

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: P590783

Luminaire Tested: FSR-24-2-LD4-4HI-50-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590783  
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-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

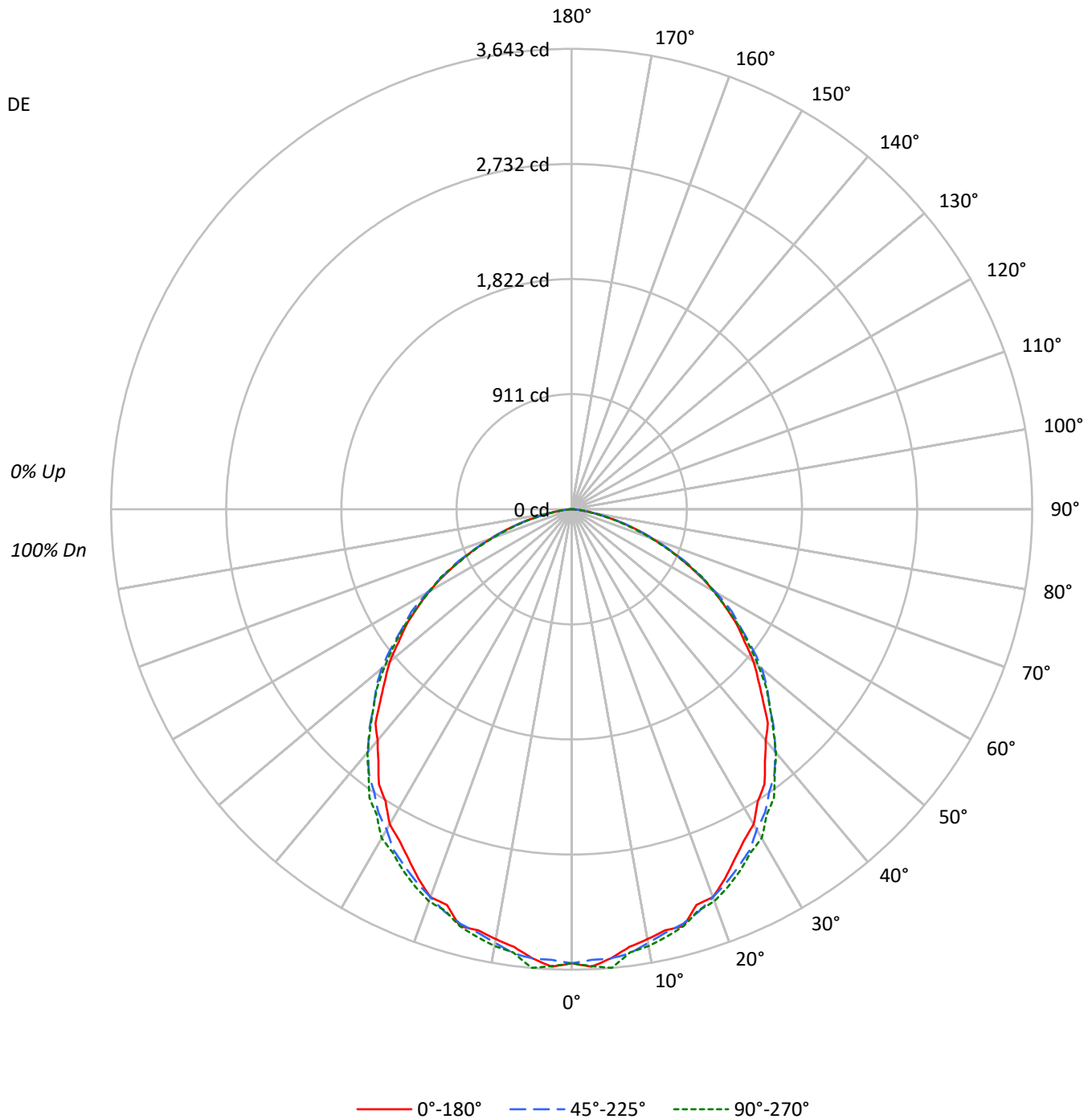
Lumens per Lamp: N/A  
Luminaire Lumens: 9052.0 lumens  
Efficiency: N/A  
Efficacy: 104.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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																		
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	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°	9665	9665	9665
5°	9633	9637	9840
10°	9438	9520	9587
15°	9512	9461	9514
20°	9352	9352	9451
25°	9064	9262	9364
30°	8940	9097	9339
35°	8729	8957	9159
40°	8389	8793	8833
45°	8136	8425	8437
50°	7868	8224	8066
55°	7497	7643	7589
60°	7011	7081	6953
65°	6251	6411	6207
70°	5364	5382	5232
75°	4247	4238	4075
80°	2845	2766	2659
85°	1547	1531	1433

