

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: P564179

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-82-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564179  
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-82-85-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

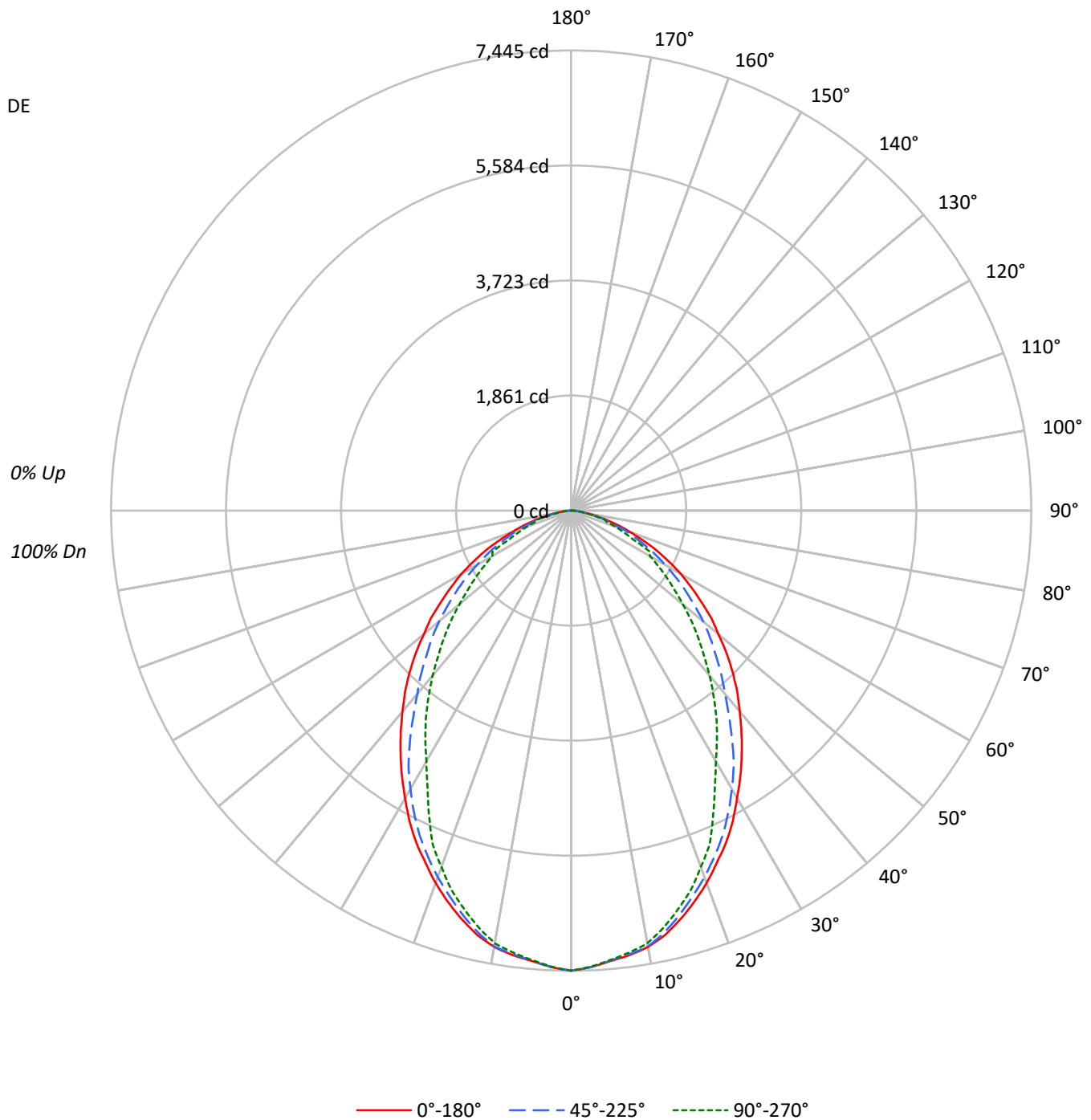
Lumens per Lamp: N/A  
Luminaire Lumens: 14615.0 lumens  
Efficiency: N/A  
Efficacy: 109.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	10017	10017	10017
5°	9881	9869	9857
10°	9795	9783	9713
15°	9531	9435	9303
20°	9181	9033	8786
25°	8803	8612	8075
30°	8344	8076	7274
35°	7902	7464	6729
40°	7452	6803	6122
45°	7026	6289	5535
50°	6504	5837	4936
55°	6016	5290	4421
60°	5512	4725	3960
65°	4850	4138	3507
70°	3995	3623	2980
75°	3177	2774	2908
80°	2134	2001	1867
85°	1329	1595	1860

