

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: P590946

Luminaire Tested: FSR-24-2-LD4-4STD-40-UNV-81-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590946  
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-81-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

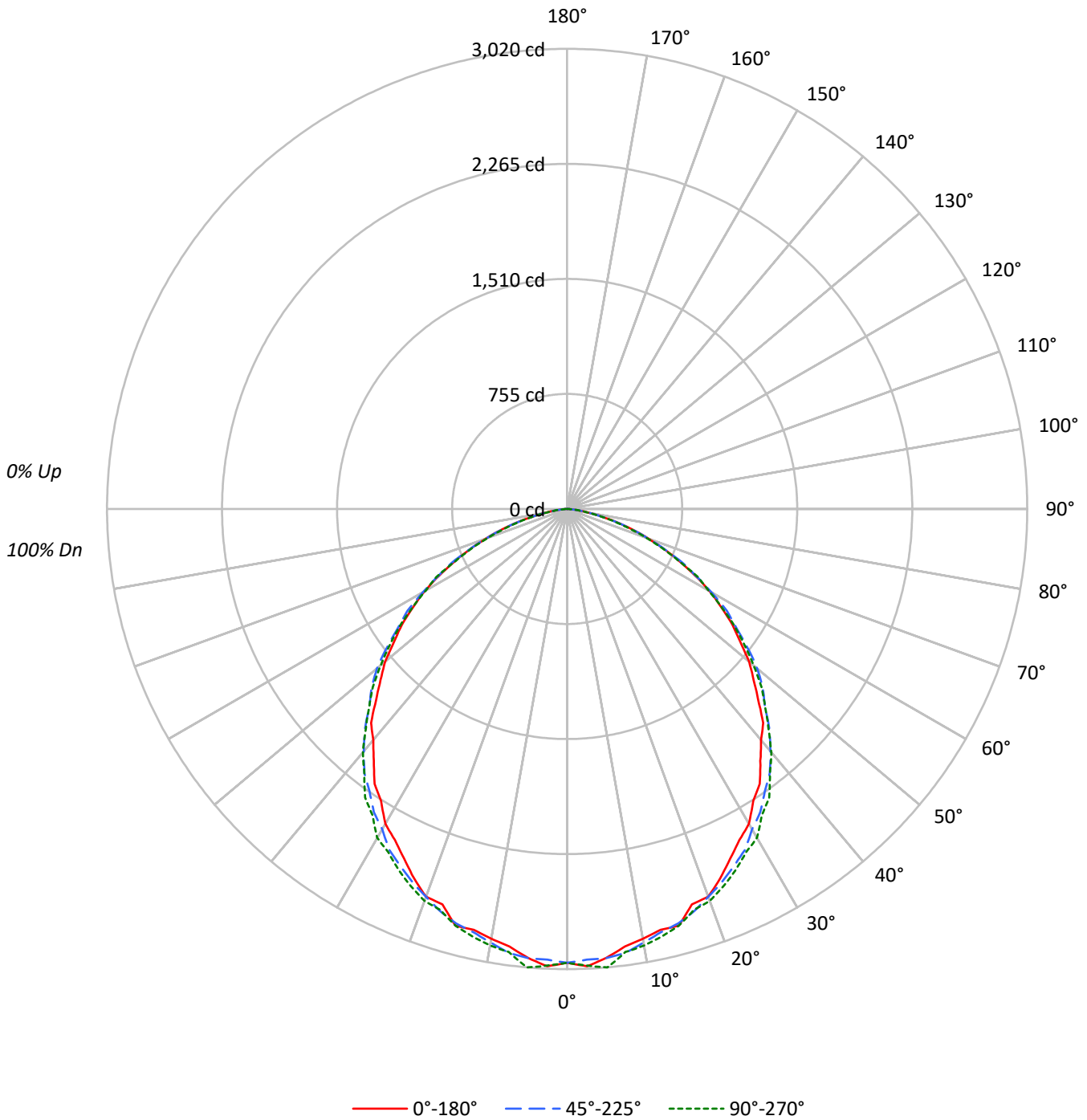
Lumens per Lamp: N/A  
Luminaire Lumens: 7506.0 lumens  
Efficiency: N/A  
Efficacy: 112.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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																												
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°	8014	8014	8014
5°	7988	7991	8159
10°	7826	7894	7950
15°	7888	7845	7889
20°	7755	7755	7837
25°	7516	7680	7765
30°	7413	7543	7744
35°	7238	7428	7594
40°	6956	7292	7324
45°	6746	6986	6996
50°	6525	6819	6689
55°	6217	6338	6292
60°	5813	5871	5766
65°	5184	5316	5147
70°	4448	4463	4338
75°	3523	3514	3378
80°	2360	2294	2205
85°	1281	1269	1189

