

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: P562734

Luminaire Tested: FSR-24-4-LD4-2LO-35-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562734  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-2LO-35-UNV-93-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

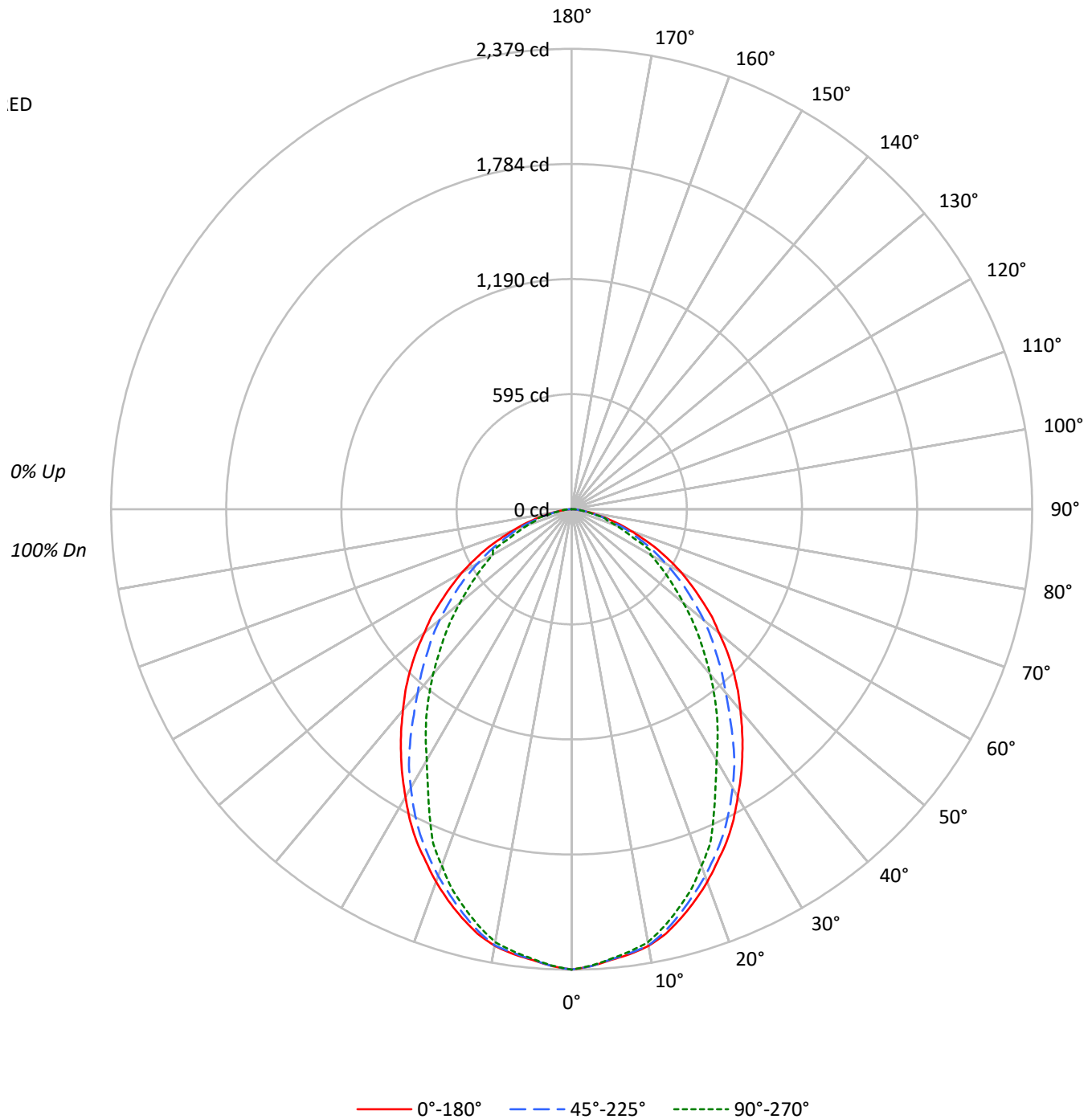
Lumens per Lamp: N/A  
Luminaire Lumens: 4670.0 lumens  
Efficiency: N/A  
Efficacy: 99.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3201	3201	3201
5°	3157	3153	3150
10°	3130	3126	3104
15°	3045	3015	2973
20°	2934	2886	2808
25°	2813	2752	2580
30°	2666	2581	2324
35°	2525	2385	2150
40°	2381	2174	1956
45°	2245	2009	1769
50°	2078	1865	1577
55°	1922	1690	1413
60°	1761	1510	1266
65°	1550	1322	1121
70°	1277	1158	952
75°	1015	886	930
80°	682	639	597
85°	425	509	594

