

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: P562592

Luminaire Tested: FSR-24-4-LD4-2HI-40-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562592  
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-LD4-2HI-40-UNV-93-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

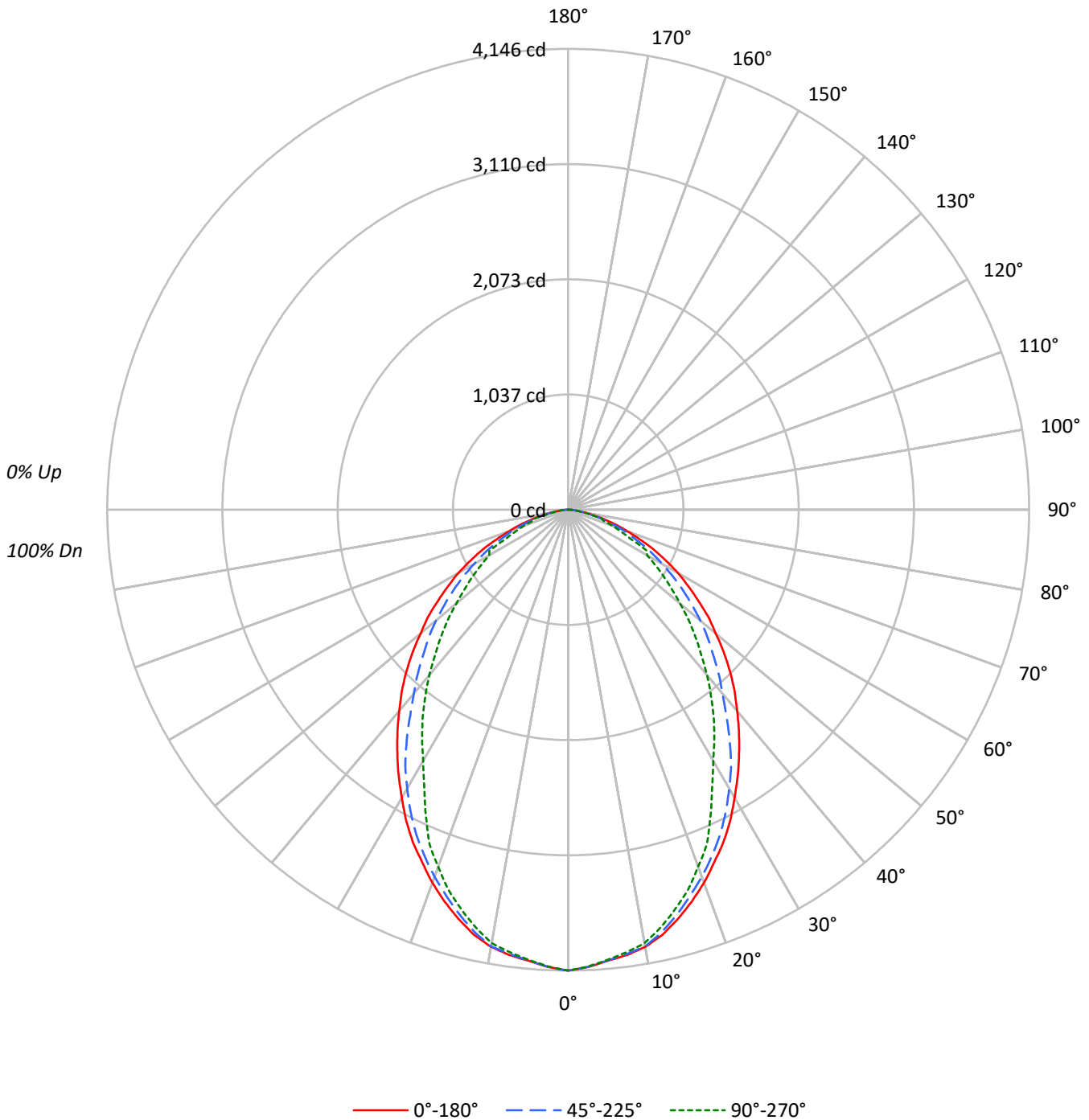
Lumens per Lamp: N/A  
Luminaire Lumens: 8140.0 lumens  
Efficiency: N/A  
Efficacy: 94.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5579	5579	5579
5°	5503	5497	5490
10°	5455	5449	5410
15°	5308	5255	5182
20°	5113	5031	4894
25°	4903	4796	4498
30°	4647	4498	4051
35°	4401	4157	3748
40°	4151	3789	3410
45°	3913	3503	3083
50°	3622	3251	2749
55°	3351	2946	2463
60°	3070	2632	2206
65°	2701	2304	1954
70°	2225	2018	1659
75°	1769	1545	1620
80°	1189	1114	1040
85°	739	888	1036

