

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: P563776

Luminaire Tested: FSR-24-4-LD4-4HI-50-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563776  
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-50-UNV-81-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

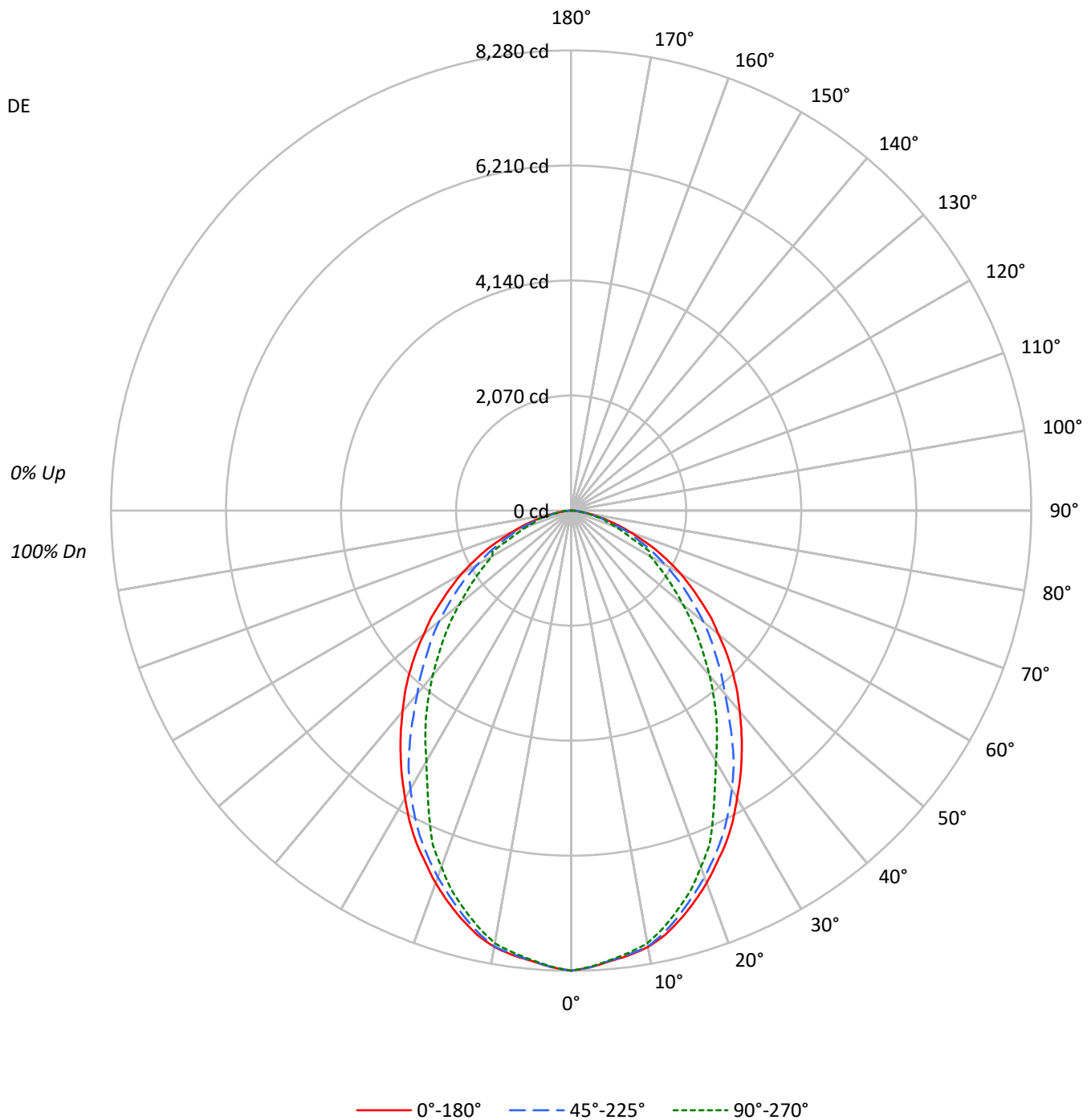
Lumens per Lamp: N/A  
Luminaire Lumens: 16254.0 lumens  
Efficiency: N/A  
Efficacy: 94.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	11140	11140	11140
5°	10989	10976	10963
10°	10893	10880	10802
15°	10600	10493	10346
20°	10210	10046	9772
25°	9791	9578	8981
30°	9280	8982	8090
35°	8789	8301	7484
40°	8288	7565	6809
45°	7814	6994	6156
50°	7233	6491	5490
55°	6691	5883	4917
60°	6130	5254	4405
65°	5394	4601	3901
70°	4443	4029	3314
75°	3533	3085	3235
80°	2373	2225	2077
85°	1477	1774	2069

