

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: P562145

Luminaire Tested: FSR-24-4-LD4-1HI-50-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562145  
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-LD4-1HI-50-UNV-93-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

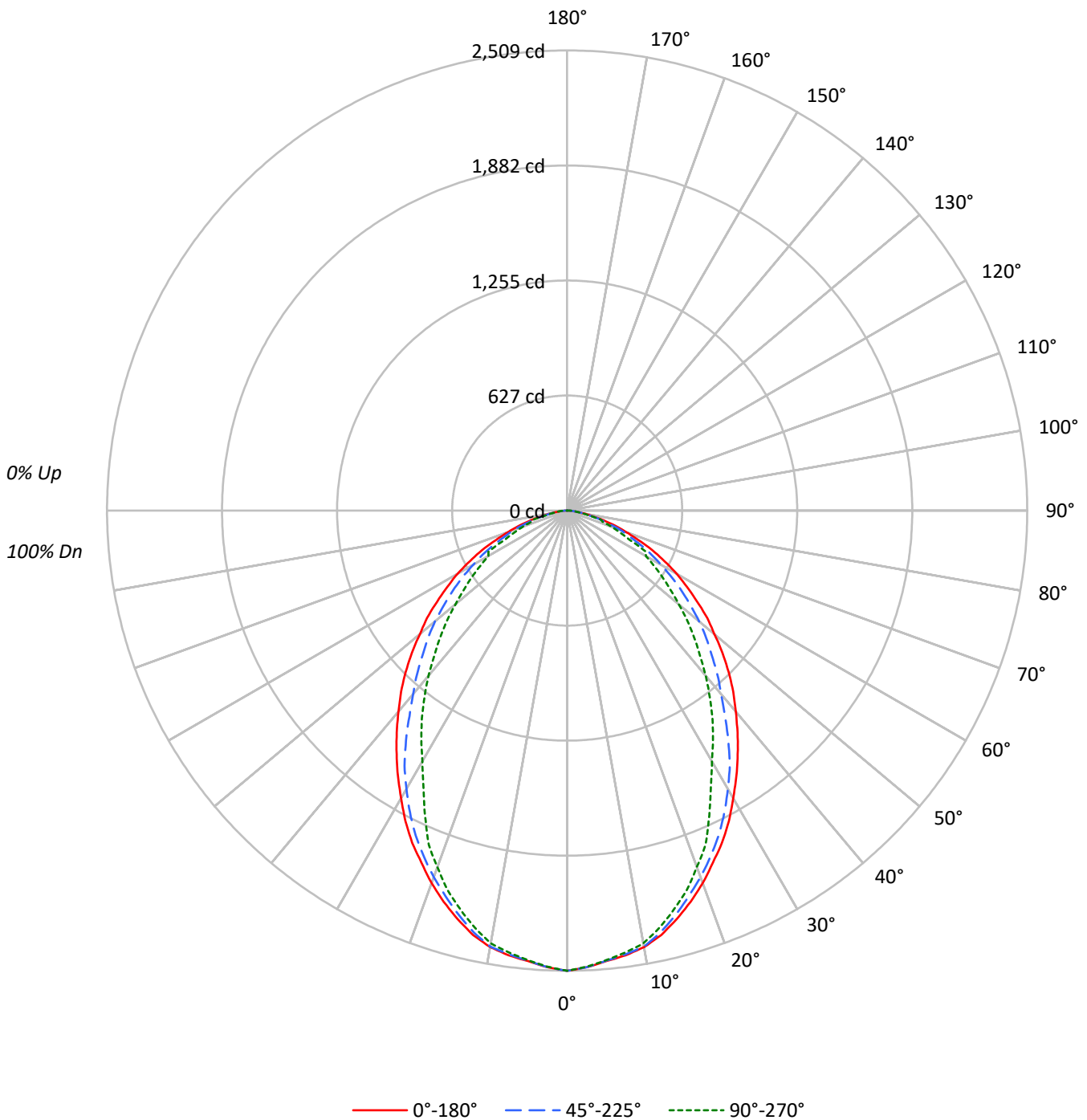
Lumens per Lamp: N/A  
Luminaire Lumens: 4926.0 lumens  
Efficiency: N/A  
Efficacy: 114.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3376	3376	3376
5°	3330	3326	3322
10°	3301	3297	3274
15°	3212	3180	3136
20°	3094	3045	2961
25°	2967	2903	2722
30°	2812	2722	2452
35°	2664	2516	2268
40°	2512	2293	2063
45°	2368	2120	1866
50°	2192	1967	1664
55°	2028	1783	1490
60°	1858	1593	1335
65°	1635	1394	1182
70°	1347	1221	1004
75°	1071	935	980
80°	719	674	629
85°	448	537	627

