

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: P563121

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-80-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563121  
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-40-UNV-80-84-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

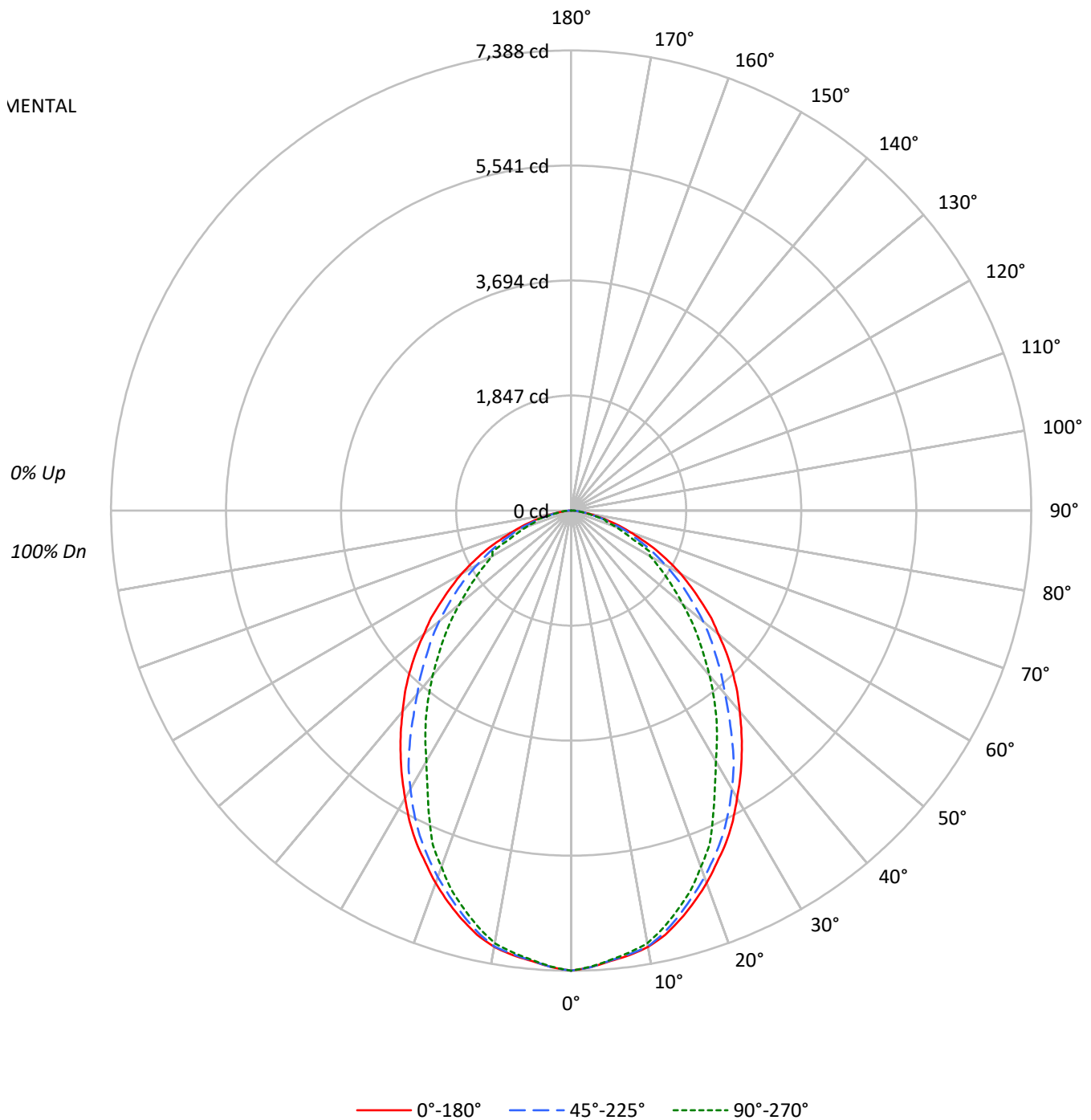
Lumens per Lamp: N/A  
Luminaire Lumens: 14503.0 lumens  
Efficiency: N/A  
Efficacy: 111.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	9940	9940	9940
5°	9805	9793	9782
10°	9720	9708	9638
15°	9458	9363	9232
20°	9111	8964	8719
25°	8736	8546	8013
30°	8280	8014	7218
35°	7842	7407	6677
40°	7395	6750	6075
45°	6972	6240	5493
50°	6454	5792	4898
55°	5970	5249	4388
60°	5470	4688	3930
65°	4813	4106	3480
70°	3965	3595	2957
75°	3152	2753	2886
80°	2118	1985	1853
85°	1318	1582	1846

