

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: P563844

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563844  
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-LD4-4LO-35-UNV-81-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

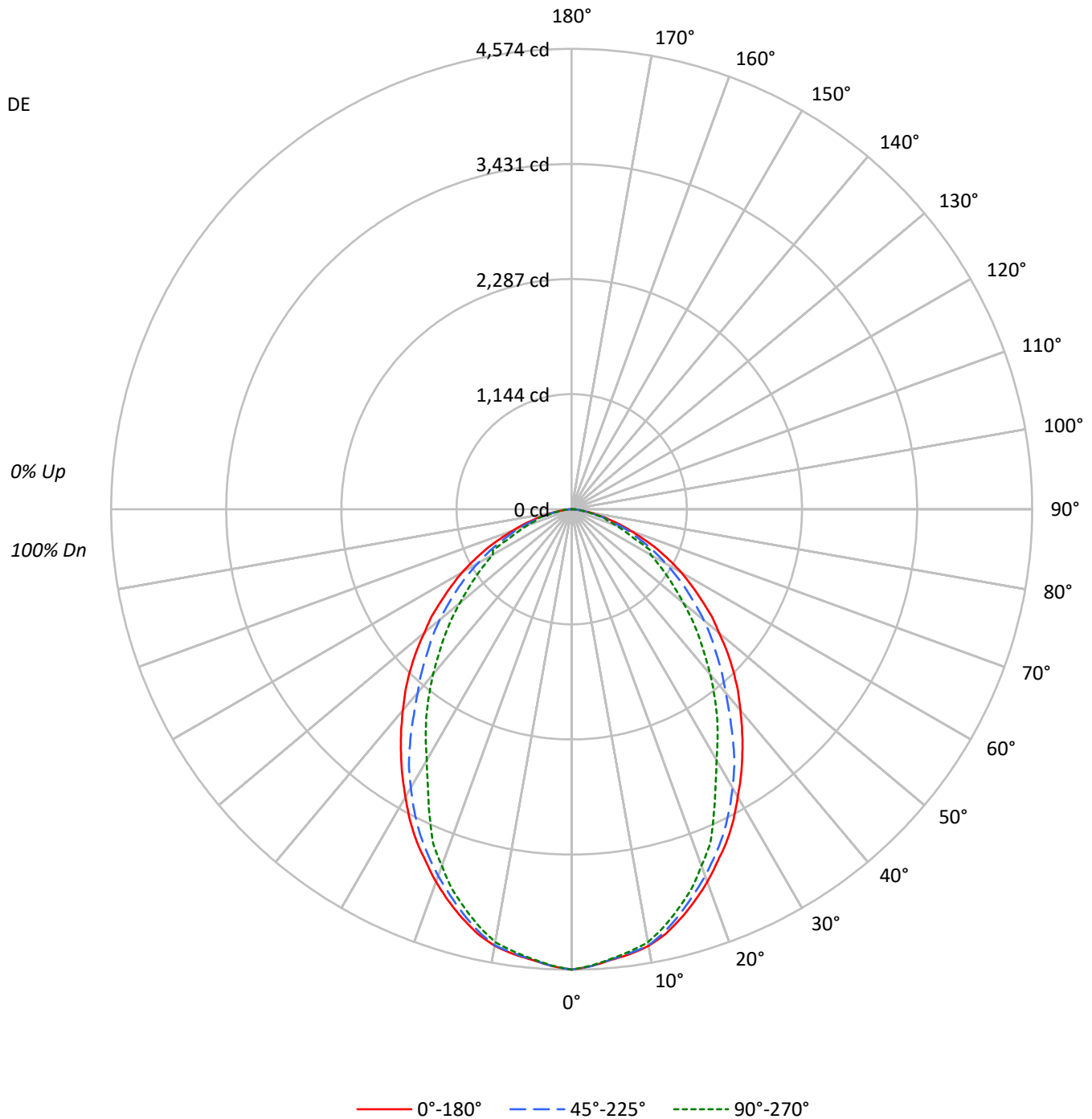
Lumens per Lamp: N/A  
Luminaire Lumens: 8979.0 lumens  
Efficiency: N/A  
Efficacy: 95.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6154	6154	6154
5°	6070	6063	6056
10°	6018	6011	5967
15°	5855	5796	5716
20°	5640	5550	5398
25°	5409	5291	4961
30°	5126	4962	4469
35°	4855	4586	4134
40°	4579	4179	3761
45°	4316	3863	3401
50°	3996	3586	3033
55°	3696	3250	2716
60°	3387	2903	2433
65°	2980	2542	2155
70°	2454	2226	1830
75°	1952	1704	1787
80°	1311	1229	1148
85°	817	980	1142

