

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: P563676

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-82-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563676  
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-35-UNV-82-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

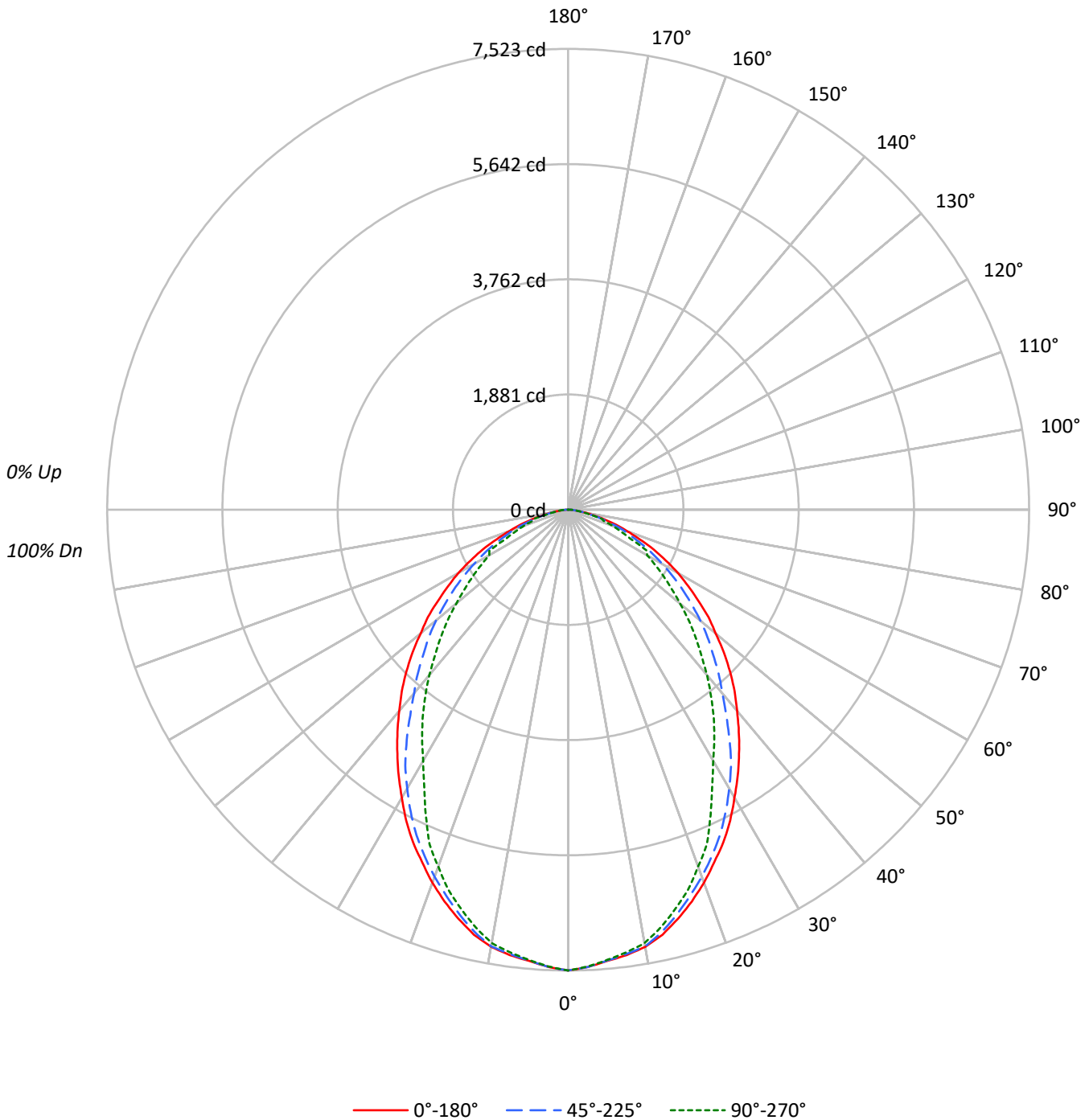
Lumens per Lamp: N/A  
Luminaire Lumens: 14769.0 lumens  
Efficiency: N/A  
Efficacy: 85.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	10122	10122	10122
5°	9985	9973	9961
10°	9898	9886	9815
15°	9631	9534	9401
20°	9278	9128	8879
25°	8896	8703	8160
30°	8432	8161	7351
35°	7986	7543	6800
40°	7531	6874	6187
45°	7100	6355	5594
50°	6572	5898	4988
55°	6080	5345	4468
60°	5570	4774	4002
65°	4901	4181	3544
70°	4037	3661	3011
75°	3210	2803	2939
80°	2156	2022	1887
85°	1343	1612	1880

