

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: P563182

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563182  
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-93-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

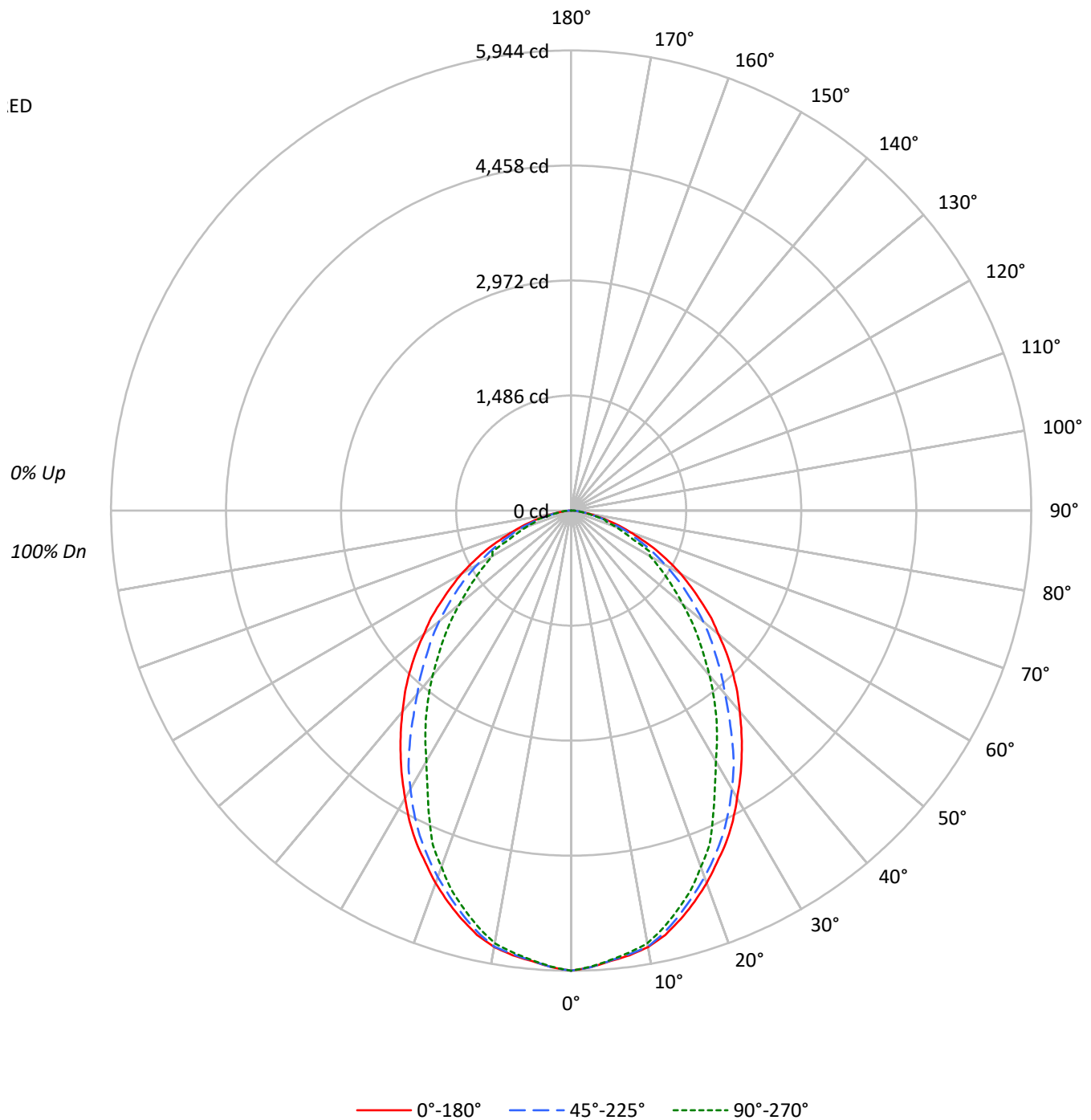
Lumens per Lamp: N/A  
Luminaire Lumens: 11669.0 lumens  
Efficiency: N/A  
Efficacy: 90.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7998	7998	7998
5°	7889	7880	7870
10°	7821	7811	7755
15°	7610	7533	7428
20°	7330	7212	7015
25°	7029	6876	6447
30°	6662	6448	5808
35°	6309	5960	5373
40°	5950	5431	4888
45°	5609	5021	4419
50°	5193	4660	3941
55°	4804	4223	3530
60°	4401	3772	3162
65°	3872	3303	2800
70°	3190	2893	2379
75°	2536	2215	2322
80°	1704	1598	1491
85°	1061	1274	1485

