

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: P563233

Luminaire Tested: FSR-24-4-LD4-3HI-50-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563233  
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-LD4-3HI-50-UNV-93-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

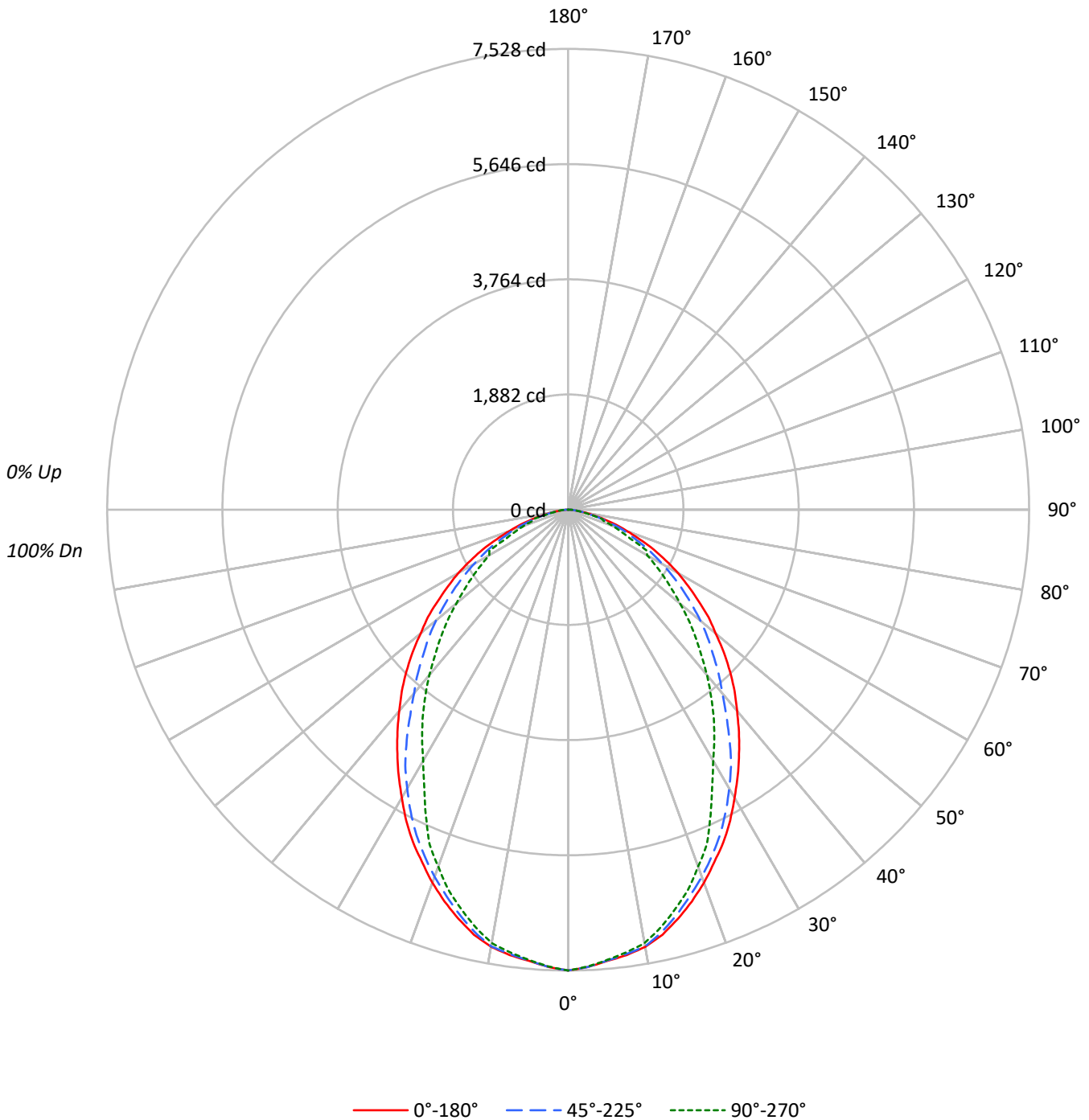
Lumens per Lamp: N/A  
Luminaire Lumens: 14779.0 lumens  
Efficiency: N/A  
Efficacy: 114.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	10129	10129	10129
5°	9992	9980	9968
10°	9905	9893	9822
15°	9638	9541	9407
20°	9284	9134	8885
25°	8902	8708	8166
30°	8437	8167	7356
35°	7991	7548	6805
40°	7536	6879	6191
45°	7105	6359	5597
50°	6576	5902	4992
55°	6084	5349	4471
60°	5574	4778	4005
65°	4904	4184	3547
70°	4040	3663	3013
75°	3212	2805	2941
80°	2158	2023	1888
85°	1343	1612	1880

