

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: P563935

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563935  
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-40-UNV-82-97-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

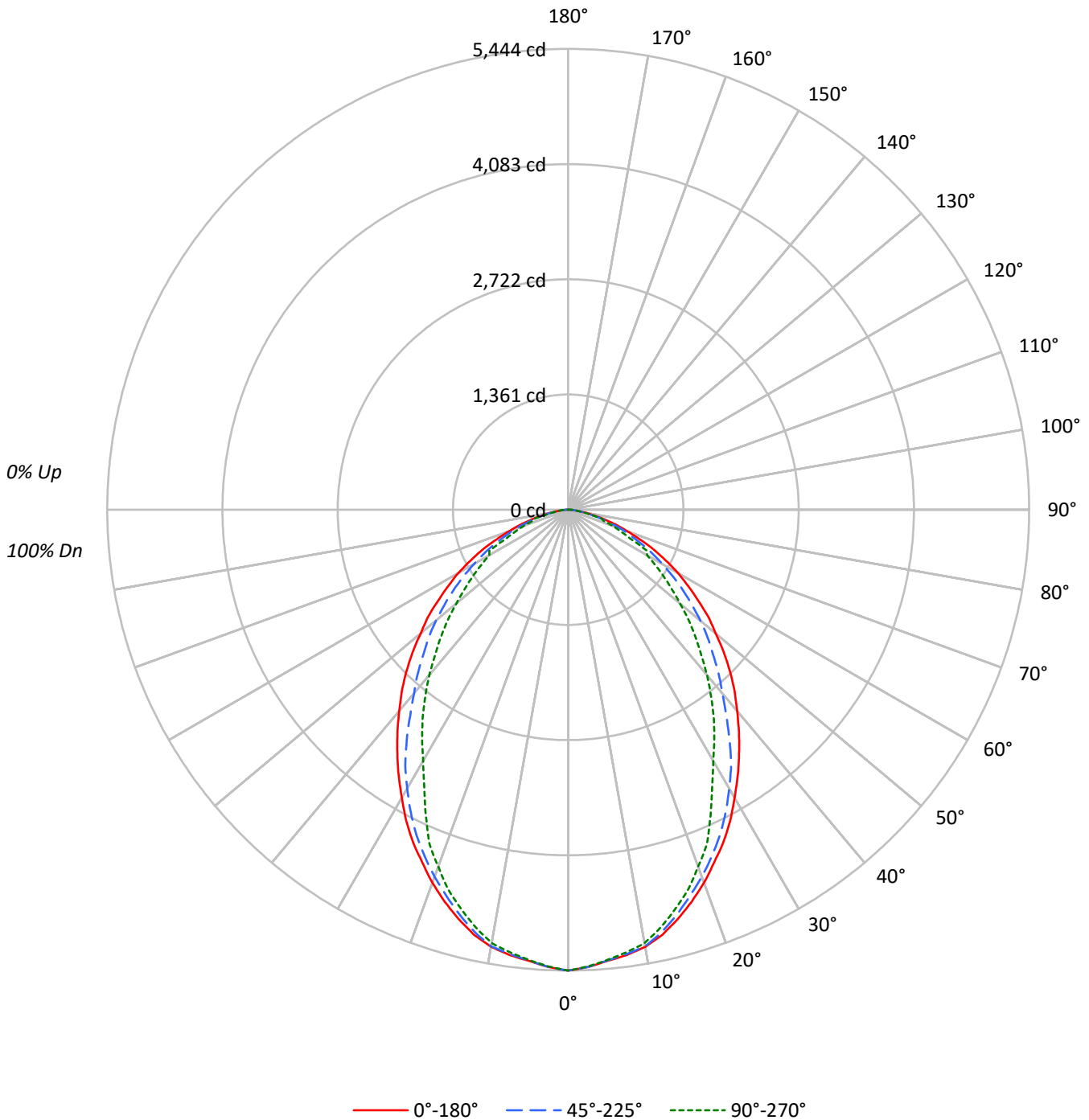
Lumens per Lamp: N/A  
Luminaire Lumens: 10688.0 lumens  
Efficiency: N/A  
Efficacy: 114.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7325	7325	7325
5°	7226	7217	7209
10°	7163	7154	7103
15°	6970	6900	6803
20°	6714	6606	6426
25°	6438	6298	5905
30°	6102	5906	5319
35°	5779	5458	4921
40°	5450	4975	4477
45°	5138	4599	4048
50°	4756	4269	3610
55°	4400	3868	3233
60°	4031	3455	2896
65°	3547	3026	2565
70°	2922	2650	2179
75°	2323	2028	2127
80°	1561	1463	1365
85°	971	1166	1360

