

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: P563931

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-82-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563931  
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-82-94-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

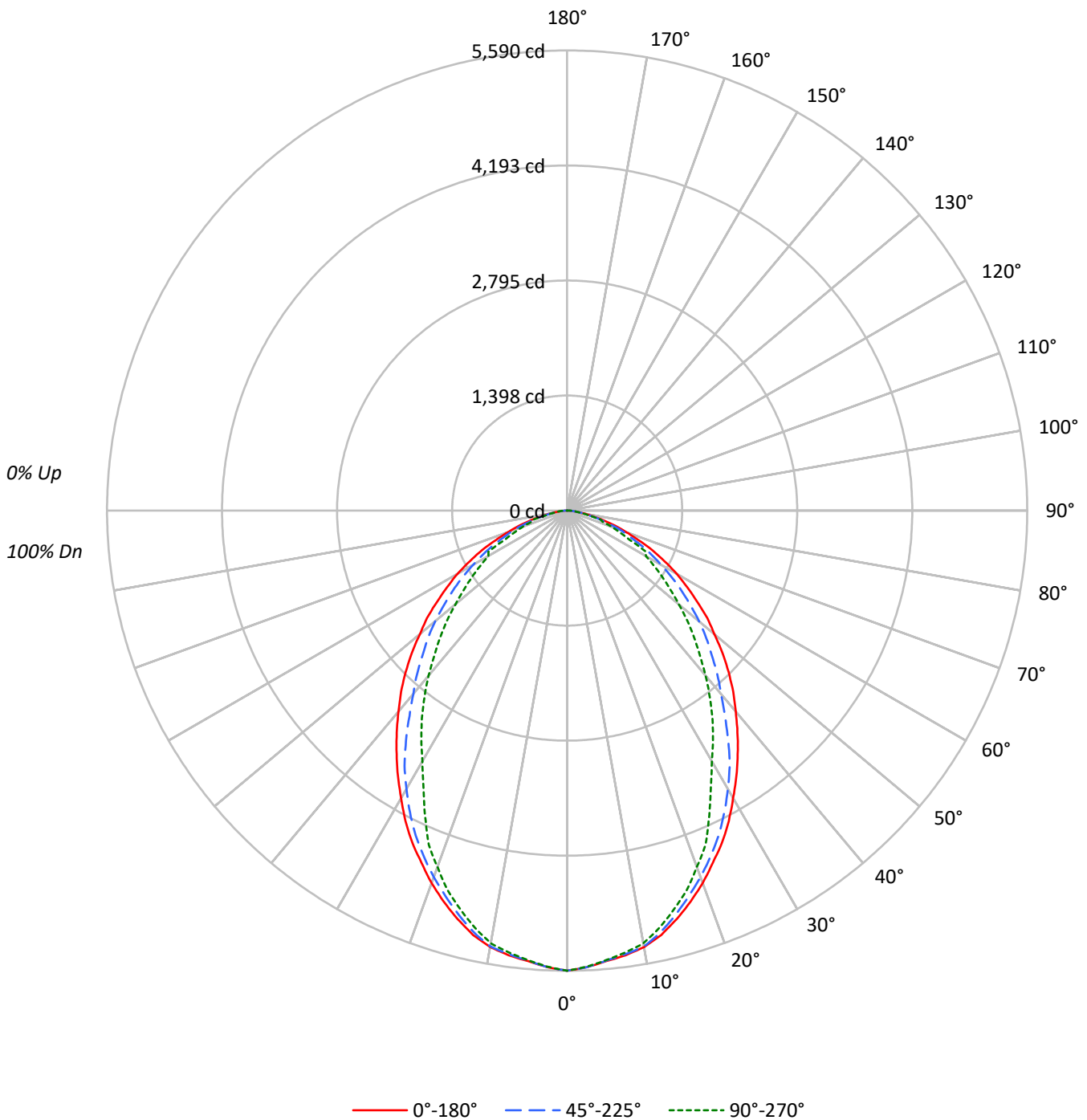
Lumens per Lamp: N/A  
Luminaire Lumens: 10974.0 lumens  
Efficiency: N/A  
Efficacy: 117.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7521	7521	7521
5°	7419	7410	7402
10°	7355	7346	7293
15°	7156	7084	6986
20°	6894	6783	6597
25°	6610	6466	6063
30°	6265	6064	5462
35°	5934	5605	5053
40°	5596	5108	4597
45°	5275	4722	4156
50°	4883	4383	3706
55°	4518	3972	3320
60°	4139	3548	2974
65°	3642	3107	2634
70°	3000	2720	2237
75°	2385	2083	2184
80°	1602	1502	1402
85°	997	1196	1397

