

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: P590883

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

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590883  
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-81-96-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**

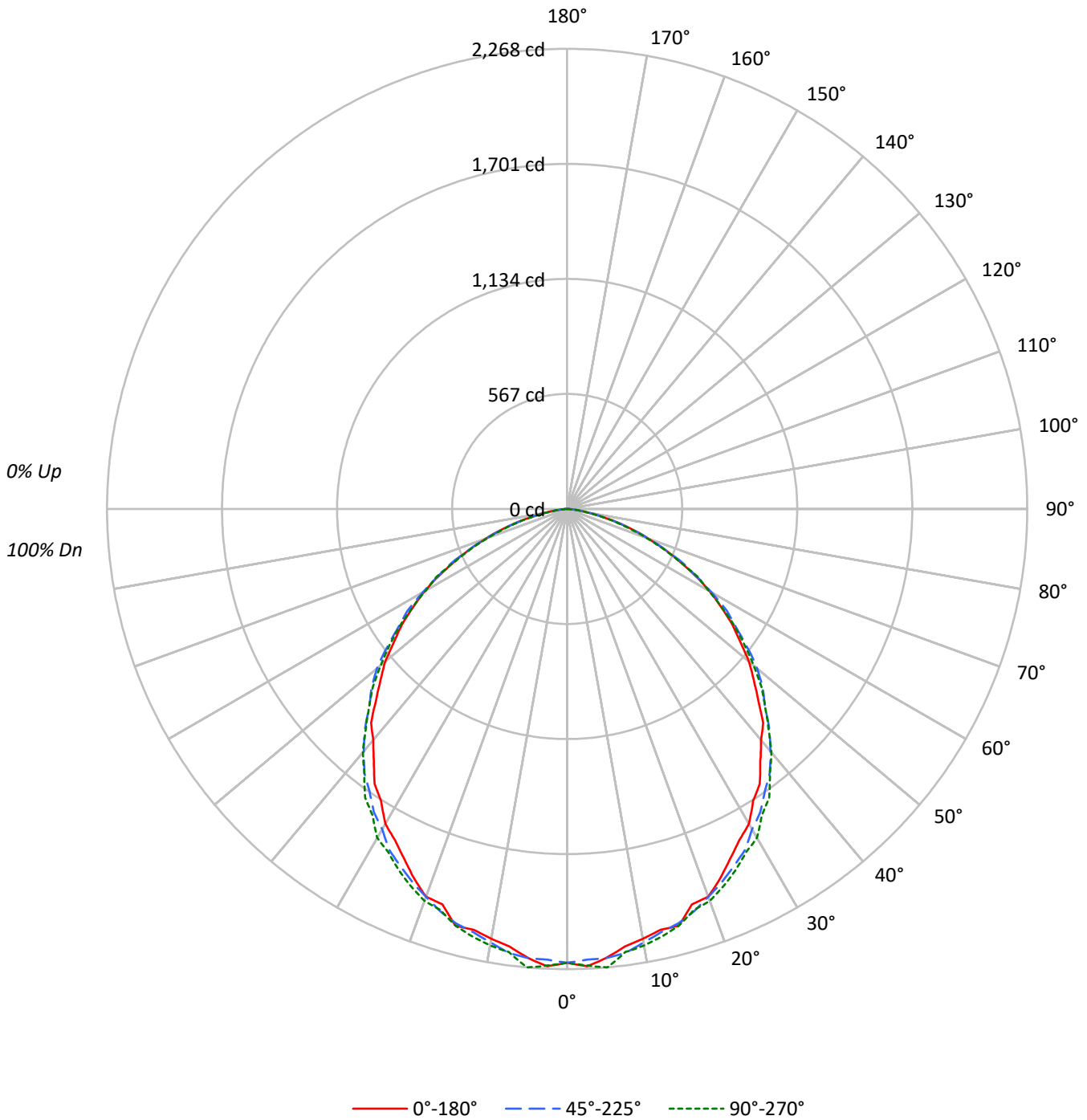
Lumens per Lamp: N/A  
Luminaire Lumens: 5637.0 lumens  
Efficiency: N/A  
Efficacy: 120.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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					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°	6019	6019	6019
5°	5999	6001	6128
10°	5877	5928	5970
15°	5924	5892	5925
20°	5824	5824	5886
25°	5645	5768	5831
30°	5567	5665	5816
35°	5436	5578	5704
40°	5224	5476	5500
45°	5066	5246	5254
50°	4900	5121	5023
55°	4669	4760	4726
60°	4366	4409	4330
65°	3893	3992	3865
70°	3340	3352	3258
75°	2645	2639	2537
80°	1773	1723	1655
85°	963	954	892

