

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: P564066

Luminaire Tested: FSR-24-4-LD4-4STD-35-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564066  
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-35-UNV-93-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

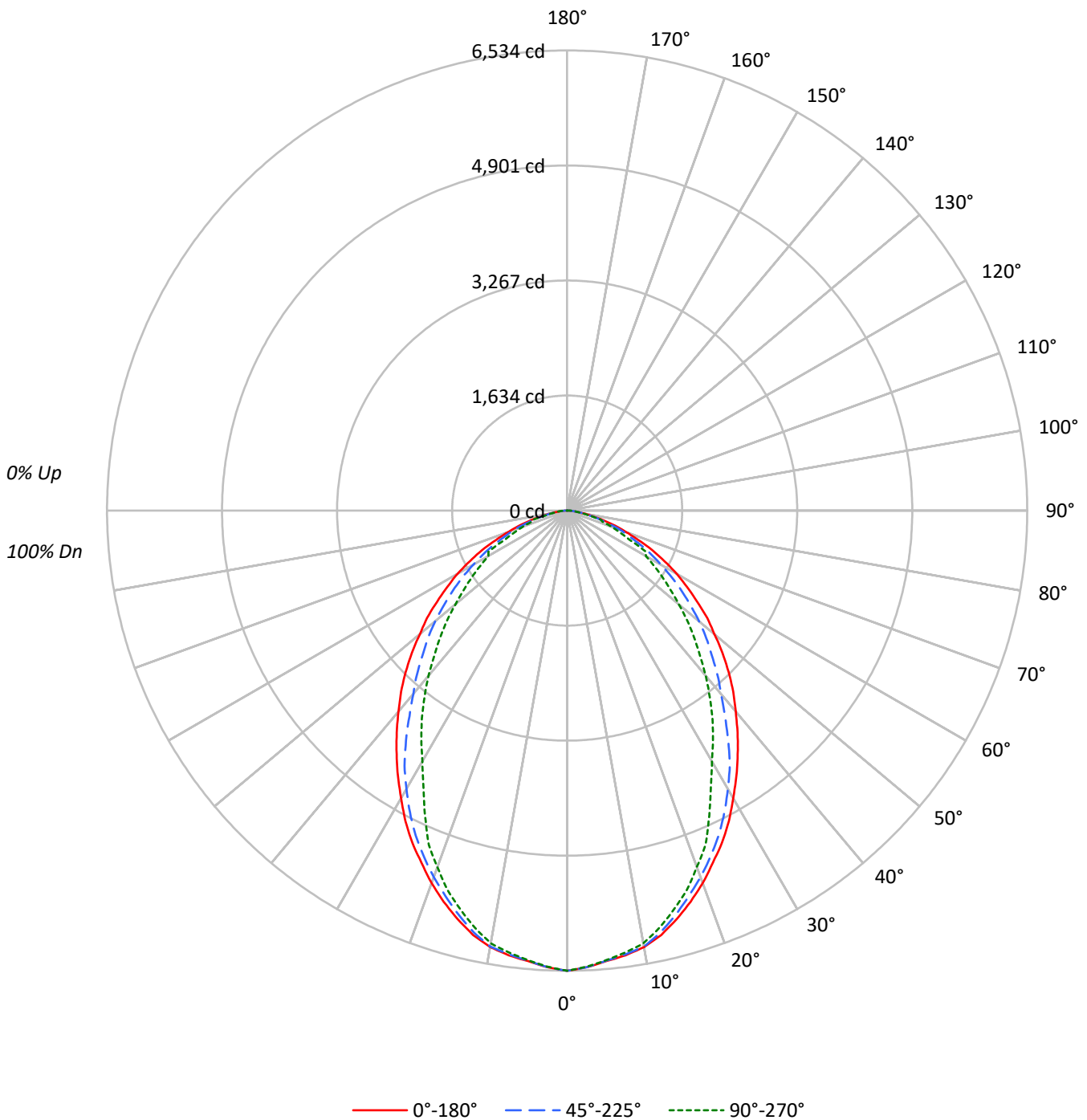
Lumens per Lamp: N/A  
Luminaire Lumens: 12828.0 lumens  
Efficiency: N/A  
Efficacy: 96.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8792	8792	8792
5°	8673	8662	8652
10°	8597	8587	8525
15°	8366	8281	8166
20°	8058	7929	7712
25°	7727	7559	7088
30°	7324	7089	6385
35°	6936	6551	5906
40°	6541	5971	5374
45°	6167	5520	4858
50°	5708	5123	4333
55°	5281	4643	3881
60°	4838	4147	3476
65°	4257	3632	3078
70°	3507	3180	2615
75°	2789	2435	2552
80°	1873	1756	1639
85°	1166	1400	1633

