

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: P590799

Luminaire Tested: FSR-24-2-LD4-4HI-50-UNV-93-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590799  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4HI-50-UNV-93-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

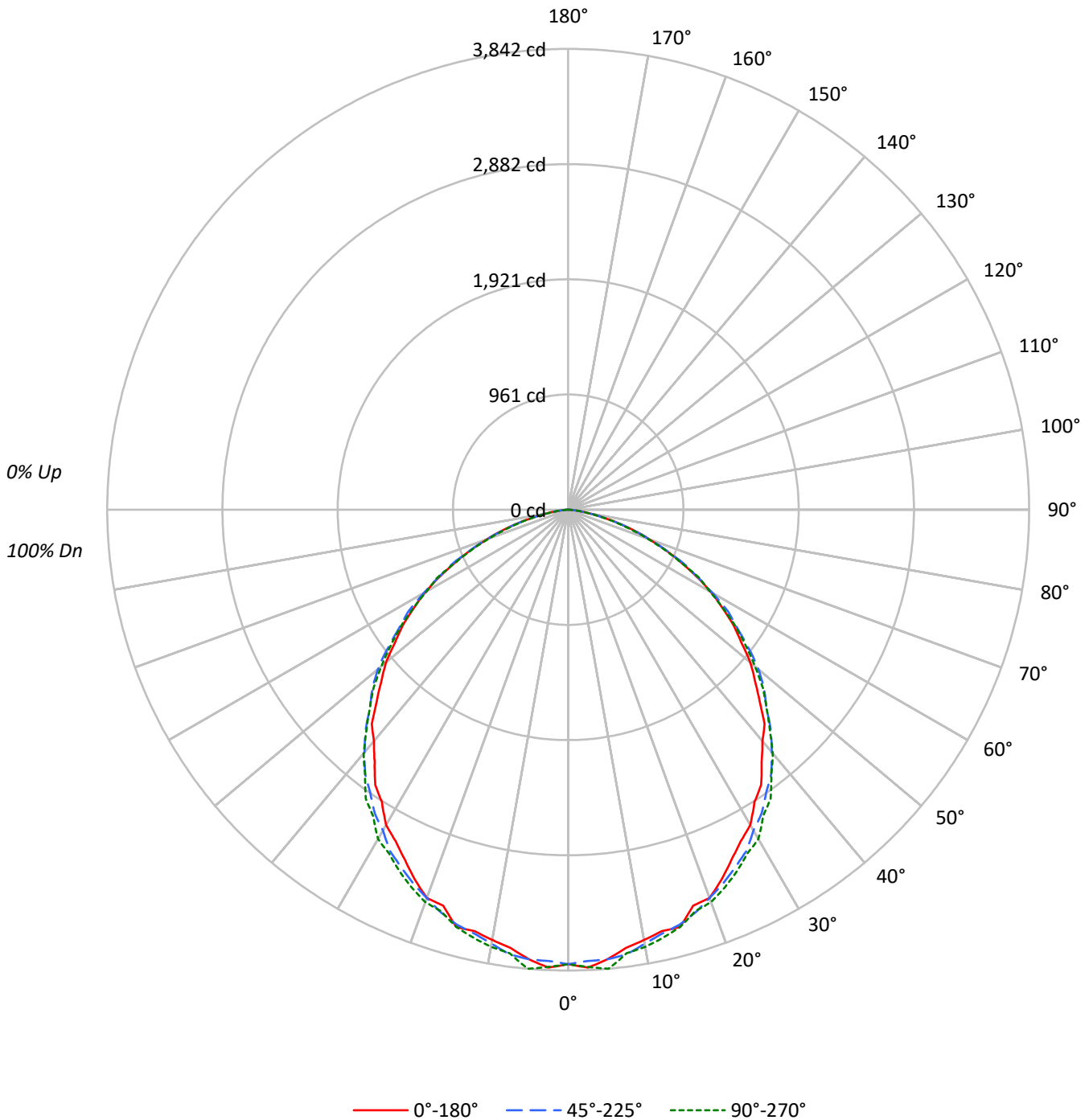
Lumens per Lamp: N/A  
Luminaire Lumens: 9548.0 lumens  
Efficiency: N/A  
Efficacy: 110.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10195	10195	10195
5°	10161	10165	10379
10°	9955	10042	10112
15°	10034	9979	10035
20°	9864	9864	9969
25°	9561	9770	9878
30°	9429	9595	9850
35°	9207	9449	9660
40°	8849	9275	9316
45°	8581	8887	8900
50°	8300	8674	8508
55°	7908	8062	8004
60°	7395	7469	7334
65°	6593	6762	6547
70°	5657	5677	5519
75°	4480	4471	4297
80°	3002	2918	2805
85°	1630	1615	1510