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5382 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.4	3.7
10°-20°	596.3	10.6
20°-30°	893.3	15.8
30°-40°	1058.8	18.8
40°-50°	1060.7	18.8
50°-60°	900.4	16.0
60°-70°	607.0	10.8
70°-80°	266.7	4.7
80°-90°	43.3	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°	1700.0	30.2
0°-40°	2758.8	48.9
0°-60°	4719.9	83.7
0°-90°	5637.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5637.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2237	2237	2237	2237	2237	
5°	2221	2216	2222	2215	2268	209
15°	2126	2102	2115	2126	2127	592
25°	1901	1912	1943	1968	1964	879
35°	1655	1660	1698	1737	1736	1027
45°	1331	1356	1379	1414	1381	1030
55°	995	988	1014	1008	1007	885
65°	611	603	627	603	607	608
75°	254	249	254	236	244	273
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2236.6	2236.6	2236.6	2236.6	2236.6
2.5°	2256.0	2238.9	2223.0	2241.5	2252.8
5°	2220.7	2215.5	2221.6	2215.0	2268.4
7.5°	2175.1	2195.0	2206.6	2199.4	2202.5
10°	2150.9	2143.9	2169.6	2187.5	2184.9
12.5°	2124.9	2135.3	2136.7	2156.0	2157.8
15°	2126.3	2101.8	2114.8	2125.7	2126.6
17.5°	2043.7	2070.3	2079.2	2104.4	2073.2
20°	2033.6	2014.3	2033.6	2059.3	2055.3
22.5°	1971.5	1949.9	1991.4	2014.3	2012.8
25°	1901.1	1911.5	1942.6	1968.1	1964.0
27.5°	1839.3	1851.4	1895.9	1930.8	1908.3
30°	1791.6	1785.5	1823.1	1854.3	1871.6
32.5°	1706.4	1728.4	1772.3	1803.2	1786.7
35°	1654.7	1659.6	1698.0	1737.3	1736.2
37.5°	1564.3	1587.1	1641.2	1652.1	1642.0
40°	1487.2	1510.0	1558.8	1570.7	1565.8
42.5°	1430.3	1434.4	1476.3	1489.8	1468.2
45°	1331.3	1356.1	1378.6	1414.2	1380.7
47.5°	1247.0	1258.5	1307.0	1316.6	1298.9
50°	1170.4	1174.5	1223.3	1211.4	1199.9
52.5°	1074.3	1091.3	1118.7	1116.4	1102.9
55°	995.1	988.5	1014.5	1007.6	1007.3
57.5°	900.1	911.7	933.1	922.1	904.5
60°	811.2	811.5	819.3	806.9	804.5
62.5°	712.1	715.6	717.3	702.0	726.9
65°	611.4	603.3	626.9	603.0	607.0
67.5°	518.7	522.7	520.4	505.4	511.1
70°	424.5	429.7	426.0	408.9	414.1
72.5°	338.5	332.1	336.1	314.8	324.6
75°	254.4	249.2	253.8	235.9	244.0
77.5°	173.3	177.3	174.4	164.9	170.4
80°	114.4	111.2	111.2	105.7	106.8
82.5°	66.7	63.5	62.7	60.9	63.5
85°	31.2	30.3	30.9	30.0	28.9
87.5°	11.3	11.6	11.6	11.0	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)