

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: P563551

Luminaire Tested: FSR-24-4-LD4-3STD-40-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563551  
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-LD4-3STD-40-UNV-82-97-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

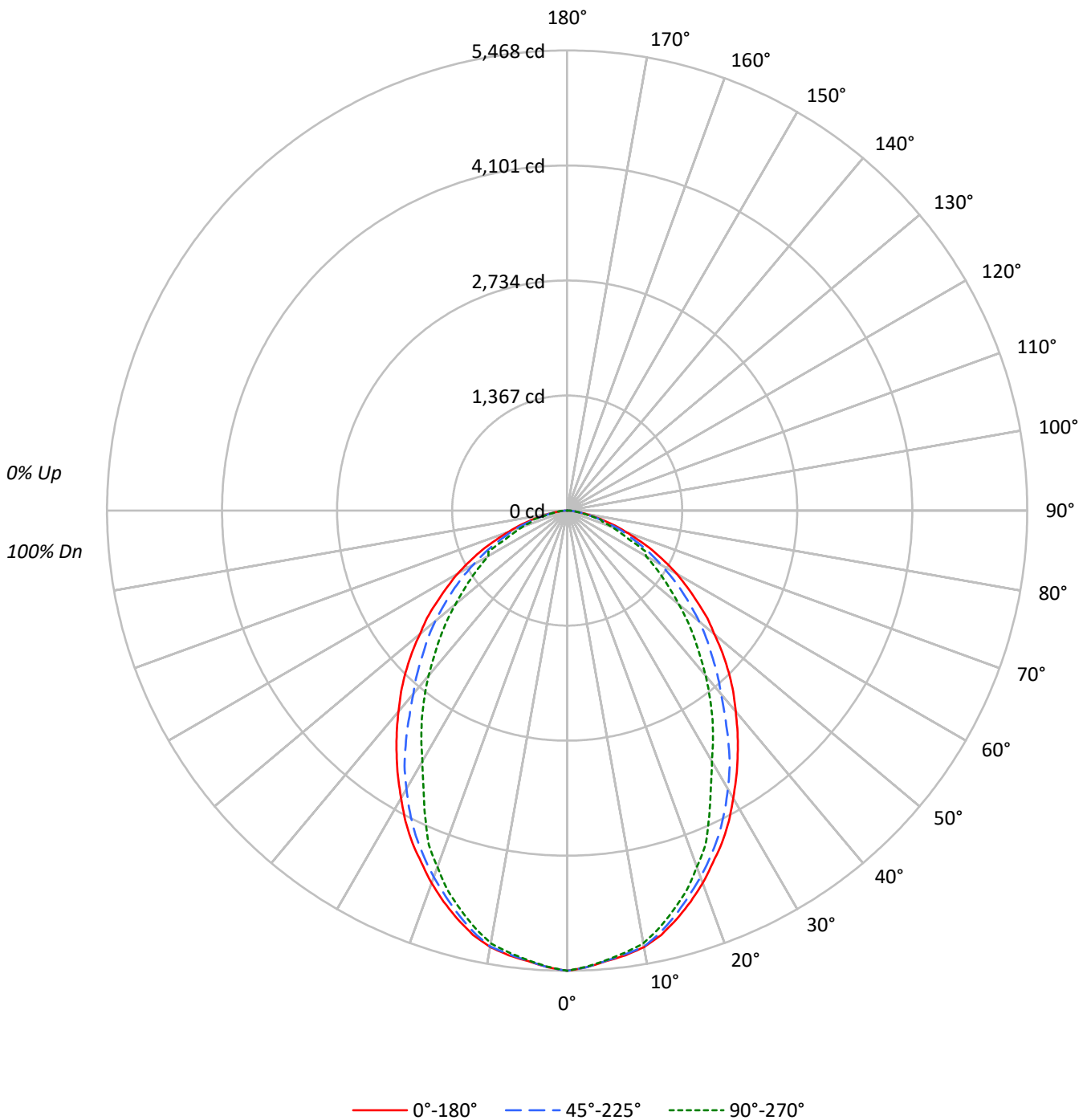
Lumens per Lamp: N/A  
Luminaire Lumens: 10735.0 lumens  
Efficiency: N/A  
Efficacy: 107.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7358	7358	7358
5°	7257	7249	7240
10°	7195	7186	7134
15°	7001	6930	6833
20°	6744	6635	6454
25°	6466	6326	5931
30°	6129	5932	5343
35°	5804	5483	4943
40°	5474	4997	4497
45°	5160	4619	4066
50°	4777	4287	3626
55°	4419	3885	3248
60°	4049	3470	2909
65°	3562	3039	2576
70°	2935	2661	2188
75°	2333	2037	2136
80°	1567	1470	1371
85°	976	1172	1366