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7814 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	770.7	4.7
10°-20°	2115.2	13.0
20°-30°	2928.3	18.0
30°-40°	3122.4	19.2
40°-50°	2848.6	17.5
50°-60°	2231.6	13.7
60°-70°	1454.5	8.9
70°-80°	644.4	4.0
80°-90°	138.4	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°	5814.2	35.8
0°-40°	8936.6	55.0
0°-60°	14016.8	86.2
0°-90°	16254.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16254.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8280	8280	8280	8280	8280	
5°	8136	8126	8126	8117	8117	772
15°	7610	7610	7533	7456	7428	2139
25°	6595	6557	6451	6222	6049	3028
35°	5351	5312	5054	4671	4556	3345
45°	4106	4020	3676	3369	3235	3163
55°	2852	2766	2508	2211	2096	2558
65°	1694	1598	1445	1474	1225	1670
75°	680	632	593	565	622	728
85°	96	105	115	124	134	133
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8279.6	8279.6	8279.6	8279.6	8279.6
2.5°	8222.1	8222.1	8222.1	8212.6	8212.6
5°	8136.0	8126.4	8126.4	8116.9	8116.9
7.5°	8069.0	8059.4	8049.8	8040.3	8021.1
10°	7973.3	7973.3	7963.7	7915.8	7906.3
12.5°	7820.1	7810.6	7772.3	7705.3	7686.1
15°	7609.5	7609.5	7533.0	7456.4	7427.7
17.5°	7379.8	7370.3	7274.5	7198.0	7159.7
20°	7131.0	7111.8	7016.1	6891.7	6824.7
22.5°	6853.4	6853.4	6738.5	6575.8	6508.8
25°	6594.9	6556.7	6451.4	6221.6	6049.4
27.5°	6298.2	6240.8	6125.9	5800.5	5599.5
30°	5972.8	5944.1	5781.3	5360.2	5207.0
32.5°	5666.5	5618.6	5446.3	5006.0	4881.6
35°	5350.6	5312.3	5053.9	4671.0	4556.2
37.5°	5034.7	4986.9	4661.4	4355.1	4211.6
40°	4718.9	4661.4	4307.3	4029.7	3876.6
42.5°	4422.2	4345.6	4001.0	3704.3	3532.0
45°	4106.3	4020.1	3675.6	3369.3	3235.3
47.5°	3790.4	3713.8	3398.0	3082.1	2929.0
50°	3455.4	3388.4	3101.2	2785.4	2622.7
52.5°	3177.8	3072.5	2795.0	2479.1	2345.1
55°	2852.4	2766.2	2507.8	2211.1	2096.2
57.5°	2555.7	2469.5	2230.2	1952.6	1856.9
60°	2278.1	2153.6	1952.6	1713.3	1636.8
62.5°	1971.8	1876.1	1703.8	1502.8	1598.5
65°	1694.2	1598.5	1445.3	1474.1	1225.2
67.5°	1387.9	1340.0	1206.0	1072.0	1033.7
70°	1129.5	1072.0	1024.2	880.6	842.3
72.5°	899.7	842.3	775.3	698.7	670.0
75°	679.6	631.7	593.4	564.7	622.2
77.5°	469.0	449.9	421.2	392.4	382.9
80°	306.3	296.7	287.2	277.6	268.0
82.5°	181.9	181.9	181.9	181.9	181.9
85°	95.7	105.3	114.9	124.4	134.0
87.5°	57.4	57.4	67.0	76.6	86.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)