

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: P563549

Luminaire Tested: FSR-24-4-LD4-3STD-40-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563549  
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-LD4-3STD-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

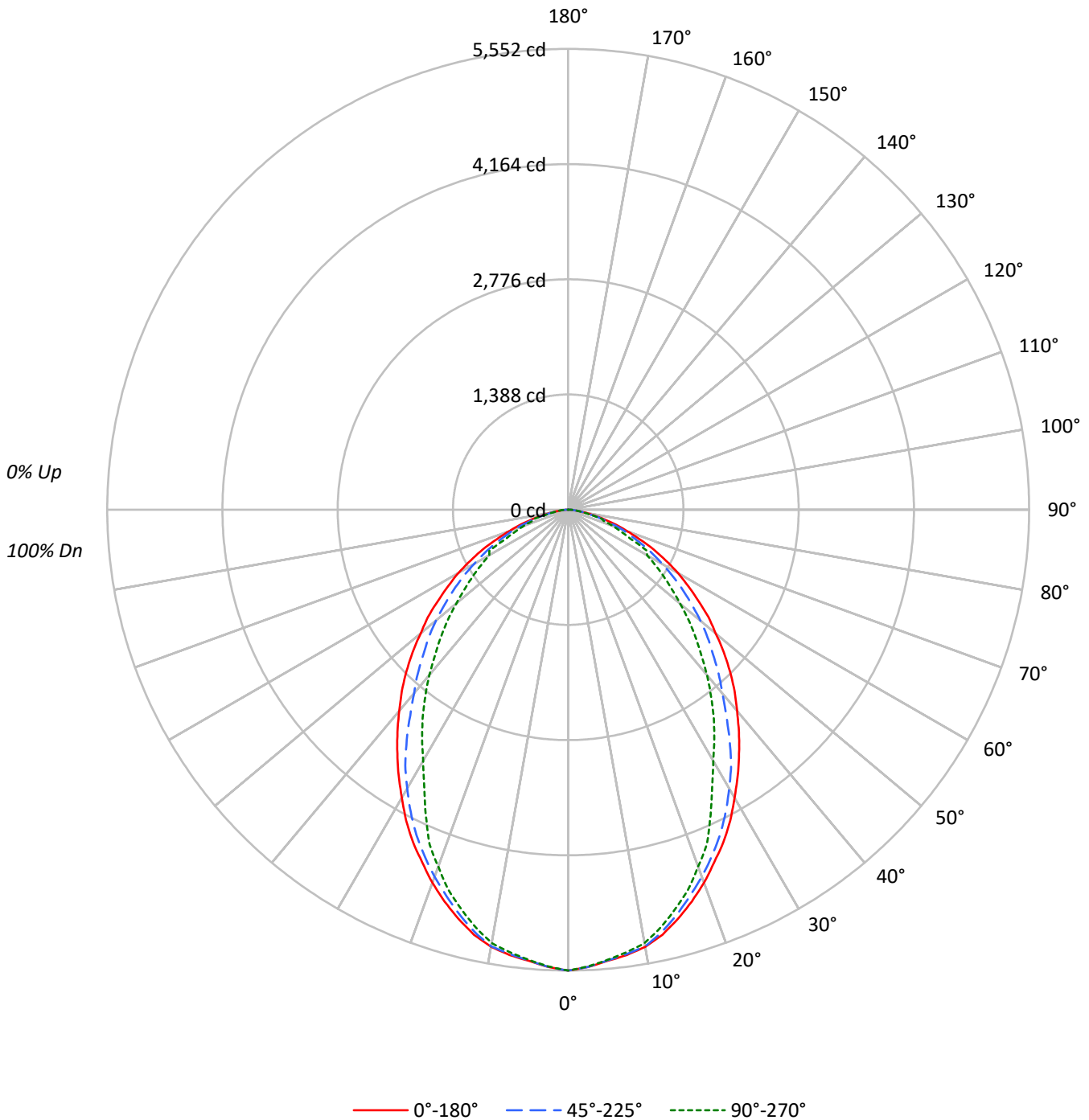
Lumens per Lamp: N/A  
Luminaire Lumens: 10900.0 lumens  
Efficiency: N/A  
Efficacy: 109.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7471	7471	7471
5°	7369	7360	7352
10°	7305	7296	7244
15°	7108	7037	6938
20°	6847	6737	6553
25°	6566	6423	6023
30°	6223	6023	5425
35°	5894	5567	5019
40°	5558	5073	4566
45°	5240	4690	4128
50°	4850	4353	3682
55°	4487	3945	3297
60°	4111	3524	2954
65°	3617	3086	2616
70°	2980	2702	2222
75°	2369	2069	2169
80°	1592	1492	1392
85°	991	1189	1388

