

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: P563869

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563869  
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-LD4-4LO-35-UNV-82-96-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

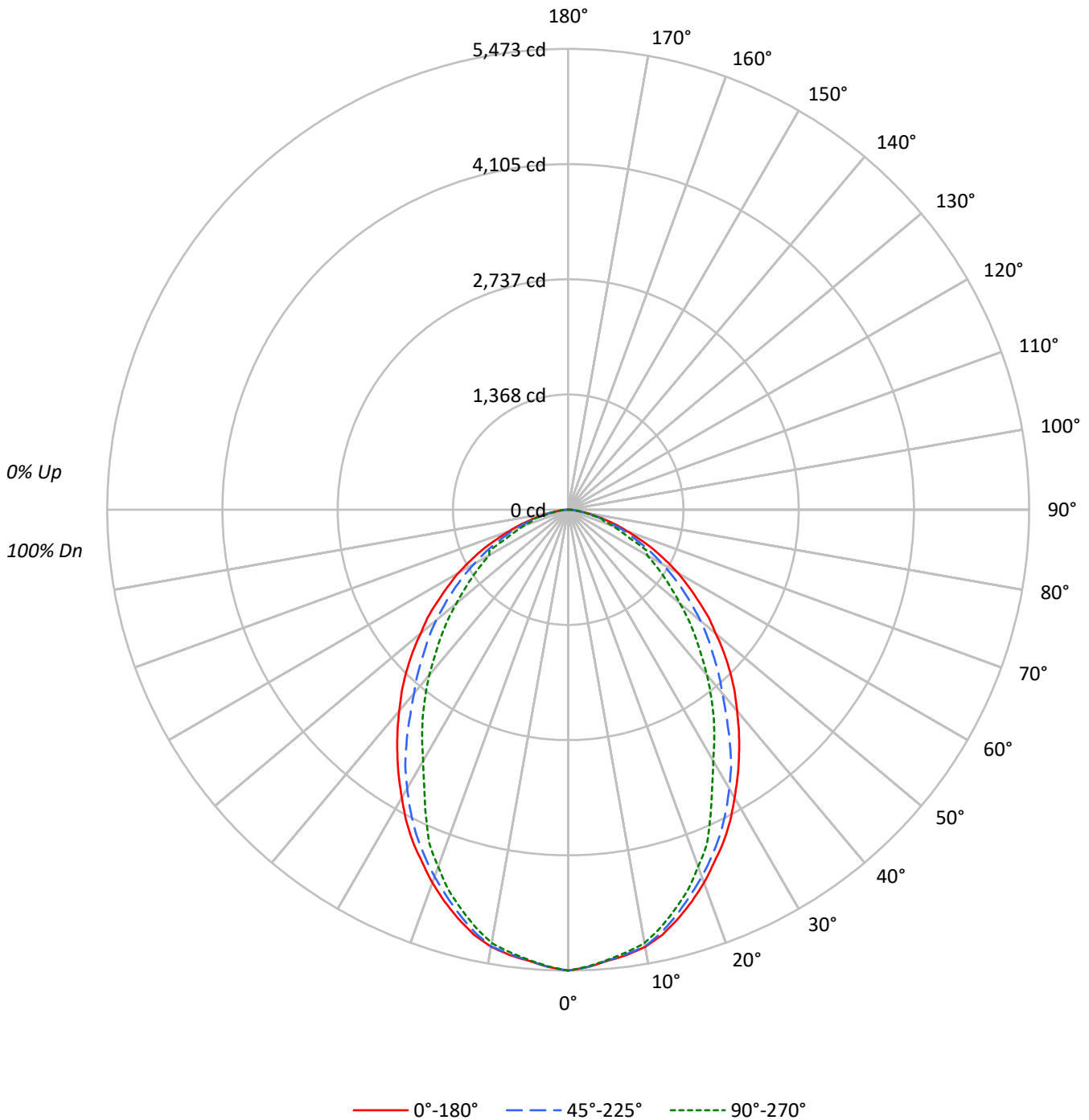
Lumens per Lamp: N/A  
Luminaire Lumens: 10745.0 lumens  
Efficiency: N/A  
Efficacy: 114.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7364	7364	7364
5°	7264	7256	7247
10°	7201	7193	7141
15°	7007	6937	6840
20°	6750	6641	6460
25°	6472	6331	5937
30°	6134	5938	5348
35°	5810	5488	4947
40°	5479	5001	4501
45°	5165	4623	4070
50°	4782	4291	3629
55°	4423	3889	3251
60°	4053	3474	2912
65°	3566	3042	2578
70°	2937	2664	2190
75°	2336	2039	2138
80°	1569	1471	1373
85°	977	1172	1368

