

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: P563651

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-81-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563651  
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-35-UNV-81-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

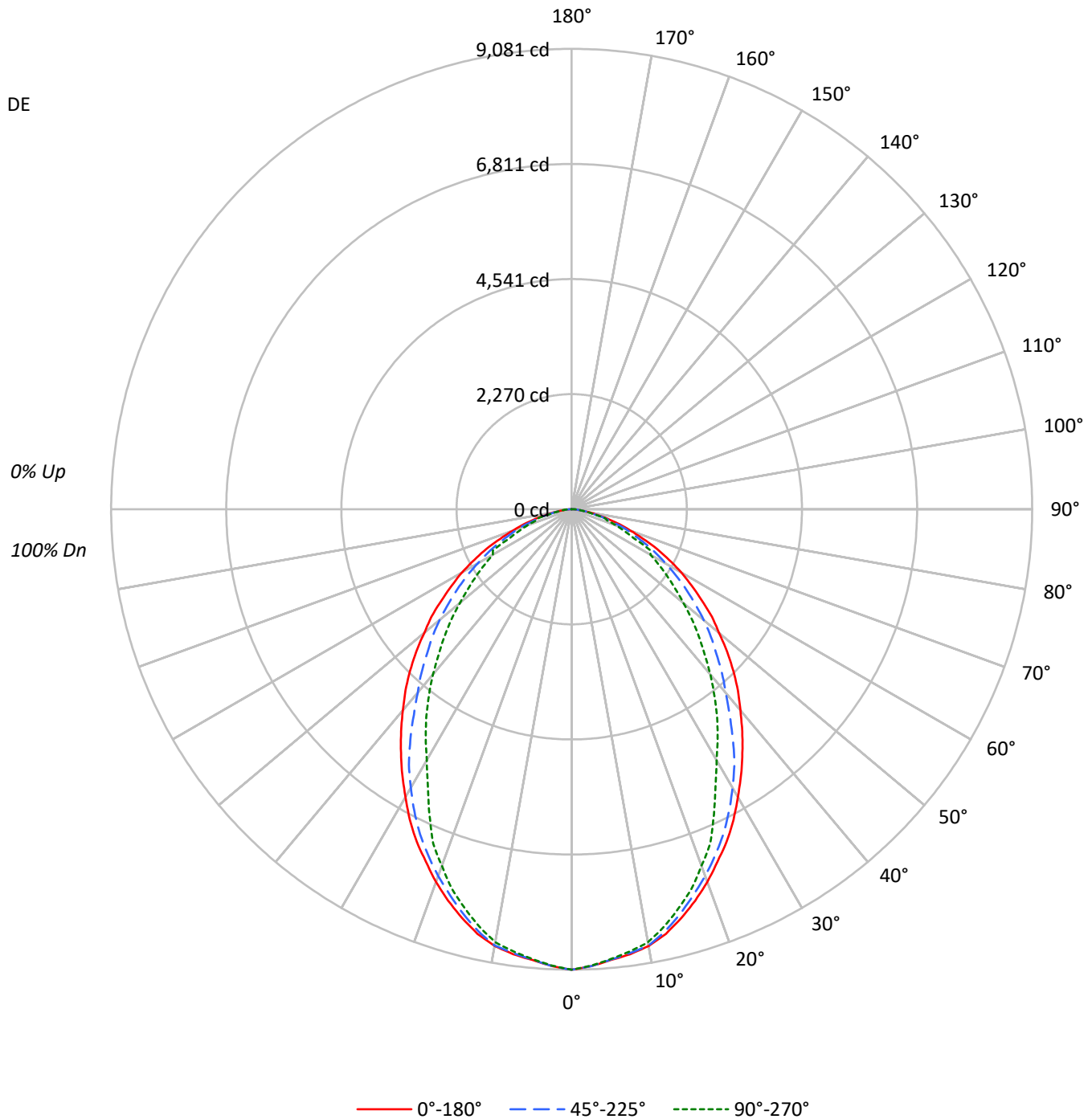
Lumens per Lamp: N/A  
Luminaire Lumens: 17828.0 lumens  
Efficiency: N/A  
Efficacy: 103.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																		
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°	12219	12219	12219
5°	12053	12039	12025
10°	11948	11934	11848
15°	11626	11509	11348
20°	11199	11019	10718
25°	10739	10505	9851
30°	10178	9852	8873
35°	9640	9105	8208
40°	9091	8298	7468
45°	8570	7671	6752
50°	7933	7120	6021
55°	7339	6453	5393
60°	6724	5763	4831
65°	5916	5047	4278
70°	4873	4419	3635
75°	3875	3384	3548
80°	2603	2441	2278
85°	1621	1945	2269

