

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: P562831

Luminaire Tested: FSR-24-4-LD4-2LO-50-UNV-81-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562831  
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-LD4-2LO-50-UNV-81-97-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

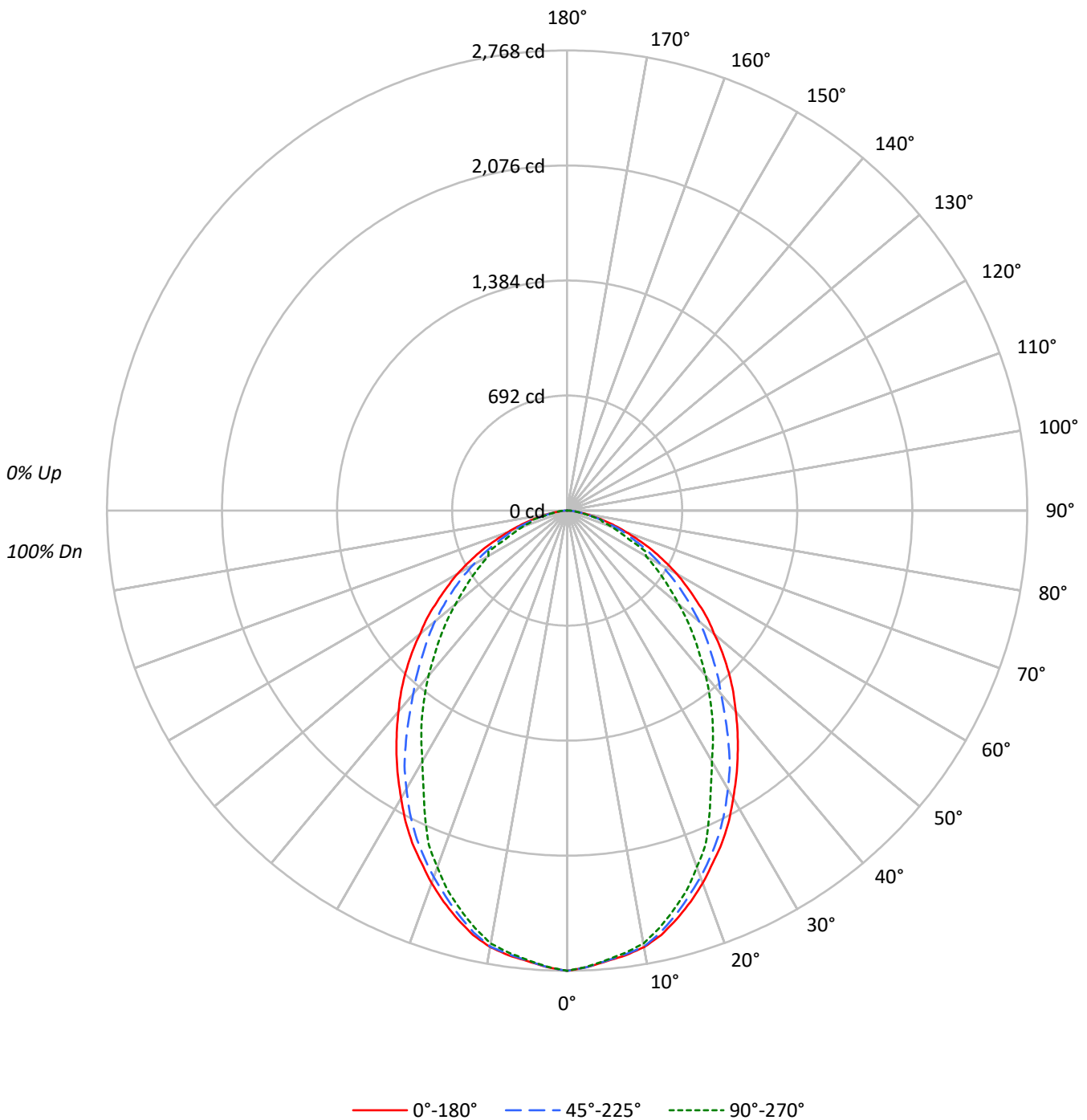
Lumens per Lamp: N/A  
Luminaire Lumens: 5435.0 lumens  
Efficiency: N/A  
Efficacy: 116.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3725	3725	3725
5°	3674	3670	3666
10°	3643	3638	3612
15°	3544	3509	3460
20°	3414	3359	3267
25°	3274	3203	3003
30°	3103	3003	2705
35°	2939	2776	2502
40°	2771	2530	2277
45°	2613	2339	2058
50°	2418	2171	1836
55°	2237	1967	1644
60°	2050	1757	1473
65°	1804	1539	1304
70°	1486	1347	1108
75°	1181	1031	1081
80°	793	744	694
85°	494	593	692

