

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: P590974

Luminaire Tested: FSR-24-2-LD4-4STD-50-UNV-81-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590974  
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-LD4-4STD-50-UNV-81-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

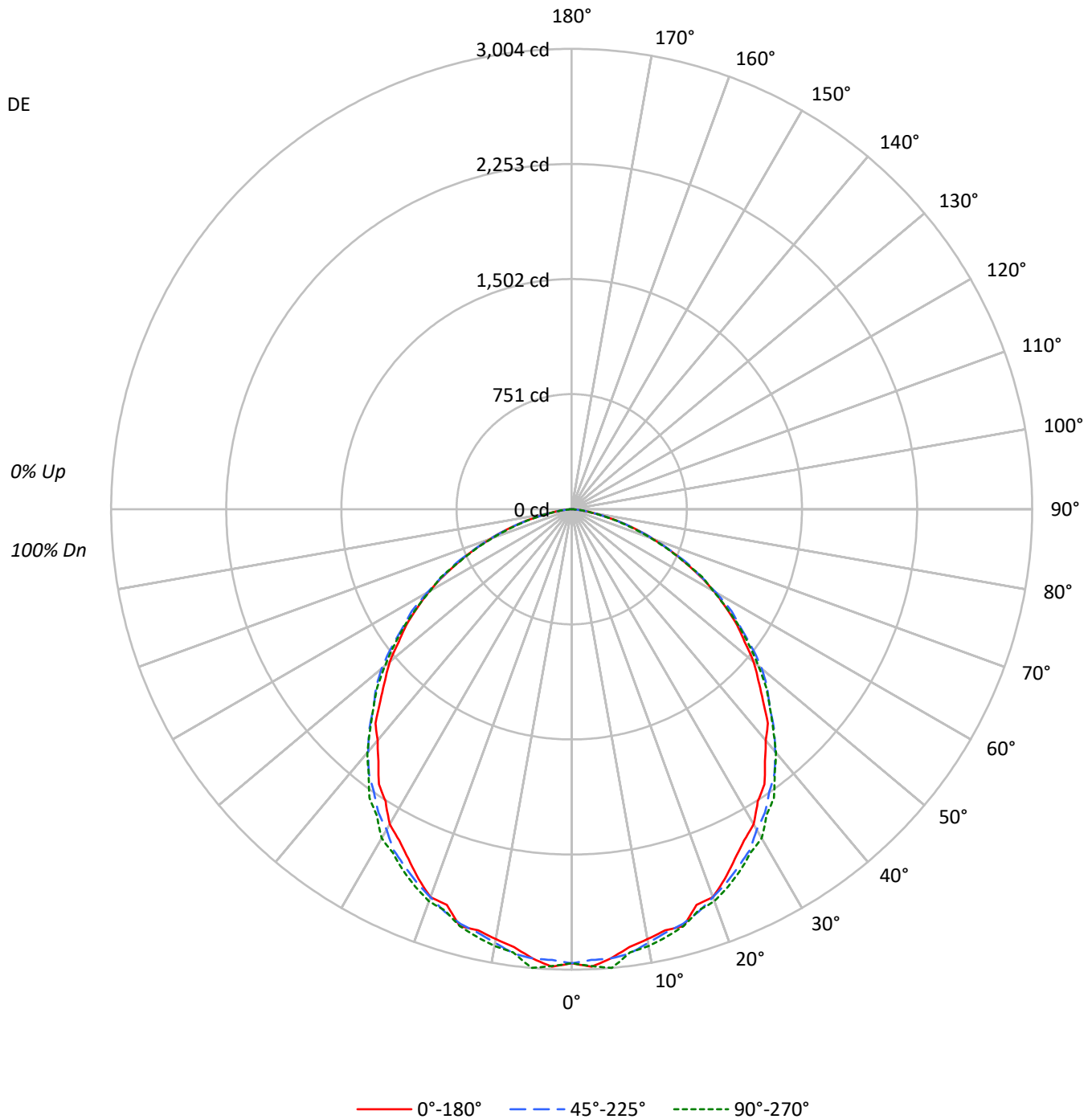
Lumens per Lamp: N/A  
Luminaire Lumens: 7465.0 lumens  
Efficiency: N/A  
Efficacy: 112.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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				
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°	7970	7970	7970
5°	7944	7947	8115
10°	7783	7851	7906
15°	7845	7802	7846
20°	7712	7712	7794
25°	7475	7638	7723
30°	7372	7502	7701
35°	7199	7387	7553
40°	6919	7252	7284
45°	6709	6948	6958
50°	6489	6782	6652
55°	6183	6303	6258
60°	5781	5839	5734
65°	5155	5287	5119
70°	4423	4438	4315
75°	3503	3496	3360
80°	2346	2281	2193
85°	1275	1263	1179

