

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: P563413

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563413  
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-LD4-3LO-50-UNV-82-86-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

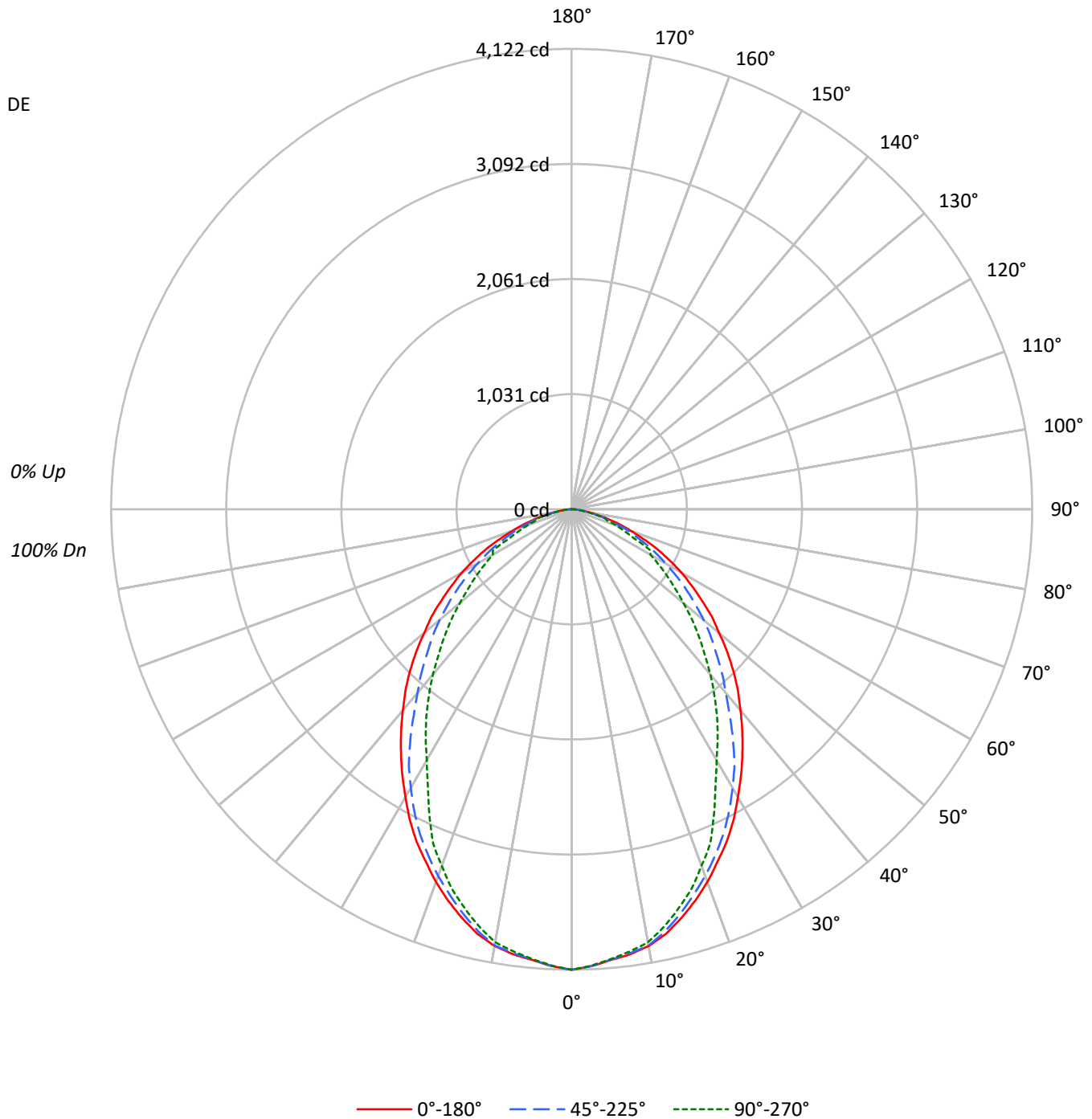
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8093.0 lumens  
Efficiency: N/A  
Efficacy: 115.3 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): 70.2  
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°	5547	5547	5547
5°	5471	5465	5458
10°	5424	5417	5378
15°	5278	5225	5152
20°	5084	5002	4866
25°	4875	4769	4472
30°	4620	4472	4028
35°	4376	4133	3726
40°	4127	3767	3390
45°	3890	3482	3065
50°	3601	3232	2733
55°	3331	2929	2448
60°	3052	2616	2193
65°	2686	2291	1942
70°	2212	2006	1650
75°	1759	1536	1611
80°	1182	1108	1034
85°	736	883	1030

