

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: P590343

Luminaire Tested: FSR-24-2-LD4-2STD-35-UNV-82-86-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P590343
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/8/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-24-2-LD4-2STD-35-UNV-82-86-EDD
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3517.0 lumens
Efficiency: N/A
Efficacy: 105.6 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

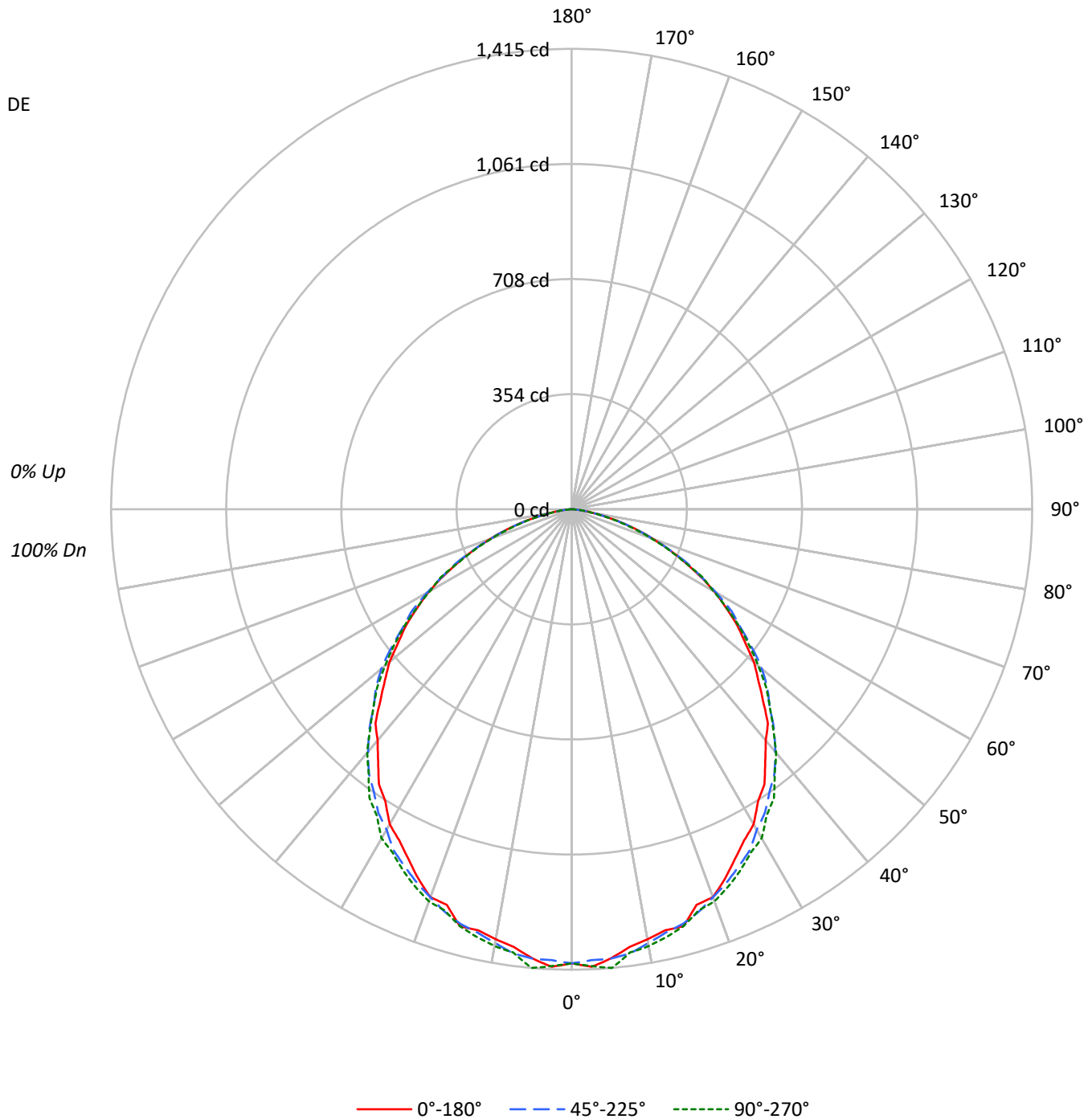
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P590343

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-82-86-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P590343

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-82-86-EDD

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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 100 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 |
| 4 | 84 | 73 | 64 | 58 | 82 | 71 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 59 | 55 | 53 |
| 5 | 78 | 65 | 57 | 50 | 76 | 64 | 56 | 50 | 62 | 55 | 49 | 60 | 54 | 49 | 58 | 53 | 48 | 46 |
| 6 | 72 | 59 | 50 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 |
| 7 | 67 | 53 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 39 | 34 | 32 |
| 9 | 58 | 45 | 37 | 31 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3755 | 3755 | 3755 |
| 5° | 3743 | 3744 | 3823 |
| 10° | 3667 | 3699 | 3725 |
| 15° | 3696 | 3676 | 3696 |
| 20° | 3633 | 3633 | 3672 |
| 25° | 3522 | 3599 | 3638 |
| 30° | 3473 | 3534 | 3628 |
| 35° | 3392 | 3480 | 3558 |
| 40° | 3260 | 3417 | 3432 |
| 45° | 3161 | 3274 | 3278 |
| 50° | 3057 | 3195 | 3134 |
| 55° | 2913 | 2970 | 2949 |
| 60° | 2724 | 2751 | 2702 |
| 65° | 2429 | 2491 | 2411 |
| 70° | 2084 | 2091 | 2033 |
| 75° | 1650 | 1647 | 1582 |
| 80° | 1105 | 1075 | 1034 |
| 85° | 602 | 596 | 556 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 3358 cd/sqm



