

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: P564078

Luminaire Tested: FSR-24-4-LD4-4STD-35-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564078  
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-LD4-4STD-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

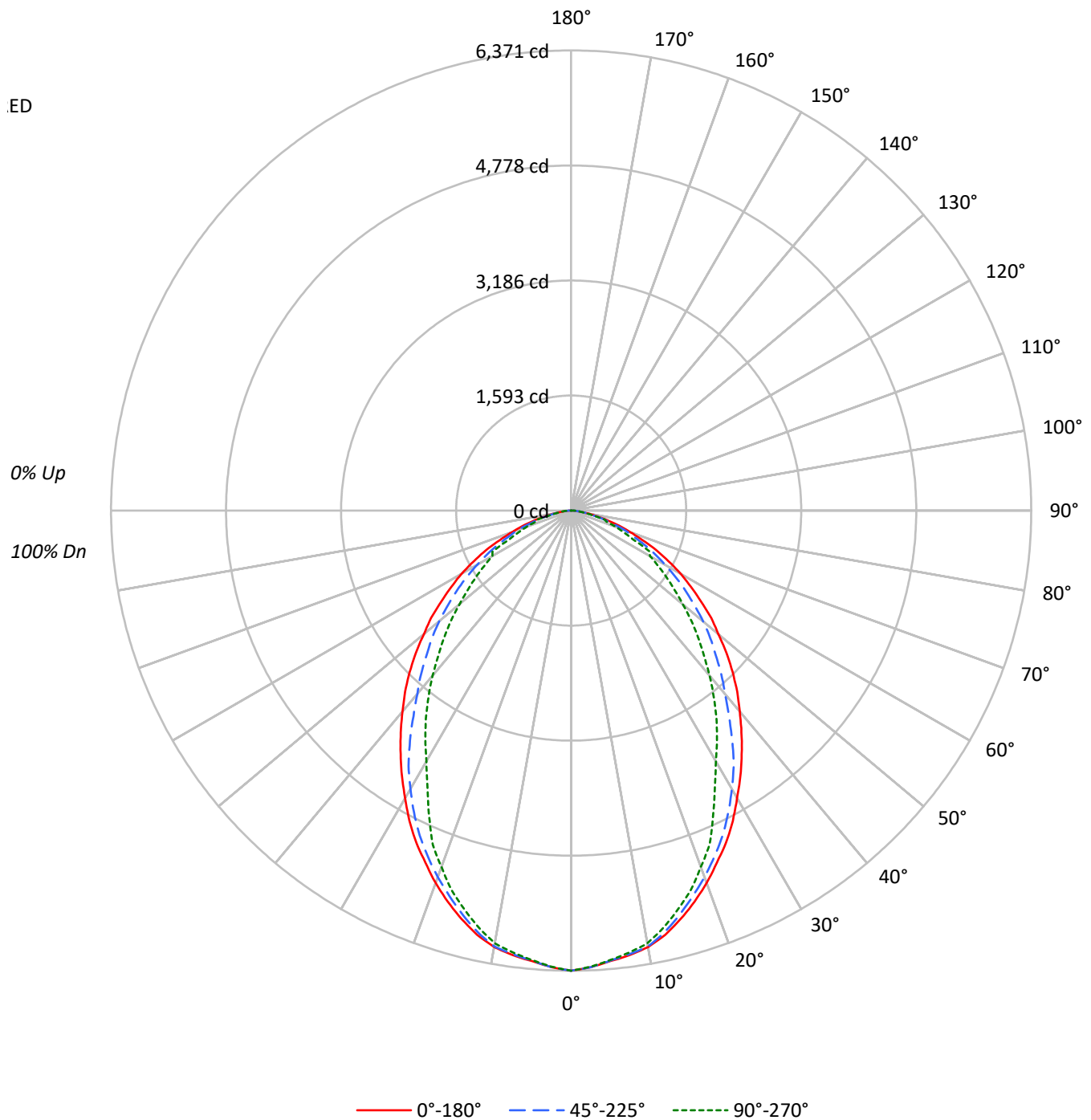
Lumens per Lamp: N/A  
Luminaire Lumens: 12507.0 lumens  
Efficiency: N/A  
Efficacy: 93.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8572	8572	8572
5°	8455	8446	8436
10°	8382	8372	8312
15°	8156	8074	7961
20°	7857	7730	7519
25°	7534	7370	6910
30°	7140	6912	6225
35°	6762	6388	5758
40°	6378	5821	5239
45°	6012	5382	4737
50°	5565	4995	4224
55°	5149	4527	3784
60°	4717	4043	3389
65°	4150	3541	3001
70°	3419	3100	2550
75°	2718	2374	2489
80°	1826	1712	1598
85°	1138	1365	1592

