

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: P590787

Luminaire Tested: FSR-24-2-LD4-4HI-50-UNV-81-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590787  
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-81-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

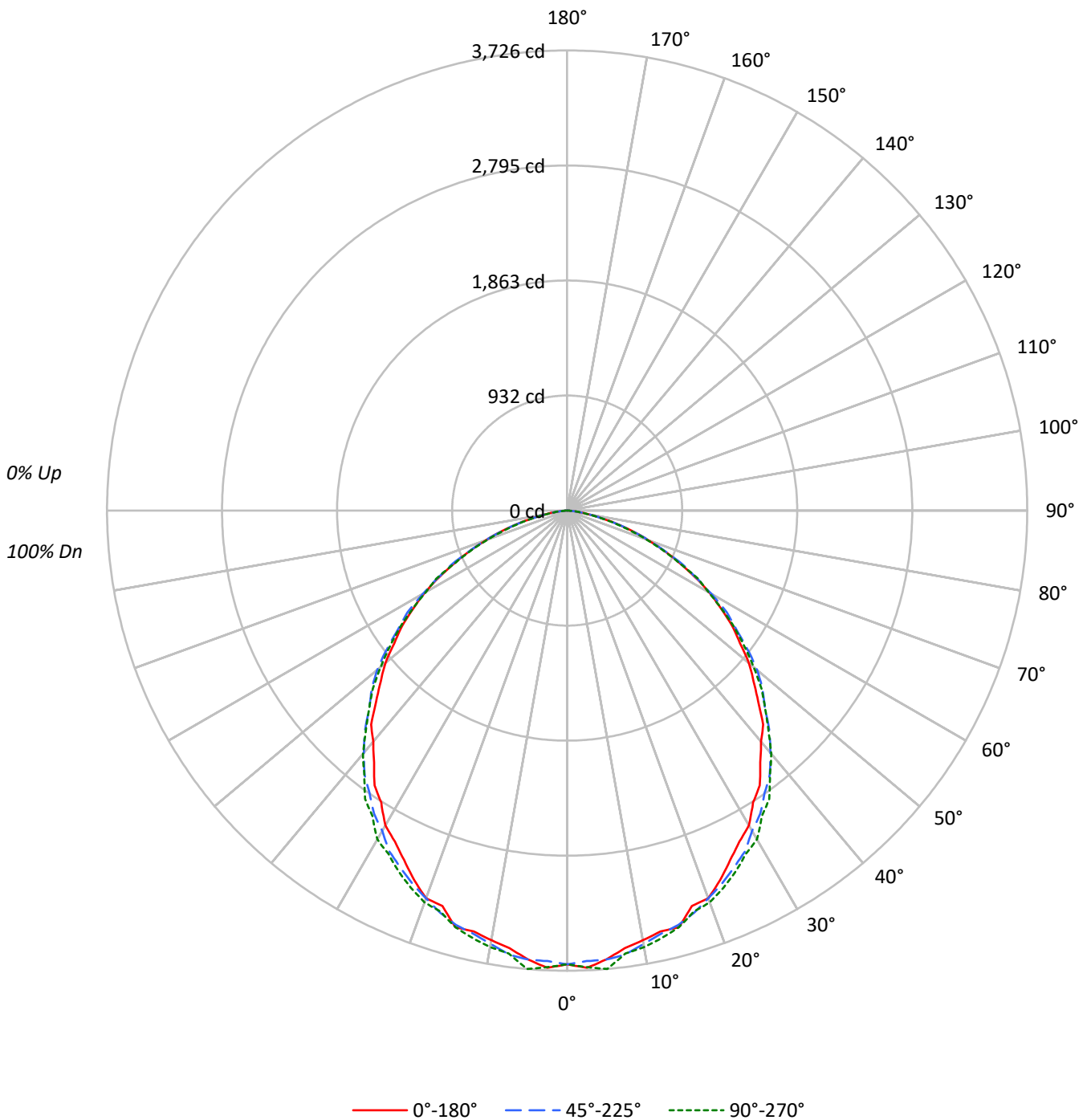
Lumens per Lamp: N/A  
Luminaire Lumens: 9259.0 lumens  
Efficiency: N/A  
Efficacy: 107.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