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5138 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	506.8	4.7
10°-20°	1390.9	13.0
20°-30°	1925.5	18.0
30°-40°	2053.2	19.2
40°-50°	1873.1	17.5
50°-60°	1467.4	13.7
60°-70°	956.4	8.9
70°-80°	423.7	4.0
80°-90°	91.0	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°	3823.2	35.8
0°-40°	5876.4	55.0
0°-60°	9216.9	86.2
0°-90°	10688.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10688.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5444	5444	5444	5444	5444	
5°	5350	5344	5344	5337	5337	508
15°	5004	5004	4953	4903	4884	1407
25°	4337	4311	4242	4091	3978	1991
35°	3518	3493	3323	3072	2996	2200
45°	2700	2644	2417	2216	2127	2080
55°	1876	1819	1649	1454	1378	1682
65°	1114	1051	950	969	806	1098
75°	447	415	390	371	409	479
85°	63	69	76	82	88	87
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5444.3	5444.3	5444.3	5444.3	5444.3
2.5°	5406.6	5406.6	5406.6	5400.3	5400.3
5°	5349.9	5343.6	5343.6	5337.3	5337.3
7.5°	5305.9	5299.6	5293.3	5287.0	5274.4
10°	5242.9	5242.9	5236.6	5205.2	5198.9
12.5°	5142.2	5135.9	5110.7	5066.7	5054.1
15°	5003.7	5003.7	4953.4	4903.0	4884.2
17.5°	4852.7	4846.4	4783.5	4733.1	4707.9
20°	4689.0	4676.5	4613.5	4531.7	4487.6
22.5°	4506.5	4506.5	4431.0	4324.0	4279.9
25°	4336.6	4311.4	4242.2	4091.1	3977.8
27.5°	4141.5	4103.7	4028.2	3814.2	3682.0
30°	3927.5	3908.6	3801.6	3524.6	3423.9
32.5°	3726.1	3694.6	3581.3	3291.8	3209.9
35°	3518.4	3493.2	3323.2	3071.5	2996.0
37.5°	3310.7	3279.2	3065.2	2863.8	2769.4
40°	3103.0	3065.2	2832.3	2649.8	2549.1
42.5°	2907.8	2857.5	2630.9	2435.8	2322.5
45°	2700.1	2643.5	2416.9	2215.5	2127.4
47.5°	2492.4	2442.1	2234.4	2026.7	1926.0
50°	2272.1	2228.1	2039.3	1831.6	1724.6
52.5°	2089.6	2020.4	1837.9	1630.2	1542.0
55°	1875.6	1819.0	1649.0	1453.9	1378.4
57.5°	1680.5	1623.9	1466.5	1284.0	1221.0
60°	1498.0	1416.2	1284.0	1126.6	1076.3
62.5°	1296.6	1233.6	1120.3	988.2	1051.1
65°	1114.0	1051.1	950.4	969.3	805.6
67.5°	912.6	881.2	793.0	704.9	679.8
70°	742.7	704.9	673.5	579.0	553.9
72.5°	591.6	553.9	509.8	459.5	440.6
75°	446.9	415.4	390.2	371.3	409.1
77.5°	308.4	295.8	276.9	258.1	251.8
80°	201.4	195.1	188.8	182.5	176.2
82.5°	119.6	119.6	119.6	119.6	119.6
85°	62.9	69.2	75.5	81.8	88.1
87.5°	37.8	37.8	44.1	50.4	56.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)