

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: P563945

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563945  
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-LD4-4LO-40-UNV-93-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

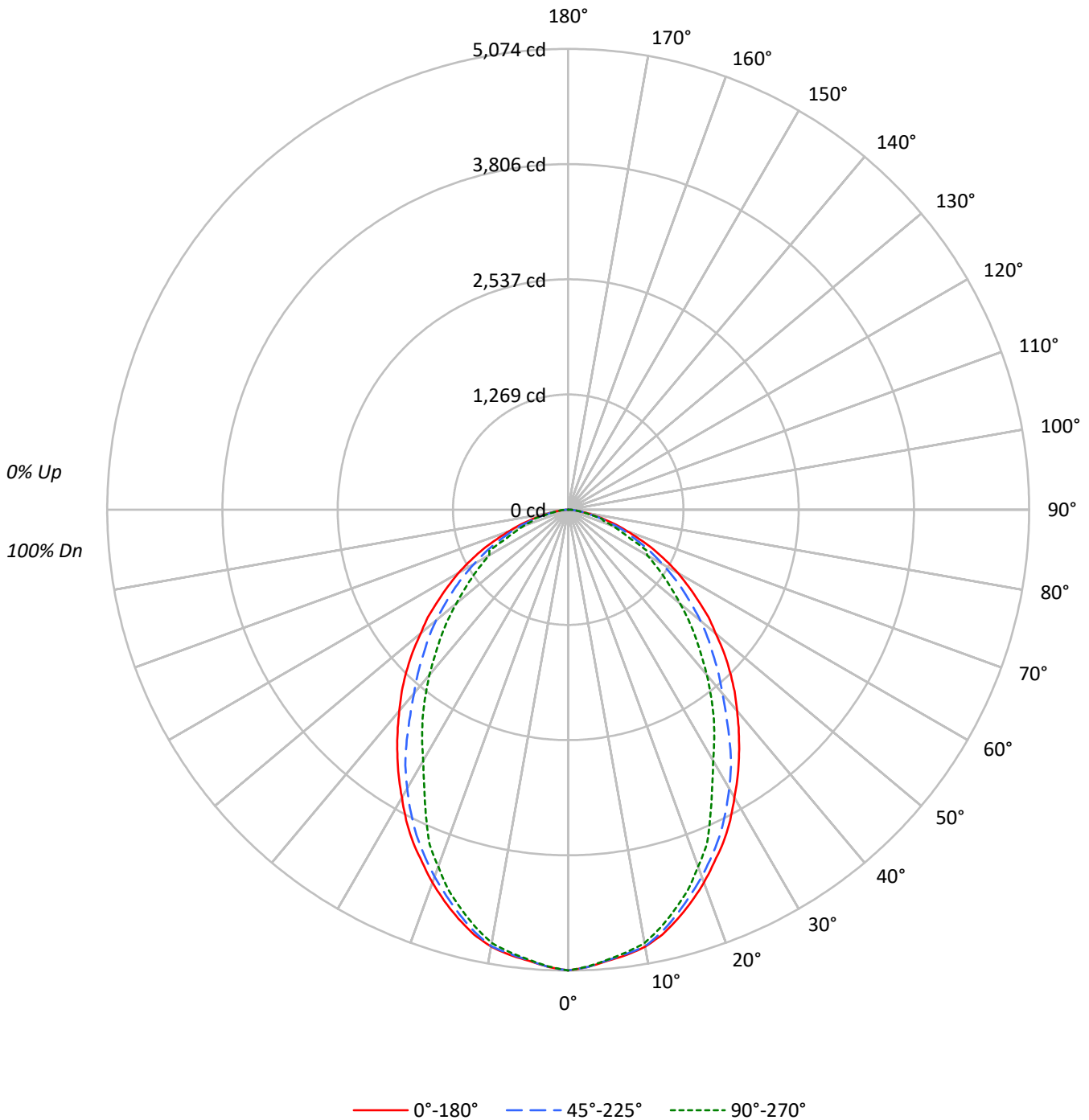
Lumens per Lamp: N/A  
Luminaire Lumens: 9960.0 lumens  
Efficiency: N/A  
Efficacy: 106.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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													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°	6826	6826	6826
5°	6734	6726	6718
10°	6675	6667	6619
15°	6495	6430	6340
20°	6257	6156	5988
25°	5999	5869	5503
30°	5686	5504	4957
35°	5385	5087	4586
40°	5079	4636	4172
45°	4788	4286	3772
50°	4432	3978	3364
55°	4100	3605	3013
60°	3756	3220	2699
65°	3305	2820	2390
70°	2723	2469	2030
75°	2165	1890	1982
80°	1454	1364	1272
85°	906	1087	1267