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

	0°	45°	90°
0°	9886	9886	9886
5°	9853	9857	10065
10°	9654	9738	9806
15°	9730	9677	9731
20°	9566	9566	9667
25°	9272	9474	9579
30°	9144	9305	9552
35°	8929	9162	9368
40°	8581	8995	9035
45°	8322	8618	8630
50°	8048	8412	8251
55°	7669	7818	7762
60°	7171	7243	7112
65°	6394	6557	6349
70°	5486	5504	5352
75°	4345	4335	4167
80°	2910	2830	2720
85°	1581	1568	1463

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 8840 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	345.6	3.7
10°-20°	979.4	10.6
20°-30°	1467.3	15.8
30°-40°	1739.1	18.8
40°-50°	1742.3	18.8
50°-60°	1478.9	16.0
60°-70°	997.1	10.8
70°-80°	438.1	4.7
80°-90°	71.2	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°	2792.3	30.2
0°-40°	4531.4	48.9
0°-60°	7752.6	83.7
0°-90°	9259.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9259.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3674	3674	3674	3674	3674	
5°	3648	3639	3649	3638	3726	344
15°	3492	3452	3474	3492	3493	973
25°	3123	3140	3191	3233	3226	1444
35°	2718	2726	2789	2854	2852	1688
45°	2187	2228	2264	2323	2268	1692
55°	1635	1624	1666	1655	1654	1454
65°	1004	991	1030	990	997	999
75°	418	409	417	388	401	448
85°	51	50	51	49	47	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3673.7	3673.7	3673.7	3673.7	3673.7
2.5°	3705.5	3677.5	3651.4	3681.8	3700.3
5°	3647.6	3639.1	3649.1	3638.2	3725.9
7.5°	3572.7	3605.4	3624.4	3612.5	3617.8
10°	3532.9	3521.5	3563.7	3593.1	3588.8
12.5°	3490.2	3507.2	3509.6	3541.4	3544.2
15°	3492.5	3452.2	3473.6	3491.6	3493.0
17.5°	3356.9	3400.5	3415.2	3456.5	3405.3
20°	3340.3	3308.5	3340.3	3382.5	3375.9
22.5°	3238.3	3202.7	3271.0	3308.5	3306.1
25°	3122.6	3139.6	3190.9	3232.6	3226.0
27.5°	3021.1	3041.0	3114.0	3171.4	3134.4
30°	2942.8	2932.8	2994.5	3045.7	3074.2
32.5°	2802.9	2838.9	2911.0	2961.8	2934.7
35°	2717.9	2726.0	2789.1	2853.6	2851.7
37.5°	2569.5	2607.0	2695.7	2713.7	2697.1
40°	2442.8	2480.3	2560.5	2579.9	2571.9
42.5°	2349.4	2356.0	2424.8	2447.1	2411.5
45°	2186.7	2227.5	2264.5	2322.8	2267.8
47.5°	2048.2	2067.2	2146.8	2162.5	2133.6
50°	1922.5	1929.1	2009.3	1989.8	1970.9
52.5°	1764.5	1792.5	1837.6	1833.8	1811.5
55°	1634.6	1623.7	1666.3	1655.0	1654.5
57.5°	1478.5	1497.5	1532.6	1514.6	1485.6
60°	1332.4	1332.9	1345.7	1325.3	1321.5
62.5°	1169.7	1175.4	1178.3	1153.1	1193.9
65°	1004.2	990.9	1029.8	990.4	997.1
67.5°	851.9	858.5	854.8	830.1	839.6
70°	697.3	705.8	699.6	671.7	680.2
72.5°	555.9	545.5	552.1	517.0	533.2
75°	417.9	409.4	416.9	387.5	400.8
77.5°	284.6	291.2	286.5	270.8	279.9
80°	187.8	182.6	182.6	173.6	175.5
82.5°	109.6	104.4	102.9	100.1	104.4
85°	51.2	49.8	50.8	49.3	47.4
87.5°	18.5	19.0	19.0	18.0	17.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)