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5160 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	509.0	4.7
10°-20°	1397.0	13.0
20°-30°	1934.0	18.0
30°-40°	2062.2	19.2
40°-50°	1881.3	17.5
50°-60°	1473.9	13.7
60°-70°	960.6	8.9
70°-80°	425.6	4.0
80°-90°	91.4	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°	3840.0	35.8
0°-40°	5902.2	55.0
0°-60°	9257.4	86.2
0°-90°	10735.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10735.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5468	5468	5468	5468	5468	
5°	5373	5367	5367	5361	5361	510
15°	5026	5026	4975	4925	4906	1413
25°	4356	4330	4261	4109	3995	2000
35°	3534	3508	3338	3085	3009	2209
45°	2712	2655	2428	2225	2137	2089
55°	1884	1827	1656	1460	1384	1690
65°	1119	1056	955	974	809	1103
75°	449	417	392	373	411	481
85°	63	70	76	82	88	88
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5468.3	5468.3	5468.3	5468.3	5468.3
2.5°	5430.3	5430.3	5430.3	5424.0	5424.0
5°	5373.4	5367.1	5367.1	5360.8	5360.8
7.5°	5329.2	5322.9	5316.5	5310.2	5297.6
10°	5266.0	5266.0	5259.6	5228.0	5221.7
12.5°	5164.8	5158.5	5133.2	5089.0	5076.3
15°	5025.7	5025.7	4975.2	4924.6	4905.6
17.5°	4874.0	4867.7	4804.5	4753.9	4728.6
20°	4709.7	4697.0	4633.8	4551.6	4507.4
22.5°	4526.3	4526.3	4450.5	4343.0	4298.8
25°	4355.6	4330.4	4260.8	4109.1	3995.3
27.5°	4159.7	4121.7	4045.9	3830.9	3698.2
30°	3944.7	3925.8	3818.3	3540.1	3439.0
32.5°	3742.4	3710.8	3597.0	3306.2	3224.1
35°	3533.8	3508.5	3337.9	3085.0	3009.1
37.5°	3325.2	3293.6	3078.7	2876.4	2781.5
40°	3116.6	3078.7	2844.8	2661.4	2560.3
42.5°	2920.6	2870.0	2642.5	2446.5	2332.7
45°	2712.0	2655.1	2427.5	2225.2	2136.7
47.5°	2503.4	2452.8	2244.2	2035.6	1934.4
50°	2282.1	2237.9	2048.2	1839.6	1732.1
52.5°	2098.8	2029.3	1845.9	1637.3	1548.8
55°	1883.9	1827.0	1656.3	1460.3	1384.5
57.5°	1687.9	1631.0	1473.0	1289.6	1226.4
60°	1504.6	1422.4	1289.6	1131.6	1081.0
62.5°	1302.3	1239.1	1125.3	992.5	1055.7
65°	1118.9	1055.7	954.6	973.5	809.2
67.5°	916.6	885.0	796.5	708.0	682.7
70°	746.0	708.0	676.4	581.6	556.3
72.5°	594.2	556.3	512.1	461.5	442.5
75°	448.8	417.2	391.9	373.0	410.9
77.5°	309.8	297.1	278.2	259.2	252.9
80°	202.3	196.0	189.7	183.3	177.0
82.5°	120.1	120.1	120.1	120.1	120.1
85°	63.2	69.5	75.9	82.2	88.5
87.5°	37.9	37.9	44.3	50.6	56.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)