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2613 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	257.7	4.7
10°-20°	707.3	13.0
20°-30°	979.2	18.0
30°-40°	1044.1	19.2
40°-50°	952.5	17.5
50°-60°	746.2	13.7
60°-70°	486.4	8.9
70°-80°	215.5	4.0
80°-90°	46.3	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°	1944.1	35.8
0°-40°	2988.2	55.0
0°-60°	4686.9	86.2
0°-90°	5435.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5435.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2768	2768	2768	2768	2768	
5°	2720	2717	2717	2714	2714	258
15°	2544	2544	2519	2493	2484	715
25°	2205	2192	2157	2080	2023	1012
35°	1789	1776	1690	1562	1524	1119
45°	1373	1344	1229	1127	1082	1058
55°	954	925	839	739	701	855
65°	566	534	483	493	410	558
75°	227	211	198	189	208	244
85°	32	35	38	42	45	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2768.5	2768.5	2768.5	2768.5	2768.5
2.5°	2749.3	2749.3	2749.3	2746.1	2746.1
5°	2720.5	2717.3	2717.3	2714.1	2714.1
7.5°	2698.1	2694.9	2691.7	2688.5	2682.1
10°	2666.1	2666.1	2662.9	2646.9	2643.7
12.5°	2614.9	2611.7	2598.9	2576.5	2570.1
15°	2544.5	2544.5	2518.9	2493.3	2483.7
17.5°	2467.7	2464.5	2432.5	2406.8	2394.0
20°	2384.4	2378.0	2346.0	2304.4	2282.0
22.5°	2291.6	2291.6	2253.2	2198.8	2176.4
25°	2205.2	2192.4	2157.2	2080.4	2022.8
27.5°	2106.0	2086.8	2048.4	1939.6	1872.3
30°	1997.2	1987.6	1933.2	1792.3	1741.1
32.5°	1894.8	1878.8	1821.1	1673.9	1632.3
35°	1789.1	1776.3	1689.9	1561.9	1523.5
37.5°	1683.5	1667.5	1558.7	1456.3	1408.3
40°	1577.9	1558.7	1440.3	1347.5	1296.2
42.5°	1478.7	1453.1	1337.8	1238.6	1181.0
45°	1373.1	1344.3	1229.0	1126.6	1081.8
47.5°	1267.4	1241.8	1136.2	1030.6	979.4
50°	1155.4	1133.0	1037.0	931.4	877.0
52.5°	1062.6	1027.4	934.6	829.0	784.1
55°	953.8	925.0	838.6	739.3	700.9
57.5°	854.6	825.8	745.7	652.9	620.9
60°	761.7	720.1	652.9	572.9	547.3
62.5°	659.3	627.3	569.7	502.5	534.5
65°	566.5	534.5	483.3	492.9	409.7
67.5°	464.1	448.1	403.3	358.5	345.7
70°	377.7	358.5	342.5	294.5	281.7
72.5°	300.9	281.7	259.2	233.6	224.0
75°	227.2	211.2	198.4	188.8	208.0
77.5°	156.8	150.4	140.8	131.2	128.0
80°	102.4	99.2	96.0	92.8	89.6
82.5°	60.8	60.8	60.8	60.8	60.8
85°	32.0	35.2	38.4	41.6	44.8
87.5°	19.2	19.2	22.4	25.6	28.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)