

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: P561505

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561505  
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-50-UNV-93-84-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

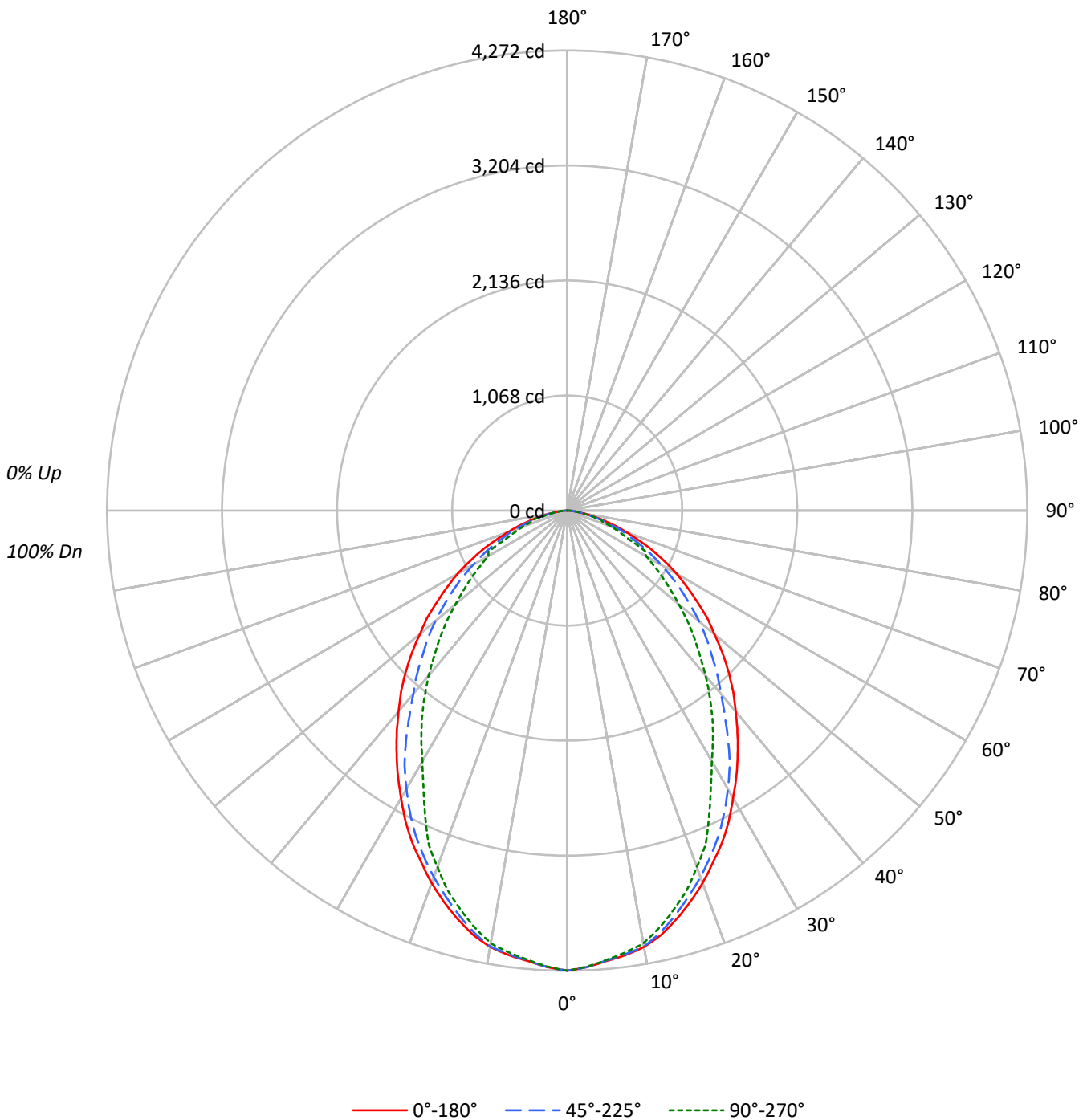
Lumens per Lamp: N/A  
Luminaire Lumens: 8386.0 lumens  
Efficiency: N/A  
Efficacy: 97.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	11495	11495	11495
5°	11339	11326	11312
10°	11241	11227	11146
15°	10937	10827	10676
20°	10536	10366	10083
25°	10103	9883	9267
30°	9575	9268	8348
35°	9069	8566	7722
40°	8552	7807	7026
45°	8063	7217	6352
50°	7464	6698	5665
55°	6904	6070	5074
60°	6325	5422	4545
65°	5566	4748	4025
70°	4585	4157	3419
75°	3645	3184	3337
80°	2448	2297	2143
85°	1525	1831	2133

