

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: P563796

Luminaire Tested: FSR-24-4-LD4-4HI-50-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563796  
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-82-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

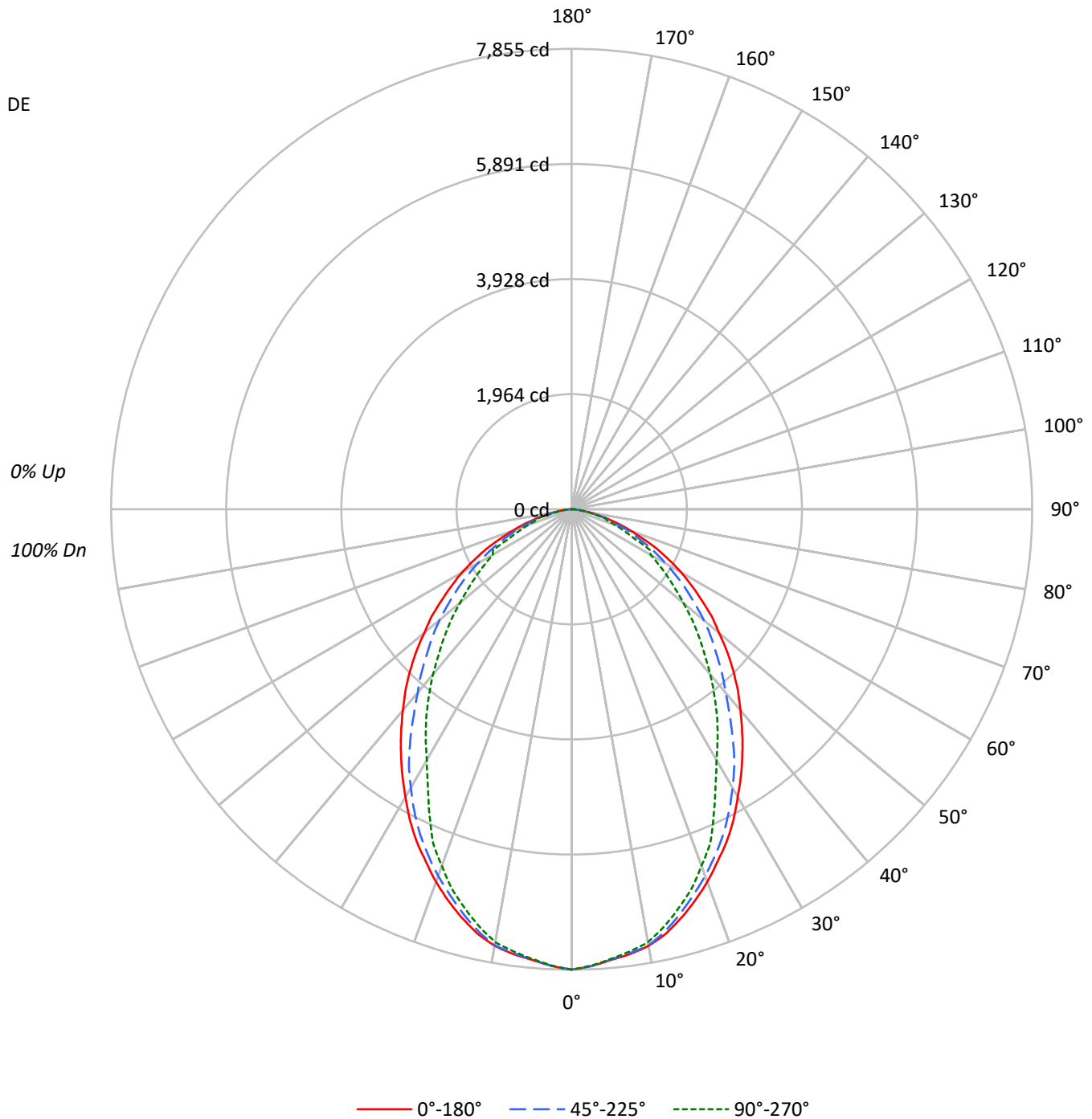
Lumens per Lamp: N/A  
Luminaire Lumens: 15420.0 lumens  
Efficiency: N/A  
Efficacy: 89.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	10568	10568	10568
5°	10425	10413	10400
10°	10335	10322	10248
15°	10056	9955	9816
20°	9687	9530	9270
25°	9288	9086	8520
30°	8803	8521	7675
35°	8338	7875	7100
40°	7863	7177	6460
45°	7413	6635	5840
50°	6862	6158	5208
55°	6348	5581	4665
60°	5816	4985	4179
65°	5117	4365	3700
70°	4215	3822	3144
75°	3352	2927	3068
80°	2252	2111	1970
85°	1402	1683	1962