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7166 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	280.1	3.7
10°-20°	794.0	10.6
20°-30°	1189.5	15.8
30°-40°	1409.8	18.8
40°-50°	1412.4	18.8
50°-60°	1198.9	16.0
60°-70°	808.3	10.8
70°-80°	355.2	4.7
80°-90°	57.7	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°	2263.6	30.2
0°-40°	3673.4	48.9
0°-60°	6284.8	83.7
0°-90°	7506.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7506.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2978	2978	2978	2978	2978	
5°	2957	2950	2958	2949	3020	279
15°	2831	2799	2816	2830	2832	789
25°	2531	2545	2587	2621	2615	1170
35°	2203	2210	2261	2313	2312	1368
45°	1773	1806	1836	1883	1838	1371
55°	1325	1316	1351	1342	1341	1179
65°	814	803	835	803	808	810
75°	339	332	338	314	325	363
85°	42	40	41	40	38	60
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2978.2	2978.2	2978.2	2978.2	2978.2
2.5°	3004.0	2981.3	2960.1	2984.7	2999.7
5°	2957.0	2950.1	2958.2	2949.4	3020.5
7.5°	2896.3	2922.8	2938.2	2928.6	2932.8
10°	2864.0	2854.8	2889.0	2912.8	2909.4
12.5°	2829.4	2843.2	2845.1	2870.9	2873.2
15°	2831.3	2798.6	2815.9	2830.5	2831.7
17.5°	2721.3	2756.7	2768.6	2802.1	2760.5
20°	2707.9	2682.1	2707.9	2742.1	2736.7
22.5°	2625.2	2596.4	2651.7	2682.1	2680.2
25°	2531.4	2545.2	2586.7	2620.6	2615.2
27.5°	2449.1	2465.2	2524.4	2571.0	2541.0
30°	2385.6	2377.6	2427.5	2469.1	2492.1
32.5°	2272.2	2301.4	2359.9	2401.0	2379.1
35°	2203.4	2209.9	2261.0	2313.3	2311.8
37.5°	2083.0	2113.4	2185.3	2199.9	2186.4
40°	1980.3	2010.7	2075.7	2091.5	2084.9
42.5°	1904.6	1910.0	1965.7	1983.8	1955.0
45°	1772.7	1805.8	1835.8	1883.0	1838.4
47.5°	1660.4	1675.8	1740.4	1753.1	1729.6
50°	1558.5	1563.9	1628.9	1613.1	1597.7
52.5°	1430.5	1453.1	1489.7	1486.6	1468.5
55°	1325.1	1316.2	1350.9	1341.6	1341.2
57.5°	1198.6	1214.0	1242.4	1227.8	1204.4
60°	1080.1	1080.5	1090.9	1074.4	1071.3
62.5°	948.3	952.9	955.2	934.8	967.9
65°	814.1	803.3	834.8	802.9	808.3
67.5°	690.6	696.0	692.9	672.9	680.6
70°	565.3	572.2	567.2	544.5	551.4
72.5°	450.7	442.2	447.6	419.1	432.2
75°	338.8	331.9	338.0	314.2	324.9
77.5°	230.7	236.1	232.3	219.6	226.9
80°	152.3	148.0	148.0	140.7	142.3
82.5°	88.8	84.6	83.4	81.1	84.6
85°	41.5	40.4	41.1	40.0	38.5
87.5°	15.0	15.4	15.4	14.6	13.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)