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3913 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	386.0	4.7
10°-20°	1059.3	13.0
20°-30°	1466.5	18.0
30°-40°	1563.7	19.2
40°-50°	1426.6	17.5
50°-60°	1117.6	13.7
60°-70°	728.4	8.9
70°-80°	322.7	4.0
80°-90°	69.3	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°	2911.7	35.8
0°-40°	4475.5	55.0
0°-60°	7019.6	86.2
0°-90°	8140.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8140.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4146	4146	4146	4146	4146	
5°	4074	4070	4070	4065	4065	387
15°	3811	3811	3772	3734	3720	1071
25°	3303	3284	3231	3116	3030	1516
35°	2680	2660	2531	2339	2282	1675
45°	2056	2013	1841	1687	1620	1584
55°	1428	1385	1256	1107	1050	1281
65°	848	800	724	738	614	836
75°	340	316	297	283	312	365
85°	48	53	58	62	67	66
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4146.4	4146.4	4146.4	4146.4	4146.4
2.5°	4117.6	4117.6	4117.6	4112.9	4112.9
5°	4074.5	4069.7	4069.7	4064.9	4064.9
7.5°	4040.9	4036.2	4031.4	4026.6	4017.0
10°	3993.0	3993.0	3988.2	3964.3	3959.5
12.5°	3916.3	3911.5	3892.3	3858.8	3849.2
15°	3810.9	3810.9	3772.5	3734.2	3719.8
17.5°	3695.8	3691.0	3643.1	3604.7	3585.6
20°	3571.2	3561.6	3513.7	3451.3	3417.8
22.5°	3432.2	3432.2	3374.6	3293.2	3259.6
25°	3302.7	3283.6	3230.8	3115.8	3029.5
27.5°	3154.1	3125.4	3067.9	2904.9	2804.2
30°	2991.2	2976.8	2895.3	2684.4	2607.7
32.5°	2837.8	2813.8	2727.5	2507.0	2444.7
35°	2679.6	2660.4	2531.0	2339.2	2281.7
37.5°	2521.4	2497.4	2334.5	2181.1	2109.2
40°	2363.2	2334.5	2157.1	2018.1	1941.4
42.5°	2214.6	2176.3	2003.7	1855.1	1768.8
45°	2056.4	2013.3	1840.7	1687.3	1620.2
47.5°	1898.2	1859.9	1701.7	1543.5	1466.8
50°	1730.5	1696.9	1553.1	1394.9	1313.4
52.5°	1591.5	1538.7	1399.7	1241.5	1174.4
55°	1428.5	1385.3	1255.9	1107.3	1049.8
57.5°	1279.9	1236.7	1116.9	977.9	929.9
60°	1140.9	1078.5	977.9	858.0	819.7
62.5°	987.5	939.5	853.2	752.6	800.5
65°	848.5	800.5	723.8	738.2	613.6
67.5°	695.1	671.1	604.0	536.9	517.7
70°	565.6	536.9	512.9	441.0	421.8
72.5°	450.6	421.8	388.3	349.9	335.5
75°	340.3	316.4	297.2	282.8	311.6
77.5°	234.9	225.3	210.9	196.5	191.7
80°	153.4	148.6	143.8	139.0	134.2
82.5°	91.1	91.1	91.1	91.1	91.1
85°	47.9	52.7	57.5	62.3	67.1
87.5°	28.8	28.8	33.6	38.3	43.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)