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7413 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	731.2	4.7
10°-20°	2006.6	13.0
20°-30°	2778.1	18.0
30°-40°	2962.2	19.2
40°-50°	2702.4	17.5
50°-60°	2117.1	13.7
60°-70°	1379.8	8.9
70°-80°	611.3	4.0
80°-90°	131.2	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°	5515.9	35.8
0°-40°	8478.1	55.0
0°-60°	13297.6	86.2
0°-90°	15420.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15420.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7855	7855	7855	7855	7855	
5°	7718	7710	7710	7700	7700	733
15°	7219	7219	7146	7074	7047	2029
25°	6257	6220	6120	5902	5739	2872
35°	5076	5040	4795	4431	4322	3173
45°	3896	3814	3487	3196	3069	3001
55°	2706	2624	2379	2098	1989	2427
65°	1607	1516	1371	1398	1162	1584
75°	645	599	563	536	590	691
85°	91	100	109	118	127	126
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7854.7	7854.7	7854.7	7854.7	7854.7
2.5°	7800.3	7800.3	7800.3	7791.2	7791.2
5°	7718.5	7709.5	7709.5	7700.4	7700.4
7.5°	7655.0	7645.9	7636.8	7627.7	7609.6
10°	7564.2	7564.2	7555.1	7509.7	7500.6
12.5°	7418.9	7409.8	7373.5	7309.9	7291.7
15°	7219.1	7219.1	7146.5	7073.8	7046.6
17.5°	7001.2	6992.1	6901.3	6828.6	6792.3
20°	6765.1	6746.9	6656.1	6538.1	6474.5
22.5°	6501.7	6501.7	6392.8	6238.4	6174.8
25°	6256.6	6220.2	6120.3	5902.4	5739.0
27.5°	5975.1	5920.6	5811.6	5502.9	5312.2
30°	5666.3	5639.1	5484.7	5085.2	4939.9
32.5°	5375.7	5330.3	5166.9	4749.2	4631.1
35°	5076.1	5039.7	4794.6	4431.3	4322.4
37.5°	4776.4	4731.0	4422.3	4131.7	3995.5
40°	4476.7	4422.3	4086.3	3822.9	3677.7
42.5°	4195.2	4122.6	3795.7	3514.2	3350.8
45°	3895.6	3813.9	3487.0	3196.4	3069.3
47.5°	3595.9	3523.3	3223.6	2924.0	2778.7
50°	3278.1	3214.5	2942.1	2642.5	2488.1
52.5°	3014.8	2914.9	2651.5	2351.9	2224.8
55°	2706.0	2624.3	2379.1	2097.6	1988.7
57.5°	2424.5	2342.8	2115.8	1852.4	1761.6
60°	2161.2	2043.1	1852.4	1625.4	1552.8
62.5°	1870.6	1779.8	1616.4	1425.7	1516.5
65°	1607.3	1516.5	1371.2	1398.4	1162.3
67.5°	1316.7	1271.3	1144.2	1017.0	980.7
70°	1071.5	1017.0	971.6	835.4	799.1
72.5°	853.6	799.1	735.5	662.9	635.6
75°	644.7	599.3	563.0	535.8	590.2
77.5°	445.0	426.8	399.5	372.3	363.2
80°	290.6	281.5	272.4	263.3	254.3
82.5°	172.5	172.5	172.5	172.5	172.5
85°	90.8	99.9	109.0	118.0	127.1
87.5°	54.5	54.5	63.6	72.6	81.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)