

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: P590994

Luminaire Tested: FSR-24-2-LD4-4STD-50-UNV-93-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590994  
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-LD4-4STD-50-UNV-93-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

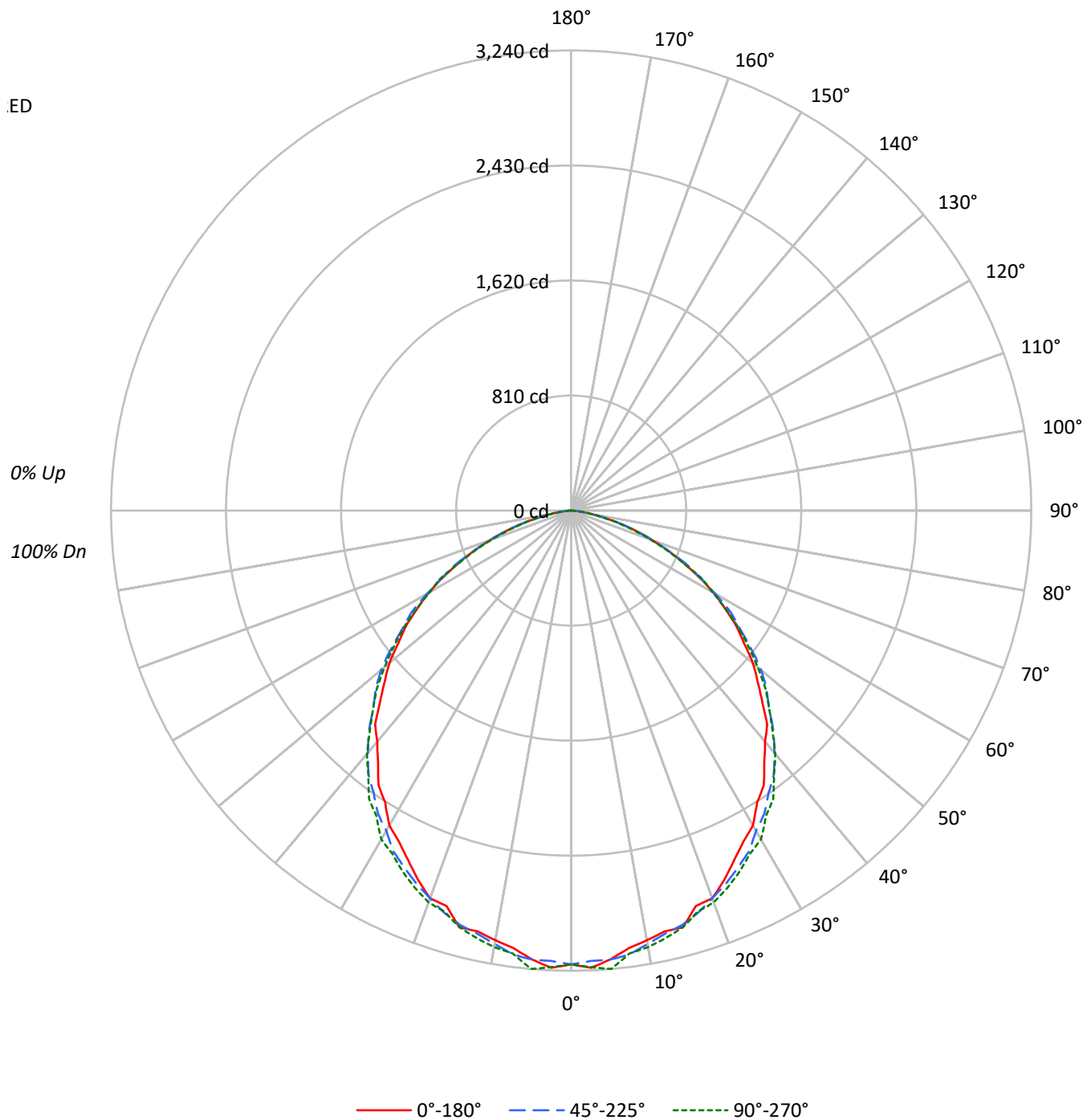
Lumens per Lamp: N/A  
Luminaire Lumens: 8051.0 lumens  
Efficiency: N/A  
Efficacy: 120.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86									86																			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73									73																			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62									62																			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53									53																			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46									46																			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41									41																			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36									36																			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32									32																			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29									29																			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26									26																			

