

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: P564157

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564157  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

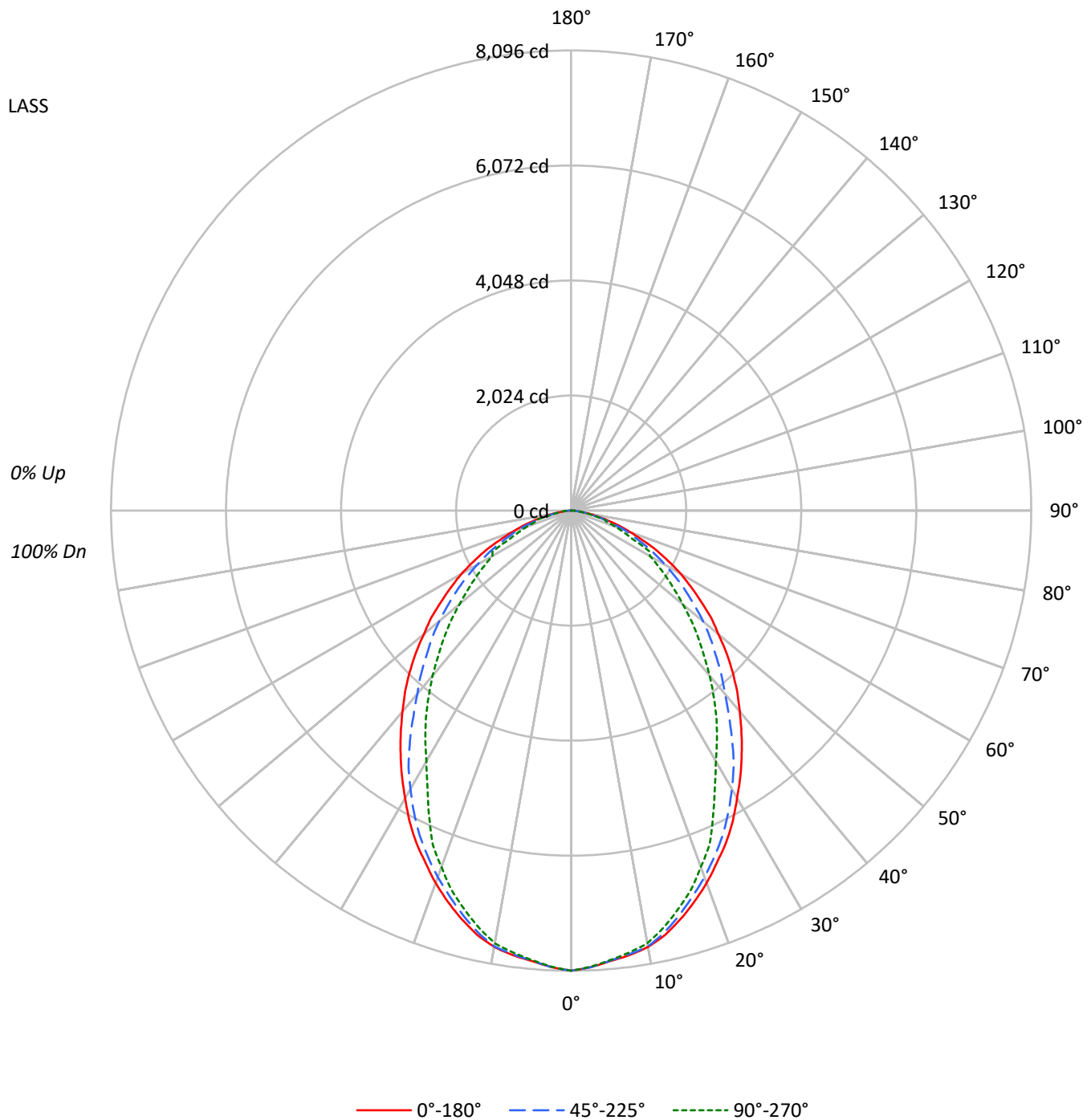
Lumens per Lamp: N/A  
Luminaire Lumens: 15893.0 lumens  
Efficiency: N/A  
Efficacy: 119.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P564157

