

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: P590698

Luminaire Tested: FSR-24-2-LD4-3STD-50-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590698  
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-50-UNV-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

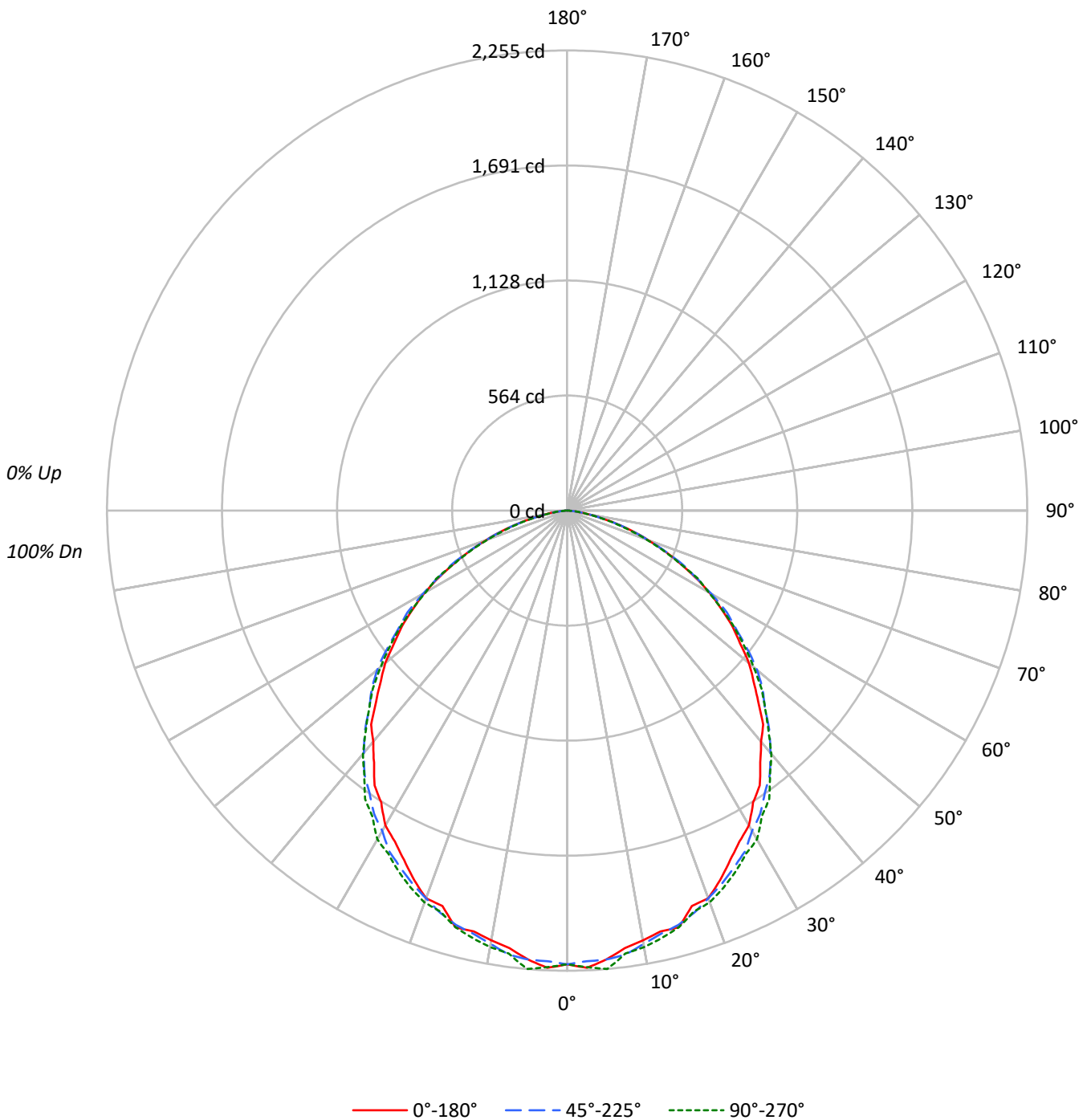
Lumens per Lamp: N/A  
Luminaire Lumens: 5604.0 lumens  
Efficiency: N/A  
Efficacy: 112.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5983	5983	5983
5°	5964	5966	6092
10°	5843	5894	5935
15°	5889	5857	5890
20°	5790	5790	5851
25°	5611	5734	5797
30°	5534	5632	5781
35°	5404	5546	5670
40°	5194	5444	5468
45°	5037	5216	5224
50°	4871	5091	4994
55°	4641	4732	4698
60°	4340	4384	4304
65°	3870	3969	3843
70°	3320	3332	3239
75°	2629	2624	2522
80°	1762	1712	1646
85°	957	948	886