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 8642 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	337.8	3.7
10°-20°	957.5	10.6
20°-30°	1434.5	15.8
30°-40°	1700.2	18.8
40°-50°	1703.4	18.8
50°-60°	1445.9	16.0
60°-70°	974.8	10.8
70°-80°	428.3	4.7
80°-90°	69.6	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°	2729.9	30.2
0°-40°	4430.0	48.9
0°-60°	7579.3	83.7
0°-90°	9052.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9052.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3592	3592	3592	3592	3592	
5°	3566	3558	3568	3557	3643	336
15°	3414	3375	3396	3414	3415	951
25°	3053	3069	3120	3160	3154	1411
35°	2657	2665	2727	2790	2788	1650
45°	2138	2178	2214	2271	2217	1654
55°	1598	1587	1629	1618	1618	1422
65°	982	969	1007	968	975	976
75°	408	400	408	379	392	438
85°	50	49	50	48	46	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3591.6	3591.6	3591.6	3591.6	3591.6
2.5°	3622.7	3595.3	3569.8	3599.5	3617.6
5°	3566.1	3557.8	3567.5	3556.8	3642.6
7.5°	3492.8	3524.8	3543.4	3531.8	3536.9
10°	3453.9	3442.7	3484.0	3512.8	3508.6
12.5°	3412.1	3428.8	3431.2	3462.2	3465.0
15°	3414.5	3375.0	3395.9	3413.5	3414.9
17.5°	3281.8	3324.5	3338.9	3379.2	3329.1
20°	3265.6	3234.5	3265.6	3306.9	3300.4
22.5°	3165.9	3131.1	3197.9	3234.5	3232.2
25°	3052.7	3069.4	3119.5	3160.3	3153.8
27.5°	2953.5	2973.0	3044.4	3100.5	3064.3
30°	2877.0	2867.3	2927.5	2977.6	3005.4
32.5°	2740.2	2775.4	2845.9	2895.5	2869.1
35°	2657.2	2665.1	2726.7	2789.8	2788.0
37.5°	2512.0	2548.7	2635.4	2653.0	2636.8
40°	2388.2	2424.9	2503.2	2522.2	2514.4
42.5°	2296.9	2303.4	2370.6	2392.4	2357.6
45°	2137.8	2177.7	2213.9	2270.9	2217.1
47.5°	2002.4	2020.9	2098.9	2114.2	2085.9
50°	1879.5	1886.0	1964.4	1945.4	1926.8
52.5°	1725.1	1752.4	1796.5	1792.8	1771.0
55°	1598.0	1587.4	1629.1	1618.0	1617.5
57.5°	1445.5	1464.0	1498.3	1480.7	1452.4
60°	1302.6	1303.1	1315.6	1295.7	1292.0
62.5°	1143.6	1149.1	1151.9	1127.3	1167.2
65°	981.7	968.7	1006.8	968.3	974.8
67.5°	832.9	839.4	835.6	811.5	820.8
70°	681.7	690.0	684.0	656.6	665.0
72.5°	543.5	533.3	539.8	505.5	521.2
75°	408.5	400.2	407.6	378.9	391.9
77.5°	278.2	284.7	280.1	264.8	273.6
80°	183.6	178.5	178.5	169.7	171.6
82.5°	107.1	102.0	100.6	97.8	102.0
85°	50.1	48.7	49.6	48.2	46.4
87.5°	18.1	18.5	18.5	17.6	16.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)