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2368 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	233.6	4.7
10°-20°	641.0	13.0
20°-30°	887.5	18.0
30°-40°	946.3	19.2
40°-50°	863.3	17.5
50°-60°	676.3	13.7
60°-70°	440.8	8.9
70°-80°	195.3	4.0
80°-90°	41.9	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°	1762.1	35.8
0°-40°	2708.4	55.0
0°-60°	4248.0	86.2
0°-90°	4926.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4926.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2509	2509	2509	2509	2509	
5°	2466	2463	2463	2460	2460	234
15°	2306	2306	2283	2260	2251	648
25°	1999	1987	1955	1886	1833	918
35°	1622	1610	1532	1416	1381	1014
45°	1244	1218	1114	1021	980	959
55°	864	838	760	670	635	775
65°	514	484	438	447	371	506
75°	206	192	180	171	189	221
85°	29	32	35	38	41	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2509.2	2509.2	2509.2	2509.2	2509.2
2.5°	2491.8	2491.8	2491.8	2488.9	2488.9
5°	2465.7	2462.8	2462.8	2459.9	2459.9
7.5°	2445.4	2442.5	2439.6	2436.7	2430.9
10°	2416.4	2416.4	2413.5	2399.0	2396.1
12.5°	2370.0	2367.1	2355.5	2335.2	2329.4
15°	2306.2	2306.2	2283.0	2259.8	2251.1
17.5°	2236.6	2233.7	2204.6	2181.4	2169.8
20°	2161.1	2155.3	2126.3	2088.6	2068.3
22.5°	2077.0	2077.0	2042.2	1992.9	1972.6
25°	1998.7	1987.1	1955.2	1885.6	1833.3
27.5°	1908.8	1891.4	1856.5	1757.9	1697.0
30°	1810.1	1801.4	1752.1	1624.5	1578.1
32.5°	1717.3	1702.8	1650.6	1517.1	1479.4
35°	1621.6	1610.0	1531.7	1415.6	1380.8
37.5°	1525.8	1511.3	1412.7	1319.9	1276.4
40°	1430.1	1412.7	1305.4	1221.3	1174.8
42.5°	1340.2	1317.0	1212.6	1122.6	1070.4
45°	1244.5	1218.4	1113.9	1021.1	980.5
47.5°	1148.7	1125.5	1029.8	934.1	887.7
50°	1047.2	1026.9	939.9	844.1	794.8
52.5°	963.1	931.2	847.0	751.3	710.7
55°	864.5	838.3	760.0	670.1	635.3
57.5°	774.5	748.4	675.9	591.8	562.8
60°	690.4	652.7	591.8	519.3	496.0
62.5°	597.6	568.6	516.4	455.4	484.4
65°	513.5	484.4	438.0	446.7	371.3
67.5°	420.6	406.1	365.5	324.9	313.3
70°	342.3	324.9	310.4	266.9	255.3
72.5°	272.7	255.3	235.0	211.8	203.1
75°	206.0	191.5	179.9	171.2	188.6
77.5°	142.1	136.3	127.6	118.9	116.0
80°	92.8	89.9	87.0	84.1	81.2
82.5°	55.1	55.1	55.1	55.1	55.1
85°	29.0	31.9	34.8	37.7	40.6
87.5°	17.4	17.4	20.3	23.2	26.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)