

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: P562657

Luminaire Tested: FSR-24-4-LD4-2HI-50-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562657  
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-LD4-2HI-50-UNV-93-84-EDD  
Description: 2X4 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**

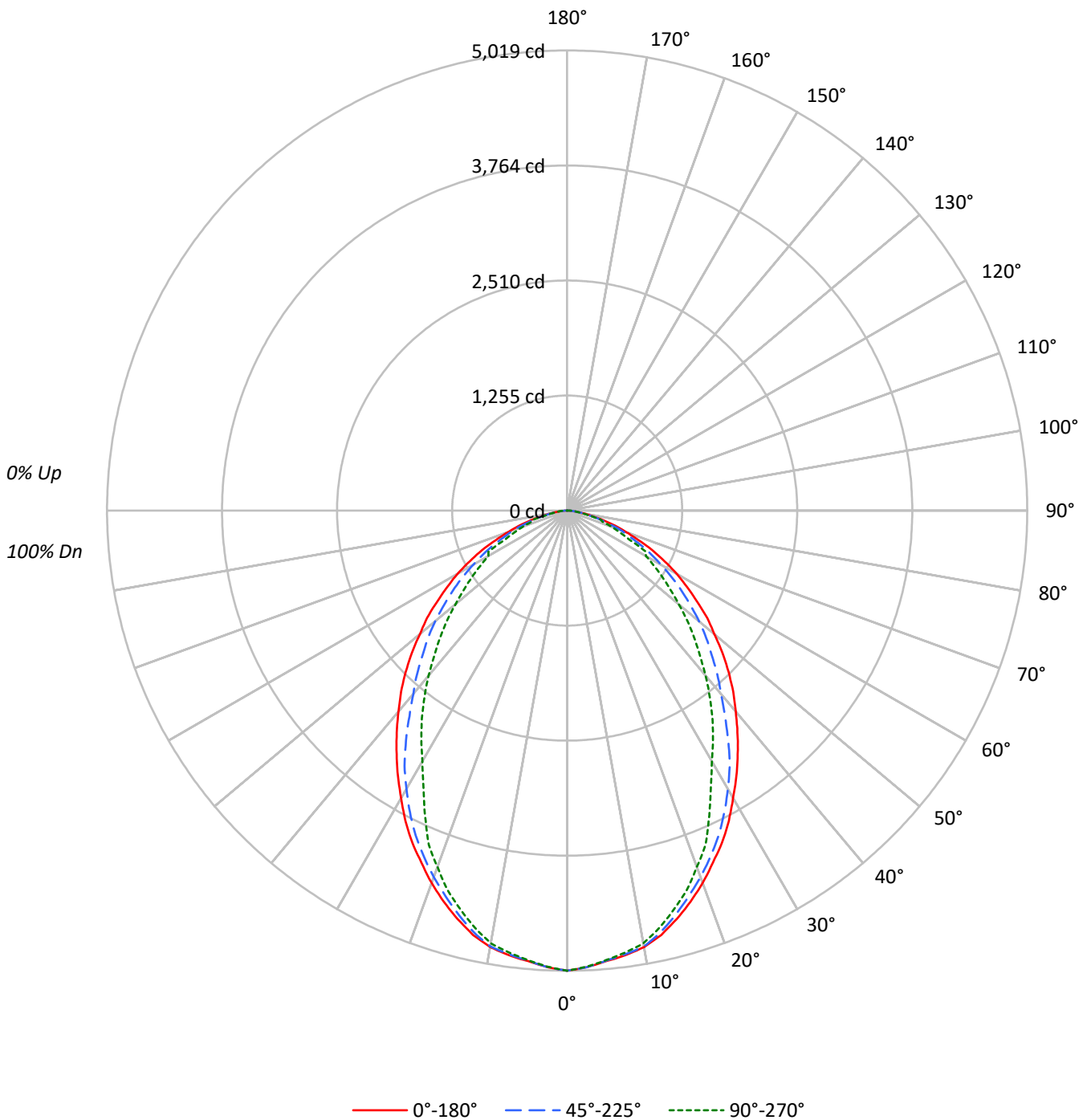
Lumens per Lamp: N/A  
Luminaire Lumens: 9853.0 lumens  
Efficiency: N/A  
Efficacy: 114.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6753	6753	6753
5°	6661	6653	6645
10°	6603	6596	6548
15°	6425	6361	6272
20°	6189	6090	5924
25°	5935	5806	5444
30°	5625	5445	4904
35°	5328	5032	4537
40°	5024	4586	4127
45°	4736	4240	3732
50°	4384	3935	3328
55°	4056	3566	2981
60°	3716	3185	2670
65°	3270	2789	2365
70°	2694	2442	2009
75°	2142	1870	1960
80°	1439	1349	1259
85°	895	1074	1254