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3890 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	383.7	4.7
10°-20°	1053.2	13.0
20°-30°	1458.0	18.0
30°-40°	1554.7	19.2
40°-50°	1418.3	17.5
50°-60°	1111.1	13.7
60°-70°	724.2	8.9
70°-80°	320.8	4.0
80°-90°	68.9	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°	2894.9	35.8
0°-40°	4449.6	55.0
0°-60°	6979.1	86.2
0°-90°	8093.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8093.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4122	4122	4122	4122	4122	
5°	4051	4046	4046	4041	4041	385
15°	3789	3789	3751	3713	3698	1065
25°	3284	3265	3212	3098	3012	1508
35°	2664	2645	2516	2326	2268	1666
45°	2045	2002	1830	1678	1611	1575
55°	1420	1377	1249	1101	1044	1274
65°	844	796	720	734	610	831
75°	338	314	296	281	310	363
85°	48	52	57	62	67	66
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4122.5	4122.5	4122.5	4122.5	4122.5
2.5°	4093.9	4093.9	4093.9	4089.1	4089.1
5°	4051.0	4046.2	4046.2	4041.4	4041.4
7.5°	4017.6	4012.9	4008.1	4003.3	3993.8
10°	3970.0	3970.0	3965.2	3941.4	3936.6
12.5°	3893.7	3888.9	3869.9	3836.5	3827.0
15°	3788.9	3788.9	3750.7	3712.6	3698.3
17.5°	3674.5	3669.7	3622.1	3583.9	3564.9
20°	3550.6	3541.0	3493.4	3431.4	3398.1
22.5°	3412.4	3412.4	3355.2	3274.1	3240.8
25°	3283.7	3264.6	3212.2	3097.8	3012.0
27.5°	3135.9	3107.3	3050.1	2888.1	2788.0
30°	2973.9	2959.6	2878.6	2668.9	2592.6
32.5°	2821.4	2797.6	2711.8	2492.5	2430.6
35°	2664.1	2645.1	2516.4	2325.7	2268.5
37.5°	2506.8	2483.0	2321.0	2168.5	2097.0
40°	2349.6	2321.0	2144.6	2006.4	1930.2
42.5°	2201.8	2163.7	1992.1	1844.4	1758.6
45°	2044.6	2001.7	1830.1	1677.6	1610.9
47.5°	1887.3	1849.2	1691.9	1534.6	1458.4
50°	1720.5	1687.1	1544.1	1386.9	1305.8
52.5°	1582.3	1529.8	1391.6	1234.4	1167.6
55°	1420.2	1377.3	1248.7	1100.9	1043.7
57.5°	1272.5	1229.6	1110.4	972.2	924.6
60°	1134.3	1072.3	972.2	853.1	815.0
62.5°	981.8	934.1	848.3	748.2	795.9
65°	843.6	795.9	719.6	733.9	610.0
67.5°	691.0	667.2	600.5	533.8	514.7
70°	562.4	533.8	509.9	438.5	419.4
72.5°	448.0	419.4	386.0	347.9	333.6
75°	338.4	314.5	295.5	281.2	309.8
77.5°	233.5	224.0	209.7	195.4	190.6
80°	152.5	147.7	143.0	138.2	133.4
82.5°	90.6	90.6	90.6	90.6	90.6
85°	47.7	52.4	57.2	62.0	66.7
87.5°	28.6	28.6	33.4	38.1	42.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)