

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: P564132

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564132  
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-93-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

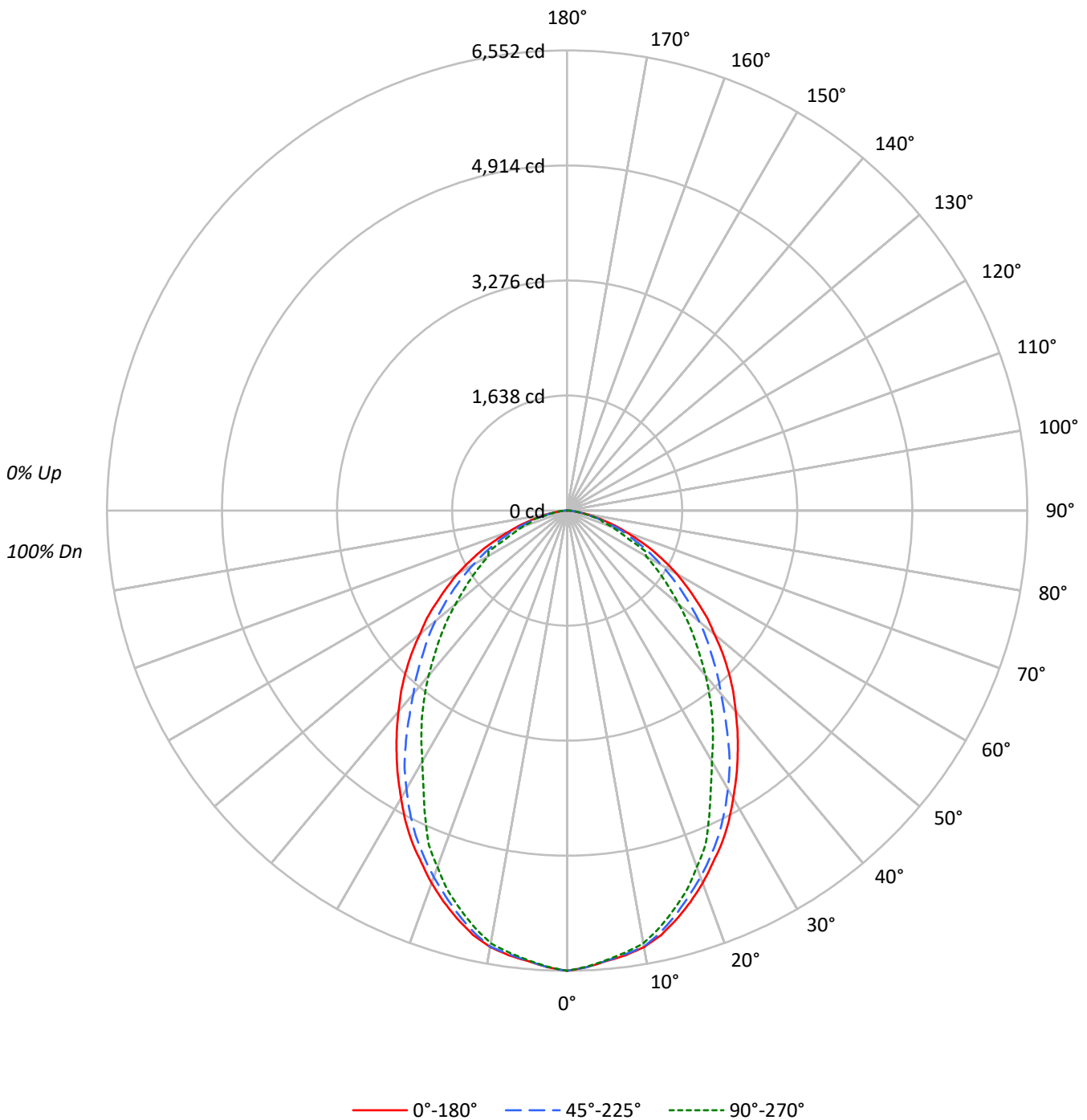
Lumens per Lamp: N/A  
Luminaire Lumens: 12863.0 lumens  
Efficiency: N/A  
Efficacy: 96.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	8816	8816	8816
5°	8696	8686	8676
10°	8621	8610	8548
15°	8388	8304	8188
20°	8080	7950	7733
25°	7748	7579	7107
30°	7344	7108	6402
35°	6955	6569	5922
40°	6559	5987	5388
45°	6183	5535	4872
50°	5724	5137	4344
55°	5295	4655	3891
60°	4851	4158	3486
65°	4268	3642	3087
70°	3516	3188	2622
75°	2796	2441	2560
80°	1878	1760	1643
85°	1169	1403	1636