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7127 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	278.6	3.7
10°-20°	789.6	10.6
20°-30°	1183.0	15.8
30°-40°	1402.1	18.8
40°-50°	1404.7	18.8
50°-60°	1192.4	16.0
60°-70°	803.9	10.8
70°-80°	353.2	4.7
80°-90°	57.4	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°	2251.3	30.2
0°-40°	3653.4	48.9
0°-60°	6250.5	83.7
0°-90°	7465.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7465.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2962	2962	2962	2962	2962	
5°	2941	2934	2942	2933	3004	277
15°	2816	2783	2800	2815	2816	785
25°	2518	2531	2573	2606	2601	1164
35°	2191	2198	2249	2301	2299	1361
45°	1763	1796	1826	1873	1828	1364
55°	1318	1309	1344	1334	1334	1172
65°	810	799	830	798	804	805
75°	337	330	336	312	323	361
85°	41	40	41	40	38	60
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2961.9	2961.9	2961.9	2961.9	2961.9
2.5°	2987.5	2965.0	2943.9	2968.4	2983.3
5°	2940.9	2934.0	2942.0	2933.2	3004.0
7.5°	2880.5	2906.9	2922.2	2912.6	2916.8
10°	2848.3	2839.2	2873.2	2896.9	2893.5
12.5°	2813.9	2827.7	2829.6	2855.2	2857.5
15°	2815.8	2783.3	2800.5	2815.1	2816.2
17.5°	2706.5	2741.6	2753.5	2786.8	2745.5
20°	2693.1	2667.5	2693.1	2727.1	2721.8
22.5°	2610.9	2582.2	2637.2	2667.5	2665.5
25°	2517.5	2531.3	2572.6	2606.3	2600.9
27.5°	2435.7	2451.8	2510.7	2556.9	2527.1
30°	2372.6	2364.6	2414.3	2455.6	2478.5
32.5°	2259.8	2288.8	2347.0	2387.9	2366.1
35°	2191.3	2197.8	2248.7	2300.7	2299.2
37.5°	2071.6	2101.8	2173.4	2187.9	2174.5
40°	1969.5	1999.7	2064.4	2080.0	2073.5
42.5°	1894.2	1899.5	1955.0	1973.0	1944.3
45°	1763.0	1795.9	1825.7	1872.8	1828.4
47.5°	1651.3	1666.6	1730.9	1743.5	1720.2
50°	1550.0	1555.3	1620.0	1604.3	1589.0
52.5°	1422.6	1445.2	1481.5	1478.5	1460.5
55°	1317.9	1309.1	1343.5	1334.3	1333.9
57.5°	1192.0	1207.3	1235.6	1221.1	1197.8
60°	1074.2	1074.6	1085.0	1068.5	1065.5
62.5°	943.1	947.7	950.0	929.7	962.6
65°	809.6	798.9	830.3	798.5	803.9
67.5°	686.8	692.2	689.1	669.3	676.9
70°	562.2	569.1	564.1	541.5	548.4
72.5°	448.2	439.8	445.1	416.8	429.9
75°	336.9	330.0	336.2	312.4	323.2
77.5°	229.5	234.8	231.0	218.4	225.6
80°	151.4	147.2	147.2	140.0	141.5
82.5°	88.3	84.1	83.0	80.7	84.1
85°	41.3	40.2	40.9	39.8	38.2
87.5°	14.9	15.3	15.3	14.5	13.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)