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8063 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	397.6	4.7
10°-20°	1091.3	13.0
20°-30°	1510.8	18.0
30°-40°	1611.0	19.2
40°-50°	1469.7	17.5
50°-60°	1151.4	13.7
60°-70°	750.4	8.9
70°-80°	332.5	4.0
80°-90°	71.4	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°	2999.7	35.8
0°-40°	4610.7	55.0
0°-60°	7231.7	86.2
0°-90°	8386.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8386.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4272	4272	4272	4272	4272	
5°	4198	4193	4193	4188	4188	398
15°	3926	3926	3886	3847	3832	1104
25°	3403	3383	3328	3210	3121	1562
35°	2761	2741	2608	2410	2351	1726
45°	2119	2074	1896	1738	1669	1632
55°	1472	1427	1294	1141	1082	1320
65°	874	825	746	760	632	861
75°	351	326	306	291	321	376
85°	49	54	59	64	69	68
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4271.7	4271.7	4271.7	4271.7	4271.7
2.5°	4242.1	4242.1	4242.1	4237.1	4237.1
5°	4197.6	4192.7	4192.7	4187.8	4187.8
7.5°	4163.1	4158.1	4153.2	4148.3	4138.4
10°	4113.7	4113.7	4108.7	4084.1	4079.1
12.5°	4034.7	4029.7	4010.0	3975.4	3965.5
15°	3926.0	3926.0	3886.5	3847.0	3832.2
17.5°	3807.5	3802.6	3753.2	3713.7	3693.9
20°	3679.1	3669.2	3619.8	3555.6	3521.1
22.5°	3535.9	3535.9	3476.6	3392.7	3358.1
25°	3402.6	3382.8	3328.5	3210.0	3121.1
27.5°	3249.5	3219.8	3160.6	2992.7	2889.0
30°	3081.6	3066.7	2982.8	2765.5	2686.5
32.5°	2923.5	2898.8	2809.9	2582.8	2518.6
35°	2760.6	2740.8	2607.5	2409.9	2350.7
37.5°	2597.6	2572.9	2405.0	2247.0	2172.9
40°	2434.6	2405.0	2222.3	2079.1	2000.1
42.5°	2281.5	2242.0	2064.3	1911.2	1822.3
45°	2118.6	2074.1	1896.3	1738.3	1669.2
47.5°	1955.6	1916.1	1753.1	1590.2	1511.2
50°	1782.8	1748.2	1600.0	1437.1	1353.1
52.5°	1639.5	1585.2	1442.0	1279.0	1209.9
55°	1471.6	1427.2	1293.9	1140.8	1081.5
57.5°	1318.6	1274.1	1150.6	1007.4	958.0
60°	1175.3	1111.1	1007.4	884.0	844.5
62.5°	1017.3	967.9	879.0	775.3	824.7
65°	874.1	824.7	745.7	760.5	632.1
67.5°	716.1	691.4	622.2	553.1	533.3
70°	582.7	553.1	528.4	454.3	434.6
72.5°	464.2	434.6	400.0	360.5	345.7
75°	350.6	325.9	306.2	291.4	321.0
77.5°	242.0	232.1	217.3	202.5	197.5
80°	158.0	153.1	148.2	143.2	138.3
82.5°	93.8	93.8	93.8	93.8	93.8
85°	49.4	54.3	59.3	64.2	69.1
87.5°	29.6	29.6	34.6	39.5	44.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)