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4316 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	425.8	4.7
10°-20°	1168.5	13.0
20°-30°	1617.6	18.0
30°-40°	1724.9	19.2
40°-50°	1573.6	17.5
50°-60°	1232.8	13.7
60°-70°	803.5	8.9
70°-80°	356.0	4.0
80°-90°	76.4	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°	3211.9	35.8
0°-40°	4936.8	55.0
0°-60°	7743.1	86.2
0°-90°	8979.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8979.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4574	4574	4574	4574	4574	
5°	4494	4489	4489	4484	4484	427
15°	4204	4204	4161	4119	4103	1182
25°	3643	3622	3564	3437	3342	1673
35°	2956	2935	2792	2580	2517	1848
45°	2268	2221	2030	1861	1787	1747
55°	1576	1528	1385	1221	1158	1413
65°	936	883	798	814	677	922
75°	375	349	328	312	344	402
85°	53	58	64	69	74	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4573.8	4573.8	4573.8	4573.8	4573.8
2.5°	4542.1	4542.1	4542.1	4536.8	4536.8
5°	4494.5	4489.2	4489.2	4483.9	4483.9
7.5°	4457.5	4452.2	4446.9	4441.6	4431.0
10°	4404.6	4404.6	4399.3	4372.9	4367.6
12.5°	4320.0	4314.7	4293.5	4256.5	4246.0
15°	4203.6	4203.6	4161.3	4119.0	4103.2
17.5°	4076.7	4071.5	4018.6	3976.3	3955.1
20°	3939.3	3928.7	3875.8	3807.1	3770.1
22.5°	3785.9	3785.9	3722.5	3632.6	3595.6
25°	3643.2	3622.0	3563.8	3436.9	3341.8
27.5°	3479.2	3447.5	3384.1	3204.3	3093.3
30°	3299.5	3283.6	3193.7	2961.1	2876.5
32.5°	3130.3	3103.8	3008.7	2765.4	2696.7
35°	2955.8	2934.6	2791.9	2580.4	2516.9
37.5°	2781.3	2754.8	2575.1	2405.9	2326.5
40°	2606.8	2575.1	2379.4	2226.1	2141.5
42.5°	2442.9	2400.6	2210.2	2046.3	1951.1
45°	2268.4	2220.8	2030.4	1861.2	1787.2
47.5°	2093.9	2051.6	1877.1	1702.6	1618.0
50°	1908.8	1871.8	1713.2	1538.7	1448.8
52.5°	1755.5	1697.3	1544.0	1369.5	1295.5
55°	1575.7	1528.1	1385.4	1221.4	1158.0
57.5°	1411.8	1364.2	1232.0	1078.7	1025.8
60°	1258.5	1189.7	1078.7	946.5	904.2
62.5°	1089.2	1036.4	941.2	830.2	883.0
65°	935.9	883.0	798.4	814.3	676.8
67.5°	766.7	740.3	666.2	592.2	571.1
70°	623.9	592.2	565.8	486.5	465.3
72.5°	497.0	465.3	428.3	386.0	370.1
75°	375.4	349.0	327.8	312.0	343.7
77.5°	259.1	248.5	232.7	216.8	211.5
80°	169.2	163.9	158.6	153.3	148.1
82.5°	100.5	100.5	100.5	100.5	100.5
85°	52.9	58.2	63.5	68.7	74.0
87.5°	31.7	31.7	37.0	42.3	47.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)