

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: P561453

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561453  
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-12-4-LD4-2HI-40-UNV-93-96-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

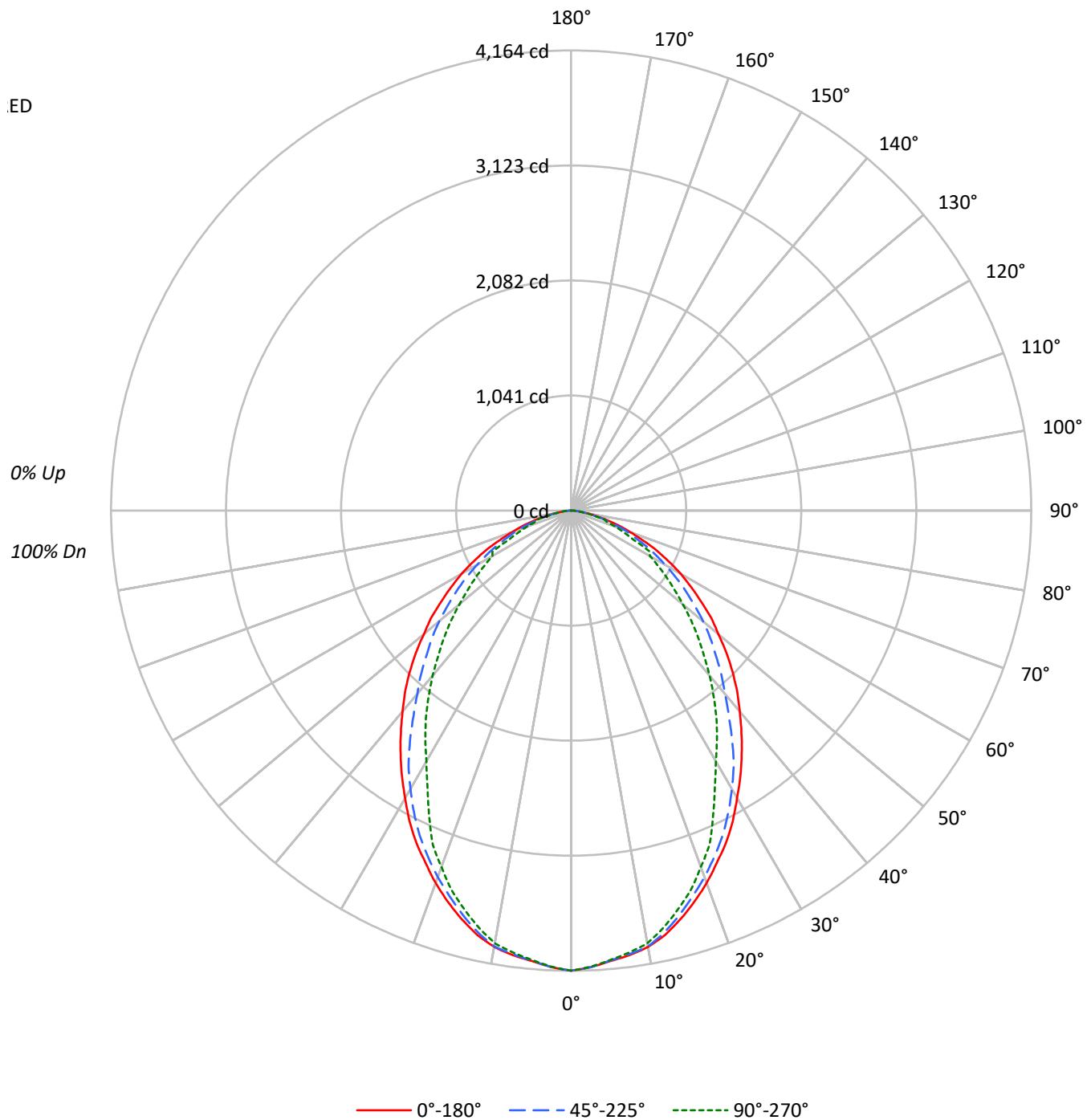
Lumens per Lamp: N/A  
Luminaire Lumens: 8174.0 lumens  
Efficiency: N/A  
Efficacy: 94.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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				
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°	11204	11204	11204
5°	11052	11039	11026
10°	10956	10943	10864
15°	10661	10554	10406
20°	10269	10104	9828
25°	9847	9633	9033
30°	9333	9034	8137
35°	8839	8349	7527
40°	8336	7609	6848
45°	7859	7034	6192
50°	7275	6529	5521
55°	6730	5917	4946
60°	6166	5285	4430
65°	5425	4628	3923
70°	4469	4053	3333
75°	3554	3103	3253
80°	2386	2238	2089
85°	1485	1785	2081