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7105 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	700.8	4.7
10°-20°	1923.2	13.0
20°-30°	2662.6	18.0
30°-40°	2839.1	19.2
40°-50°	2590.1	17.5
50°-60°	2029.1	13.7
60°-70°	1322.5	8.9
70°-80°	585.9	4.0
80°-90°	125.8	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°	5286.6	35.8
0°-40°	8125.6	55.0
0°-60°	12744.8	86.2
0°-90°	14779.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14779.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7528	7528	7528	7528	7528	
5°	7398	7389	7389	7380	7380	702
15°	6919	6919	6849	6780	6754	1945
25°	5996	5962	5866	5657	5500	2753
35°	4865	4830	4595	4247	4143	3042
45°	3734	3655	3342	3064	2942	2876
55°	2594	2515	2280	2010	1906	2326
65°	1540	1453	1314	1340	1114	1518
75°	618	574	540	514	566	662
85°	87	96	104	113	122	121
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7528.2	7528.2	7528.2	7528.2	7528.2
2.5°	7476.0	7476.0	7476.0	7467.3	7467.3
5°	7397.7	7389.0	7389.0	7380.3	7380.3
7.5°	7336.8	7328.1	7319.3	7310.6	7293.2
10°	7249.7	7249.7	7241.0	7197.5	7188.8
12.5°	7110.5	7101.8	7067.0	7006.0	6988.6
15°	6919.0	6919.0	6849.4	6779.8	6753.6
17.5°	6710.1	6701.4	6614.4	6544.8	6510.0
20°	6483.8	6466.4	6379.4	6266.3	6205.3
22.5°	6231.5	6231.5	6127.0	5979.1	5918.1
25°	5996.5	5961.7	5865.9	5657.0	5500.4
27.5°	5726.7	5674.5	5570.0	5274.1	5091.3
30°	5430.8	5404.7	5256.7	4873.8	4734.5
32.5°	5152.3	5108.7	4952.1	4551.7	4438.6
35°	4865.1	4830.2	4595.3	4247.1	4142.7
37.5°	4577.9	4534.3	4238.4	3959.9	3829.4
40°	4290.7	4238.4	3916.4	3664.0	3524.8
42.5°	4020.9	3951.2	3637.9	3368.1	3211.5
45°	3733.7	3655.3	3342.0	3063.5	2941.7
47.5°	3446.4	3376.8	3089.6	2802.4	2663.2
50°	3141.8	3080.9	2819.8	2532.6	2384.7
52.5°	2889.4	2793.7	2541.3	2254.1	2132.3
55°	2593.5	2515.2	2280.2	2010.4	1906.0
57.5°	2323.7	2245.4	2027.8	1775.4	1688.4
60°	2071.3	1958.2	1775.4	1557.9	1488.2
62.5°	1792.8	1705.8	1549.2	1366.4	1453.4
65°	1540.5	1453.4	1314.2	1340.3	1114.0
67.5°	1262.0	1218.4	1096.6	974.8	939.9
70°	1027.0	974.8	931.2	800.7	765.9
72.5°	818.1	765.9	705.0	635.3	609.2
75°	617.9	574.4	539.6	513.5	565.7
77.5°	426.5	409.0	382.9	356.8	348.1
80°	278.5	269.8	261.1	252.4	243.7
82.5°	165.4	165.4	165.4	165.4	165.4
85°	87.0	95.7	104.4	113.1	121.8
87.5°	52.2	52.2	60.9	69.6	78.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)