

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: P590882

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-81-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590882  
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-LD4-4LO-50-UNV-81-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

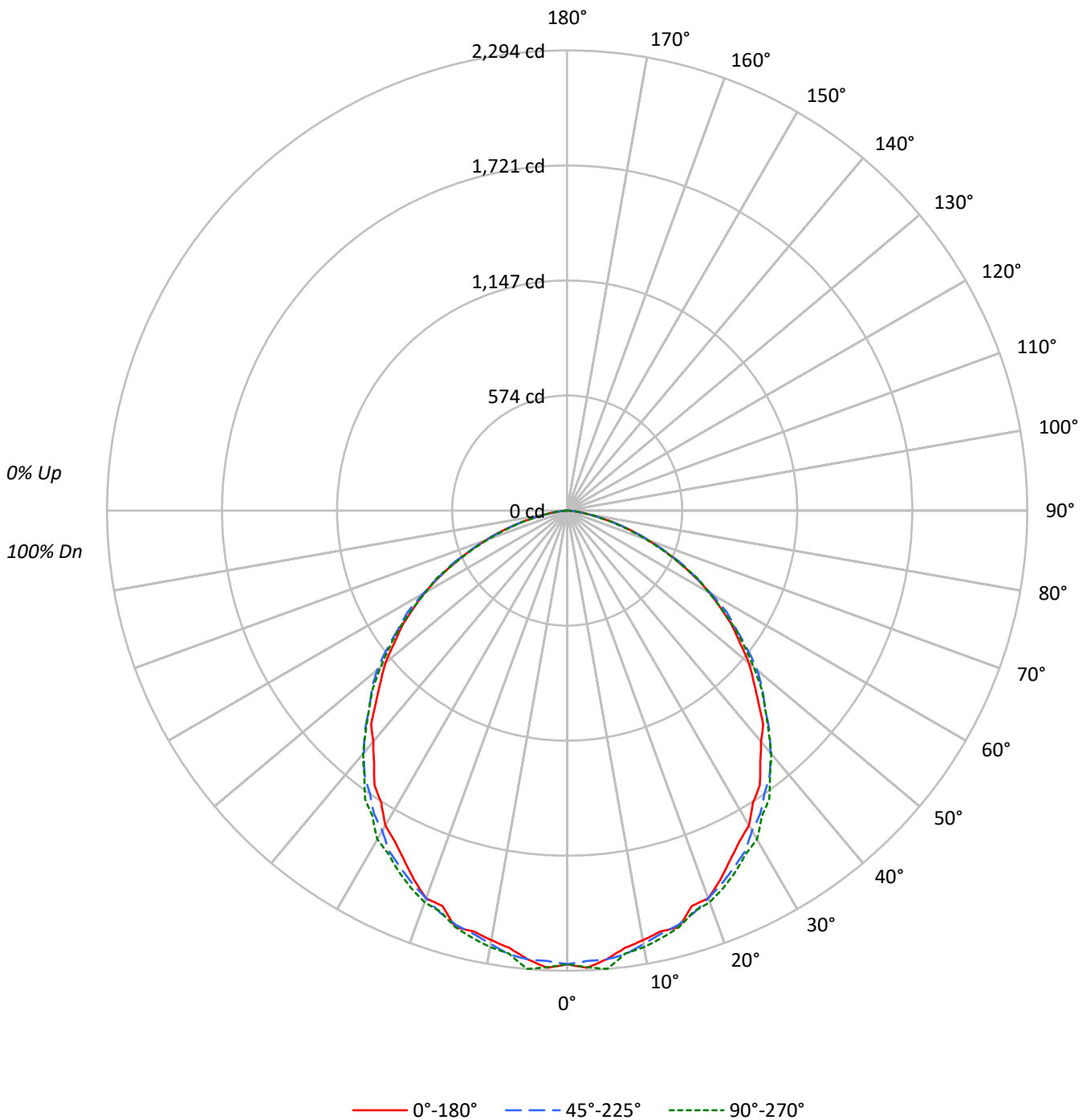
Lumens per Lamp: N/A  
Luminaire Lumens: 5700.0 lumens  
Efficiency: N/A  
Efficacy: 121.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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°	6086	6086	6086
5°	6066	6068	6196
10°	5943	5995	6037
15°	5990	5957	5991
20°	5889	5889	5951
25°	5708	5833	5897
30°	5629	5728	5881
35°	5497	5640	5767
40°	5283	5537	5562
45°	5123	5305	5313
50°	4955	5179	5079
55°	4721	4813	4778
60°	4415	4458	4378
65°	3936	4037	3908
70°	3378	3389	3294
75°	2675	2669	2565
80°	1791	1742	1674
85°	973	963	902