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7859 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	387.6	4.7
10°-20°	1063.7	13.0
20°-30°	1472.6	18.0
30°-40°	1570.2	19.2
40°-50°	1432.5	17.5
50°-60°	1122.3	13.7
60°-70°	731.4	8.9
70°-80°	324.1	4.0
80°-90°	69.6	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°	2923.9	35.8
0°-40°	4494.2	55.0
0°-60°	7048.9	86.2
0°-90°	8174.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8174.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4164	4164	4164	4164	4164	
5°	4092	4087	4087	4082	4082	388
15°	3827	3827	3788	3750	3735	1076
25°	3316	3297	3244	3129	3042	1523
35°	2691	2672	2542	2349	2291	1682
45°	2065	2022	1848	1694	1627	1591
55°	1434	1391	1261	1112	1054	1287
65°	852	804	727	741	616	840
75°	342	318	298	284	313	366
85°	48	53	58	63	67	67
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4163.7	4163.7	4163.7	4163.7	4163.7
2.5°	4134.8	4134.8	4134.8	4130.0	4130.0
5°	4091.5	4086.7	4086.7	4081.9	4081.9
7.5°	4057.8	4053.0	4048.2	4043.4	4033.8
10°	4009.7	4009.7	4004.9	3980.8	3976.0
12.5°	3932.7	3927.9	3908.6	3874.9	3865.3
15°	3826.8	3826.8	3788.3	3749.8	3735.3
17.5°	3711.3	3706.4	3658.3	3619.8	3600.5
20°	3586.1	3576.5	3528.3	3465.8	3432.1
22.5°	3446.5	3446.5	3388.7	3306.9	3273.2
25°	3316.5	3297.3	3244.3	3128.8	3042.2
27.5°	3167.3	3138.4	3080.7	2917.0	2815.9
30°	3003.7	2989.2	2907.4	2695.6	2618.6
32.5°	2849.6	2825.6	2738.9	2517.5	2454.9
35°	2690.8	2671.5	2541.6	2349.0	2291.3
37.5°	2531.9	2507.9	2344.2	2190.2	2118.0
40°	2373.1	2344.2	2166.1	2026.5	1949.5
42.5°	2223.9	2185.4	2012.1	1862.8	1776.2
45°	2065.0	2021.7	1848.4	1694.4	1627.0
47.5°	1906.2	1867.7	1708.8	1550.0	1472.9
50°	1737.7	1704.0	1559.6	1400.7	1318.9
52.5°	1598.1	1545.2	1405.6	1246.7	1179.3
55°	1434.4	1391.1	1261.2	1111.9	1054.2
57.5°	1285.2	1241.9	1121.6	982.0	933.8
60°	1145.6	1083.1	982.0	861.6	823.1
62.5°	991.6	943.5	856.8	755.7	803.9
65°	852.0	803.9	726.8	741.3	616.1
67.5°	698.0	673.9	606.5	539.1	519.9
70°	568.0	539.1	515.1	442.8	423.6
72.5°	452.5	423.6	389.9	351.4	336.9
75°	341.8	317.7	298.4	284.0	312.9
77.5°	235.9	226.2	211.8	197.4	192.5
80°	154.0	149.2	144.4	139.6	134.8
82.5°	91.5	91.5	91.5	91.5	91.5
85°	48.1	52.9	57.8	62.6	67.4
87.5°	28.9	28.9	33.7	38.5	43.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)