

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: P564010

Luminaire Tested: FSR-24-4-LD4-4LO-50-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564010  
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-50-UNV-93-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

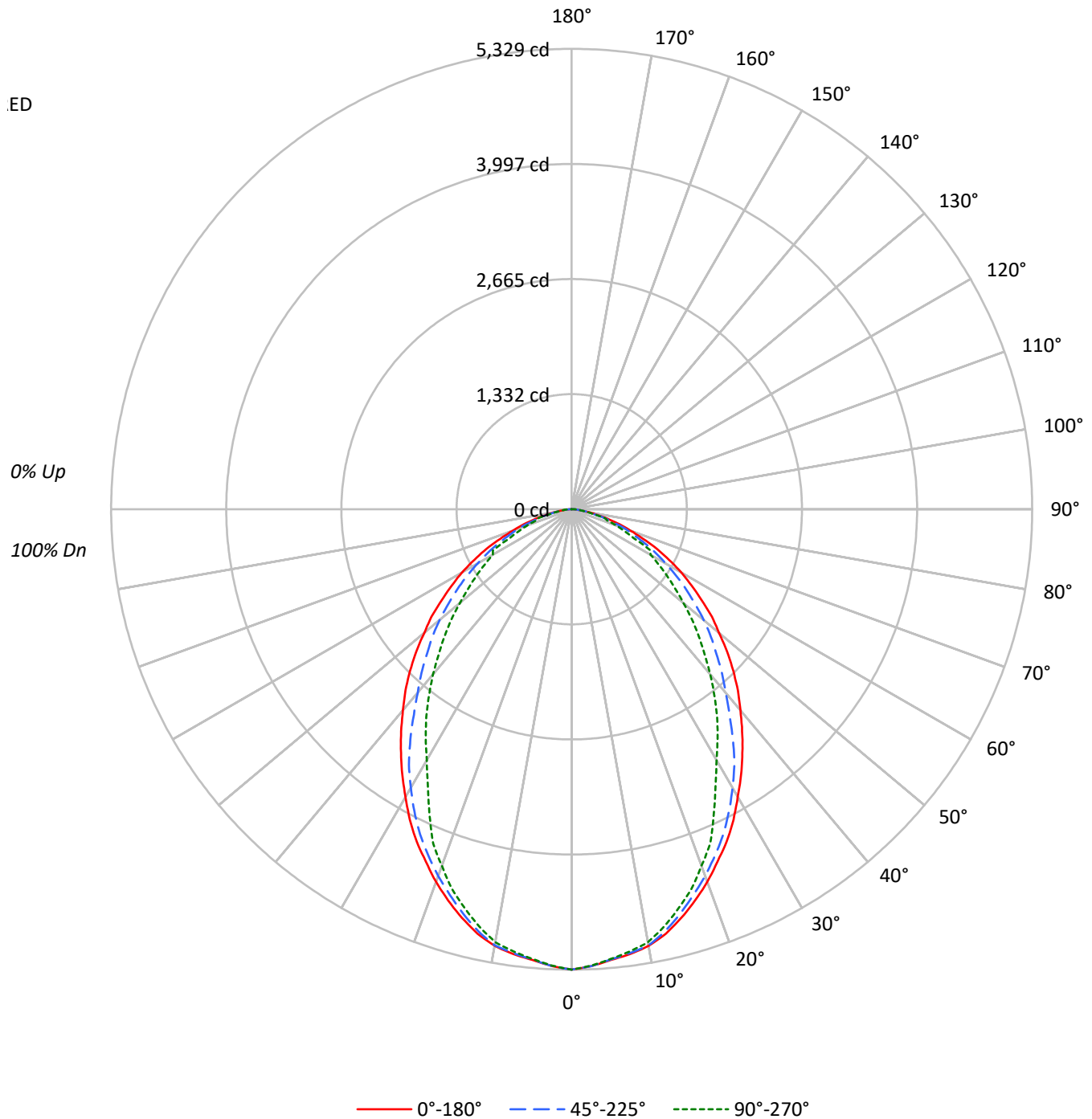
Lumens per Lamp: N/A  
Luminaire Lumens: 10461.0 lumens  
Efficiency: N/A  
Efficacy: 111.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7170	7170	7170
5°	7072	7064	7056
10°	7011	7003	6952
15°	6822	6753	6659
20°	6571	6465	6289
25°	6301	6164	5780
30°	5972	5781	5207
35°	5656	5343	4816
40°	5334	4869	4382
45°	5029	4501	3962
50°	4655	4178	3533
55°	4306	3786	3165
60°	3946	3382	2835
65°	3472	2961	2510
70°	2860	2593	2133
75°	2274	1985	2082
80°	1527	1432	1337
85°	951	1141	1331

