

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: P564189

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564189  
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-LD4-4STD-50-UNV-82-96-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

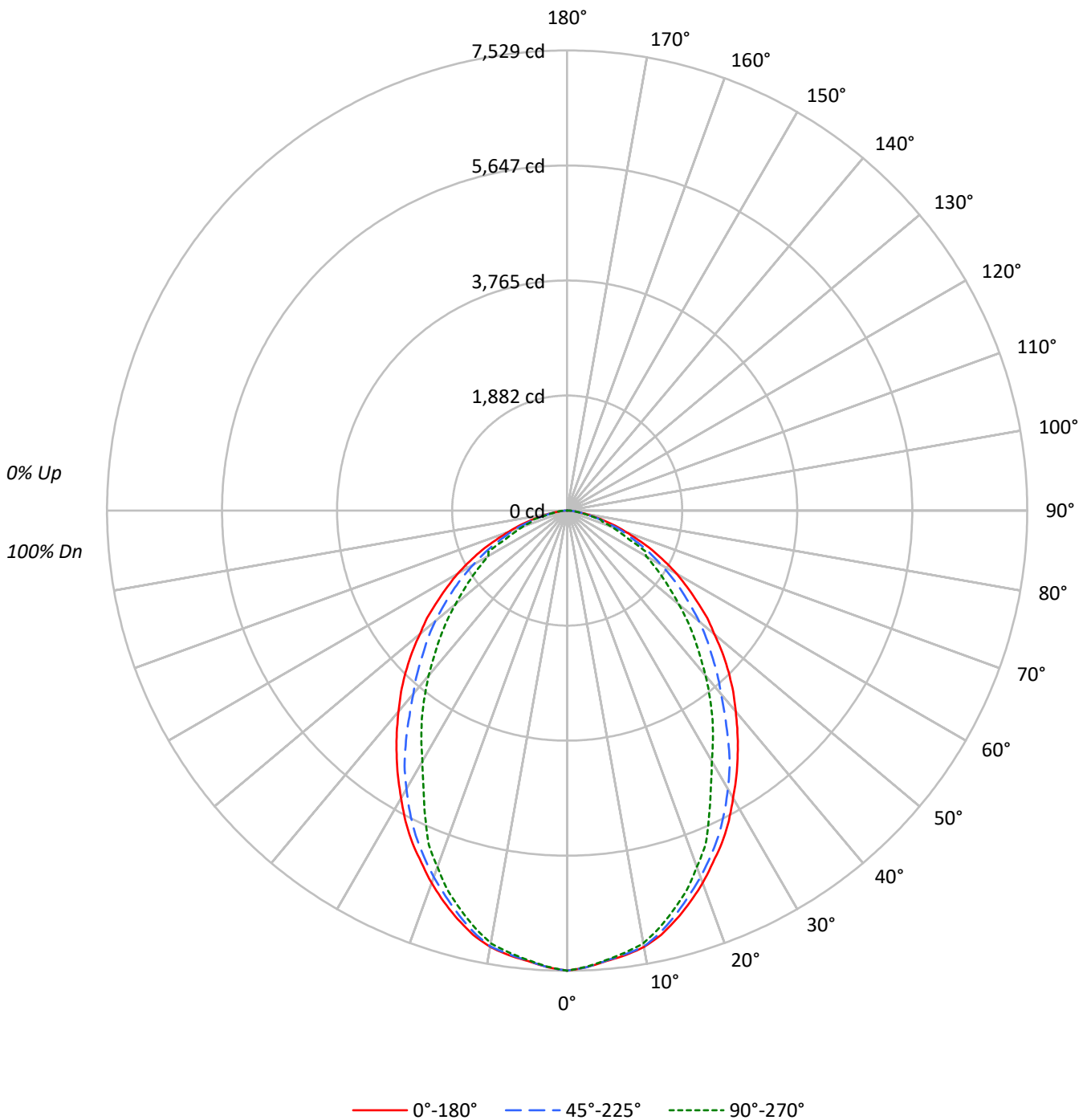
Lumens per Lamp: N/A  
Luminaire Lumens: 14780.0 lumens  
Efficiency: N/A  
Efficacy: 111.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	10130	10130	10130
5°	9992	9980	9969
10°	9906	9894	9822
15°	9639	9541	9408
20°	9284	9135	8886
25°	8903	8709	8166
30°	8438	8168	7356
35°	7992	7548	6805
40°	7537	6879	6191
45°	7105	6360	5598
50°	6577	5903	4992
55°	6084	5349	4471
60°	5574	4778	4005
65°	4905	4184	3547
70°	4040	3664	3013
75°	3213	2805	2941
80°	2158	2023	1888
85°	1343	1612	1882

**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°	1923.4	13.0
20°-30°	2662.8	18.0
30°-40°	2839.3	19.2
40°-50°	2590.2	17.5
50°-60°	2029.3	13.7
60°-70°	1322.6	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°	5286.9	35.8
0°-40°	8126.2	55.0
0°-60°	12745.7	86.2
0°-90°	14780.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14780.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7529	7529	7529	7529	7529	
5°	7398	7390	7390	7381	7381	702
15°	6920	6920	6850	6780	6754	1945
25°	5997	5962	5866	5657	5501	2753
35°	4865	4831	4596	4247	4143	3042
45°	3734	3656	3342	3064	2942	2876
55°	2594	2515	2280	2011	1906	2326
65°	1541	1454	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°	7528.7	7528.7	7528.7	7528.7	7528.7
2.5°	7476.5	7476.5	7476.5	7467.8	7467.8
5°	7398.2	7389.5	7389.5	7380.8	7380.8
7.5°	7337.3	7328.5	7319.8	7311.1	7293.7
10°	7250.2	7250.2	7241.5	7198.0	7189.3
12.5°	7111.0	7102.3	7067.4	7006.5	6989.1
15°	6919.5	6919.5	6849.8	6780.2	6754.1
17.5°	6710.6	6701.9	6614.8	6545.2	6510.4
20°	6484.3	6466.9	6379.8	6266.7	6205.8
22.5°	6231.9	6231.9	6127.4	5979.5	5918.5
25°	5996.9	5962.1	5866.3	5657.4	5500.8
27.5°	5727.1	5674.8	5570.4	5274.5	5091.7
30°	5431.1	5405.0	5257.1	4874.1	4734.8
32.5°	5152.6	5109.1	4952.4	4552.1	4438.9
35°	4865.4	4830.6	4595.6	4247.4	4143.0
37.5°	4578.2	4534.6	4238.7	3960.2	3829.6
40°	4290.9	4238.7	3916.7	3664.3	3525.0
42.5°	4021.1	3951.5	3638.2	3368.3	3211.7
45°	3733.9	3655.6	3342.2	3063.7	2941.9
47.5°	3446.7	3377.1	3089.8	2802.6	2663.3
50°	3142.0	3081.1	2820.0	2532.8	2384.8
52.5°	2889.6	2793.9	2541.5	2254.3	2132.4
55°	2593.7	2515.4	2280.4	2010.6	1906.1
57.5°	2323.9	2245.6	2028.0	1775.6	1688.5
60°	2071.5	1958.3	1775.6	1558.0	1488.3
62.5°	1793.0	1705.9	1549.3	1366.5	1453.5
65°	1540.6	1453.5	1314.3	1340.4	1114.1
67.5°	1262.0	1218.5	1096.7	974.8	940.0
70°	1027.0	974.8	931.3	800.7	765.9
72.5°	818.2	765.9	705.0	635.4	609.3
75°	618.0	574.4	539.6	513.5	565.7
77.5°	426.5	409.1	383.0	356.9	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	121.9
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)