

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: P590954

Luminaire Tested: FSR-24-2-LD4-4STD-40-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590954  
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-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

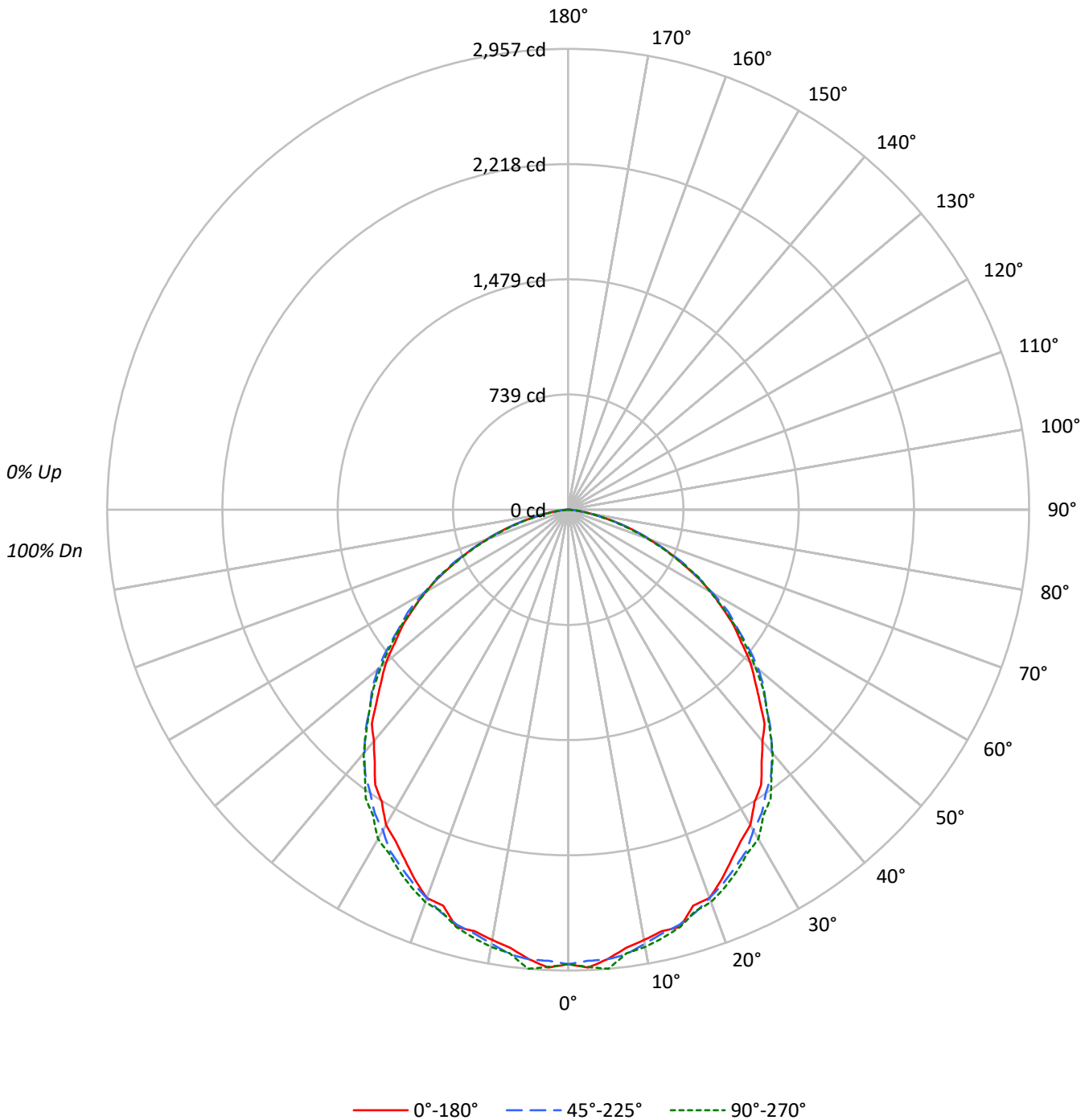
Lumens per Lamp: N/A  
Luminaire Lumens: 7348.0 lumens  
Efficiency: N/A  
Efficacy: 110.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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