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P564157

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-96-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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	10893	10893	10893
5°	10745	10732	10719
10°	10652	10639	10562
15°	10364	10260	10117
20°	9984	9823	9555
25°	9573	9365	8781
30°	9073	8783	7910
35°	8593	8117	7318
40°	8104	7397	6658
45°	7640	6839	6019
50°	7072	6347	5368
55°	6542	5752	4808
60°	5994	5138	4307
65°	5274	4499	3814
70°	4345	3939	3240
75°	3454	3017	3162
80°	2321	2176	2031
85°	1445	1734	2022

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7640 cd/sqm



TEST NUMBER: P564157

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	753.6	4.7
10°-20°	2068.2	13.0
20°-30°	2863.3	18.0
30°-40°	3053.1	19.2
40°-50°	2785.3	17.5
50°-60°	2182.1	13.7
60°-70°	1422.2	8.9
70°-80°	630.1	4.0
80°-90°	135.3	0.9
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°	5685.1	35.8
0°-40°	8738.1	55.0
0°-60°	13705.5	86.2
0°-90°	15893.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15893.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8096	8096	8096	8096	8096	
5°	7955	7946	7946	7937	7937	755
15°	7440	7440	7366	7291	7263	2092
25°	6448	6411	6308	6084	5915	2960
35°	5232	5194	4942	4567	4455	3271
45°	4015	3931	3594	3294	3163	3093
55°	2789	2705	2452	2162	2050	2502
65°	1657	1563	1413	1441	1198	1633
75°	664	618	580	552	608	712
85°	94	103	112	122	131	130
90°	0	0	0	0	0	



TEST NUMBER: P564157

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8095.7	8095.7	8095.7	8095.7	8095.7
2.5°	8039.5	8039.5	8039.5	8030.2	8030.2
5°	7955.3	7945.9	7945.9	7936.6	7936.6
7.5°	7889.8	7880.4	7871.1	7861.7	7843.0
10°	7796.2	7796.2	7786.8	7740.0	7730.7
12.5°	7646.4	7637.1	7599.6	7534.1	7515.4
15°	7440.5	7440.5	7365.7	7290.8	7262.7
17.5°	7215.9	7206.6	7113.0	7038.1	7000.7
20°	6972.6	6953.9	6860.3	6738.6	6673.1
22.5°	6701.2	6701.2	6588.9	6429.7	6364.2
25°	6448.5	6411.0	6308.1	6083.5	5915.0
27.5°	6158.3	6102.2	5989.9	5671.7	5475.1
30°	5840.1	5812.0	5652.9	5241.1	5091.4
32.5°	5540.6	5493.8	5325.4	4894.8	4773.2
35°	5231.8	5194.3	4941.6	4567.3	4455.0
37.5°	4922.9	4876.1	4557.9	4258.4	4118.0
40°	4614.1	4557.9	4211.6	3940.2	3790.5
42.5°	4323.9	4249.1	3912.1	3622.0	3453.5
45°	4015.1	3930.9	3593.9	3294.4	3163.4
47.5°	3706.2	3631.4	3322.5	3013.7	2863.9
50°	3378.7	3313.1	3032.4	2723.5	2564.4
52.5°	3107.2	3004.3	2732.9	2424.0	2293.0
55°	2789.0	2704.8	2452.1	2162.0	2049.7
57.5°	2498.9	2414.7	2180.7	1909.3	1815.7
60°	2227.5	2105.8	1909.3	1675.3	1600.4
62.5°	1928.0	1834.4	1665.9	1469.4	1563.0
65°	1656.6	1563.0	1413.2	1441.3	1198.0
67.5°	1357.1	1310.3	1179.3	1048.2	1010.8
70°	1104.4	1048.2	1001.4	861.0	823.6
72.5°	879.8	823.6	758.1	683.2	655.1
75°	664.5	617.7	580.3	552.2	608.3
77.5°	458.6	439.9	411.8	383.7	374.4
80°	299.5	290.1	280.8	271.4	262.1
82.5°	177.8	177.8	177.8	177.8	177.8
85°	93.6	103.0	112.3	121.7	131.0
87.5°	56.2	56.2	65.5	74.9	84.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)