

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: P562665

Luminaire Tested: FSR-24-4-LD4-2HI-50-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562665  
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-LD4-2HI-50-UNV-93-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

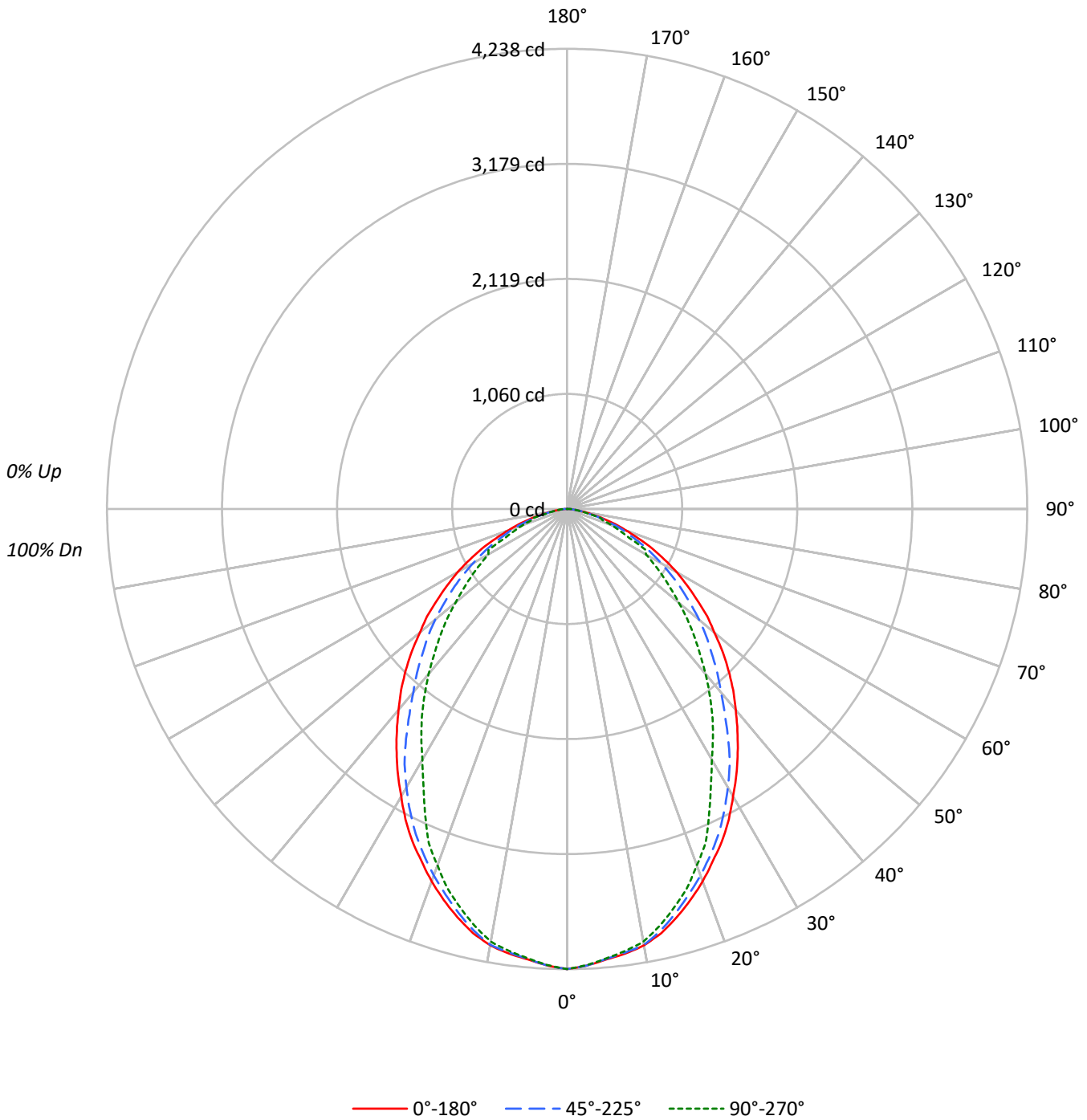
Lumens per Lamp: N/A  
Luminaire Lumens: 8319.0 lumens  
Efficiency: N/A  
Efficacy: 96.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5702	5702	5702
5°	5624	5618	5611
10°	5575	5569	5529
15°	5425	5371	5295
20°	5226	5142	5001
25°	5011	4902	4596
30°	4749	4597	4140
35°	4498	4249	3830
40°	4242	3872	3485
45°	3999	3580	3151
50°	3702	3323	2810
55°	3425	3011	2517
60°	3137	2689	2254
65°	2761	2355	1996
70°	2274	2062	1696
75°	1808	1579	1655
80°	1215	1139	1063
85°	756	908	1059