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6183 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	609.9	4.7
10°-20°	1673.9	13.0
20°-30°	2317.4	18.0
30°-40°	2471.0	19.2
40°-50°	2254.3	17.5
50°-60°	1766.0	13.7
60°-70°	1151.0	8.9
70°-80°	510.0	4.0
80°-90°	109.5	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°	4601.2	35.8
0°-40°	7072.2	55.0
0°-60°	11092.5	86.2
0°-90°	12863.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12863.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6552	6552	6552	6552	6552	
5°	6439	6431	6431	6424	6424	611
15°	6022	6022	5961	5901	5878	1693
25°	5219	5189	5105	4924	4787	2396
35°	4234	4204	4000	3696	3606	2647
45°	3250	3181	2909	2666	2560	2503
55°	2257	2189	1985	1750	1659	2025
65°	1341	1265	1144	1166	970	1321
75°	538	500	470	447	492	576
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°	6552.2	6552.2	6552.2	6552.2	6552.2
2.5°	6506.8	6506.8	6506.8	6499.2	6499.2
5°	6438.6	6431.0	6431.0	6423.5	6423.5
7.5°	6385.6	6378.0	6370.4	6362.9	6347.7
10°	6309.8	6309.8	6302.3	6264.4	6256.8
12.5°	6188.6	6181.1	6150.8	6097.7	6082.6
15°	6022.0	6022.0	5961.4	5900.8	5878.1
17.5°	5840.2	5832.6	5756.9	5696.3	5666.0
20°	5643.3	5628.1	5552.4	5453.9	5400.9
22.5°	5423.6	5423.6	5332.7	5203.9	5150.9
25°	5219.1	5188.8	5105.4	4923.6	4787.3
27.5°	4984.2	4938.8	4847.9	4590.4	4431.3
30°	4726.7	4704.0	4575.2	4241.9	4120.7
32.5°	4484.3	4446.4	4310.1	3961.6	3863.2
35°	4234.3	4204.0	3999.5	3696.5	3605.6
37.5°	3984.4	3946.5	3688.9	3446.6	3332.9
40°	3734.4	3688.9	3408.7	3189.0	3067.8
42.5°	3499.6	3439.0	3166.3	2931.5	2795.1
45°	3249.6	3181.4	2908.7	2666.3	2560.3
47.5°	2999.6	2939.0	2689.1	2439.1	2317.9
50°	2734.5	2681.5	2454.2	2204.3	2075.5
52.5°	2514.8	2431.5	2211.9	1961.9	1855.8
55°	2257.3	2189.1	1984.6	1749.8	1658.9
57.5°	2022.5	1954.3	1764.9	1545.3	1469.5
60°	1802.8	1704.3	1545.3	1355.9	1295.3
62.5°	1560.4	1484.7	1348.3	1189.3	1265.0
65°	1340.7	1265.0	1143.8	1166.5	969.6
67.5°	1098.4	1060.5	954.4	848.4	818.1
70°	893.8	848.4	810.5	696.9	666.6
72.5°	712.0	666.6	613.6	553.0	530.2
75°	537.8	499.9	469.6	446.9	492.4
77.5°	371.2	356.0	333.3	310.6	303.0
80°	242.4	234.8	227.2	219.7	212.1
82.5°	143.9	143.9	143.9	143.9	143.9
85°	75.7	83.3	90.9	98.5	106.0
87.5°	45.4	45.4	53.0	60.6	68.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)