

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: P563765

Luminaire Tested: FSR-24-4-LD4-4HI-50-UNV-80-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563765  
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-80-86-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

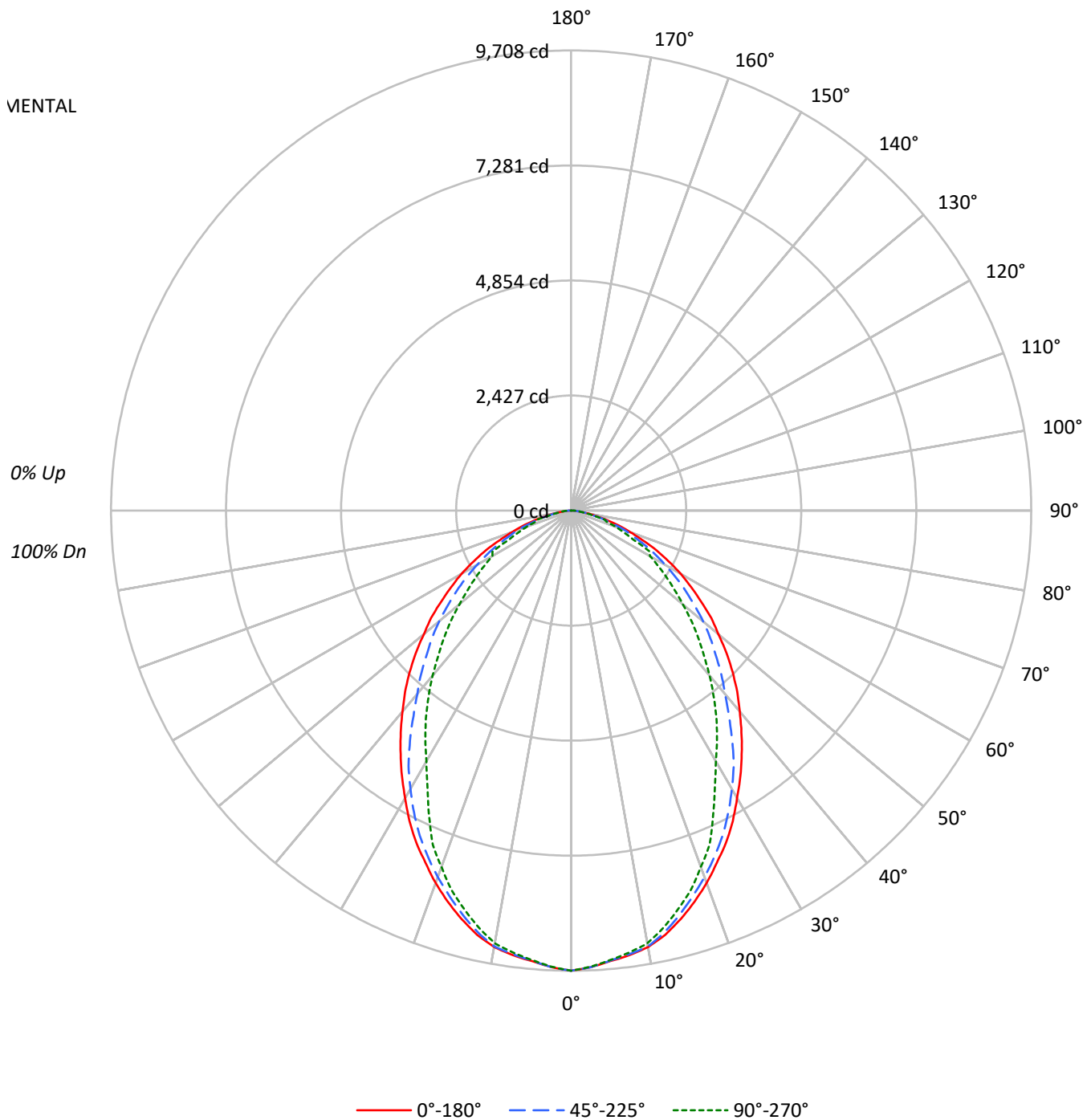
Lumens per Lamp: N/A  
Luminaire Lumens: 19058.0 lumens  
Efficiency: N/A  
Efficacy: 110.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77					75				
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67					65				
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58					56				
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52					50				
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46					44				
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42					40				
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38					36				
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32					30				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	13062	13062	13062
5°	12884	12869	12854
10°	12773	12757	12665
15°	12428	12303	12131
20°	11972	11779	11458
25°	11480	11230	10530
30°	10880	10532	9485
35°	10305	9733	8775
40°	9718	8870	7983
45°	9161	8200	7218
50°	8481	7612	6437
55°	7845	6898	5765
60°	7188	6161	5164
65°	6324	5395	4573
70°	5210	4724	3885
75°	4142	3617	3792
80°	2782	2609	2435
85°	1732	2079	2425