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3999 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	394.5	4.7
10°-20°	1082.6	13.0
20°-30°	1498.7	18.0
30°-40°	1598.1	19.2
40°-50°	1457.9	17.5
50°-60°	1142.2	13.7
60°-70°	744.4	8.9
70°-80°	329.8	4.0
80°-90°	70.8	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°	2975.8	35.8
0°-40°	4573.9	55.0
0°-60°	7174.0	86.2
0°-90°	8319.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8319.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4238	4238	4238	4238	4238	
5°	4164	4159	4159	4154	4154	395
15°	3895	3895	3856	3816	3802	1095
25°	3375	3356	3302	3184	3096	1550
35°	2738	2719	2587	2391	2332	1712
45°	2102	2058	1881	1724	1656	1619
55°	1460	1416	1284	1132	1073	1309
65°	867	818	740	754	627	855
75°	348	323	304	289	318	373
85°	49	54	59	64	69	68
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4237.6	4237.6	4237.6	4237.6	4237.6
2.5°	4208.2	4208.2	4208.2	4203.3	4203.3
5°	4164.1	4159.2	4159.2	4154.3	4154.3
7.5°	4129.8	4124.9	4120.0	4115.1	4105.3
10°	4080.8	4080.8	4075.9	4051.4	4046.5
12.5°	4002.4	3997.5	3977.9	3943.7	3933.9
15°	3894.7	3894.7	3855.5	3816.3	3801.6
17.5°	3777.1	3772.2	3723.2	3684.0	3664.4
20°	3649.7	3639.9	3590.9	3527.2	3492.9
22.5°	3507.6	3507.6	3448.9	3365.6	3331.3
25°	3375.4	3355.8	3301.9	3184.3	3096.1
27.5°	3223.5	3194.1	3135.3	2968.8	2865.9
30°	3056.9	3042.2	2959.0	2743.4	2665.0
32.5°	2900.2	2875.7	2787.5	2562.1	2498.5
35°	2738.5	2718.9	2586.6	2390.7	2331.9
37.5°	2576.8	2552.4	2385.8	2229.0	2155.5
40°	2415.2	2385.8	2204.5	2062.5	1984.1
42.5°	2263.3	2224.1	2047.8	1895.9	1807.7
45°	2101.6	2057.6	1881.2	1724.4	1655.8
47.5°	1940.0	1900.8	1739.1	1577.5	1499.1
50°	1768.5	1734.2	1587.3	1425.6	1342.3
52.5°	1626.4	1572.6	1430.5	1268.8	1200.2
55°	1459.9	1415.8	1283.5	1131.7	1072.9
57.5°	1308.0	1263.9	1141.5	999.4	950.4
60°	1165.9	1102.3	999.4	876.9	837.7
62.5°	1009.2	960.2	872.0	769.1	818.1
65°	867.1	818.1	739.7	754.4	627.1
67.5°	710.3	685.9	617.3	548.7	529.1
70°	578.1	548.7	524.2	450.7	431.1
72.5°	460.5	431.1	396.8	357.6	342.9
75°	347.8	323.3	303.7	289.0	318.4
77.5°	240.0	230.3	215.6	200.9	196.0
80°	156.8	151.9	147.0	142.1	137.2
82.5°	93.1	93.1	93.1	93.1	93.1
85°	49.0	53.9	58.8	63.7	68.6
87.5°	29.4	29.4	34.3	39.2	44.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)