

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: P590473

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-82-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590473  
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-LD4-3HI-40-UNV-82-88-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

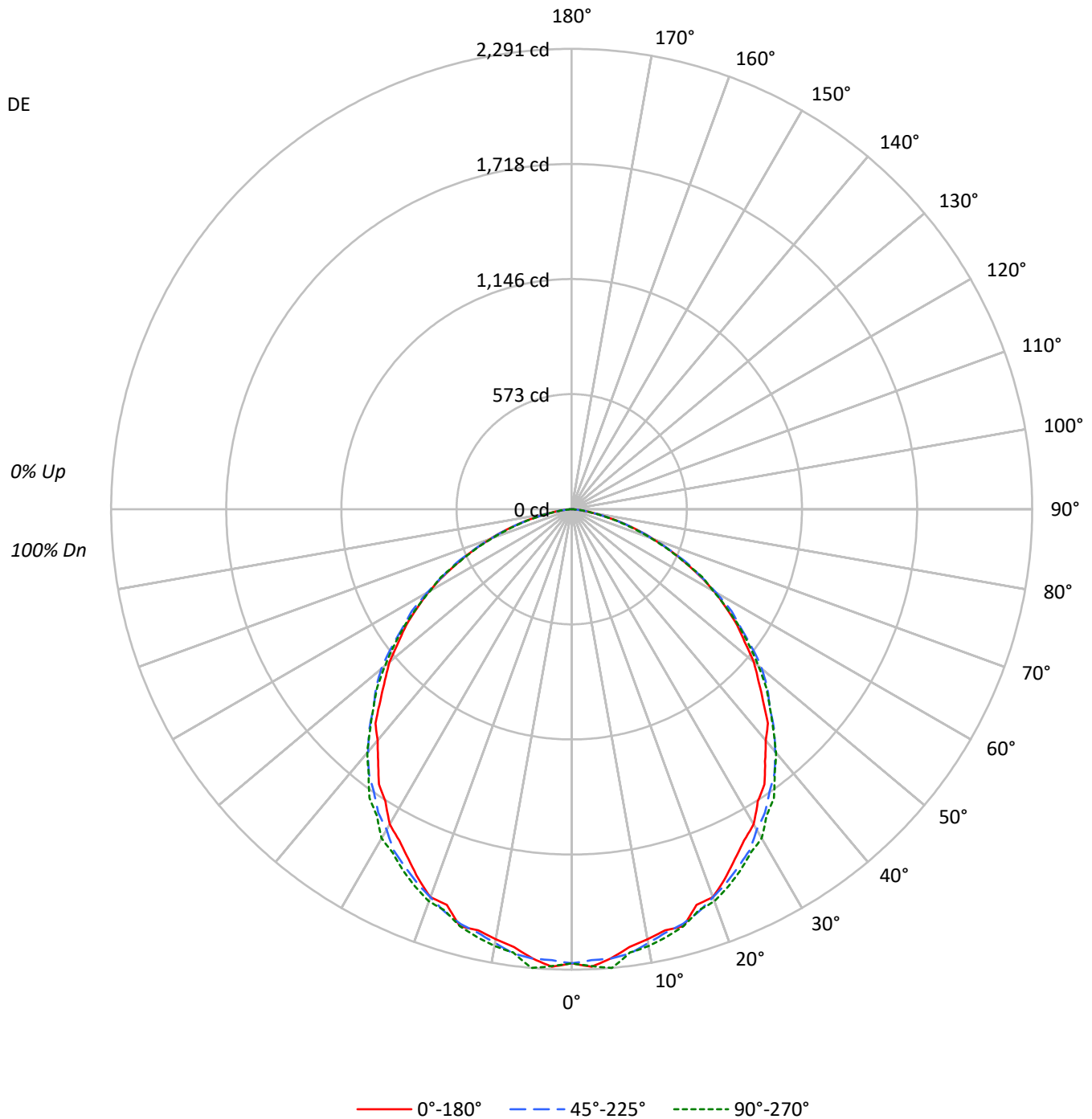
Lumens per Lamp: N/A  
Luminaire Lumens: 5694.0 lumens  
Efficiency: N/A  
Efficacy: 87.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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																		
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																												
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°	6079	6079	6079
5°	6059	6062	6189
10°	5937	5989	6031
15°	5984	5951	5984
20°	5883	5883	5945
25°	5702	5826	5891
30°	5623	5722	5874
35°	5491	5635	5761
40°	5277	5531	5556
45°	5117	5300	5307
50°	4950	5173	5074
55°	4716	4808	4774
60°	4410	4454	4374
65°	3932	4032	3904
70°	3374	3386	3291
75°	2672	2666	2563
80°	1790	1740	1672
85°	973	963	902

