

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: P564108

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564108  
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-40-UNV-81-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

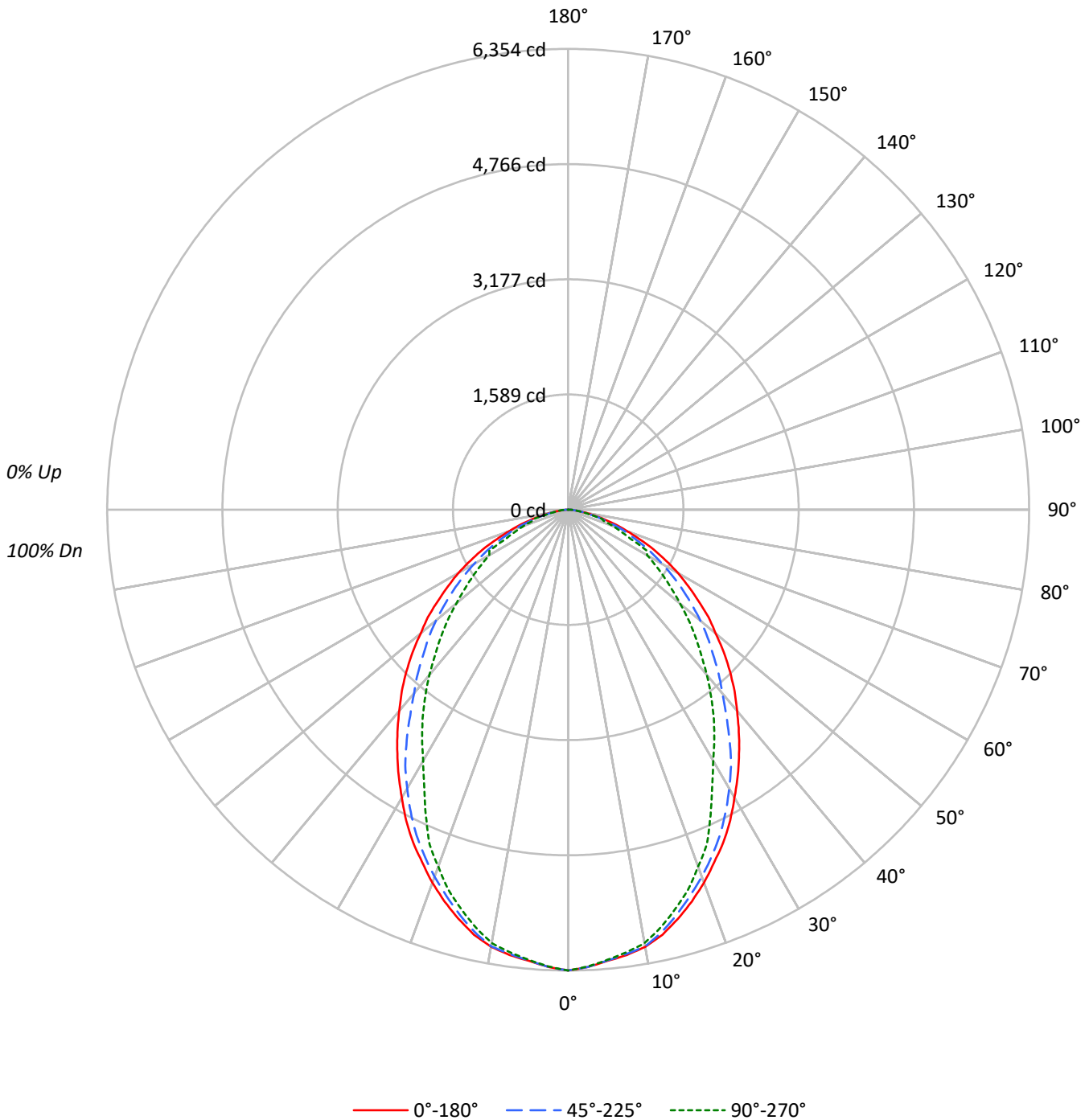
Lumens per Lamp: N/A  
Luminaire Lumens: 12474.0 lumens  
Efficiency: N/A  
Efficacy: 93.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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			
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°	8549	8549	8549
5°	8433	8423	8413
10°	8360	8350	8290
15°	8135	8053	7940
20°	7836	7710	7499
25°	7514	7350	6892
30°	7122	6893	6208
35°	6745	6371	5743
40°	6361	5806	5225
45°	5996	5367	4724
50°	5551	4982	4213
55°	5135	4515	3774
60°	4705	4032	3380
65°	4139	3531	2994
70°	3410	3092	2543
75°	2711	2367	2482
80°	1822	1708	1594
85°	1135	1360	1587