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6012 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	593.0	4.7
10°-20°	1627.6	13.0
20°-30°	2253.2	18.0
30°-40°	2402.6	19.2
40°-50°	2191.9	17.5
50°-60°	1717.2	13.7
60°-70°	1119.2	8.9
70°-80°	495.8	4.0
80°-90°	106.4	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°	4473.9	35.8
0°-40°	6876.5	55.0
0°-60°	10785.5	86.2
0°-90°	12507.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12507.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6371	6371	6371	6371	6371	
5°	6260	6253	6253	6246	6246	594
15°	5855	5855	5796	5738	5715	1646
25°	5075	5045	4964	4787	4655	2330
35°	4117	4088	3889	3594	3506	2574
45°	3160	3093	2828	2593	2489	2434
55°	2195	2128	1930	1701	1613	1969
65°	1304	1230	1112	1134	943	1285
75°	523	486	457	434	479	560
85°	74	81	88	96	103	102
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6370.9	6370.9	6370.9	6370.9	6370.9
2.5°	6326.7	6326.7	6326.7	6319.3	6319.3
5°	6260.4	6253.1	6253.1	6245.7	6245.7
7.5°	6208.9	6201.5	6194.1	6186.8	6172.0
10°	6135.2	6135.2	6127.8	6091.0	6083.7
12.5°	6017.4	6010.0	5980.5	5929.0	5914.3
15°	5855.3	5855.3	5796.4	5737.5	5715.4
17.5°	5678.6	5671.2	5597.6	5538.6	5509.2
20°	5487.1	5472.3	5398.7	5302.9	5251.4
22.5°	5273.5	5273.5	5185.1	5059.9	5008.3
25°	5074.6	5045.2	4964.1	4787.4	4654.8
27.5°	4846.3	4802.1	4713.7	4463.3	4308.6
30°	4595.9	4573.8	4448.6	4124.5	4006.7
32.5°	4360.2	4323.4	4190.8	3852.0	3756.3
35°	4117.1	4087.7	3888.8	3594.2	3505.8
37.5°	3874.1	3837.3	3586.9	3351.2	3240.7
40°	3631.0	3586.9	3314.3	3100.7	2982.9
42.5°	3402.7	3343.8	3078.7	2850.3	2717.8
45°	3159.7	3093.4	2828.2	2592.6	2489.4
47.5°	2916.6	2857.7	2614.6	2371.6	2253.8
50°	2658.8	2607.3	2386.3	2143.3	2018.1
52.5°	2445.2	2364.2	2150.6	1907.6	1804.5
55°	2194.8	2128.5	1929.7	1701.4	1613.0
57.5°	1966.5	1900.2	1716.1	1502.5	1428.8
60°	1752.9	1657.2	1502.5	1318.4	1259.4
62.5°	1517.2	1443.6	1311.0	1156.3	1230.0
65°	1303.6	1230.0	1112.1	1134.2	942.7
67.5°	1068.0	1031.1	928.0	824.9	795.4
70°	869.1	824.9	788.1	677.6	648.1
72.5°	692.3	648.1	596.6	537.7	515.6
75°	522.9	486.1	456.6	434.5	478.7
77.5°	360.9	346.2	324.1	302.0	294.6
80°	235.7	228.3	221.0	213.6	206.2
82.5°	139.9	139.9	139.9	139.9	139.9
85°	73.7	81.0	88.4	95.7	103.1
87.5°	44.2	44.2	51.6	58.9	66.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)