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7026 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	693.0	4.7
10°-20°	1901.9	13.0
20°-30°	2633.0	18.0
30°-40°	2807.6	19.2
40°-50°	2561.3	17.5
50°-60°	2006.6	13.7
60°-70°	1307.8	8.9
70°-80°	579.4	4.0
80°-90°	124.4	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°	5227.9	35.8
0°-40°	8035.5	55.0
0°-60°	12603.4	86.2
0°-90°	14615.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14615.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7445	7445	7445	7445	7445	
5°	7316	7307	7307	7298	7298	694
15°	6842	6842	6773	6704	6679	1924
25°	5930	5896	5801	5594	5439	2722
35°	4811	4777	4544	4200	4097	3008
45°	3692	3615	3305	3030	2909	2844
55°	2565	2487	2255	1988	1885	2300
65°	1523	1437	1300	1325	1102	1501
75°	611	568	534	508	559	655
85°	86	95	103	112	120	119
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7444.7	7444.7	7444.7	7444.7	7444.7
2.5°	7393.0	7393.0	7393.0	7384.4	7384.4
5°	7315.6	7307.0	7307.0	7298.4	7298.4
7.5°	7255.3	7246.7	7238.1	7229.5	7212.3
10°	7169.3	7169.3	7160.7	7117.6	7109.0
12.5°	7031.6	7023.0	6988.5	6928.3	6911.1
15°	6842.2	6842.2	6773.4	6704.5	6678.7
17.5°	6635.7	6627.1	6541.0	6472.1	6437.7
20°	6411.9	6394.7	6308.6	6196.7	6136.5
22.5°	6162.3	6162.3	6059.0	5912.7	5852.5
25°	5929.9	5895.5	5800.8	5594.3	5439.4
27.5°	5663.1	5611.5	5508.2	5215.6	5034.8
30°	5370.5	5344.7	5198.4	4819.7	4682.0
32.5°	5095.1	5052.1	4897.1	4501.2	4389.4
35°	4811.1	4776.6	4544.3	4200.0	4096.7
37.5°	4527.1	4484.0	4191.4	3916.0	3786.9
40°	4243.0	4191.4	3873.0	3623.4	3485.7
42.5°	3976.2	3907.4	3597.5	3330.7	3175.8
45°	3692.2	3614.8	3304.9	3029.5	2909.0
47.5°	3408.2	3339.4	3055.3	2771.3	2633.6
50°	3107.0	3046.7	2788.5	2504.5	2358.2
52.5°	2857.4	2762.7	2513.1	2229.1	2108.6
55°	2564.8	2487.3	2254.9	1988.1	1884.8
57.5°	2298.0	2220.5	2005.3	1755.7	1669.7
60°	2048.4	1936.5	1755.7	1540.6	1471.7
62.5°	1773.0	1686.9	1532.0	1351.2	1437.3
65°	1523.4	1437.3	1299.6	1325.4	1101.6
67.5°	1248.0	1204.9	1084.4	963.9	929.5
70°	1015.6	963.9	920.9	791.8	757.4
72.5°	809.0	757.4	697.1	628.3	602.5
75°	611.1	568.0	533.6	507.8	559.4
77.5°	421.7	404.5	378.7	352.9	344.3
80°	275.4	266.8	258.2	249.6	241.0
82.5°	163.5	163.5	163.5	163.5	163.5
85°	86.1	94.7	103.3	111.9	120.5
87.5°	51.6	51.6	60.2	68.9	77.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)