TEST NUMBER: P590343

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-82-86-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 131.3 | 3.7 |
| 10°-20° | 372.0 | 10.6 |
| 20°-30° | 557.4 | 15.8 |
| 30°-40° | 660.6 | 18.8 |
| 40°-50° | 661.8 | 18.8 |
| 50°-60° | 561.8 | 16.0 |
| 60°-70° | 378.7 | 10.8 |
| 70°-80° | 166.4 | 4.7 |
| 80°-90° | 27.0 | 0.8 |
| 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° | 1060.6 | 30.2 |
| 0°-40° | 1721.2 | 48.9 |
| 0°-60° | 2944.8 | 83.7 |
| 0°-90° | 3517.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3517.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1396 | 1396 | 1396 | 1396 | 1396 | |
| 5° | 1386 | 1382 | 1386 | 1382 | 1415 | 131 |
| 15° | 1327 | 1311 | 1319 | 1326 | 1327 | 370 |
| 25° | 1186 | 1193 | 1212 | 1228 | 1225 | 548 |
| 35° | 1032 | 1036 | 1059 | 1084 | 1083 | 641 |
| 45° | 831 | 846 | 860 | 882 | 861 | 643 |
| 55° | 621 | 617 | 633 | 629 | 628 | 552 |
| 65° | 381 | 376 | 391 | 376 | 379 | 379 |
| 75° | 159 | 156 | 158 | 147 | 152 | 170 |
| 85° | 20 | 19 | 19 | 19 | 18 | 28 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P590343

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-82-86-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1395.5 | 1395.5 | 1395.5 | 1395.5 | 1395.5 |
| 2.5° | 1407.5 | 1396.9 | 1387.0 | 1398.5 | 1405.5 |
| 5° | 1385.5 | 1382.3 | 1386.1 | 1381.9 | 1415.3 |
| 7.5° | 1357.1 | 1369.5 | 1376.7 | 1372.2 | 1374.2 |
| 10° | 1341.9 | 1337.6 | 1353.7 | 1364.8 | 1363.2 |
| 12.5° | 1325.7 | 1332.2 | 1333.1 | 1345.2 | 1346.3 |
| 15° | 1326.6 | 1311.3 | 1319.4 | 1326.3 | 1326.8 |
| 17.5° | 1275.1 | 1291.7 | 1297.3 | 1312.9 | 1293.5 |
| 20° | 1268.8 | 1256.7 | 1268.8 | 1284.8 | 1282.3 |
| 22.5° | 1230.1 | 1216.5 | 1242.5 | 1256.7 | 1255.8 |
| 25° | 1186.1 | 1192.6 | 1212.0 | 1227.9 | 1225.4 |
| 27.5° | 1147.5 | 1155.1 | 1182.9 | 1204.7 | 1190.6 |
| 30° | 1117.8 | 1114.0 | 1137.4 | 1156.9 | 1167.7 |
| 32.5° | 1064.7 | 1078.3 | 1105.7 | 1125.0 | 1114.7 |
| 35° | 1032.4 | 1035.5 | 1059.4 | 1083.9 | 1083.2 |
| 37.5° | 976.0 | 990.2 | 1023.9 | 1030.8 | 1024.5 |
| 40° | 927.9 | 942.1 | 972.6 | 980.0 | 976.9 |
| 42.5° | 892.4 | 894.9 | 921.1 | 929.5 | 916.0 |
| 45° | 830.6 | 846.1 | 860.2 | 882.3 | 861.4 |
| 47.5° | 778.0 | 785.2 | 815.5 | 821.4 | 810.4 |
| 50° | 730.3 | 732.8 | 763.2 | 755.8 | 748.6 |
| 52.5° | 670.3 | 680.9 | 698.0 | 696.6 | 688.1 |
| 55° | 620.9 | 616.7 | 633.0 | 628.6 | 628.5 |
| 57.5° | 561.6 | 568.8 | 582.1 | 575.3 | 564.3 |
| 60° | 506.1 | 506.3 | 511.2 | 503.4 | 502.0 |
| 62.5° | 444.3 | 446.5 | 447.6 | 438.0 | 453.5 |
| 65° | 381.4 | 376.4 | 391.2 | 376.2 | 378.7 |
| 67.5° | 323.6 | 326.1 | 324.7 | 315.3 | 318.9 |
| 70° | 264.9 | 268.1 | 265.8 | 255.1 | 258.4 |
| 72.5° | 211.2 | 207.2 | 209.7 | 196.4 | 202.5 |
| 75° | 158.7 | 155.5 | 158.4 | 147.2 | 152.2 |
| 77.5° | 108.1 | 110.6 | 108.8 | 102.9 | 106.3 |
| 80° | 71.3 | 69.4 | 69.4 | 65.9 | 66.7 |
| 82.5° | 41.6 | 39.6 | 39.1 | 38.0 | 39.6 |
| 85° | 19.5 | 18.9 | 19.3 | 18.7 | 18.0 |
| 87.5° | 7.0 | 7.2 | 7.2 | 6.8 | 6.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)