

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: P590990

Luminaire Tested: FSR-24-2-LD4-4STD-50-UNV-93-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590990  
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-93-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

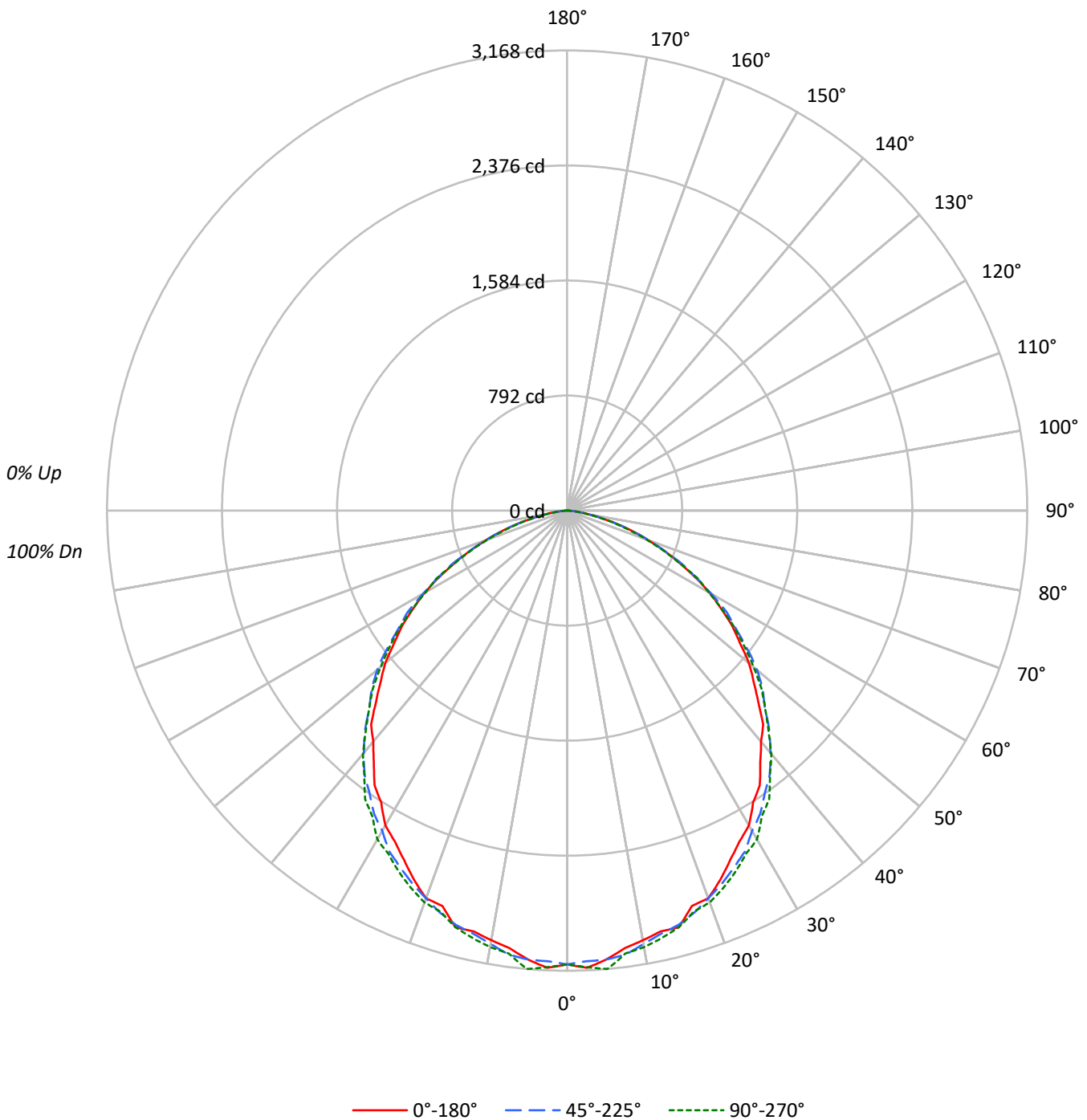
Lumens per Lamp: N/A  
Luminaire Lumens: 7873.0 lumens  
Efficiency: N/A  
Efficacy: 118.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28