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6972 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	687.7	4.7
10°-20°	1887.3	13.0
20°-30°	2612.8	18.0
30°-40°	2786.0	19.2
40°-50°	2541.7	17.5
50°-60°	1991.2	13.7
60°-70°	1297.8	8.9
70°-80°	575.0	4.0
80°-90°	123.4	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°	5187.8	35.8
0°-40°	7973.9	55.0
0°-60°	12506.8	86.2
0°-90°	14503.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14503.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7388	7388	7388	7388	7388	
5°	7260	7251	7251	7242	7242	689
15°	6790	6790	6722	6653	6628	1909
25°	5884	5850	5756	5551	5398	2702
35°	4774	4740	4509	4168	4065	2985
45°	3664	3587	3280	3006	2887	2822
55°	2545	2468	2238	1973	1870	2283
65°	1512	1426	1290	1315	1093	1490
75°	606	564	530	504	555	650
85°	85	94	102	111	120	118
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7387.6	7387.6	7387.6	7387.6	7387.6
2.5°	7336.4	7336.4	7336.4	7327.9	7327.9
5°	7259.5	7251.0	7251.0	7242.4	7242.4
7.5°	7199.7	7191.2	7182.7	7174.1	7157.0
10°	7114.3	7114.3	7105.8	7063.1	7054.6
12.5°	6977.7	6969.1	6935.0	6875.2	6858.1
15°	6789.8	6789.8	6721.5	6653.1	6627.5
17.5°	6584.8	6576.3	6490.9	6422.5	6388.4
20°	6362.8	6345.7	6260.3	6149.2	6089.5
22.5°	6115.1	6115.1	6012.6	5867.4	5807.6
25°	5884.5	5850.3	5756.4	5551.4	5397.7
27.5°	5619.7	5568.5	5466.0	5175.6	4996.3
30°	5329.3	5303.7	5158.5	4782.7	4646.1
32.5°	5056.0	5013.3	4859.6	4466.7	4355.7
35°	4774.2	4740.0	4509.4	4167.8	4065.3
37.5°	4492.4	4449.7	4159.3	3886.0	3757.9
40°	4210.5	4159.3	3843.3	3595.6	3459.0
42.5°	3945.8	3877.4	3570.0	3305.2	3151.5
45°	3663.9	3587.1	3279.6	3006.3	2886.7
47.5°	3382.1	3313.8	3031.9	2750.1	2613.4
50°	3083.2	3023.4	2767.2	2485.3	2340.1
52.5°	2835.5	2741.5	2493.9	2212.0	2092.5
55°	2545.1	2468.2	2237.6	1972.9	1870.4
57.5°	2280.3	2203.5	1990.0	1742.3	1656.9
60°	2032.7	1921.6	1742.3	1528.8	1460.4
62.5°	1759.4	1674.0	1520.2	1340.9	1426.3
65°	1511.7	1426.3	1289.6	1315.3	1093.2
67.5°	1238.4	1195.7	1076.1	956.5	922.4
70°	1007.8	956.5	913.8	785.7	751.6
72.5°	802.8	751.6	691.8	623.5	597.8
75°	606.4	563.7	529.5	503.9	555.1
77.5°	418.5	401.4	375.8	350.2	341.6
80°	273.3	264.8	256.2	247.7	239.1
82.5°	162.3	162.3	162.3	162.3	162.3
85°	85.4	93.9	102.5	111.0	119.6
87.5°	51.2	51.2	59.8	68.3	76.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)