 | 4012 | 4012 | 4012 | 4012 | |
| 5° | 3942 | 3938 | 3938 | 3933 | 3933 | 374 |
| 15° | 3687 | 3687 | 3650 | 3613 | 3599 | 1037 |
| 25° | 3196 | 3177 | 3126 | 3015 | 2931 | 1467 |
| 35° | 2593 | 2574 | 2449 | 2263 | 2208 | 1621 |
| 45° | 1990 | 1948 | 1781 | 1633 | 1568 | 1533 |
| 55° | 1382 | 1340 | 1215 | 1071 | 1016 | 1240 |
| 65° | 821 | 775 | 700 | 714 | 594 | 809 |
| 75° | 329 | 306 | 288 | 274 | 302 | 353 |
| 85° | 46 | 51 | 56 | 60 | 65 | 64 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P562628

CATALOG NUMBER: FSR-24-4-LD4-2HI-50-UNV-81-86-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 4011.9 | 4011.9 | 4011.9 | 4011.9 | 4011.9 |
| 2.5° | 3984.1 | 3984.1 | 3984.1 | 3979.5 | 3979.5 |
| 5° | 3942.4 | 3937.7 | 3937.7 | 3933.1 | 3933.1 |
| 7.5° | 3909.9 | 3905.3 | 3900.6 | 3896.0 | 3886.7 |
| 10° | 3863.5 | 3863.5 | 3858.9 | 3835.7 | 3831.0 |
| 12.5° | 3789.3 | 3784.7 | 3766.1 | 3733.6 | 3724.4 |
| 15° | 3687.3 | 3687.3 | 3650.2 | 3613.1 | 3599.1 |
| 17.5° | 3576.0 | 3571.3 | 3524.9 | 3487.8 | 3469.3 |
| 20° | 3455.4 | 3446.1 | 3399.7 | 3339.4 | 3306.9 |
| 22.5° | 3320.9 | 3320.9 | 3265.2 | 3186.4 | 3153.9 |
| 25° | 3195.6 | 3177.1 | 3126.1 | 3014.7 | 2931.3 |
| 27.5° | 3051.8 | 3024.0 | 2968.4 | 2810.7 | 2713.3 |
| 30° | 2894.2 | 2880.2 | 2801.4 | 2597.3 | 2523.1 |
| 32.5° | 2745.7 | 2722.5 | 2639.1 | 2425.7 | 2365.4 |
| 35° | 2592.7 | 2574.1 | 2448.9 | 2263.4 | 2207.7 |
| 37.5° | 2439.6 | 2416.4 | 2258.7 | 2110.3 | 2040.8 |
| 40° | 2286.6 | 2258.7 | 2087.1 | 1952.6 | 1878.4 |
| 42.5° | 2142.8 | 2105.7 | 1938.7 | 1794.9 | 1711.4 |
| 45° | 1989.7 | 1948.0 | 1781.0 | 1632.6 | 1567.7 |
| 47.5° | 1836.7 | 1799.6 | 1646.5 | 1493.5 | 1419.2 |
| 50° | 1674.3 | 1641.9 | 1502.7 | 1349.7 | 1270.8 |
| 52.5° | 1539.8 | 1488.8 | 1354.3 | 1201.3 | 1136.3 |
| 55° | 1382.1 | 1340.4 | 1215.2 | 1071.4 | 1015.7 |
| 57.5° | 1238.4 | 1196.6 | 1080.7 | 946.2 | 899.8 |
| 60° | 1103.9 | 1043.6 | 946.2 | 830.2 | 793.1 |
| 62.5° | 955.4 | 909.1 | 825.6 | 728.2 | 774.6 |
| 65° | 820.9 | 774.6 | 700.3 | 714.3 | 593.7 |
| 67.5° | 672.5 | 649.3 | 584.4 | 519.5 | 500.9 |
| 70° | 547.3 | 519.5 | 496.3 | 426.7 | 408.2 |
| 72.5° | 436.0 | 408.2 | 375.7 | 338.6 | 324.7 |
| 75° | 329.3 | 306.1 | 287.6 | 273.6 | 301.5 |
| 77.5° | 227.3 | 218.0 | 204.1 | 190.2 | 185.5 |
| 80° | 148.4 | 143.8 | 139.1 | 134.5 | 129.9 |
| 82.5° | 88.1 | 88.1 | 88.1 | 88.1 | 88.1 |
| 85° | 46.4 | 51.0 | 55.7 | 60.3 | 64.9 |
| 87.5° | 27.8 | 27.8 | 32.5 | 37.1 | 41.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)