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5996 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	591.5	4.7
10°-20°	1623.3	13.0
20°-30°	2247.3	18.0
30°-40°	2396.3	19.2
40°-50°	2186.1	17.5
50°-60°	1712.6	13.7
60°-70°	1116.2	8.9
70°-80°	494.5	4.0
80°-90°	106.2	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°	4462.0	35.8
0°-40°	6858.3	55.0
0°-60°	10757.1	86.2
0°-90°	12474.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12474.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6354	6354	6354	6354	6354	
5°	6244	6237	6237	6229	6229	593
15°	5840	5840	5781	5722	5700	1642
25°	5061	5032	4951	4775	4642	2324
35°	4106	4077	3879	3585	3497	2567
45°	3151	3085	2821	2586	2483	2427
55°	2189	2123	1925	1697	1609	1963
65°	1300	1227	1109	1131	940	1281
75°	522	485	455	433	478	559
85°	74	81	88	96	103	102
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6354.1	6354.1	6354.1	6354.1	6354.1
2.5°	6310.0	6310.0	6310.0	6302.7	6302.7
5°	6243.9	6236.6	6236.6	6229.2	6229.2
7.5°	6192.5	6185.1	6177.8	6170.4	6155.8
10°	6119.0	6119.0	6111.7	6074.9	6067.6
12.5°	6001.5	5994.1	5964.8	5913.3	5898.7
15°	5839.9	5839.9	5781.1	5722.4	5700.3
17.5°	5663.6	5656.2	5582.8	5524.0	5494.6
20°	5472.6	5457.9	5384.4	5289.0	5237.5
22.5°	5259.6	5259.6	5171.4	5046.5	4995.1
25°	5061.2	5031.9	4951.0	4774.7	4642.5
27.5°	4833.5	4789.4	4701.3	4451.5	4297.3
30°	4583.8	4561.7	4436.8	4113.6	3996.1
32.5°	4348.7	4312.0	4179.7	3841.8	3746.3
35°	4106.3	4076.9	3878.6	3584.7	3496.6
37.5°	3863.9	3827.1	3577.4	3342.3	3232.1
40°	3621.5	3577.4	3305.6	3092.6	2975.0
42.5°	3393.7	3335.0	3070.5	2842.8	2710.6
45°	3151.3	3085.2	2820.8	2585.7	2482.9
47.5°	2908.9	2850.2	2607.7	2365.3	2247.8
50°	2651.8	2600.4	2380.0	2137.6	2012.7
52.5°	2438.8	2358.0	2145.0	1902.6	1799.7
55°	2189.0	2122.9	1924.6	1696.9	1608.7
57.5°	1961.3	1895.2	1711.6	1498.5	1425.1
60°	1748.3	1652.8	1498.5	1314.9	1256.1
62.5°	1513.2	1439.8	1307.5	1153.3	1226.7
65°	1300.2	1226.7	1109.2	1131.2	940.3
67.5°	1065.1	1028.4	925.6	822.7	793.3
70°	866.8	822.7	786.0	675.8	646.4
72.5°	690.5	646.4	595.0	536.2	514.2
75°	521.5	484.8	455.4	433.4	477.5
77.5°	359.9	345.3	323.2	301.2	293.8
80°	235.1	227.7	220.4	213.0	205.7
82.5°	139.6	139.6	139.6	139.6	139.6
85°	73.5	80.8	88.1	95.5	102.8
87.5°	44.1	44.1	51.4	58.8	66.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)