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 9116 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	356.4	3.7
10°-20°	1010.0	10.6
20°-30°	1513.1	15.8
30°-40°	1793.4	18.8
40°-50°	1796.7	18.8
50°-60°	1525.1	16.0
60°-70°	1028.2	10.8
70°-80°	451.8	4.7
80°-90°	73.4	0.8
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°	2879.4	30.2
0°-40°	4672.8	48.9
0°-60°	7994.6	83.7
0°-90°	9548.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9548.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3788	3788	3788	3788	3788	
5°	3762	3753	3763	3752	3842	355
15°	3602	3560	3582	3601	3602	1003
25°	3220	3238	3290	3334	3327	1489
35°	2803	2811	2876	2943	2941	1740
45°	2255	2297	2335	2395	2339	1744
55°	1686	1674	1718	1707	1706	1499
65°	1036	1022	1062	1021	1028	1030
75°	431	422	430	400	413	462
85°	53	51	52	51	49	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3788.4	3788.4	3788.4	3788.4	3788.4
2.5°	3821.2	3792.3	3765.4	3796.7	3815.8
5°	3761.5	3752.7	3763.0	3751.7	3842.2
7.5°	3684.2	3718.0	3737.5	3725.3	3730.7
10°	3643.1	3631.4	3674.9	3705.3	3700.8
12.5°	3599.1	3616.7	3619.2	3651.9	3654.9
15°	3601.6	3560.0	3582.0	3600.6	3602.0
17.5°	3461.7	3506.7	3521.8	3564.4	3511.6
20°	3444.5	3411.8	3444.5	3488.1	3481.2
22.5°	3339.4	3302.7	3373.1	3411.8	3409.3
25°	3220.0	3237.6	3290.5	3333.5	3326.7
27.5°	3115.3	3135.9	3211.2	3270.4	3232.3
30°	3034.6	3024.4	3088.0	3140.8	3170.1
32.5°	2890.3	2927.5	3001.9	3054.2	3026.3
35°	2802.8	2811.1	2876.2	2942.7	2940.7
37.5°	2649.7	2688.3	2779.8	2798.4	2781.3
40°	2519.1	2557.7	2640.4	2660.4	2652.1
42.5°	2422.7	2429.6	2500.5	2523.5	2486.8
45°	2254.9	2297.0	2335.2	2395.3	2338.6
47.5°	2112.1	2131.7	2213.9	2230.0	2200.2
50°	1982.5	1989.3	2072.0	2052.0	2032.4
52.5°	1819.6	1848.5	1894.9	1891.0	1868.0
55°	1685.6	1674.3	1718.4	1706.6	1706.1
57.5°	1524.7	1544.2	1580.4	1561.8	1532.0
60°	1374.0	1374.5	1387.7	1366.7	1362.7
62.5°	1206.2	1212.1	1215.0	1189.1	1231.2
65°	1035.5	1021.8	1061.9	1021.3	1028.2
67.5°	878.5	885.3	881.4	856.0	865.8
70°	719.0	727.8	721.5	692.6	701.4
72.5°	573.3	562.5	569.4	533.2	549.8
75°	430.9	422.1	430.0	399.6	413.3
77.5°	293.5	300.3	295.4	279.3	288.6
80°	193.7	188.3	188.3	179.0	181.0
82.5°	113.0	107.6	106.1	103.2	107.6
85°	52.8	51.4	52.3	50.9	48.9
87.5°	19.1	19.6	19.6	18.6	17.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)