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8570 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	845.4	4.7
10°-20°	2320.0	13.0
20°-30°	3211.9	18.0
30°-40°	3424.8	19.2
40°-50°	3124.4	17.5
50°-60°	2447.7	13.7
60°-70°	1595.3	8.9
70°-80°	706.8	4.0
80°-90°	151.8	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°	6377.2	35.8
0°-40°	9802.0	55.0
0°-60°	15374.2	86.2
0°-90°	17828.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	17828.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9081	9081	9081	9081	9081	
5°	8924	8913	8913	8903	8903	847
15°	8346	8346	8262	8178	8147	2346
25°	7234	7192	7076	6824	6635	3321
35°	5869	5827	5543	5123	4997	3669
45°	4504	4409	4032	3696	3548	3469
55°	3129	3034	2751	2425	2299	2806
65°	1858	1753	1585	1617	1344	1831
75°	745	693	651	619	682	799
85°	105	116	126	136	147	146
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9081.3	9081.3	9081.3	9081.3	9081.3
2.5°	9018.4	9018.4	9018.4	9007.9	9007.9
5°	8923.9	8913.4	8913.4	8902.9	8902.9
7.5°	8850.4	8839.9	8829.4	8818.9	8797.9
10°	8745.4	8745.4	8734.9	8682.4	8671.9
12.5°	8577.4	8566.9	8524.9	8451.4	8430.4
15°	8346.4	8346.4	8262.4	8178.5	8147.0
17.5°	8094.5	8084.0	7979.0	7895.0	7853.0
20°	7821.5	7800.5	7695.5	7559.0	7485.5
22.5°	7517.0	7517.0	7391.1	7212.6	7139.1
25°	7233.6	7191.6	7076.1	6824.1	6635.2
27.5°	6908.1	6845.1	6719.1	6362.2	6141.7
30°	6551.2	6519.7	6341.2	5879.3	5711.3
32.5°	6215.2	6162.7	5973.7	5490.8	5354.3
35°	5868.8	5826.8	5543.3	5123.3	4997.4
37.5°	5522.3	5469.8	5112.8	4776.9	4619.4
40°	5175.8	5112.8	4724.4	4419.9	4252.0
42.5°	4850.4	4766.4	4388.4	4063.0	3874.0
45°	4503.9	4409.4	4031.5	3695.5	3548.5
47.5°	4157.5	4073.5	3727.0	3380.6	3212.6
50°	3790.0	3716.5	3401.6	3055.1	2876.6
52.5°	3485.6	3370.1	3065.6	2719.2	2572.2
55°	3128.6	3034.1	2750.7	2425.2	2299.2
57.5°	2803.1	2708.7	2446.2	2141.7	2036.7
60°	2498.7	2362.2	2141.7	1879.3	1795.3
62.5°	2162.7	2057.7	1868.8	1648.3	1753.3
65°	1858.3	1753.3	1585.3	1616.8	1343.8
67.5°	1522.3	1469.8	1322.8	1175.9	1133.9
70°	1238.8	1175.9	1123.4	965.9	923.9
72.5°	986.9	923.9	850.4	766.4	734.9
75°	745.4	692.9	650.9	619.4	682.4
77.5°	514.4	493.4	461.9	430.4	419.9
80°	336.0	325.5	315.0	304.5	294.0
82.5°	199.5	199.5	199.5	199.5	199.5
85°	105.0	115.5	126.0	136.5	147.0
87.5°	63.0	63.0	73.5	84.0	94.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)