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6167 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	608.3	4.7
10°-20°	1669.3	13.0
20°-30°	2311.1	18.0
30°-40°	2464.3	19.2
40°-50°	2248.2	17.5
50°-60°	1761.2	13.7
60°-70°	1147.9	8.9
70°-80°	508.6	4.0
80°-90°	109.2	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°	4588.7	35.8
0°-40°	7053.0	55.0
0°-60°	11062.4	86.2
0°-90°	12828.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12828.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6534	6534	6534	6534	6534	
5°	6421	6414	6414	6406	6406	610
15°	6006	6006	5945	5885	5862	1688
25°	5205	5175	5092	4910	4774	2390
35°	4223	4193	3989	3686	3596	2640
45°	3241	3173	2901	2659	2553	2496
55°	2251	2183	1979	1745	1654	2019
65°	1337	1262	1141	1163	967	1318
75°	536	499	468	446	491	575
85°	76	83	91	98	106	105
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6534.4	6534.4	6534.4	6534.4	6534.4
2.5°	6489.1	6489.1	6489.1	6481.5	6481.5
5°	6421.1	6413.5	6413.5	6406.0	6406.0
7.5°	6368.2	6360.7	6353.1	6345.6	6330.4
10°	6292.7	6292.7	6285.1	6247.4	6239.8
12.5°	6171.8	6164.3	6134.0	6081.2	6066.0
15°	6005.6	6005.6	5945.2	5884.7	5862.1
17.5°	5824.3	5816.8	5741.2	5680.8	5650.6
20°	5627.9	5612.8	5537.3	5439.0	5386.2
22.5°	5408.8	5408.8	5318.2	5189.8	5136.9
25°	5204.9	5174.6	5091.6	4910.3	4774.3
27.5°	4970.7	4925.4	4834.7	4577.9	4419.2
30°	4713.8	4691.2	4562.8	4230.4	4109.5
32.5°	4472.1	4434.3	4298.4	3950.9	3852.7
35°	4222.8	4192.6	3988.6	3686.5	3595.8
37.5°	3973.5	3935.8	3678.9	3437.2	3323.9
40°	3724.2	3678.9	3399.4	3180.3	3059.5
42.5°	3490.1	3429.6	3157.7	2923.5	2787.5
45°	3240.8	3172.8	2900.8	2659.1	2553.3
47.5°	2991.5	2931.0	2681.8	2432.5	2311.6
50°	2727.1	2674.2	2447.6	2198.3	2069.9
52.5°	2508.0	2424.9	2205.8	1956.5	1850.8
55°	2251.2	2183.2	1979.2	1745.0	1654.4
57.5°	2017.0	1949.0	1760.1	1541.1	1465.5
60°	1797.9	1699.7	1541.1	1352.2	1291.8
62.5°	1556.2	1480.6	1344.7	1186.0	1261.6
65°	1337.1	1261.6	1140.7	1163.4	966.9
67.5°	1095.4	1057.6	951.8	846.1	815.9
70°	891.4	846.1	808.3	695.0	664.8
72.5°	710.1	664.8	611.9	551.5	528.8
75°	536.4	498.6	468.4	445.7	491.0
77.5°	370.2	355.0	332.4	309.7	302.2
80°	241.7	234.2	226.6	219.1	211.5
82.5°	143.5	143.5	143.5	143.5	143.5
85°	75.5	83.1	90.7	98.2	105.8
87.5°	45.3	45.3	52.9	60.4	68.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)