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5350 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	209.2	3.7
10°-20°	592.8	10.6
20°-30°	888.1	15.8
30°-40°	1052.6	18.8
40°-50°	1054.5	18.8
50°-60°	895.1	16.0
60°-70°	603.5	10.8
70°-80°	265.2	4.7
80°-90°	43.1	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°	1690.0	30.2
0°-40°	2742.6	48.9
0°-60°	4692.2	83.7
0°-90°	5604.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5604.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2224	2224	2224	2224	2224	
5°	2208	2203	2209	2202	2255	208
15°	2114	2090	2102	2113	2114	589
25°	1890	1900	1931	1956	1952	874
35°	1645	1650	1688	1727	1726	1021
45°	1324	1348	1371	1406	1373	1024
55°	989	983	1009	1002	1001	880
65°	608	600	623	599	604	604
75°	253	248	252	235	243	271
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°	2223.5	2223.5	2223.5	2223.5	2223.5
2.5°	2242.8	2225.8	2210.0	2228.4	2239.6
5°	2207.7	2202.6	2208.6	2202.0	2255.1
7.5°	2162.4	2182.2	2193.7	2186.5	2189.6
10°	2138.3	2131.4	2156.9	2174.7	2172.1
12.5°	2112.4	2122.8	2124.2	2143.4	2145.1
15°	2113.9	2089.5	2102.4	2113.3	2114.1
17.5°	2031.7	2058.2	2067.1	2092.0	2061.0
20°	2021.7	2002.5	2021.7	2047.3	2043.2
22.5°	1960.0	1938.4	1979.8	2002.5	2001.0
25°	1889.9	1900.3	1931.3	1956.5	1952.5
27.5°	1828.5	1840.5	1884.8	1919.5	1897.1
30°	1781.1	1775.1	1812.4	1843.4	1860.6
32.5°	1696.4	1718.2	1761.9	1792.6	1776.2
35°	1645.0	1649.9	1688.1	1727.1	1726.0
37.5°	1555.2	1577.9	1631.5	1642.5	1632.4
40°	1478.5	1501.2	1549.7	1561.5	1556.6
42.5°	1422.0	1426.0	1467.6	1481.1	1459.6
45°	1323.5	1348.2	1370.6	1405.9	1372.6
47.5°	1239.7	1251.1	1299.4	1308.9	1291.3
50°	1163.6	1167.6	1216.1	1204.3	1192.9
52.5°	1068.0	1084.9	1112.2	1109.9	1096.4
55°	989.3	982.7	1008.6	1001.7	1001.4
57.5°	894.9	906.3	927.6	916.7	899.2
60°	806.4	806.7	814.5	802.1	799.8
62.5°	708.0	711.4	713.1	697.9	722.6
65°	607.8	599.7	623.3	599.4	603.5
67.5°	515.6	519.6	517.3	502.4	508.2
70°	422.0	427.2	423.5	406.5	411.7
72.5°	336.5	330.2	334.2	312.9	322.7
75°	252.9	247.8	252.4	234.6	242.6
77.5°	172.3	176.3	173.4	163.9	169.4
80°	113.7	110.5	110.5	105.1	106.2
82.5°	66.3	63.2	62.3	60.6	63.2
85°	31.0	30.1	30.7	29.9	28.7
87.5°	11.2	11.5	11.5	10.9	10.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)