

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: P590960

Luminaire Tested: FSR-24-2-LD4-4STD-40-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590960  
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-40-UNV-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

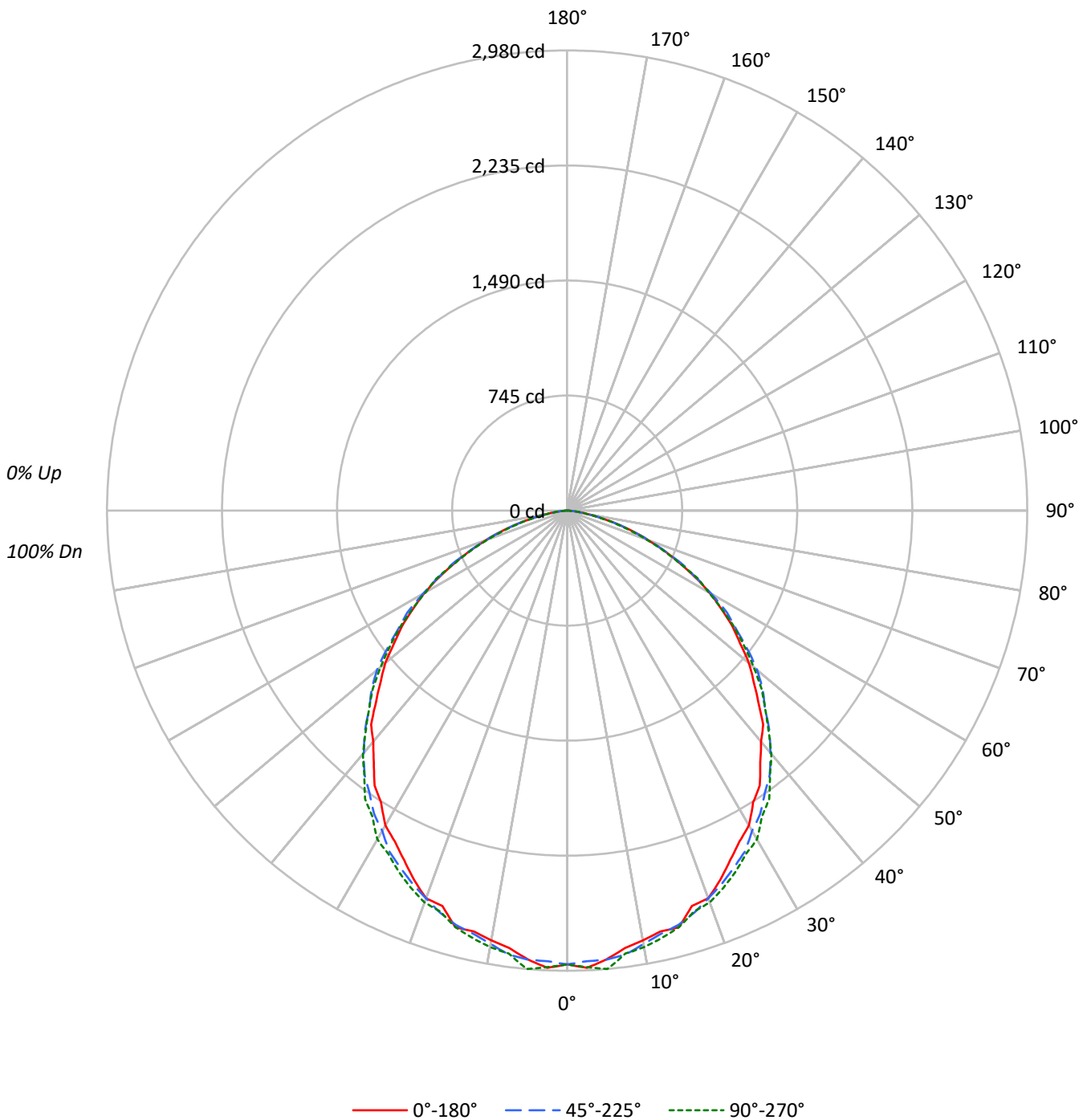
Lumens per Lamp: N/A  
Luminaire Lumens: 7406.0 lumens  
Efficiency: N/A  
Efficacy: 111.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	7907	7907	7907
5°	7881	7884	8050
10°	7721	7789	7844
15°	7783	7740	7784
20°	7651	7651	7733
25°	7416	7578	7662
30°	7314	7443	7640
35°	7142	7329	7493
40°	6864	7194	7226
45°	6656	6893	6903
50°	6437	6728	6599
55°	6134	6253	6209
60°	5736	5793	5689
65°	5114	5245	5078
70°	4388	4403	4281
75°	3476	3467	3333
80°	2328	2264	2176
85°	1266	1254	1170