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

	0°	45°	90°
0°	8406	8406	8406
5°	8378	8381	8558
10°	8208	8280	8338
15°	8273	8228	8274
20°	8134	8134	8220
25°	7883	8056	8145
30°	7775	7912	8122
35°	7592	7791	7966
40°	7297	7648	7682
45°	7076	7328	7338
50°	6844	7152	7016
55°	6521	6647	6600
60°	6098	6159	6048
65°	5437	5575	5398
70°	4665	4681	4551
75°	3694	3686	3543
80°	2475	2407	2312
85°	1346	1334	1244

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7516 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	293.8	3.7
10°-20°	832.8	10.6
20°-30°	1247.7	15.8
30°-40°	1478.7	18.8
40°-50°	1481.5	18.8
50°-60°	1257.5	16.0
60°-70°	847.8	10.8
70°-80°	372.5	4.7
80°-90°	60.5	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°	2374.3	30.2
0°-40°	3853.1	48.9
0°-60°	6592.1	83.7
0°-90°	7873.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7873.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3124	3124	3124	3124	3124	
5°	3102	3094	3103	3094	3168	292
15°	2970	2936	2954	2969	2970	827
25°	2655	2670	2713	2749	2743	1227
35°	2311	2318	2372	2426	2425	1435
45°	1859	1894	1926	1975	1928	1438
55°	1390	1381	1417	1407	1407	1236
65°	854	843	876	842	848	849
75°	355	348	354	330	341	381
85°	44	42	43	42	40	63
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3123.8	3123.8	3123.8	3123.8	3123.8
2.5°	3150.8	3127.0	3104.9	3130.7	3146.4
5°	3101.6	3094.4	3102.8	3093.6	3168.2
7.5°	3037.9	3065.7	3081.9	3071.8	3076.2
10°	3004.0	2994.3	3030.2	3055.2	3051.6
12.5°	2967.7	2982.2	2984.3	3011.3	3013.7
15°	2969.7	2935.5	2953.6	2968.9	2970.1
17.5°	2854.4	2891.5	2904.0	2939.1	2895.5
20°	2840.3	2813.2	2840.3	2876.2	2870.5
22.5°	2753.5	2723.3	2781.4	2813.2	2811.2
25°	2655.1	2669.7	2713.2	2748.7	2743.1
27.5°	2568.8	2585.8	2647.9	2696.7	2665.2
30°	2502.3	2493.8	2546.2	2589.8	2614.0
32.5°	2383.3	2413.9	2475.2	2518.4	2495.4
35°	2311.1	2317.9	2371.6	2426.4	2424.8
37.5°	2184.9	2216.7	2292.1	2307.5	2293.3
40°	2077.2	2109.0	2177.2	2193.7	2186.9
42.5°	1997.7	2003.4	2061.8	2080.8	2050.5
45°	1859.4	1894.0	1925.5	1975.1	1928.3
47.5°	1741.6	1757.7	1825.5	1838.8	1814.2
50°	1634.7	1640.4	1708.5	1692.0	1675.8
52.5°	1500.4	1524.2	1562.5	1559.3	1540.3
55°	1389.9	1380.6	1416.9	1407.2	1406.8
57.5°	1257.2	1273.3	1303.2	1287.8	1263.2
60°	1133.0	1133.4	1144.3	1126.9	1123.7
62.5°	994.6	999.5	1001.9	980.5	1015.2
65°	853.9	842.6	875.6	842.2	847.8
67.5°	724.4	730.0	726.8	705.8	713.9
70°	592.9	600.2	594.9	571.1	578.4
72.5°	472.7	463.8	469.5	439.6	453.3
75°	355.3	348.1	354.5	329.5	340.8
77.5°	242.0	247.6	243.6	230.3	238.0
80°	159.7	155.3	155.3	147.6	149.2
82.5°	93.2	88.7	87.5	85.1	88.7
85°	43.6	42.3	43.2	41.9	40.3
87.5°	15.7	16.1	16.1	15.3	14.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)