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5436 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	212.5	3.7
10°-20°	602.3	10.6
20°-30°	902.4	15.8
30°-40°	1069.5	18.8
40°-50°	1071.5	18.8
50°-60°	909.5	16.0
60°-70°	613.2	10.8
70°-80°	269.4	4.7
80°-90°	43.8	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°	1717.2	30.2
0°-40°	2786.7	48.9
0°-60°	4767.6	83.7
0°-90°	5694.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5694.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2259	2259	2259	2259	2259	
5°	2243	2238	2244	2237	2291	211
15°	2148	2123	2136	2147	2148	598
25°	1920	1931	1962	1988	1984	888
35°	1672	1676	1715	1755	1754	1038
45°	1345	1370	1393	1428	1395	1040
55°	1005	998	1025	1018	1018	894
65°	618	609	633	609	613	614
75°	257	252	256	238	246	275
85°	32	31	31	30	29	46
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2259.2	2259.2	2259.2	2259.2	2259.2
2.5°	2278.8	2261.6	2245.5	2264.2	2275.6
5°	2243.2	2237.9	2244.1	2237.4	2291.3
7.5°	2197.1	2217.2	2228.9	2221.6	2224.8
10°	2172.6	2165.6	2191.6	2209.6	2207.0
12.5°	2146.3	2156.8	2158.3	2177.9	2179.6
15°	2147.8	2123.0	2136.1	2147.2	2148.1
17.5°	2064.4	2091.2	2100.3	2125.6	2094.1
20°	2054.2	2034.6	2054.2	2080.1	2076.0
22.5°	1991.5	1969.6	2011.6	2034.6	2033.2
25°	1920.3	1930.8	1962.3	1988.0	1983.9
27.5°	1857.9	1870.1	1915.0	1950.3	1927.6
30°	1809.7	1803.6	1841.5	1873.0	1890.5
32.5°	1723.7	1745.8	1790.2	1821.4	1804.8
35°	1671.5	1676.4	1715.2	1754.9	1753.7
37.5°	1580.2	1603.2	1657.7	1668.8	1658.6
40°	1502.3	1525.3	1574.6	1586.6	1581.6
42.5°	1444.8	1448.9	1491.2	1504.9	1483.0
45°	1344.7	1369.8	1392.6	1428.5	1394.6
47.5°	1259.6	1271.2	1320.2	1329.9	1312.1
50°	1182.3	1186.4	1235.7	1223.7	1212.0
52.5°	1085.1	1102.3	1130.1	1127.7	1114.0
55°	1005.2	998.5	1024.8	1017.7	1017.5
57.5°	909.2	920.9	942.5	931.4	913.6
60°	819.4	819.7	827.6	815.0	812.7
62.5°	719.3	722.8	724.6	709.1	734.2
65°	617.5	609.4	633.3	609.1	613.2
67.5°	523.9	528.0	525.6	510.5	516.3
70°	428.8	434.1	430.3	413.1	418.3
72.5°	341.9	335.5	339.5	318.0	327.9
75°	257.0	251.7	256.4	238.3	246.5
77.5°	175.0	179.1	176.2	166.6	172.1
80°	115.5	112.3	112.3	106.8	107.9
82.5°	67.4	64.2	63.3	61.5	64.2
85°	31.5	30.6	31.2	30.3	29.2
87.5°	11.4	11.7	11.7	11.1	10.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)