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5240 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	516.8	4.7
10°-20°	1418.4	13.0
20°-30°	1963.7	18.0
30°-40°	2093.9	19.2
40°-50°	1910.3	17.5
50°-60°	1496.5	13.7
60°-70°	975.4	8.9
70°-80°	432.1	4.0
80°-90°	92.8	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°	3899.0	35.8
0°-40°	5992.9	55.0
0°-60°	9399.7	86.2
0°-90°	10900.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10900.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5552	5552	5552	5552	5552	
5°	5456	5450	5450	5443	5443	518
15°	5103	5103	5052	5000	4981	1435
25°	4423	4397	4326	4172	4057	2030
35°	3588	3562	3389	3132	3055	2243
45°	2754	2696	2465	2259	2170	2121
55°	1913	1855	1682	1483	1406	1716
65°	1136	1072	969	988	822	1120
75°	456	424	398	379	417	488
85°	64	71	77	83	90	89
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5552.3	5552.3	5552.3	5552.3	5552.3
2.5°	5513.8	5513.8	5513.8	5507.4	5507.4
5°	5456.0	5449.6	5449.6	5443.2	5443.2
7.5°	5411.1	5404.7	5398.3	5391.8	5379.0
10°	5346.9	5346.9	5340.5	5308.4	5302.0
12.5°	5244.2	5237.8	5212.1	5167.2	5154.3
15°	5103.0	5103.0	5051.6	5000.3	4981.0
17.5°	4948.9	4942.5	4878.3	4827.0	4801.3
20°	4782.1	4769.2	4705.0	4621.6	4576.6
22.5°	4595.9	4595.9	4518.9	4409.8	4364.8
25°	4422.6	4396.9	4326.3	4172.3	4056.7
27.5°	4223.6	4185.1	4108.1	3889.8	3755.0
30°	4005.4	3986.1	3877.0	3594.6	3491.9
32.5°	3800.0	3767.9	3652.3	3357.1	3273.6
35°	3588.1	3562.5	3389.2	3132.4	3055.4
37.5°	3376.3	3344.2	3126.0	2920.6	2824.3
40°	3164.5	3126.0	2888.5	2702.3	2599.6
42.5°	2965.5	2914.2	2683.1	2484.1	2368.6
45°	2753.7	2695.9	2464.8	2259.4	2169.6
47.5°	2541.9	2490.5	2278.7	2066.9	1964.2
50°	2317.2	2272.3	2079.7	1867.9	1758.8
52.5°	2131.1	2060.5	1874.3	1662.5	1572.6
55°	1912.8	1855.1	1681.7	1482.8	1405.7
57.5°	1713.8	1656.1	1495.6	1309.4	1245.3
60°	1527.7	1444.2	1309.4	1149.0	1097.6
62.5°	1322.3	1258.1	1142.6	1007.8	1071.9
65°	1136.1	1071.9	969.2	988.5	821.6
67.5°	930.7	898.6	808.8	718.9	693.2
70°	757.4	718.9	686.8	590.5	564.9
72.5°	603.4	564.9	519.9	468.6	449.3
75°	455.7	423.6	398.0	378.7	417.2
77.5°	314.5	301.7	282.4	263.2	256.8
80°	205.4	199.0	192.6	186.1	179.7
82.5°	122.0	122.0	122.0	122.0	122.0
85°	64.2	70.6	77.0	83.4	89.9
87.5°	38.5	38.5	44.9	51.4	57.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)