

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: P563815

Luminaire Tested: FSR-24-4-LD4-4HI-50-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563815  
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-LD4-4HI-50-UNV-93-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

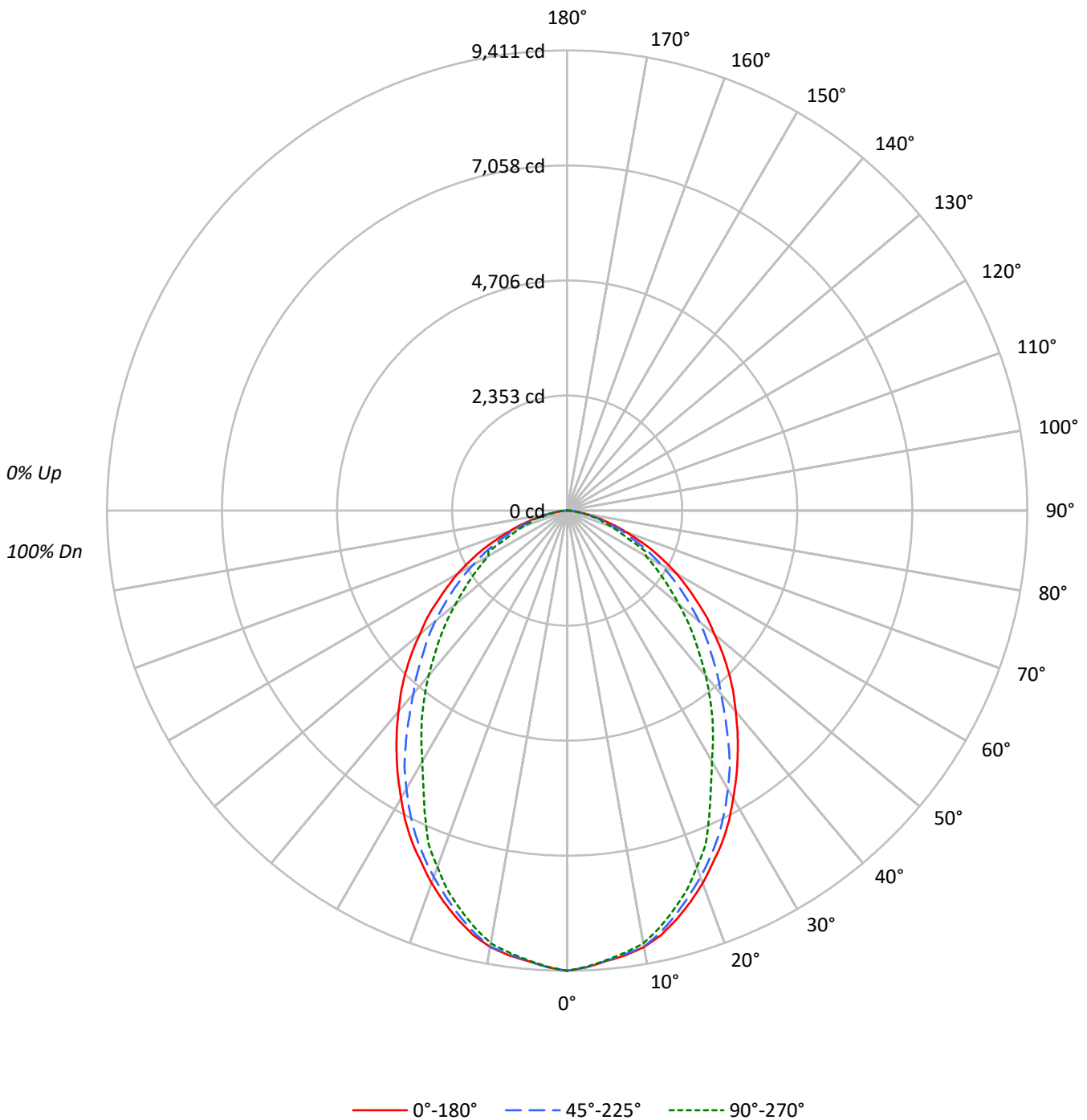
Lumens per Lamp: N/A  
Luminaire Lumens: 18476.0 lumens  
Efficiency: N/A  
Efficacy: 106.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	12663	12663	12663
5°	12491	12476	12462
10°	12383	12368	12279
15°	12049	11928	11761
20°	11606	11419	11108
25°	11129	10887	10208
30°	10548	10210	9196
35°	9990	9436	8507
40°	9421	8600	7740
45°	8882	7950	6998
50°	8222	7379	6240
55°	7606	6687	5590
60°	6968	5973	5007
65°	6131	5230	4434
70°	5051	4580	3767
75°	4016	3507	3676
80°	2698	2529	2360
85°	1680	2016	2351

