

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: P564207

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-93-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564207  
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-93-97-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

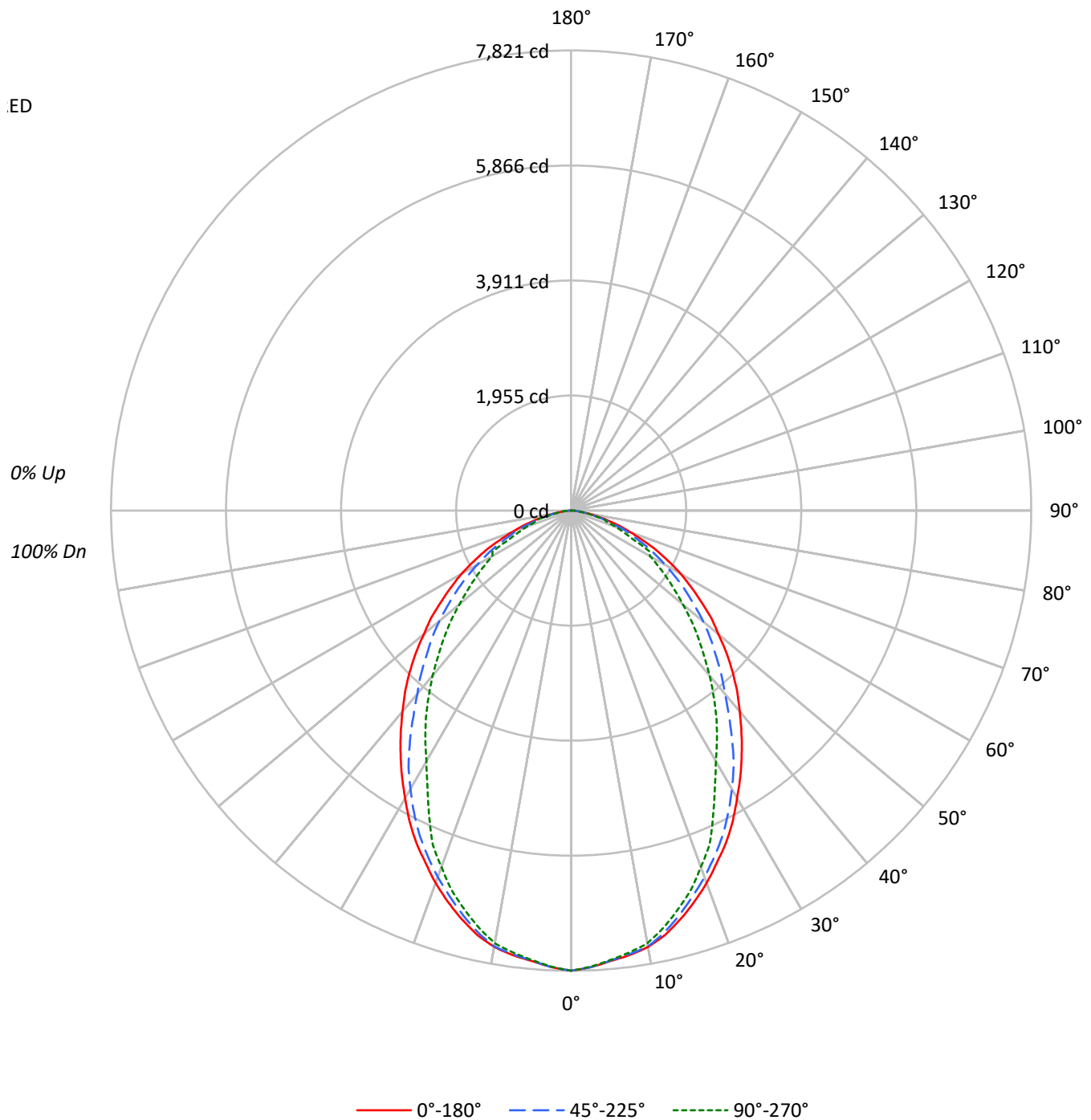
Lumens per Lamp: N/A  
Luminaire Lumens: 15353.0 lumens  
Efficiency: N/A  
Efficacy: 115.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	10523	10523	10523
5°	10380	10367	10355
10°	10290	10277	10203
15°	10012	9911	9773
20°	9644	9489	9230
25°	9248	9047	8483
30°	8765	8484	7641
35°	8301	7841	7069
40°	7829	7146	6431
45°	7380	6606	5815
50°	6832	6132	5186
55°	6320	5557	4645
60°	5790	4963	4160
65°	5095	4346	3684
70°	4197	3806	3130
75°	3337	2914	3055
80°	2242	2101	1962
85°	1396	1675	1954

