

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: P590658

Luminaire Tested: FSR-24-2-LD4-3STD-40-UNV-81-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590658  
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-LD4-3STD-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

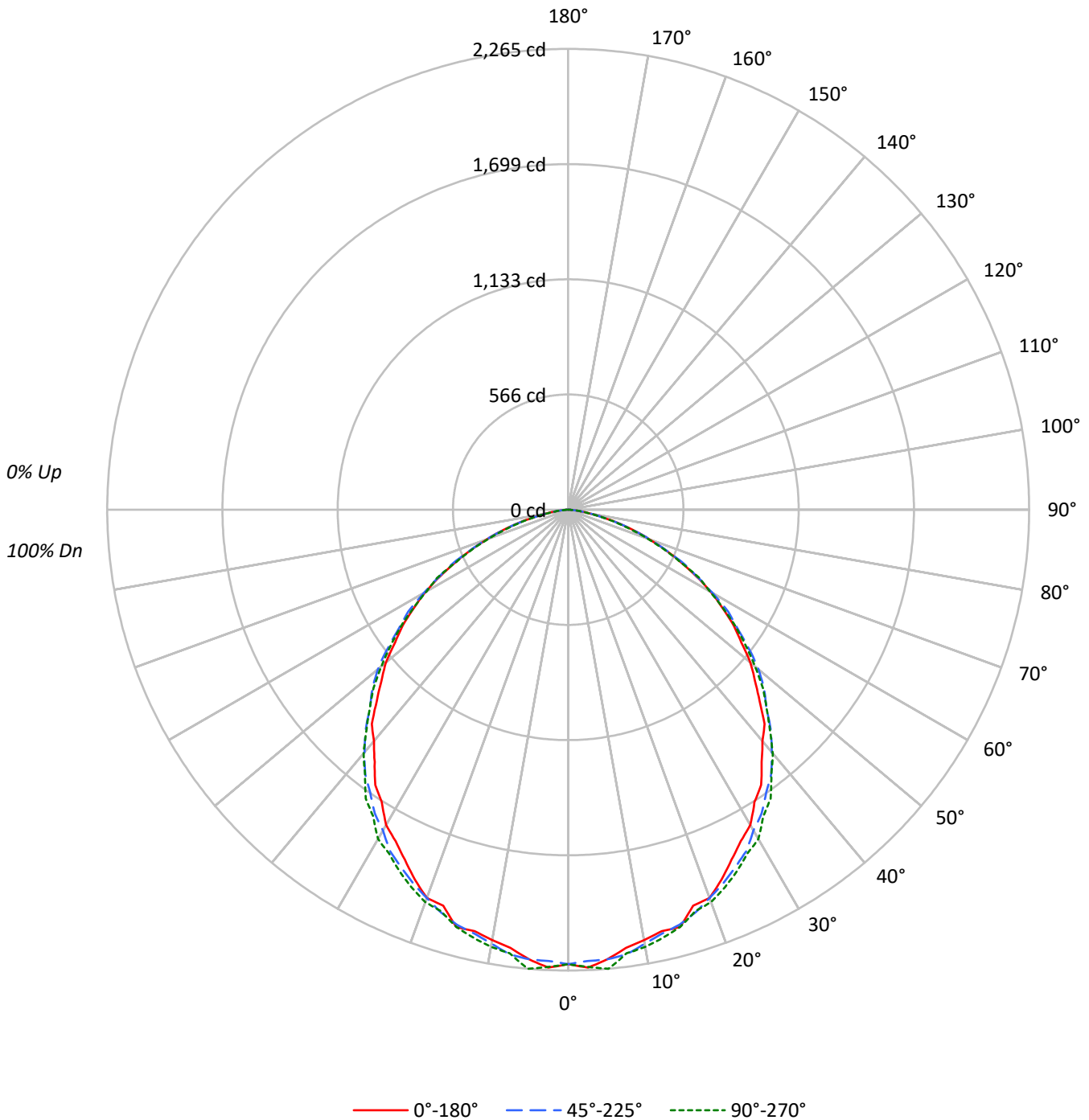
Lumens per Lamp: N/A  
Luminaire Lumens: 5629.0 lumens  
Efficiency: N/A  
Efficacy: 112.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6010	6010	6010
5°	5990	5992	6119
10°	5869	5920	5962
15°	5915	5883	5916
20°	5815	5815	5877
25°	5637	5760	5823
30°	5559	5657	5807
35°	5428	5570	5695
40°	5217	5468	5493
45°	5059	5239	5247
50°	4893	5114	5016
55°	4662	4753	4719
60°	4359	4403	4324
65°	3887	3987	3860
70°	3335	3346	3253
75°	2642	2636	2534
80°	1770	1720	1654
85°	960	954	889