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5029 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	496.0	4.7
10°-20°	1361.3	13.0
20°-30°	1884.6	18.0
30°-40°	2009.6	19.2
40°-50°	1833.3	17.5
50°-60°	1436.3	13.7
60°-70°	936.1	8.9
70°-80°	414.7	4.0
80°-90°	89.0	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°	3742.0	35.8
0°-40°	5751.6	55.0
0°-60°	9021.1	86.2
0°-90°	10461.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10461.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5329	5329	5329	5329	5329	
5°	5236	5230	5230	5224	5224	497
15°	4898	4898	4848	4799	4780	1377
25°	4244	4220	4152	4004	3893	1949
35°	3444	3419	3253	3006	2932	2153
45°	2643	2587	2366	2168	2082	2036
55°	1836	1780	1614	1423	1349	1647
65°	1090	1029	930	949	788	1075
75°	437	407	382	364	400	469
85°	62	68	74	80	86	85
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5328.7	5328.7	5328.7	5328.7	5328.7
2.5°	5291.7	5291.7	5291.7	5285.6	5285.6
5°	5236.3	5230.1	5230.1	5224.0	5224.0
7.5°	5193.2	5187.0	5180.8	5174.7	5162.4
10°	5131.6	5131.6	5125.4	5094.6	5088.4
12.5°	5033.0	5026.8	5002.2	4959.1	4946.8
15°	4897.5	4897.5	4848.2	4798.9	4780.4
17.5°	4749.6	4743.5	4681.9	4632.6	4607.9
20°	4589.5	4577.1	4515.5	4435.4	4392.3
22.5°	4410.8	4410.8	4336.9	4232.2	4189.0
25°	4244.5	4219.8	4152.1	4004.2	3893.3
27.5°	4053.5	4016.5	3942.6	3733.2	3603.8
30°	3844.1	3825.6	3720.8	3449.8	3351.2
32.5°	3646.9	3616.1	3505.2	3221.9	3141.8
35°	3443.6	3419.0	3252.7	3006.2	2932.3
37.5°	3240.3	3209.5	3000.1	2803.0	2710.5
40°	3037.0	3000.1	2772.2	2593.5	2494.9
42.5°	2846.1	2796.8	2575.0	2384.1	2273.2
45°	2642.8	2587.3	2365.6	2168.4	2082.2
47.5°	2439.5	2390.2	2186.9	1983.6	1885.1
50°	2223.9	2180.8	1995.9	1792.7	1687.9
52.5°	2045.2	1977.5	1798.8	1595.5	1509.3
55°	1835.8	1780.3	1614.0	1423.0	1349.1
57.5°	1644.8	1589.4	1435.4	1256.7	1195.1
60°	1466.2	1386.1	1256.7	1102.7	1053.4
62.5°	1269.0	1207.4	1096.5	967.2	1028.8
65°	1090.4	1028.8	930.2	948.7	788.5
67.5°	893.2	862.4	776.2	690.0	665.3
70°	726.9	690.0	659.2	566.8	542.1
72.5°	579.1	542.1	499.0	449.7	431.2
75°	437.4	406.6	381.9	363.5	400.4
77.5°	301.9	289.5	271.1	252.6	246.4
80°	197.1	191.0	184.8	178.6	172.5
82.5°	117.0	117.0	117.0	117.0	117.0
85°	61.6	67.8	73.9	80.1	86.2
87.5°	37.0	37.0	43.1	49.3	55.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)