

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: P590675

Luminaire Tested: FSR-24-2-LD4-3STD-40-UNV-93-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590675  
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-93-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

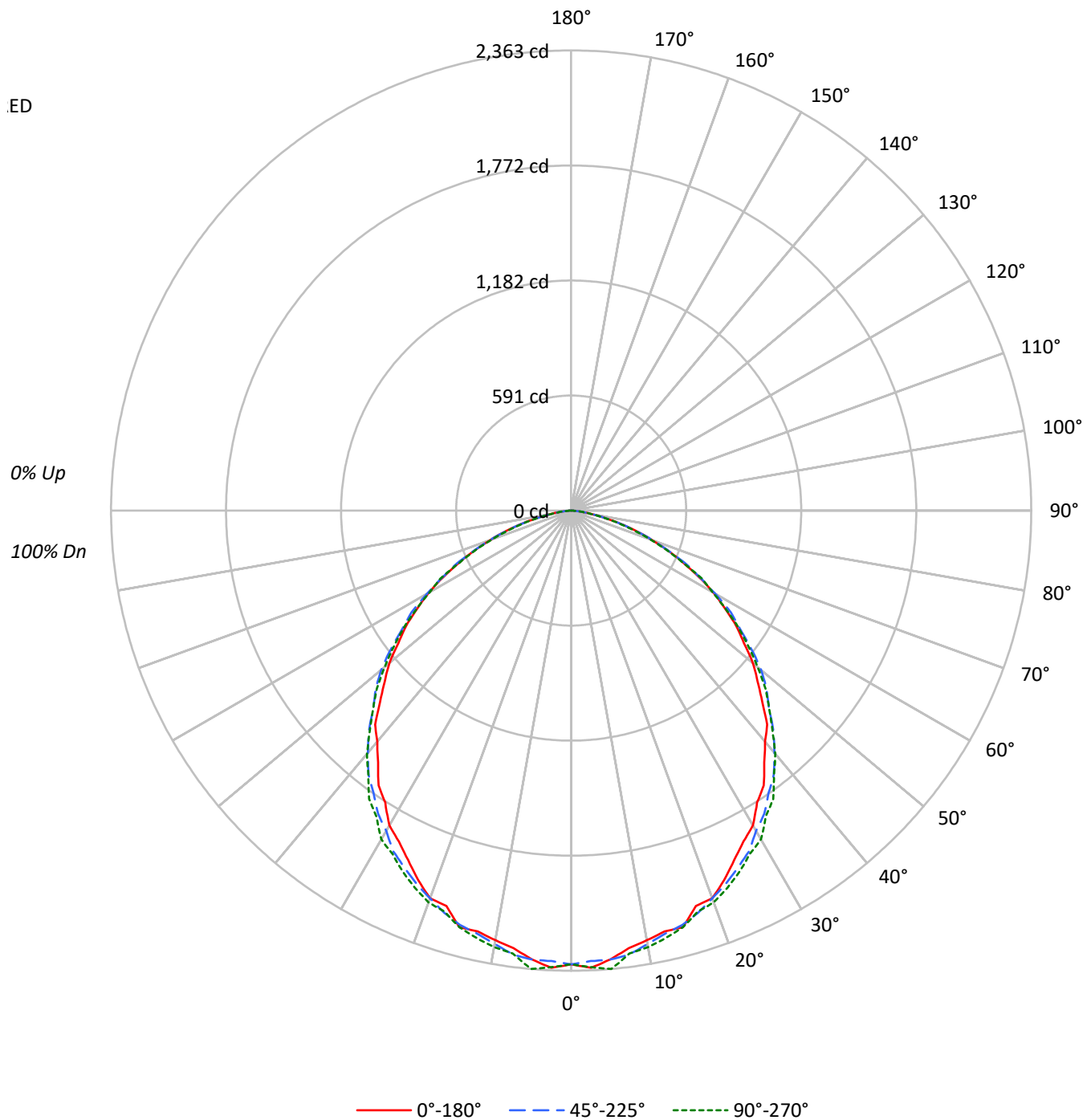
Lumens per Lamp: N/A  
Luminaire Lumens: 5872.0 lumens  
Efficiency: N/A  
Efficacy: 117.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	6270	6270	6270
5°	6249	6251	6383
10°	6122	6176	6219
15°	6171	6137	6171
20°	6066	6066	6131
25°	5880	6008	6075
30°	5799	5901	6058
35°	5662	5811	5941
40°	5442	5704	5730
45°	5278	5465	5473
50°	5104	5335	5233
55°	4863	4958	4923
60°	4548	4593	4511
65°	4055	4159	4026
70°	3479	3491	3394
75°	2755	2749	2643
80°	1846	1795	1725
85°	1003	994	929

