

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: P563174

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563174  
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-93-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

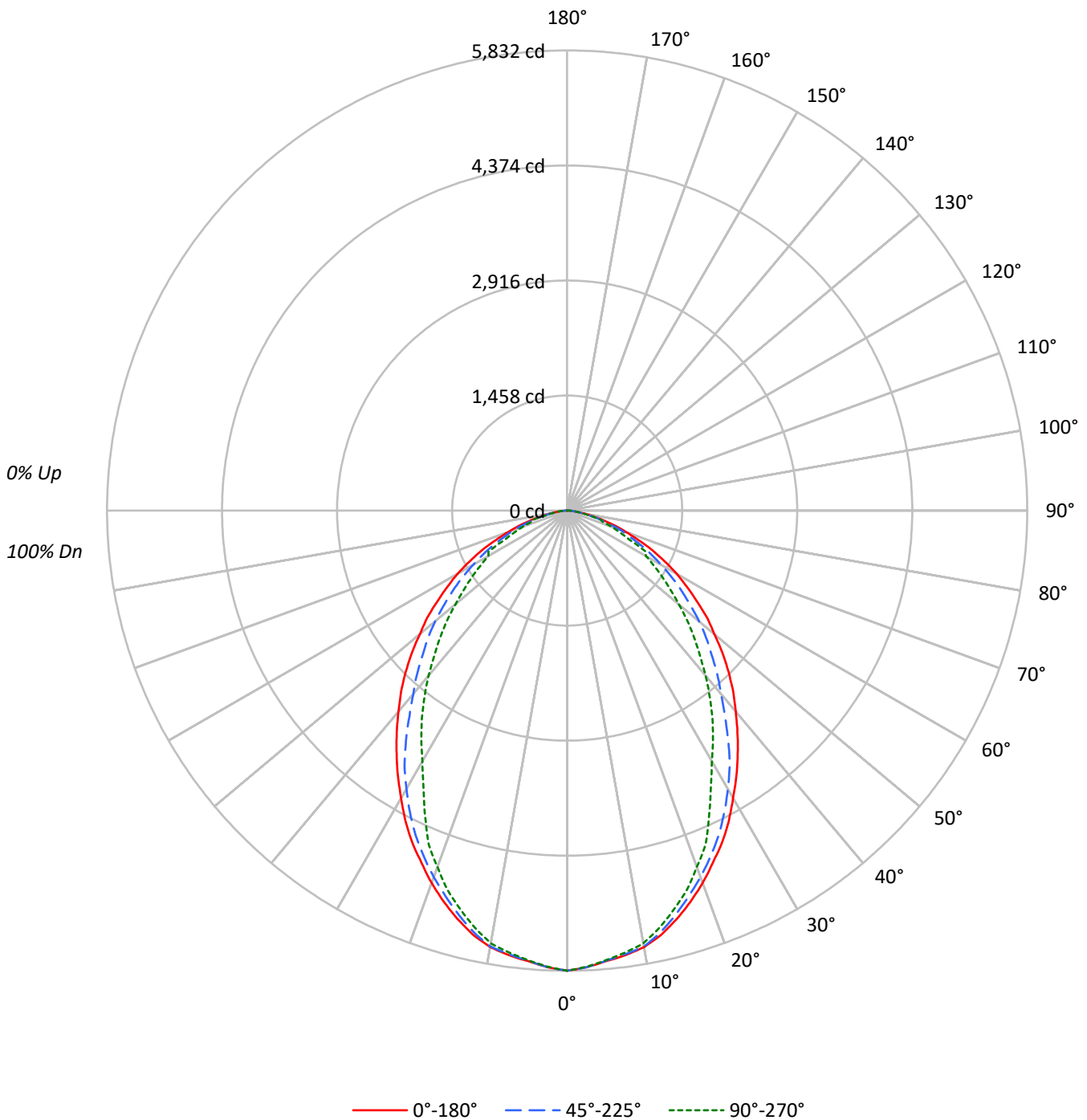
Lumens per Lamp: N/A  
Luminaire Lumens: 11449.0 lumens  
Efficiency: N/A  
Efficacy: 88.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7847	7847	7847
5°	7740	7731	7722
10°	7673	7664	7609
15°	7466	7391	7288
20°	7192	7076	6883
25°	6896	6746	6326
30°	6536	6327	5698
35°	6191	5847	5271
40°	5838	5329	4796
45°	5504	4926	4336
50°	5095	4573	3867
55°	4713	4144	3464
60°	4318	3701	3102
65°	3799	3241	2748
70°	3130	2838	2334
75°	2489	2173	2278
80°	1671	1567	1463
85°	1041	1249	1457