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

	0°	45°	90°
0°	8596	8596	8596
5°	8568	8571	8752
10°	8394	8467	8527
15°	8461	8415	8462
20°	8318	8318	8406
25°	8062	8238	8329
30°	7951	8091	8306
35°	7764	7967	8146
40°	7462	7821	7856
45°	7236	7493	7504
50°	6998	7314	7174
55°	6668	6798	6749
60°	6236	6297	6184
65°	5560	5701	5521
70°	4770	4787	4654
75°	3778	3769	3623
80°	2531	2461	2365
85°	1374	1362	1272

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7687 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	300.5	3.7
10°-20°	851.6	10.6
20°-30°	1275.9	15.8
30°-40°	1512.2	18.8
40°-50°	1515.0	18.8
50°-60°	1286.0	16.0
60°-70°	867.0	10.8
70°-80°	381.0	4.7
80°-90°	61.9	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°	2428.0	30.2
0°-40°	3940.2	48.9
0°-60°	6741.1	83.7
0°-90°	8051.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8051.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3194	3194	3194	3194	3194	
5°	3172	3164	3173	3164	3240	299
15°	3037	3002	3020	3036	3037	846
25°	2715	2730	2775	2811	2805	1255
35°	2363	2370	2425	2481	2480	1467
45°	1901	1937	1969	2020	1972	1471
55°	1421	1412	1449	1439	1439	1264
65°	873	862	895	861	867	868
75°	363	356	362	337	348	389
85°	44	43	44	43	41	65
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3194.4	3194.4	3194.4	3194.4	3194.4
2.5°	3222.1	3197.7	3175.0	3201.4	3217.5
5°	3171.7	3164.3	3173.0	3163.5	3239.8
7.5°	3106.6	3135.0	3151.5	3141.2	3145.8
10°	3071.9	3062.0	3098.7	3124.3	3120.6
12.5°	3034.8	3049.7	3051.7	3079.4	3081.8
15°	3036.9	3001.8	3020.4	3036.1	3037.3
17.5°	2918.9	2956.9	2969.6	3005.5	2961.0
20°	2904.5	2876.8	2904.5	2941.2	2935.4
22.5°	2815.8	2784.9	2844.3	2876.8	2874.8
25°	2715.2	2730.0	2774.6	2810.9	2805.1
27.5°	2626.9	2644.2	2707.7	2757.6	2725.5
30°	2558.8	2550.2	2603.8	2648.3	2673.1
32.5°	2437.2	2468.5	2531.2	2575.3	2551.8
35°	2363.3	2370.4	2425.2	2481.3	2479.7
37.5°	2234.2	2266.8	2344.0	2359.6	2345.2
40°	2124.1	2156.7	2226.4	2243.3	2236.3
42.5°	2042.9	2048.6	2108.4	2127.8	2096.9
45°	1901.4	1936.9	1969.0	2019.8	1971.9
47.5°	1781.0	1797.5	1866.8	1880.4	1855.2
50°	1671.7	1677.4	1747.1	1730.2	1713.7
52.5°	1534.3	1558.7	1597.8	1594.5	1575.2
55°	1421.3	1411.8	1448.9	1439.0	1438.6
57.5°	1285.6	1302.1	1332.6	1317.0	1291.8
60°	1158.6	1159.0	1170.1	1152.4	1149.1
62.5°	1017.1	1022.1	1024.5	1002.7	1038.1
65°	873.2	861.6	895.4	861.2	867.0
67.5°	740.8	746.5	743.2	721.8	730.0
70°	606.3	613.7	608.4	584.0	591.5
72.5°	483.4	474.3	480.1	449.6	463.6
75°	363.4	355.9	362.5	337.0	348.5
77.5°	247.5	253.2	249.1	235.5	243.3
80°	163.3	158.8	158.8	151.0	152.6
82.5°	95.3	90.7	89.5	87.0	90.7
85°	44.5	43.3	44.1	42.9	41.2
87.5°	16.1	16.5	16.5	15.7	14.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)