

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: P564182

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-82-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564182  
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-50-UNV-82-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

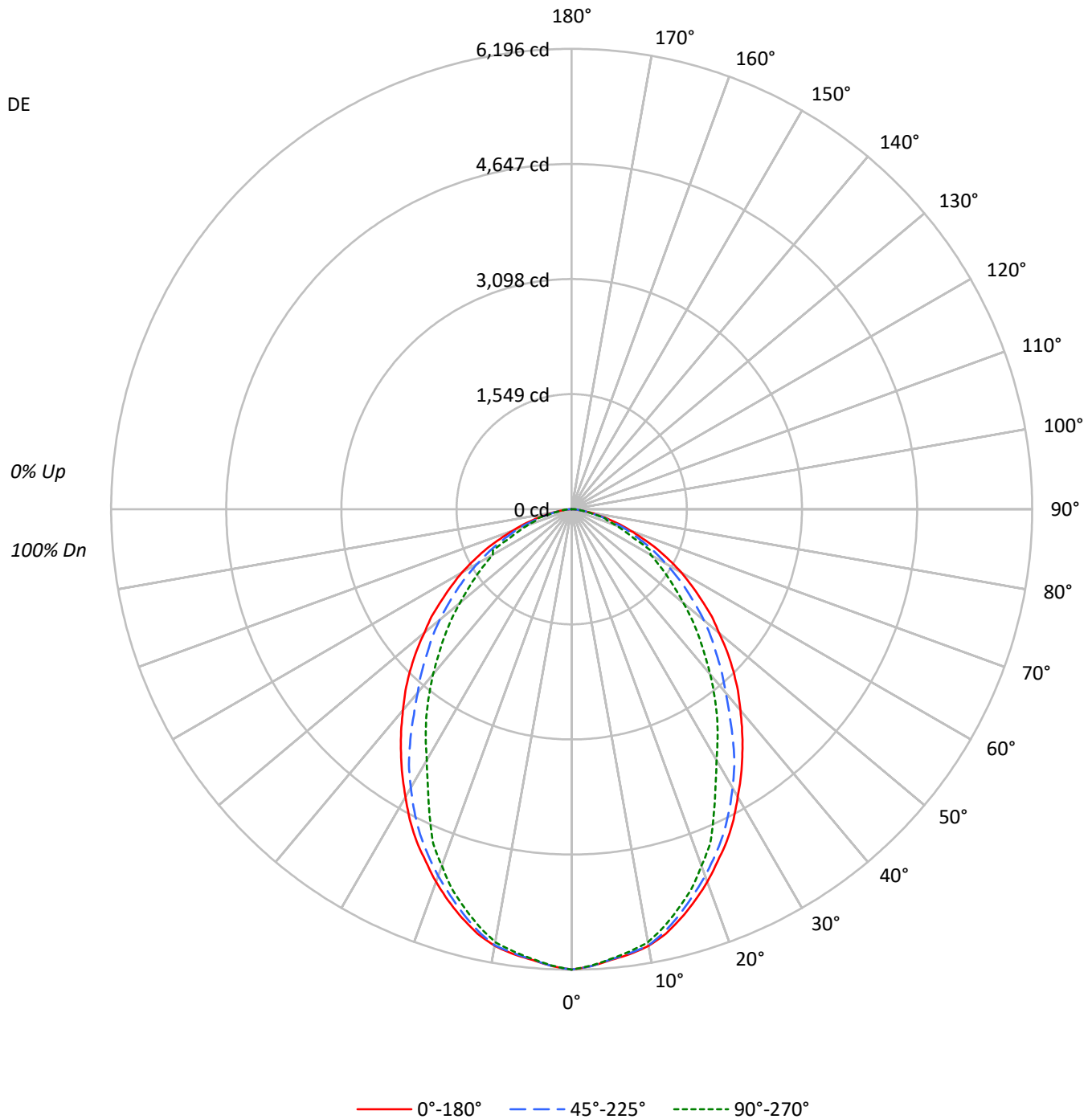
Lumens per Lamp: N/A  
Luminaire Lumens: 12163.0 lumens  
Efficiency: N/A  
Efficacy: 91.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8336	8336	8336
5°	8223	8213	8204
10°	8152	8142	8083
15°	7932	7852	7742
20°	7641	7517	7312
25°	7326	7167	6720
30°	6944	6721	6054
35°	6577	6212	5600
40°	6202	5661	5095
45°	5847	5233	4607
50°	5412	4858	4108
55°	5007	4402	3680
60°	4587	3932	3296
65°	4036	3443	2919
70°	3325	3015	2480
75°	2643	2309	2420
80°	1776	1665	1554
85°	1105	1328	1548