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5609 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	553.3	4.7
10°-20°	1518.5	13.0
20°-30°	2102.3	18.0
30°-40°	2241.6	19.2
40°-50°	2045.0	17.5
50°-60°	1602.1	13.7
60°-70°	1044.2	8.9
70°-80°	462.6	4.0
80°-90°	99.3	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°	4174.1	35.8
0°-40°	6415.7	55.0
0°-60°	10062.9	86.2
0°-90°	11669.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11669.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5944	5944	5944	5944	5944	
5°	5841	5834	5834	5827	5827	554
15°	5463	5463	5408	5353	5332	1536
25°	4735	4707	4632	4467	4343	2174
35°	3841	3814	3628	3353	3271	2402
45°	2948	2886	2639	2419	2323	2271
55°	2048	1986	1800	1587	1505	1837
65°	1216	1148	1038	1058	880	1199
75°	488	454	426	405	447	523
85°	69	76	82	89	96	95
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5944.0	5944.0	5944.0	5944.0	5944.0
2.5°	5902.8	5902.8	5902.8	5895.9	5895.9
5°	5841.0	5834.1	5834.1	5827.2	5827.2
7.5°	5792.9	5786.0	5779.1	5772.2	5758.5
10°	5724.1	5724.1	5717.3	5682.9	5676.0
12.5°	5614.2	5607.3	5579.8	5531.7	5518.0
15°	5463.0	5463.0	5408.0	5353.1	5332.5
17.5°	5298.1	5291.2	5222.5	5167.5	5140.0
20°	5119.4	5105.7	5037.0	4947.6	4899.5
22.5°	4920.1	4920.1	4837.7	4720.9	4672.8
25°	4734.6	4707.1	4631.5	4466.6	4342.9
27.5°	4521.6	4480.4	4397.9	4164.3	4020.0
30°	4287.9	4267.3	4150.5	3848.2	3738.2
32.5°	4068.1	4033.7	3910.0	3593.9	3504.6
35°	3841.3	3813.8	3628.3	3353.4	3270.9
37.5°	3614.5	3580.2	3346.5	3126.6	3023.6
40°	3387.8	3346.5	3092.3	2893.0	2783.0
42.5°	3174.7	3119.8	2872.4	2659.4	2535.7
45°	2948.0	2886.1	2638.7	2418.8	2322.6
47.5°	2721.2	2666.2	2439.5	2212.7	2102.7
50°	2480.7	2432.6	2226.4	1999.7	1882.8
52.5°	2281.4	2205.8	2006.5	1779.8	1683.6
55°	2047.8	1985.9	1800.4	1587.4	1504.9
57.5°	1834.7	1772.9	1601.1	1401.8	1333.1
60°	1635.5	1546.1	1401.8	1230.0	1175.1
62.5°	1415.6	1346.9	1223.2	1078.9	1147.6
65°	1216.3	1147.6	1037.6	1058.2	879.6
67.5°	996.4	962.0	865.8	769.6	742.1
70°	810.9	769.6	735.3	632.2	604.7
72.5°	645.9	604.7	556.6	501.6	481.0
75°	487.9	453.5	426.0	405.4	446.7
77.5°	336.7	323.0	302.4	281.7	274.9
80°	219.9	213.0	206.2	199.3	192.4
82.5°	130.6	130.6	130.6	130.6	130.6
85°	68.7	75.6	82.5	89.3	96.2
87.5°	41.2	41.2	48.1	55.0	61.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)