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7100 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	700.3	4.7
10°-20°	1921.9	13.0
20°-30°	2660.8	18.0
30°-40°	2837.2	19.2
40°-50°	2588.3	17.5
50°-60°	2027.7	13.7
60°-70°	1321.6	8.9
70°-80°	585.5	4.0
80°-90°	125.7	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°	5283.0	35.8
0°-40°	8120.2	55.0
0°-60°	12736.2	86.2
0°-90°	14769.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14769.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7523	7523	7523	7523	7523	
5°	7393	7384	7384	7375	7375	702
15°	6914	6914	6845	6775	6749	1944
25°	5992	5958	5862	5653	5497	2751
35°	4862	4827	4592	4244	4140	3039
45°	3731	3653	3340	3061	2940	2874
55°	2592	2514	2279	2009	1905	2325
65°	1539	1452	1313	1339	1113	1517
75°	618	574	539	513	565	662
85°	87	96	104	113	122	121
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7523.1	7523.1	7523.1	7523.1	7523.1
2.5°	7470.9	7470.9	7470.9	7462.3	7462.3
5°	7392.7	7384.0	7384.0	7375.3	7375.3
7.5°	7331.8	7323.1	7314.4	7305.7	7288.3
10°	7244.8	7244.8	7236.1	7192.6	7183.9
12.5°	7105.7	7097.0	7062.2	7001.3	6983.9
15°	6914.3	6914.3	6844.7	6775.2	6749.1
17.5°	6705.6	6696.9	6609.9	6540.3	6505.6
20°	6479.5	6462.1	6375.1	6262.0	6201.1
22.5°	6227.2	6227.2	6122.9	5975.0	5914.1
25°	5992.4	5957.6	5862.0	5653.2	5496.7
27.5°	5722.8	5670.6	5566.2	5270.5	5087.9
30°	5427.1	5401.0	5253.1	4870.5	4731.3
32.5°	5148.8	5105.3	4948.7	4548.7	4435.6
35°	4861.8	4827.0	4592.2	4244.3	4139.9
37.5°	4574.8	4531.3	4235.6	3957.3	3826.8
40°	4287.7	4235.6	3913.8	3661.5	3522.4
42.5°	4018.1	3948.6	3635.5	3365.8	3209.3
45°	3731.1	3652.8	3339.7	3061.4	2939.7
47.5°	3444.1	3374.5	3087.5	2800.5	2661.4
50°	3139.7	3078.8	2817.9	2530.9	2383.0
52.5°	2887.5	2791.8	2539.6	2252.6	2130.8
55°	2591.8	2513.5	2278.7	2009.1	1904.7
57.5°	2322.2	2243.9	2026.5	1774.2	1687.3
60°	2069.9	1956.9	1774.2	1556.8	1487.2
62.5°	1791.6	1704.7	1548.1	1365.5	1452.4
65°	1539.4	1452.4	1313.3	1339.4	1113.2
67.5°	1261.1	1217.6	1095.9	974.1	939.3
70°	1026.3	974.1	930.6	800.1	765.4
72.5°	817.5	765.4	704.5	634.9	608.8
75°	617.5	574.0	539.2	513.1	565.3
77.5°	426.2	408.8	382.7	356.6	347.9
80°	278.3	269.6	260.9	252.2	243.5
82.5°	165.2	165.2	165.2	165.2	165.2
85°	87.0	95.7	104.4	113.1	121.8
87.5°	52.2	52.2	60.9	69.6	78.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)