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4788 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	472.3	4.7
10°-20°	1296.1	13.0
20°-30°	1794.4	18.0
30°-40°	1913.3	19.2
40°-50°	1745.5	17.5
50°-60°	1367.5	13.7
60°-70°	891.3	8.9
70°-80°	394.9	4.0
80°-90°	84.8	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°	3562.8	35.8
0°-40°	5476.1	55.0
0°-60°	8589.1	86.2
0°-90°	9960.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9960.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5074	5074	5074	5074	5074	
5°	4986	4980	4980	4974	4974	473
15°	4663	4663	4616	4569	4552	1311
25°	4041	4018	3953	3812	3707	1855
35°	3279	3255	3097	2862	2792	2050
45°	2516	2463	2252	2065	1982	1938
55°	1748	1695	1537	1355	1284	1568
65°	1038	980	886	903	751	1023
75°	416	387	364	346	381	446
85°	59	64	70	76	82	81
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5073.5	5073.5	5073.5	5073.5	5073.5
2.5°	5038.3	5038.3	5038.3	5032.4	5032.4
5°	4985.5	4979.6	4979.6	4973.8	4973.8
7.5°	4944.5	4938.6	4932.7	4926.9	4915.1
10°	4885.8	4885.8	4879.9	4850.6	4844.7
12.5°	4792.0	4786.1	4762.6	4721.6	4709.8
15°	4662.9	4662.9	4616.0	4569.1	4551.5
17.5°	4522.2	4516.3	4457.6	4410.7	4387.2
20°	4369.7	4357.9	4299.3	4223.0	4182.0
22.5°	4199.6	4199.6	4129.2	4029.5	3988.4
25°	4041.2	4017.7	3953.2	3812.4	3706.9
27.5°	3859.4	3824.2	3753.8	3554.4	3431.2
30°	3660.0	3642.4	3542.6	3284.6	3190.7
32.5°	3472.3	3442.9	3337.4	3067.6	2991.3
35°	3278.7	3255.2	3096.9	2862.3	2791.9
37.5°	3085.2	3055.8	2856.4	2668.7	2580.7
40°	2891.6	2856.4	2639.4	2469.3	2375.4
42.5°	2709.8	2662.8	2451.7	2269.9	2164.3
45°	2516.2	2463.4	2252.3	2064.6	1982.5
47.5°	2322.7	2275.7	2082.2	1888.6	1794.8
50°	2117.4	2076.3	1900.4	1706.8	1607.1
52.5°	1947.3	1882.8	1712.7	1519.1	1437.0
55°	1747.9	1695.1	1536.7	1354.9	1284.5
57.5°	1566.0	1513.2	1366.6	1196.5	1137.9
60°	1395.9	1319.7	1196.5	1049.9	1003.0
62.5°	1208.3	1149.6	1044.0	920.9	979.5
65°	1038.2	979.5	885.7	903.3	750.8
67.5°	850.5	821.1	739.0	656.9	633.5
70°	692.1	656.9	627.6	539.6	516.1
72.5°	551.3	516.1	475.1	428.2	410.6
75°	416.4	387.1	363.6	346.1	381.2
77.5°	287.4	275.7	258.1	240.5	234.6
80°	187.7	181.8	176.0	170.1	164.2
82.5°	111.4	111.4	111.4	111.4	111.4
85°	58.7	64.5	70.4	76.2	82.1
87.5°	35.2	35.2	41.1	46.9	52.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)