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4736 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	467.2	4.7
10°-20°	1282.2	13.0
20°-30°	1775.1	18.0
30°-40°	1892.8	19.2
40°-50°	1726.8	17.5
50°-60°	1352.8	13.7
60°-70°	881.7	8.9
70°-80°	390.6	4.0
80°-90°	83.8	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°	3524.5	35.8
0°-40°	5417.3	55.0
0°-60°	8496.8	86.2
0°-90°	9853.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9853.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5019	5019	5019	5019	5019	
5°	4932	4926	4926	4920	4920	468
15°	4613	4613	4566	4520	4503	1297
25°	3998	3975	3911	3772	3667	1835
35°	3244	3220	3064	2832	2762	2028
45°	2489	2437	2228	2042	1961	1917
55°	1729	1677	1520	1340	1271	1551
65°	1027	969	876	894	743	1012
75°	412	383	360	342	377	442
85°	58	64	70	75	81	80
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5019.0	5019.0	5019.0	5019.0	5019.0
2.5°	4984.2	4984.2	4984.2	4978.4	4978.4
5°	4932.0	4926.1	4926.1	4920.3	4920.3
7.5°	4891.3	4885.5	4879.7	4873.9	4862.3
10°	4833.3	4833.3	4827.5	4798.5	4792.7
12.5°	4740.5	4734.7	4711.5	4670.8	4659.2
15°	4612.8	4612.8	4566.4	4520.0	4502.6
17.5°	4473.6	4467.8	4409.7	4363.3	4340.1
20°	4322.7	4311.1	4253.1	4177.7	4137.0
22.5°	4154.4	4154.4	4084.8	3986.2	3945.6
25°	3997.8	3974.6	3910.7	3771.5	3667.1
27.5°	3817.9	3783.1	3713.5	3516.2	3394.3
30°	3620.6	3603.2	3504.6	3249.3	3156.4
32.5°	3435.0	3405.9	3301.5	3034.6	2959.2
35°	3243.5	3220.3	3063.6	2831.5	2761.9
37.5°	3052.0	3023.0	2825.7	2640.0	2553.0
40°	2860.5	2825.7	2611.0	2442.8	2349.9
42.5°	2680.7	2634.2	2425.4	2245.5	2141.0
45°	2489.2	2437.0	2228.1	2042.4	1961.2
47.5°	2297.7	2251.3	2059.8	1868.3	1775.5
50°	2094.6	2054.0	1879.9	1688.5	1589.8
52.5°	1926.4	1862.5	1694.3	1502.8	1421.6
55°	1729.1	1676.9	1520.2	1340.3	1270.7
57.5°	1549.2	1497.0	1351.9	1183.7	1125.6
60°	1380.9	1305.5	1183.7	1038.6	992.2
62.5°	1195.3	1137.3	1032.8	911.0	969.0
65°	1027.0	969.0	876.1	893.6	742.7
67.5°	841.3	812.3	731.1	649.9	626.6
70°	684.7	649.9	620.8	533.8	510.6
72.5°	545.4	510.6	470.0	423.6	406.2
75°	412.0	383.0	359.7	342.3	377.1
77.5°	284.3	272.7	255.3	237.9	232.1
80°	185.7	179.9	174.1	168.3	162.5
82.5°	110.2	110.2	110.2	110.2	110.2
85°	58.0	63.8	69.6	75.4	81.2
87.5°	34.8	34.8	40.6	46.4	52.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)