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5847 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	576.7	4.7
10°-20°	1582.8	13.0
20°-30°	2191.3	18.0
30°-40°	2336.5	19.2
40°-50°	2131.6	17.5
50°-60°	1669.9	13.7
60°-70°	1088.4	8.9
70°-80°	482.2	4.0
80°-90°	103.5	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°	4350.8	35.8
0°-40°	6687.4	55.0
0°-60°	10488.9	86.2
0°-90°	12163.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12163.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6196	6196	6196	6196	6196	
5°	6088	6081	6081	6074	6074	578
15°	5694	5694	5637	5580	5558	1601
25°	4935	4906	4828	4656	4527	2266
35°	4004	3975	3782	3495	3409	2503
45°	3073	3008	2750	2521	2421	2367
55°	2134	2070	1877	1655	1569	1914
65°	1268	1196	1082	1103	917	1249
75°	508	473	444	423	466	545
85°	72	79	86	93	100	99
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6195.7	6195.7	6195.7	6195.7	6195.7
2.5°	6152.7	6152.7	6152.7	6145.5	6145.5
5°	6088.2	6081.1	6081.1	6073.9	6073.9
7.5°	6038.1	6030.9	6023.8	6016.6	6002.3
10°	5966.5	5966.5	5959.3	5923.5	5916.3
12.5°	5851.9	5844.7	5816.1	5765.9	5751.6
15°	5694.3	5694.3	5637.0	5579.7	5558.2
17.5°	5522.4	5515.2	5443.6	5386.3	5357.6
20°	5336.2	5321.8	5250.2	5157.1	5107.0
22.5°	5128.4	5128.4	5042.5	4920.7	4870.6
25°	4935.0	4906.4	4827.6	4655.7	4526.8
27.5°	4713.0	4670.0	4584.1	4340.6	4190.1
30°	4469.5	4448.0	4326.2	4011.1	3896.5
32.5°	4240.3	4204.5	4075.5	3746.1	3652.9
35°	4003.9	3975.3	3781.9	3495.4	3409.4
37.5°	3767.5	3731.7	3488.2	3259.0	3151.6
40°	3531.2	3488.2	3223.2	3015.5	2900.9
42.5°	3309.1	3251.8	2994.0	2771.9	2643.0
45°	3072.8	3008.3	2750.4	2521.2	2421.0
47.5°	2836.4	2779.1	2542.7	2306.4	2191.8
50°	2585.7	2535.6	2320.7	2084.3	1962.6
52.5°	2378.0	2299.2	2091.5	1855.1	1754.8
55°	2134.5	2070.0	1876.6	1654.6	1568.6
57.5°	1912.4	1848.0	1668.9	1461.2	1389.5
60°	1704.7	1611.6	1461.2	1282.1	1224.8
62.5°	1475.5	1403.9	1274.9	1124.5	1196.2
65°	1267.8	1196.2	1081.6	1103.0	916.8
67.5°	1038.6	1002.8	902.5	802.2	773.6
70°	845.2	802.2	766.4	659.0	630.3
72.5°	673.3	630.3	580.2	522.9	501.4
75°	508.5	472.7	444.1	422.6	465.6
77.5°	351.0	336.6	315.2	293.7	286.5
80°	229.2	222.0	214.9	207.7	200.6
82.5°	136.1	136.1	136.1	136.1	136.1
85°	71.6	78.8	86.0	93.1	100.3
87.5°	43.0	43.0	50.1	57.3	64.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)