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7380 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	728.0	4.7
10°-20°	1997.9	13.0
20°-30°	2766.0	18.0
30°-40°	2949.3	19.2
40°-50°	2690.7	17.5
50°-60°	2107.9	13.7
60°-70°	1373.8	8.9
70°-80°	608.7	4.0
80°-90°	130.7	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°	5491.9	35.8
0°-40°	8441.2	55.0
0°-60°	13239.8	86.2
0°-90°	15353.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15353.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7821	7821	7821	7821	7821	
5°	7685	7676	7676	7667	7667	729
15°	7188	7188	7115	7043	7016	2021
25°	6229	6193	6094	5877	5714	2860
35°	5054	5018	4774	4412	4304	3160
45°	3879	3797	3472	3182	3056	2988
55°	2694	2613	2369	2088	1980	2417
65°	1600	1510	1365	1392	1157	1577
75°	642	597	561	533	588	688
85°	90	100	108	118	127	125
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7820.6	7820.6	7820.6	7820.6	7820.6
2.5°	7766.4	7766.4	7766.4	7757.3	7757.3
5°	7685.0	7676.0	7676.0	7666.9	7666.9
7.5°	7621.7	7612.7	7603.6	7594.6	7576.5
10°	7531.3	7531.3	7522.3	7477.0	7468.0
12.5°	7386.6	7377.6	7341.4	7278.1	7260.1
15°	7187.7	7187.7	7115.4	7043.1	7015.9
17.5°	6970.7	6961.7	6871.3	6799.0	6762.8
20°	6735.7	6717.6	6627.2	6509.6	6446.4
22.5°	6473.5	6473.5	6365.0	6211.3	6148.0
25°	6229.4	6193.2	6093.7	5876.8	5714.0
27.5°	5949.1	5894.8	5786.3	5478.9	5289.1
30°	5641.7	5614.6	5460.9	5063.1	4918.4
32.5°	5352.4	5307.2	5144.4	4728.5	4611.0
35°	5054.0	5017.9	4773.7	4412.1	4303.6
37.5°	4755.7	4710.5	4403.1	4113.7	3978.1
40°	4457.3	4403.1	4068.5	3806.3	3661.7
42.5°	4177.0	4104.7	3779.2	3498.9	3336.2
45°	3878.7	3797.3	3471.8	3182.5	3055.9
47.5°	3580.3	3508.0	3209.6	2911.3	2766.6
50°	3263.9	3200.6	2929.3	2631.0	2477.3
52.5°	3001.7	2902.2	2640.0	2341.7	2215.1
55°	2694.3	2612.9	2368.8	2088.5	1980.0
57.5°	2414.0	2332.6	2106.6	1844.4	1754.0
60°	2151.8	2034.3	1844.4	1618.4	1546.0
62.5°	1862.5	1772.1	1609.3	1419.5	1509.9
65°	1600.3	1509.9	1365.2	1392.3	1157.3
67.5°	1311.0	1265.8	1139.2	1012.6	976.4
70°	1066.9	1012.6	967.4	831.8	795.6
72.5°	849.9	795.6	732.3	660.0	632.9
75°	641.9	596.7	560.6	533.4	587.7
77.5°	443.0	424.9	397.8	370.7	361.6
80°	289.3	280.3	271.2	262.2	253.2
82.5°	171.8	171.8	171.8	171.8	171.8
85°	90.4	99.5	108.5	117.5	126.6
87.5°	54.2	54.2	63.3	72.3	81.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)