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5504 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	542.9	4.7
10°-20°	1489.9	13.0
20°-30°	2062.6	18.0
30°-40°	2199.4	19.2
40°-50°	2006.5	17.5
50°-60°	1571.9	13.7
60°-70°	1024.5	8.9
70°-80°	453.9	4.0
80°-90°	97.5	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°	4095.4	35.8
0°-40°	6294.8	55.0
0°-60°	9873.2	86.2
0°-90°	11449.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11449.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5832	5832	5832	5832	5832	
5°	5731	5724	5724	5717	5717	544
15°	5360	5360	5306	5252	5232	1507
25°	4645	4618	4544	4382	4261	2133
35°	3769	3742	3560	3290	3209	2356
45°	2892	2832	2589	2373	2279	2228
55°	2009	1948	1766	1557	1476	1802
65°	1193	1126	1018	1038	863	1176
75°	479	445	418	398	438	513
85°	67	74	81	88	94	94
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5832.0	5832.0	5832.0	5832.0	5832.0
2.5°	5791.5	5791.5	5791.5	5784.8	5784.8
5°	5730.8	5724.1	5724.1	5717.4	5717.4
7.5°	5683.6	5676.9	5670.2	5663.4	5649.9
10°	5616.2	5616.2	5609.5	5575.8	5569.0
12.5°	5508.3	5501.6	5474.6	5427.4	5414.0
15°	5360.0	5360.0	5306.1	5252.1	5231.9
17.5°	5198.2	5191.5	5124.0	5070.1	5043.1
20°	5022.9	5009.4	4942.0	4854.4	4807.2
22.5°	4827.4	4827.4	4746.5	4631.9	4584.7
25°	4645.3	4618.4	4544.2	4382.4	4261.0
27.5°	4436.3	4395.9	4315.0	4085.7	3944.2
30°	4207.1	4186.9	4072.3	3775.6	3667.7
32.5°	3991.4	3957.6	3836.3	3526.1	3438.5
35°	3768.9	3741.9	3559.9	3290.2	3209.3
37.5°	3546.4	3512.7	3283.4	3067.7	2966.6
40°	3323.9	3283.4	3034.0	2838.4	2730.6
42.5°	3114.9	3060.9	2818.2	2609.2	2487.9
45°	2892.4	2831.7	2589.0	2373.2	2278.8
47.5°	2669.9	2616.0	2393.5	2171.0	2063.1
50°	2433.9	2386.7	2184.5	1962.0	1847.4
52.5°	2238.4	2164.2	1968.7	1746.2	1651.8
55°	2009.2	1948.5	1766.4	1557.4	1476.5
57.5°	1800.2	1739.5	1570.9	1375.4	1308.0
60°	1604.6	1517.0	1375.4	1206.8	1152.9
62.5°	1388.9	1321.5	1200.1	1058.5	1125.9
65°	1193.4	1125.9	1018.1	1038.3	863.0
67.5°	977.6	943.9	849.5	755.1	728.2
70°	795.6	755.1	721.4	620.3	593.3
72.5°	633.8	593.3	546.1	492.2	472.0
75°	478.7	445.0	418.0	397.8	438.2
77.5°	330.4	316.9	296.7	276.4	269.7
80°	215.7	209.0	202.3	195.5	188.8
82.5°	128.1	128.1	128.1	128.1	128.1
85°	67.4	74.2	80.9	87.6	94.4
87.5°	40.5	40.5	47.2	53.9	60.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)