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5374 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.1	3.7
10°-20°	595.4	10.6
20°-30°	892.1	15.8
30°-40°	1057.3	18.8
40°-50°	1059.2	18.8
50°-60°	899.1	16.0
60°-70°	606.2	10.8
70°-80°	266.4	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°	1697.6	30.2
0°-40°	2754.8	48.9
0°-60°	4713.2	83.7
0°-90°	5629.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5629.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2233	2233	2233	2233	2233	
5°	2218	2212	2218	2212	2265	209
15°	2123	2099	2112	2123	2124	592
25°	1898	1909	1940	1965	1961	878
35°	1652	1657	1696	1735	1734	1026
45°	1329	1354	1377	1412	1379	1028
55°	994	987	1013	1006	1006	884
65°	610	602	626	602	606	607
75°	254	249	254	236	244	272
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°	2233.4	2233.4	2233.4	2233.4	2233.4
2.5°	2252.8	2235.8	2219.9	2238.3	2249.6
5°	2217.6	2212.4	2218.4	2211.8	2265.2
7.5°	2172.0	2191.9	2203.5	2196.2	2199.4
10°	2147.8	2140.9	2166.5	2184.4	2181.8
12.5°	2121.8	2132.2	2133.7	2153.0	2154.7
15°	2123.3	2098.8	2111.8	2122.7	2123.6
17.5°	2040.8	2067.3	2076.3	2101.4	2070.2
20°	2030.7	2011.4	2030.7	2056.4	2052.3
22.5°	1968.7	1947.1	1988.6	2011.4	2010.0
25°	1898.4	1908.7	1939.9	1965.3	1961.2
27.5°	1836.6	1848.8	1893.2	1928.1	1905.6
30°	1789.1	1783.0	1820.5	1851.6	1868.9
32.5°	1704.0	1725.9	1769.7	1800.6	1784.2
35°	1652.4	1657.3	1695.6	1734.8	1733.7
37.5°	1562.1	1584.9	1638.8	1649.8	1639.7
40°	1485.1	1507.9	1556.6	1568.5	1563.6
42.5°	1428.3	1432.3	1474.2	1487.7	1466.1
45°	1329.4	1354.2	1376.7	1412.2	1378.7
47.5°	1245.2	1256.7	1305.2	1314.7	1297.1
50°	1168.8	1172.8	1221.5	1209.7	1198.2
52.5°	1072.7	1089.8	1117.2	1114.8	1101.3
55°	993.7	987.1	1013.1	1006.1	1005.8
57.5°	898.9	910.4	931.7	920.8	903.2
60°	810.0	810.3	818.1	805.7	803.4
62.5°	711.1	714.6	716.3	701.0	725.8
65°	610.5	602.4	626.1	602.1	606.2
67.5°	517.9	522.0	519.6	504.7	510.4
70°	423.9	429.1	425.3	408.3	413.5
72.5°	338.0	331.6	335.7	314.3	324.1
75°	254.1	248.9	253.5	235.6	243.7
77.5°	173.0	177.1	174.2	164.7	170.1
80°	114.2	111.0	111.0	105.5	106.7
82.5°	66.6	63.4	62.6	60.8	63.4
85°	31.1	30.3	30.9	30.0	28.8
87.5°	11.2	11.5	11.5	11.0	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)