

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: P560755

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-80-85-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560755
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-12-4-LD4-1HI-35-UNV-80-85-EDD
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRON
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

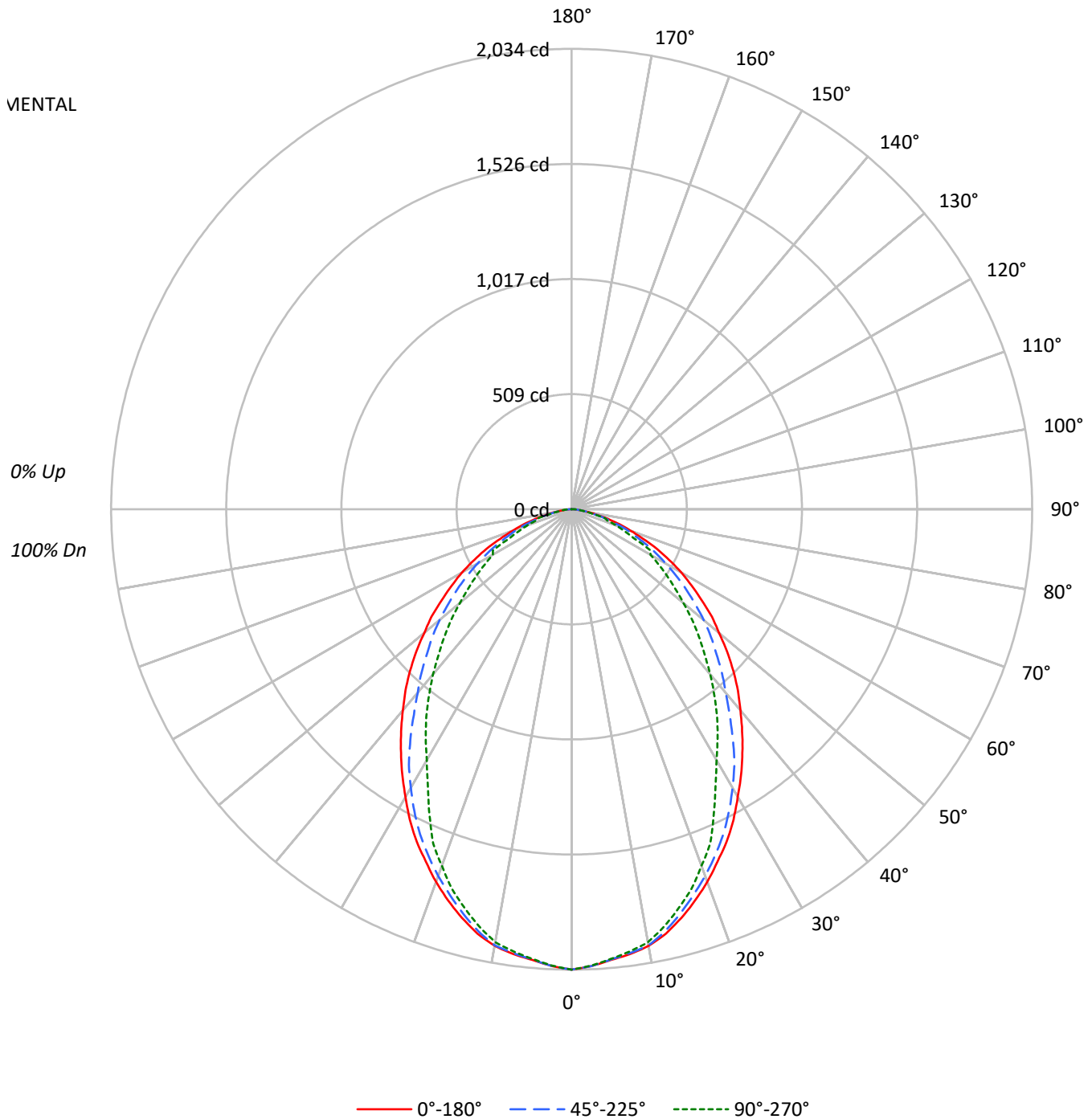
Lumens per Lamp: N/A
Luminaire Lumens: 3993.0 lumens
Efficiency: N/A
Efficacy: 92.4 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 43.2
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