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9161 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	903.7	4.7
10°-20°	2480.1	13.0
20°-30°	3433.5	18.0
30°-40°	3661.1	19.2
40°-50°	3340.0	17.5
50°-60°	2616.6	13.7
60°-70°	1705.4	8.9
70°-80°	755.6	4.0
80°-90°	162.2	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°	6817.2	35.8
0°-40°	10478.3	55.0
0°-60°	16434.9	86.2
0°-90°	19058.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	19058.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9708	9708	9708	9708	9708	
5°	9540	9528	9528	9517	9517	906
15°	8922	8922	8832	8743	8709	2508
25°	7733	7688	7564	7295	7093	3550
35°	6274	6229	5926	5477	5342	3922
45°	4815	4714	4310	3950	3793	3709
55°	3344	3243	2940	2592	2458	3000
65°	1986	1874	1695	1728	1436	1958
75°	797	741	696	662	730	854
85°	112	124	135	146	157	156
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9707.9	9707.9	9707.9	9707.9	9707.9
2.5°	9640.6	9640.6	9640.6	9629.3	9629.3
5°	9539.5	9528.3	9528.3	9517.1	9517.1
7.5°	9461.0	9449.8	9438.5	9427.3	9404.9
10°	9348.8	9348.8	9337.5	9281.4	9270.2
12.5°	9169.2	9158.0	9113.1	9034.5	9012.1
15°	8922.3	8922.3	8832.5	8742.7	8709.0
17.5°	8652.9	8641.7	8529.5	8439.7	8394.8
20°	8361.1	8338.7	8226.5	8080.6	8002.0
22.5°	8035.7	8035.7	7901.0	7710.2	7631.6
25°	7732.6	7687.8	7564.3	7294.9	7092.9
27.5°	7384.7	7317.4	7182.7	6801.1	6565.5
30°	7003.1	6969.5	6778.7	6284.9	6105.3
32.5°	6644.0	6587.9	6385.9	5869.6	5723.7
35°	6273.7	6228.8	5925.7	5476.8	5342.1
37.5°	5903.3	5847.2	5465.6	5106.5	4938.1
40°	5532.9	5465.6	5050.3	4724.9	4545.3
42.5°	5185.0	5095.2	4691.2	4343.3	4141.3
45°	4814.7	4713.7	4309.6	3950.5	3793.4
47.5°	4444.3	4354.5	3984.2	3613.8	3434.2
50°	4051.5	3972.9	3636.3	3265.9	3075.1
52.5°	3726.0	3602.6	3277.1	2906.8	2749.6
55°	3344.5	3243.4	2940.4	2592.5	2457.8
57.5°	2996.5	2895.5	2615.0	2289.5	2177.3
60°	2671.1	2525.2	2289.5	2008.9	1919.1
62.5°	2311.9	2199.7	1997.7	1762.0	1874.2
65°	1986.5	1874.2	1694.7	1728.3	1436.5
67.5°	1627.3	1571.2	1414.1	1257.0	1212.1
70°	1324.3	1257.0	1200.9	1032.5	987.6
72.5°	1055.0	987.6	909.1	819.3	785.6
75°	796.8	740.7	695.8	662.2	729.5
77.5°	549.9	527.5	493.8	460.1	448.9
80°	359.1	347.9	336.7	325.5	314.2
82.5°	213.2	213.2	213.2	213.2	213.2
85°	112.2	123.5	134.7	145.9	157.1
87.5°	67.3	67.3	78.6	89.8	101.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)