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8882 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	876.1	4.7
10°-20°	2404.3	13.0
20°-30°	3328.6	18.0
30°-40°	3549.3	19.2
40°-50°	3238.0	17.5
50°-60°	2536.7	13.7
60°-70°	1653.3	8.9
70°-80°	732.5	4.0
80°-90°	157.3	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°	6609.0	35.8
0°-40°	10158.3	55.0
0°-60°	15933.0	86.2
0°-90°	18476.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	18476.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9411	9411	9411	9411	9411	
5°	9248	9237	9237	9226	9226	878
15°	8650	8650	8563	8476	8443	2432
25°	7496	7453	7333	7072	6876	3442
35°	6082	6038	5745	5310	5179	3802
45°	4668	4570	4178	3830	3678	3595
55°	3242	3144	2851	2513	2383	2908
65°	1926	1817	1643	1676	1393	1898
75°	772	718	675	642	707	828
85°	109	120	131	141	152	151
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9411.4	9411.4	9411.4	9411.4	9411.4
2.5°	9346.1	9346.1	9346.1	9335.3	9335.3
5°	9248.2	9237.3	9237.3	9226.5	9226.5
7.5°	9172.1	9161.2	9150.3	9139.4	9117.7
10°	9063.3	9063.3	9052.4	8998.0	8987.1
12.5°	8889.2	8878.3	8834.8	8758.6	8736.9
15°	8649.8	8649.8	8562.8	8475.7	8443.1
17.5°	8388.7	8377.8	8269.0	8182.0	8138.4
20°	8105.8	8084.0	7975.2	7833.8	7757.6
22.5°	7790.3	7790.3	7659.7	7474.7	7398.6
25°	7496.5	7453.0	7333.3	7072.2	6876.3
27.5°	7159.2	7093.9	6963.4	6593.4	6365.0
30°	6789.3	6756.6	6571.7	6092.9	5918.9
32.5°	6441.1	6386.7	6190.9	5690.4	5548.9
35°	6082.1	6038.5	5744.8	5309.6	5179.0
37.5°	5723.0	5668.6	5298.7	4950.5	4787.3
40°	5364.0	5298.7	4896.1	4580.6	4406.5
42.5°	5026.7	4939.6	4547.9	4210.7	4014.8
45°	4667.6	4569.7	4178.0	3829.9	3677.5
47.5°	4308.6	4221.5	3862.5	3503.4	3329.4
50°	3927.8	3851.6	3525.2	3166.2	2981.2
52.5°	3612.2	3492.6	3177.0	2818.0	2665.7
55°	3242.3	3144.4	2850.6	2513.3	2382.8
57.5°	2905.0	2807.1	2535.1	2219.6	2110.8
60°	2589.5	2448.1	2219.6	1947.6	1860.5
62.5°	2241.3	2132.5	1936.7	1708.2	1817.0
65°	1925.8	1817.0	1642.9	1675.6	1392.7
67.5°	1577.6	1523.2	1370.9	1218.6	1175.1
70°	1283.9	1218.6	1164.2	1001.0	957.5
72.5°	1022.7	957.5	881.3	794.3	761.6
75°	772.5	718.1	674.6	641.9	707.2
77.5°	533.1	511.4	478.7	446.1	435.2
80°	348.2	337.3	326.4	315.5	304.6
82.5°	206.7	206.7	206.7	206.7	206.7
85°	108.8	119.7	130.6	141.4	152.3
87.5°	65.3	65.3	76.2	87.0	97.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)