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5275 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	520.4	4.7
10°-20°	1428.1	13.0
20°-30°	1977.1	18.0
30°-40°	2108.1	19.2
40°-50°	1923.2	17.5
50°-60°	1506.7	13.7
60°-70°	982.0	8.9
70°-80°	435.1	4.0
80°-90°	93.4	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°	3925.5	35.8
0°-40°	6033.6	55.0
0°-60°	9463.5	86.2
0°-90°	10974.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10974.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5590	5590	5590	5590	5590	
5°	5493	5487	5487	5480	5480	521
15°	5138	5138	5086	5034	5015	1444
25°	4453	4427	4356	4201	4084	2044
35°	3612	3587	3412	3154	3076	2258
45°	2772	2714	2482	2275	2184	2136
55°	1926	1868	1693	1493	1415	1727
65°	1144	1079	976	995	827	1127
75°	459	426	401	381	420	492
85°	65	71	78	84	90	90
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5590.0	5590.0	5590.0	5590.0	5590.0
2.5°	5551.2	5551.2	5551.2	5544.8	5544.8
5°	5493.1	5486.6	5486.6	5480.1	5480.1
7.5°	5447.8	5441.4	5434.9	5428.4	5415.5
10°	5383.2	5383.2	5376.7	5344.4	5338.0
12.5°	5279.8	5273.3	5247.5	5202.3	5189.3
15°	5137.6	5137.6	5085.9	5034.2	5014.9
17.5°	4982.5	4976.1	4911.5	4859.8	4833.9
20°	4814.5	4801.6	4737.0	4653.0	4607.7
22.5°	4627.1	4627.1	4549.6	4439.7	4394.5
25°	4452.6	4426.8	4355.7	4200.6	4084.3
27.5°	4252.3	4213.5	4136.0	3916.2	3780.5
30°	4032.6	4013.2	3903.3	3619.0	3515.6
32.5°	3825.8	3793.5	3677.1	3379.9	3295.8
35°	3612.5	3586.7	3412.2	3153.7	3076.1
37.5°	3399.2	3366.9	3147.2	2940.4	2843.5
40°	3186.0	3147.2	2908.1	2720.7	2617.3
42.5°	2985.6	2933.9	2701.3	2501.0	2384.6
45°	2772.4	2714.2	2481.6	2274.8	2184.3
47.5°	2559.1	2507.4	2294.2	2080.9	1977.5
50°	2332.9	2287.7	2093.8	1880.6	1770.7
52.5°	2145.5	2074.4	1887.0	1673.8	1583.3
55°	1925.8	1867.6	1693.2	1492.8	1415.3
57.5°	1725.5	1667.3	1505.7	1318.3	1253.7
60°	1538.1	1454.0	1318.3	1156.8	1105.1
62.5°	1331.3	1266.6	1150.3	1014.6	1079.2
65°	1143.9	1079.2	975.8	995.2	827.2
67.5°	937.1	904.7	814.3	723.8	697.9
70°	762.6	723.8	691.5	594.5	568.7
72.5°	607.5	568.7	523.5	471.8	452.4
75°	458.8	426.5	400.7	381.3	420.1
77.5°	316.7	303.7	284.3	265.0	258.5
80°	206.8	200.3	193.9	187.4	180.9
82.5°	122.8	122.8	122.8	122.8	122.8
85°	64.6	71.1	77.5	84.0	90.5
87.5°	38.8	38.8	45.2	51.7	58.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)