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5165 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	509.5	4.7
10°-20°	1398.3	13.0
20°-30°	1935.8	18.0
30°-40°	2064.1	19.2
40°-50°	1883.1	17.5
50°-60°	1475.3	13.7
60°-70°	961.5	8.9
70°-80°	426.0	4.0
80°-90°	91.5	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°	3843.6	35.8
0°-40°	5907.7	55.0
0°-60°	9266.0	86.2
0°-90°	10745.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10745.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5473	5473	5473	5473	5473	
5°	5378	5372	5372	5366	5366	511
15°	5030	5030	4980	4929	4910	1414
25°	4360	4334	4265	4113	3999	2002
35°	3537	3512	3341	3088	3012	2211
45°	2714	2658	2430	2227	2139	2091
55°	1886	1829	1658	1462	1386	1691
65°	1120	1057	956	974	810	1104
75°	449	418	392	373	411	482
85°	63	70	76	82	89	88
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5473.4	5473.4	5473.4	5473.4	5473.4
2.5°	5435.4	5435.4	5435.4	5429.1	5429.1
5°	5378.4	5372.1	5372.1	5365.8	5365.8
7.5°	5334.2	5327.8	5321.5	5315.2	5302.5
10°	5270.9	5270.9	5264.5	5232.9	5226.6
12.5°	5169.6	5163.3	5138.0	5093.7	5081.0
15°	5030.4	5030.4	4979.8	4929.2	4910.2
17.5°	4878.6	4872.2	4809.0	4758.3	4733.0
20°	4714.0	4701.4	4638.1	4555.9	4511.6
22.5°	4530.5	4530.5	4454.6	4347.0	4302.8
25°	4359.7	4334.4	4264.8	4112.9	3999.0
27.5°	4163.5	4125.6	4049.7	3834.5	3701.6
30°	3948.4	3929.4	3821.9	3543.4	3442.2
32.5°	3745.9	3714.3	3600.4	3309.3	3227.1
35°	3537.1	3511.8	3341.0	3087.9	3011.9
37.5°	3328.3	3296.7	3081.5	2879.1	2784.1
40°	3119.5	3081.5	2847.4	2663.9	2562.7
42.5°	2923.3	2872.7	2644.9	2448.8	2334.9
45°	2714.5	2657.6	2429.8	2227.3	2138.7
47.5°	2505.7	2455.1	2246.3	2037.5	1936.2
50°	2284.3	2240.0	2050.1	1841.3	1733.8
52.5°	2100.8	2031.2	1847.7	1638.8	1550.3
55°	1885.6	1828.7	1657.8	1461.7	1385.7
57.5°	1689.5	1632.5	1474.3	1290.8	1227.6
60°	1506.0	1423.7	1290.8	1132.6	1082.0
62.5°	1303.5	1240.2	1126.3	993.4	1056.7
65°	1120.0	1056.7	955.5	974.4	809.9
67.5°	917.5	885.9	797.3	708.7	683.4
70°	746.7	708.7	677.1	582.1	556.8
72.5°	594.8	556.8	512.5	461.9	442.9
75°	449.3	417.6	392.3	373.3	411.3
77.5°	310.1	297.4	278.4	259.4	253.1
80°	202.5	196.2	189.8	183.5	177.2
82.5°	120.2	120.2	120.2	120.2	120.2
85°	63.3	69.6	75.9	82.3	88.6
87.5°	38.0	38.0	44.3	50.6	56.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)