

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: P562591

Luminaire Tested: FSR-24-4-LD4-2HI-40-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562591  
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-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**

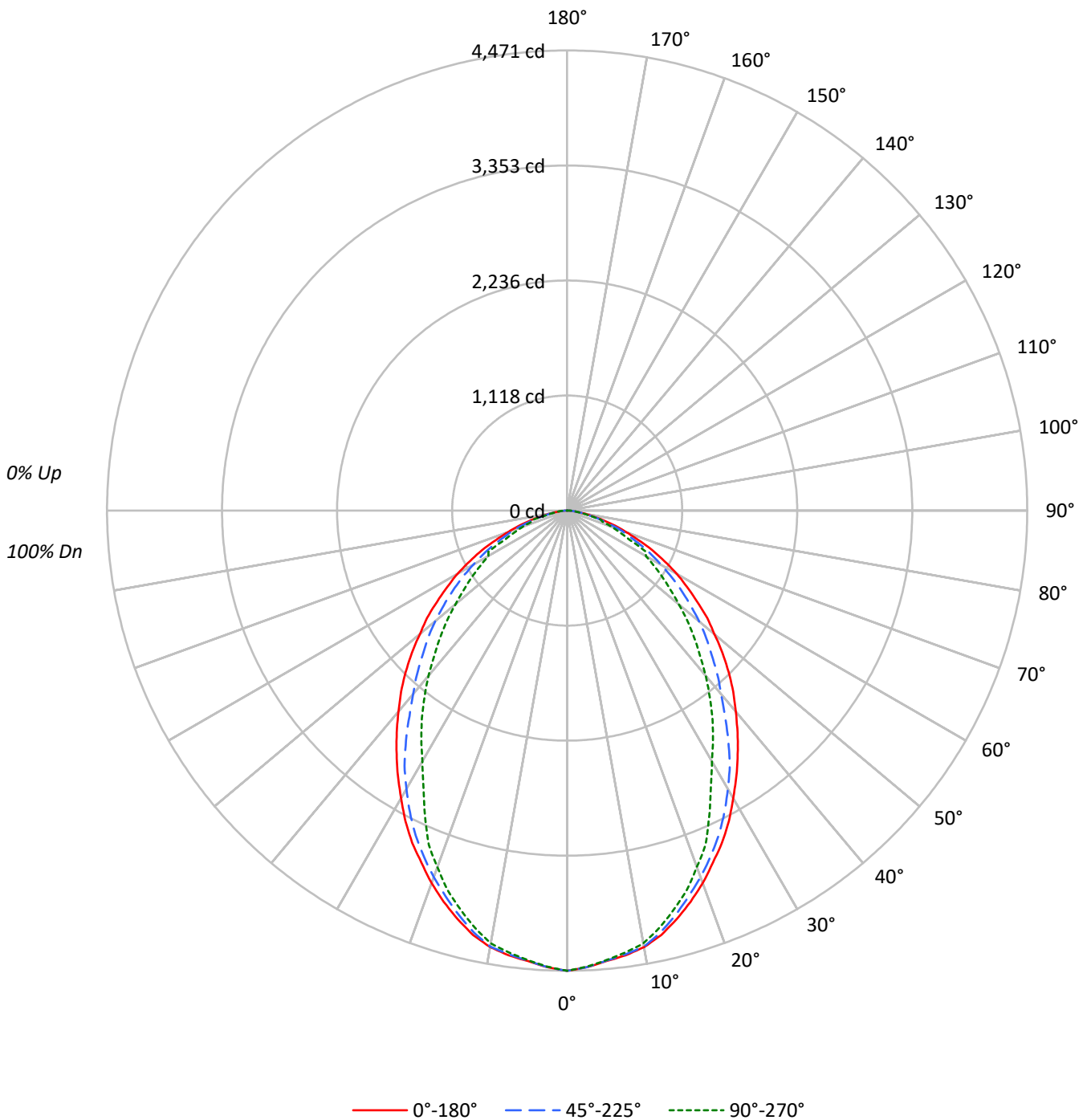
Lumens per Lamp: N/A  
Luminaire Lumens: 8778.0 lumens  
Efficiency: N/A  
Efficacy: 101.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6016	6016	6016
5°	5935	5928	5920
10°	5883	5876	5834
15°	5724	5667	5588
20°	5514	5425	5277
25°	5287	5172	4850
30°	5011	4851	4369
35°	4746	4483	4042
40°	4476	4086	3677
45°	4220	3777	3325
50°	3906	3506	2965
55°	3613	3177	2656
60°	3311	2838	2379
65°	2913	2485	2107
70°	2400	2176	1790
75°	1908	1666	1747
80°	1282	1202	1121
85°	798	957	1118

