

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: P563173

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563173  
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-LD4-3HI-40-UNV-93-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

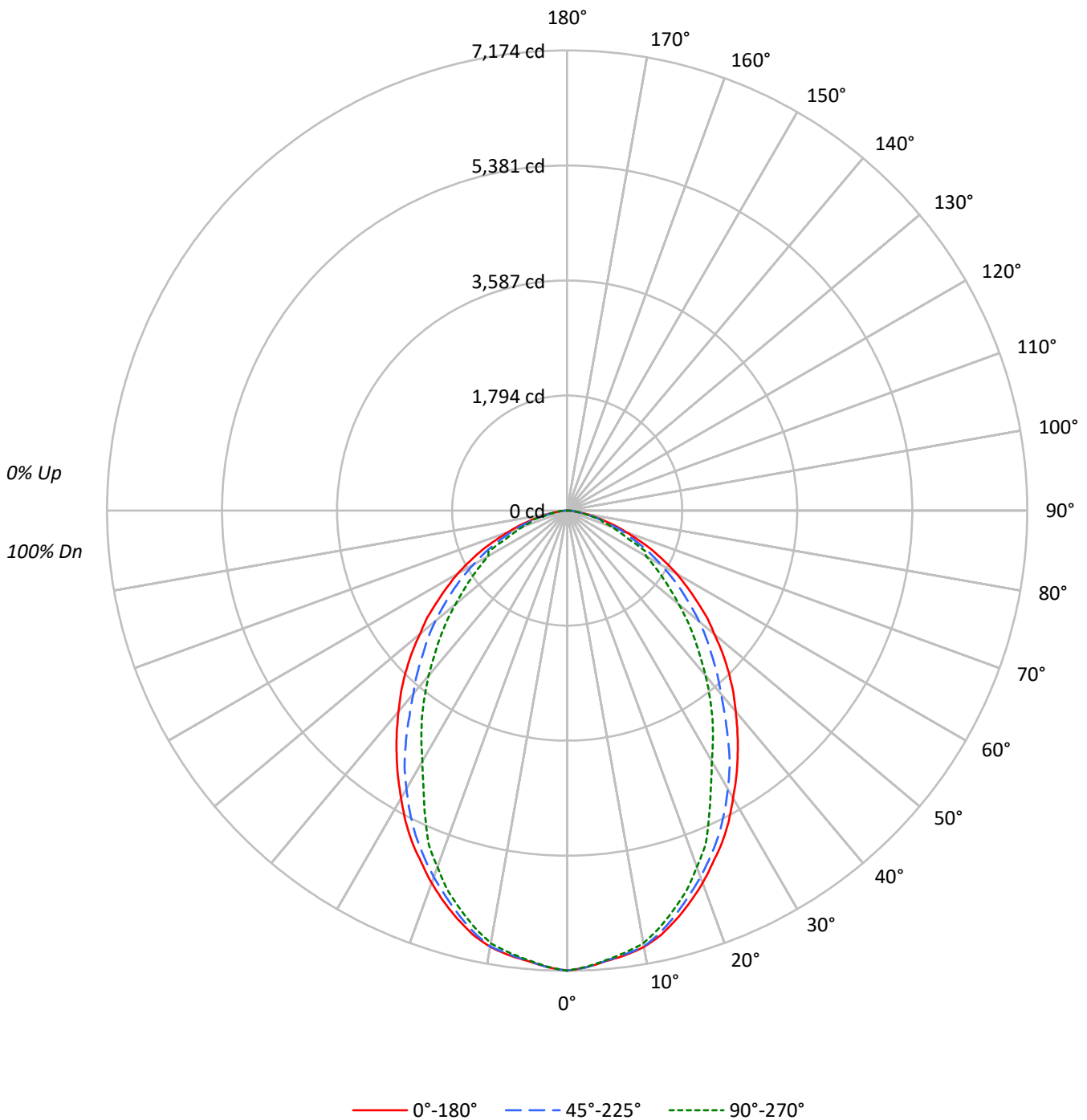
Lumens per Lamp: N/A  
Luminaire Lumens: 14083.0 lumens  
Efficiency: N/A  
Efficacy: 108.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																												
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°	9652	9652	9652
5°	9521	9510	9499
10°	9438	9427	9359
15°	9184	9092	8964
20°	8847	8704	8467
25°	8483	8298	7781
30°	8040	7782	7009
35°	7615	7193	6484
40°	7181	6555	5899
45°	6770	6060	5334
50°	6267	5624	4757
55°	5797	5097	4260
60°	5311	4553	3816
65°	4673	3987	3379
70°	3850	3491	2871
75°	3061	2673	2803
80°	2056	1928	1799
85°	1280	1536	1792