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7071 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	276.4	3.7
10°-20°	783.4	10.6
20°-30°	1173.7	15.8
30°-40°	1391.0	18.8
40°-50°	1393.6	18.8
50°-60°	1183.0	16.0
60°-70°	797.5	10.8
70°-80°	350.5	4.7
80°-90°	57.0	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°	2233.5	30.2
0°-40°	3624.5	48.9
0°-60°	6201.1	83.7
0°-90°	7406.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7406.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2938	2938	2938	2938	2938	
5°	2918	2911	2919	2910	2980	275
15°	2794	2761	2778	2793	2794	778
25°	2498	2511	2552	2586	2580	1155
35°	2174	2180	2231	2282	2281	1350
45°	1749	1782	1811	1858	1814	1353
55°	1307	1299	1333	1324	1323	1163
65°	803	793	824	792	798	799
75°	334	327	334	310	321	358
85°	41	40	41	40	38	59
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2938.5	2938.5	2938.5	2938.5	2938.5
2.5°	2963.9	2941.5	2920.7	2945.0	2959.8
5°	2917.6	2910.8	2918.8	2910.1	2980.2
7.5°	2857.7	2883.9	2899.1	2889.6	2893.7
10°	2825.8	2816.7	2850.5	2874.0	2870.6
12.5°	2791.7	2805.3	2807.2	2832.7	2834.9
15°	2793.6	2761.3	2778.4	2792.8	2794.0
17.5°	2685.1	2720.0	2731.7	2764.7	2723.8
20°	2671.8	2646.4	2671.8	2705.6	2700.2
22.5°	2590.2	2561.8	2616.4	2646.4	2644.5
25°	2497.6	2511.3	2552.3	2585.7	2580.4
27.5°	2416.4	2432.4	2490.8	2536.7	2507.1
30°	2353.8	2345.9	2395.2	2436.2	2458.9
32.5°	2241.9	2270.8	2328.4	2369.0	2347.4
35°	2174.0	2180.5	2230.9	2282.5	2281.0
37.5°	2055.3	2085.2	2156.2	2170.6	2157.3
40°	1954.0	1983.9	2048.0	2063.6	2057.1
42.5°	1879.2	1884.5	1939.5	1957.4	1928.9
45°	1749.1	1781.7	1811.3	1858.0	1813.9
47.5°	1638.3	1653.5	1717.2	1729.7	1706.6
50°	1537.7	1543.1	1607.2	1591.6	1576.4
52.5°	1411.4	1433.8	1469.8	1466.8	1449.0
55°	1307.4	1298.7	1332.9	1323.8	1323.4
57.5°	1182.6	1197.8	1225.9	1211.4	1188.3
60°	1065.8	1066.1	1076.4	1060.1	1057.0
62.5°	935.6	940.2	942.4	922.3	955.0
65°	803.2	792.6	823.7	792.2	797.5
67.5°	681.4	686.7	683.7	664.0	671.6
70°	557.7	564.6	559.6	537.2	544.1
72.5°	444.7	436.3	441.6	413.6	426.5
75°	334.3	327.4	333.5	310.0	320.6
77.5°	227.6	233.0	229.2	216.6	223.9
80°	150.2	146.1	146.1	138.9	140.4
82.5°	87.6	83.5	82.3	80.1	83.5
85°	41.0	39.8	40.6	39.5	37.9
87.5°	14.8	15.2	15.2	14.4	13.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)