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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 | 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° | 5473 | 5473 | 5473 |
| 5° | 5399 | 5393 | 5386 |
| 10° | 5352 | 5346 | 5307 |
| 15° | 5208 | 5156 | 5083 |
| 20° | 5017 | 4936 | 4801 |
| 25° | 4810 | 4706 | 4412 |
| 30° | 4559 | 4413 | 3975 |
| 35° | 4318 | 4079 | 3677 |
| 40° | 4072 | 3717 | 3345 |
| 45° | 3839 | 3436 | 3025 |
| 50° | 3554 | 3190 | 2697 |
| 55° | 3287 | 2890 | 2416 |
| 60° | 3012 | 2582 | 2164 |
| 65° | 2650 | 2261 | 1917 |
| 70° | 2183 | 1980 | 1628 |
| 75° | 1736 | 1516 | 1589 |
| 80° | 1165 | 1093 | 1020 |
| 85° | 726 | 871 | 1016 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3839 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 189.3 | 4.7 |
| 10°-20° | 519.6 | 13.0 |
| 20°-30° | 719.4 | 18.0 |
| 30°-40° | 767.1 | 19.2 |
| 40°-50° | 699.8 | 17.5 |
| 50°-60° | 548.2 | 13.7 |
| 60°-70° | 357.3 | 8.9 |
| 70°-80° | 158.3 | 4.0 |
| 80°-90° | 34.0 | 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° | 1428.3 | 35.8 |
| 0°-40° | 2195.4 | 55.0 |
| 0°-60° | 3443.4 | 86.2 |
| 0°-90° | 3993.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3993.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2034 | 2034 | 2034 | 2034 | 2034 | |
| 5° | 1999 | 1996 | 1996 | 1994 | 1994 | 190 |
| 15° | 1869 | 1869 | 1851 | 1832 | 1825 | 526 |
| 25° | 1620 | 1611 | 1585 | 1528 | 1486 | 744 |
| 35° | 1314 | 1305 | 1242 | 1148 | 1119 | 822 |
| 45° | 1009 | 988 | 903 | 828 | 795 | 777 |
| 55° | 701 | 680 | 616 | 543 | 515 | 628 |
| 65° | 416 | 393 | 355 | 362 | 301 | 410 |
| 75° | 167 | 155 | 146 | 139 | 153 | 179 |
| 85° | 24 | 26 | 28 | 31 | 33 | 33 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560755

CATALOG NUMBER: FSR-12-4-LD4-1HI-35-UNV-80-85-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2034.0 | 2034.0 | 2034.0 | 2034.0 | 2034.0 |
| 2.5° | 2019.9 | 2019.9 | 2019.9 | 2017.5 | 2017.5 |
| 5° | 1998.7 | 1996.4 | 1996.4 | 1994.0 | 1994.0 |
| 7.5° | 1982.2 | 1979.9 | 1977.5 | 1975.2 | 1970.5 |
| 10° | 1958.7 | 1958.7 | 1956.4 | 1944.6 | 1942.3 |
| 12.5° | 1921.1 | 1918.8 | 1909.4 | 1892.9 | 1888.2 |
| 15° | 1869.4 | 1869.4 | 1850.6 | 1831.8 | 1824.7 |
| 17.5° | 1812.9 | 1810.6 | 1787.1 | 1768.3 | 1758.9 |
| 20° | 1751.8 | 1747.1 | 1723.6 | 1693.0 | 1676.6 |
| 22.5° | 1683.6 | 1683.6 | 1655.4 | 1615.4 | 1599.0 |
| 25° | 1620.1 | 1610.7 | 1584.9 | 1528.4 | 1486.1 |
| 27.5° | 1547.2 | 1533.1 | 1504.9 | 1425.0 | 1375.6 |
| 30° | 1467.3 | 1460.2 | 1420.3 | 1316.8 | 1279.2 |
| 32.5° | 1392.0 | 1380.3 | 1338.0 | 1229.8 | 1199.2 |
| 35° | 1314.4 | 1305.0 | 1241.6 | 1147.5 | 1119.3 |
| 37.5° | 1236.8 | 1225.1 | 1145.1 | 1069.9 | 1034.6 |
| 40° | 1159.3 | 1145.1 | 1058.1 | 989.9 | 952.3 |
| 42.5° | 1086.4 | 1067.5 | 982.9 | 910.0 | 867.7 |
| 45° | 1008.8 | 987.6 | 902.9 | 827.7 | 794.8 |
| 47.5° | 931.2 | 912.4 | 834.8 | 757.2 | 719.5 |
| 50° | 848.9 | 832.4 | 761.9 | 684.3 | 644.3 |
| 52.5° | 780.7 | 754.8 | 686.6 | 609.0 | 576.1 |
| 55° | 700.7 | 679.6 | 616.1 | 543.2 | 515.0 |
| 57.5° | 627.8 | 606.7 | 547.9 | 479.7 | 456.2 |
| 60° | 559.6 | 529.1 | 479.7 | 420.9 | 402.1 |
| 62.5° | 484.4 | 460.9 | 418.6 | 369.2 | 392.7 |
| 65° | 416.2 | 392.7 | 355.1 | 362.1 | 301.0 |
| 67.5° | 341.0 | 329.2 | 296.3 | 263.4 | 254.0 |
| 70° | 277.5 | 263.4 | 251.6 | 216.3 | 206.9 |
| 72.5° | 221.0 | 206.9 | 190.5 | 171.7 | 164.6 |
| 75° | 167.0 | 155.2 | 145.8 | 138.7 | 152.8 |
| 77.5° | 115.2 | 110.5 | 103.5 | 96.4 | 94.1 |
| 80° | 75.2 | 72.9 | 70.5 | 68.2 | 65.8 |
| 82.5° | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 |
| 85° | 23.5 | 25.9 | 28.2 | 30.6 | 32.9 |
| 87.5° | 14.1 | 14.1 | 16.5 | 18.8 | 21.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)