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6770 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	667.8	4.7
10°-20°	1832.7	13.0
20°-30°	2537.2	18.0
30°-40°	2705.4	19.2
40°-50°	2468.1	17.5
50°-60°	1933.5	13.7
60°-70°	1260.2	8.9
70°-80°	558.3	4.0
80°-90°	119.9	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°	5037.6	35.8
0°-40°	7743.0	55.0
0°-60°	12144.6	86.2
0°-90°	14083.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14083.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7174	7174	7174	7174	7174	
5°	7049	7041	7041	7033	7033	669
15°	6593	6593	6527	6460	6436	1854
25°	5714	5681	5590	5391	5241	2623
35°	4636	4603	4379	4047	3948	2898
45°	3558	3483	3185	2919	2803	2741
55°	2471	2397	2173	1916	1816	2217
65°	1468	1385	1252	1277	1062	1447
75°	589	547	514	489	539	631
85°	83	91	100	108	116	115
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7173.7	7173.7	7173.7	7173.7	7173.7
2.5°	7123.9	7123.9	7123.9	7115.6	7115.6
5°	7049.3	7041.0	7041.0	7032.7	7032.7
7.5°	6991.2	6982.9	6974.7	6966.4	6949.8
10°	6908.3	6908.3	6900.0	6858.5	6850.3
12.5°	6775.6	6767.3	6734.1	6676.1	6659.5
15°	6593.2	6593.2	6526.8	6460.5	6435.6
17.5°	6394.1	6385.8	6302.9	6236.6	6203.4
20°	6178.5	6161.9	6079.0	5971.2	5913.1
22.5°	5938.0	5938.0	5838.5	5697.5	5639.4
25°	5714.1	5680.9	5589.7	5390.6	5241.4
27.5°	5457.0	5407.2	5307.7	5025.7	4851.6
30°	5175.0	5150.1	5009.1	4644.2	4511.5
32.5°	4909.6	4868.2	4718.9	4337.4	4229.6
35°	4635.9	4602.8	4378.9	4047.1	3947.6
37.5°	4362.3	4320.8	4038.8	3773.4	3649.0
40°	4088.6	4038.8	3732.0	3491.5	3358.8
42.5°	3831.5	3765.2	3466.6	3209.5	3060.2
45°	3557.8	3483.2	3184.6	2919.2	2803.1
47.5°	3284.1	3217.8	2944.1	2670.4	2537.7
50°	2993.9	2935.8	2687.0	2413.3	2272.4
52.5°	2753.4	2662.1	2421.6	2148.0	2031.9
55°	2471.4	2396.8	2172.8	1915.7	1816.2
57.5°	2214.3	2139.7	1932.3	1691.8	1608.9
60°	1973.8	1866.0	1691.8	1484.5	1418.2
62.5°	1708.4	1625.5	1476.2	1302.0	1385.0
65°	1467.9	1385.0	1252.3	1277.2	1061.5
67.5°	1202.5	1161.1	1045.0	928.8	895.7
70°	978.6	928.8	887.4	763.0	729.8
72.5°	779.6	729.8	671.8	605.4	580.5
75°	588.8	547.4	514.2	489.3	539.1
77.5°	406.4	389.8	364.9	340.0	331.7
80°	265.4	257.1	248.8	240.5	232.2
82.5°	157.6	157.6	157.6	157.6	157.6
85°	82.9	91.2	99.5	107.8	116.1
87.5°	49.8	49.8	58.1	66.3	74.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)