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5442 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	212.7	3.7
10°-20°	602.9	10.6
20°-30°	903.3	15.8
30°-40°	1070.6	18.8
40°-50°	1072.6	18.8
50°-60°	910.4	16.0
60°-70°	613.8	10.8
70°-80°	269.7	4.7
80°-90°	43.8	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°	1719.0	30.2
0°-40°	2789.6	48.9
0°-60°	4772.6	83.7
0°-90°	5700.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5700.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2262	2262	2262	2262	2262	
5°	2246	2240	2246	2240	2294	212
15°	2150	2125	2138	2150	2150	599
25°	1922	1933	1964	1990	1986	889
35°	1673	1678	1717	1757	1756	1039
45°	1346	1371	1394	1430	1396	1041
55°	1006	1000	1026	1019	1018	895
65°	618	610	634	610	614	615
75°	257	252	257	239	247	276
85°	32	31	31	30	29	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2261.6	2261.6	2261.6	2261.6	2261.6
2.5°	2281.2	2264.0	2247.9	2266.6	2278.0
5°	2245.6	2240.3	2246.4	2239.7	2293.7
7.5°	2199.4	2219.6	2231.2	2223.9	2227.2
10°	2174.9	2167.9	2193.9	2212.0	2209.3
12.5°	2148.6	2159.1	2160.6	2180.1	2181.9
15°	2150.1	2125.2	2138.4	2149.5	2150.4
17.5°	2066.6	2093.4	2102.5	2127.9	2096.3
20°	2056.3	2036.8	2056.3	2082.3	2078.2
22.5°	1993.6	1971.7	2013.7	2036.8	2035.3
25°	1922.3	1932.8	1964.4	1990.0	1986.0
27.5°	1859.8	1872.1	1917.0	1952.4	1929.6
30°	1811.6	1805.5	1843.5	1875.0	1892.5
32.5°	1725.5	1747.7	1792.1	1823.3	1806.7
35°	1673.2	1678.2	1717.0	1756.7	1755.6
37.5°	1581.8	1604.9	1659.5	1670.6	1660.4
40°	1503.9	1526.9	1576.3	1588.2	1583.3
42.5°	1446.3	1450.4	1492.8	1506.5	1484.6
45°	1346.2	1371.3	1394.1	1430.0	1396.1
47.5°	1260.9	1272.6	1321.6	1331.3	1313.5
50°	1183.5	1187.6	1237.0	1225.0	1213.3
52.5°	1086.3	1103.5	1131.2	1128.9	1115.2
55°	1006.3	999.5	1025.8	1018.8	1018.5
57.5°	910.2	921.9	943.5	932.4	914.6
60°	820.3	820.5	828.4	815.9	813.5
62.5°	720.1	723.6	725.4	709.9	735.0
65°	618.2	610.0	634.0	609.7	613.8
67.5°	524.4	528.5	526.2	511.0	516.9
70°	429.3	434.5	430.7	413.5	418.7
72.5°	342.2	335.8	339.9	318.3	328.2
75°	257.3	252.0	256.7	238.6	246.7
77.5°	175.2	179.3	176.4	166.7	172.3
80°	115.6	112.4	112.4	106.9	108.0
82.5°	67.5	64.2	63.4	61.6	64.2
85°	31.5	30.7	31.2	30.4	29.2
87.5°	11.4	11.7	11.7	11.1	10.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)