TEST NUMBER: P590954

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-82-94-EDD

### Luminous Intensity Polar Plot



TEST NUMBER: P590954

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-82-94-EDD

**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°	7846	7846	7846
5°	7820	7823	7987
10°	7661	7728	7782
15°	7722	7680	7723
20°	7591	7591	7672
25°	7358	7519	7601
30°	7257	7384	7581
35°	7086	7271	7434
40°	6810	7138	7170
45°	6604	6839	6849
50°	6387	6676	6548
55°	6086	6204	6160
60°	5691	5748	5645
65°	5074	5203	5039
70°	4354	4368	4247
75°	3448	3440	3307
80°	2311	2245	2159
85°	1257	1244	1161

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7015 cd/sqm



TEST NUMBER: P590954

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-82-94-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	274.2	3.7
10°-20°	777.2	10.6
20°-30°	1164.5	15.8
30°-40°	1380.1	18.8
40°-50°	1382.7	18.8
50°-60°	1173.7	16.0
60°-70°	791.3	10.8
70°-80°	347.7	4.7
80°-90°	56.5	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°	2216.0	30.2
0°-40°	3596.1	48.9
0°-60°	6152.5	83.7
0°-90°	7348.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7348.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2916	2916	2916	2916	2916	
5°	2895	2888	2896	2887	2957	273
15°	2772	2740	2757	2771	2772	772
25°	2478	2492	2532	2565	2560	1146
35°	2157	2163	2213	2265	2263	1339
45°	1735	1768	1797	1843	1800	1342
55°	1297	1288	1322	1313	1313	1154
65°	797	786	817	786	791	793
75°	332	325	331	308	318	355
85°	41	40	40	39	38	59
90°	0	0	0	0	0	



TEST NUMBER: P590954

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-82-94-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2915.5	2915.5	2915.5	2915.5	2915.5
2.5°	2940.7	2918.5	2897.8	2921.9	2936.6
5°	2894.8	2888.0	2895.9	2887.3	2956.9
7.5°	2835.3	2861.3	2876.4	2866.9	2871.1
10°	2803.7	2794.7	2828.2	2851.5	2848.1
12.5°	2769.8	2783.4	2785.3	2810.5	2812.7
15°	2771.7	2739.7	2756.6	2770.9	2772.1
17.5°	2664.0	2698.7	2710.3	2743.1	2702.4
20°	2650.9	2625.6	2650.9	2684.4	2679.1
22.5°	2569.9	2541.7	2595.9	2625.6	2623.8
25°	2478.1	2491.6	2532.3	2565.4	2560.1
27.5°	2397.5	2413.3	2471.3	2516.9	2487.5
30°	2335.4	2327.5	2376.4	2417.1	2439.7
32.5°	2224.4	2253.0	2310.2	2350.5	2329.0
35°	2157.0	2163.4	2213.4	2264.6	2263.1
37.5°	2039.2	2068.9	2139.3	2153.6	2140.4
40°	1938.6	1968.4	2032.0	2047.4	2041.0
42.5°	1864.5	1869.8	1924.3	1942.0	1913.8
45°	1735.4	1767.7	1797.1	1843.4	1799.7
47.5°	1625.5	1640.5	1703.8	1716.2	1693.2
50°	1525.7	1531.0	1594.6	1579.2	1564.1
52.5°	1400.3	1422.6	1458.3	1455.3	1437.6
55°	1297.2	1288.5	1322.4	1313.4	1313.0
57.5°	1173.4	1188.4	1216.3	1202.0	1179.0
60°	1057.4	1057.8	1068.0	1051.8	1048.8
62.5°	928.3	932.8	935.1	915.1	947.5
65°	796.9	786.4	817.2	786.0	791.3
67.5°	676.1	681.4	678.3	658.8	666.3
70°	553.4	560.1	555.2	533.0	539.8
72.5°	441.2	432.9	438.2	410.3	423.1
75°	331.6	324.9	330.9	307.5	318.1
77.5°	225.9	231.1	227.4	214.9	222.1
80°	149.1	144.9	144.9	137.8	139.3
82.5°	87.0	82.8	81.7	79.4	82.8
85°	40.7	39.5	40.3	39.1	37.6
87.5°	14.7	15.1	15.1	14.3	13.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)