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2245 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.4	4.7
10°-20°	607.7	13.0
20°-30°	841.4	18.0
30°-40°	897.1	19.2
40°-50°	818.4	17.5
50°-60°	641.2	13.7
60°-70°	417.9	8.9
70°-80°	185.2	4.0
80°-90°	39.8	0.9
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°	1670.5	35.8
0°-40°	2567.6	55.0
0°-60°	4027.2	86.2
0°-90°	4670.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4670.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2379	2379	2379	2379	2379	
5°	2338	2335	2335	2332	2332	222
15°	2186	2186	2164	2142	2134	615
25°	1895	1884	1854	1788	1738	870
35°	1537	1526	1452	1342	1309	961
45°	1180	1155	1056	968	930	909
55°	820	795	720	635	602	735
65°	487	459	415	424	352	480
75°	195	182	170	162	179	209
85°	28	30	33	36	38	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2378.8	2378.8	2378.8	2378.8	2378.8
2.5°	2362.3	2362.3	2362.3	2359.6	2359.6
5°	2337.6	2334.8	2334.8	2332.1	2332.1
7.5°	2318.3	2315.6	2312.8	2310.1	2304.6
10°	2290.8	2290.8	2288.1	2274.3	2271.6
12.5°	2246.8	2244.1	2233.1	2213.8	2208.3
15°	2186.3	2186.3	2164.3	2142.3	2134.1
17.5°	2120.3	2117.6	2090.1	2068.1	2057.1
20°	2048.8	2043.3	2015.8	1980.1	1960.8
22.5°	1969.1	1969.1	1936.1	1889.3	1870.1
25°	1894.8	1883.8	1853.6	1787.6	1738.1
27.5°	1809.6	1793.1	1760.1	1666.6	1608.8
30°	1716.1	1707.8	1661.1	1540.1	1496.1
32.5°	1628.1	1614.3	1564.8	1438.3	1402.6
35°	1537.3	1526.3	1452.1	1342.0	1309.0
37.5°	1446.6	1432.8	1339.3	1251.3	1210.0
40°	1355.8	1339.3	1237.5	1157.8	1113.8
42.5°	1270.5	1248.5	1149.5	1064.3	1014.8
45°	1179.8	1155.0	1056.0	968.0	929.5
47.5°	1089.0	1067.0	976.3	885.5	841.5
50°	992.8	973.5	891.0	800.3	753.5
52.5°	913.0	882.8	803.0	712.3	673.8
55°	819.5	794.8	720.5	635.3	602.3
57.5°	734.3	709.5	640.8	561.0	533.5
60°	654.5	618.8	561.0	492.3	470.3
62.5°	566.5	539.0	489.5	431.8	459.3
65°	486.8	459.3	415.3	423.5	352.0
67.5°	398.8	385.0	346.5	308.0	297.0
70°	324.5	308.0	294.3	253.0	242.0
72.5°	258.5	242.0	222.8	200.8	192.5
75°	195.3	181.5	170.5	162.3	178.8
77.5°	134.8	129.3	121.0	112.8	110.0
80°	88.0	85.3	82.5	79.8	77.0
82.5°	52.3	52.3	52.3	52.3	52.3
85°	27.5	30.3	33.0	35.8	38.5
87.5°	16.5	16.5	19.3	22.0	24.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)