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4220 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	416.2	4.7
10°-20°	1142.3	13.0
20°-30°	1581.4	18.0
30°-40°	1686.3	19.2
40°-50°	1538.4	17.5
50°-60°	1205.2	13.7
60°-70°	785.5	8.9
70°-80°	348.0	4.0
80°-90°	74.7	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°	3140.0	35.8
0°-40°	4826.2	55.0
0°-60°	7569.8	86.2
0°-90°	8778.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8778.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4471	4471	4471	4471	4471	
5°	4394	4389	4389	4384	4384	417
15°	4110	4110	4068	4027	4011	1155
25°	3562	3541	3484	3360	3267	1635
35°	2890	2869	2729	2523	2461	1807
45°	2218	2171	1985	1820	1747	1708
55°	1540	1494	1354	1194	1132	1382
65°	915	863	781	796	662	902
75°	367	341	320	305	336	393
85°	52	57	62	67	72	72
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4471.4	4471.4	4471.4	4471.4	4471.4
2.5°	4440.4	4440.4	4440.4	4435.2	4435.2
5°	4393.9	4388.7	4388.7	4383.5	4383.5
7.5°	4357.7	4352.5	4347.3	4342.2	4331.8
10°	4306.0	4306.0	4300.8	4275.0	4269.8
12.5°	4223.3	4218.1	4197.4	4161.2	4150.9
15°	4109.5	4109.5	4068.2	4026.8	4011.3
17.5°	3985.5	3980.3	3928.6	3887.3	3866.6
20°	3851.1	3840.7	3789.1	3721.9	3685.7
22.5°	3701.2	3701.2	3639.1	3551.3	3515.1
25°	3561.6	3540.9	3484.1	3360.0	3267.0
27.5°	3401.4	3370.3	3308.3	3132.6	3024.0
30°	3225.6	3210.1	3122.2	2894.8	2812.1
32.5°	3060.2	3034.3	2941.3	2703.5	2636.3
35°	2889.6	2868.9	2729.4	2522.6	2460.6
37.5°	2719.0	2693.2	2517.4	2352.0	2274.5
40°	2548.4	2517.4	2326.2	2176.3	2093.5
42.5°	2388.2	2346.8	2160.7	2000.5	1907.5
45°	2217.6	2171.1	1985.0	1819.6	1747.2
47.5°	2047.0	2005.7	1835.1	1664.5	1581.8
50°	1866.1	1829.9	1674.8	1504.2	1416.4
52.5°	1716.2	1659.3	1509.4	1338.8	1266.5
55°	1540.4	1493.9	1354.3	1194.1	1132.1
57.5°	1380.2	1333.7	1204.4	1054.5	1002.8
60°	1230.3	1163.1	1054.5	925.3	883.9
62.5°	1064.9	1013.2	920.1	811.6	863.3
65°	915.0	863.3	780.6	796.1	661.7
67.5°	749.5	723.7	651.3	579.0	558.3
70°	610.0	579.0	553.1	475.6	454.9
72.5°	485.9	454.9	418.7	377.4	361.8
75°	367.0	341.2	320.5	305.0	336.0
77.5°	253.3	243.0	227.4	211.9	206.8
80°	165.4	160.2	155.1	149.9	144.7
82.5°	98.2	98.2	98.2	98.2	98.2
85°	51.7	56.9	62.0	67.2	72.4
87.5°	31.0	31.0	36.2	41.4	46.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)