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5606 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	219.2	3.7
10°-20°	621.1	10.6
20°-30°	930.6	15.8
30°-40°	1102.9	18.8
40°-50°	1104.9	18.8
50°-60°	937.9	16.0
60°-70°	632.3	10.8
70°-80°	277.9	4.7
80°-90°	45.2	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°	1770.8	30.2
0°-40°	2873.8	48.9
0°-60°	4916.6	83.7
0°-90°	5872.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5872.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2330	2330	2330	2330	2330	
5°	2313	2308	2314	2307	2363	218
15°	2215	2189	2203	2214	2215	617
25°	1980	1991	2024	2050	2046	916
35°	1724	1729	1769	1810	1808	1070
45°	1387	1413	1436	1473	1438	1073
55°	1037	1030	1057	1050	1049	922
65°	637	628	653	628	632	633
75°	265	260	264	246	254	284
85°	32	32	32	31	30	47
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2329.9	2329.9	2329.9	2329.9	2329.9
2.5°	2350.0	2332.3	2315.7	2335.0	2346.7
5°	2313.3	2307.9	2314.2	2307.3	2363.0
7.5°	2265.8	2286.5	2298.6	2291.1	2294.4
10°	2240.5	2233.3	2260.1	2278.7	2276.0
12.5°	2213.4	2224.3	2225.8	2245.9	2247.7
15°	2214.9	2189.4	2202.9	2214.3	2215.2
17.5°	2128.9	2156.6	2165.9	2192.1	2159.6
20°	2118.4	2098.2	2118.4	2145.2	2140.9
22.5°	2053.7	2031.1	2074.5	2098.2	2096.7
25°	1980.3	1991.1	2023.6	2050.1	2045.9
27.5°	1915.9	1928.6	1974.9	2011.3	1987.8
30°	1866.3	1860.0	1899.1	1931.6	1949.6
32.5°	1777.6	1800.4	1846.1	1878.3	1861.2
35°	1723.7	1728.8	1768.8	1809.7	1808.5
37.5°	1629.5	1653.3	1709.6	1721.0	1710.5
40°	1549.2	1573.0	1623.8	1636.2	1631.1
42.5°	1490.0	1494.2	1537.8	1551.9	1529.4
45°	1386.8	1412.7	1436.1	1473.1	1438.2
47.5°	1298.9	1311.0	1361.5	1371.4	1353.1
50°	1219.2	1223.4	1274.3	1261.9	1249.9
52.5°	1119.1	1136.8	1165.4	1163.0	1148.8
55°	1036.6	1029.7	1056.8	1049.6	1049.3
57.5°	937.7	949.7	972.0	960.5	942.2
60°	845.0	845.3	853.4	840.5	838.1
62.5°	741.8	745.4	747.2	731.3	757.2
65°	636.8	628.4	653.1	628.1	632.3
67.5°	540.3	544.5	542.1	526.4	532.5
70°	442.2	447.6	443.7	426.0	431.4
72.5°	352.6	345.9	350.2	327.9	338.1
75°	265.0	259.6	264.4	245.8	254.2
77.5°	180.5	184.7	181.7	171.8	177.5
80°	119.1	115.8	115.8	110.1	111.3
82.5°	69.5	66.2	65.3	63.5	66.2
85°	32.5	31.6	32.2	31.3	30.1
87.5°	11.7	12.0	12.0	11.4	10.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)