

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: P562725

Luminaire Tested: FSR-24-4-LD4-2LO-35-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562725  
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-LD4-2LO-35-UNV-93-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

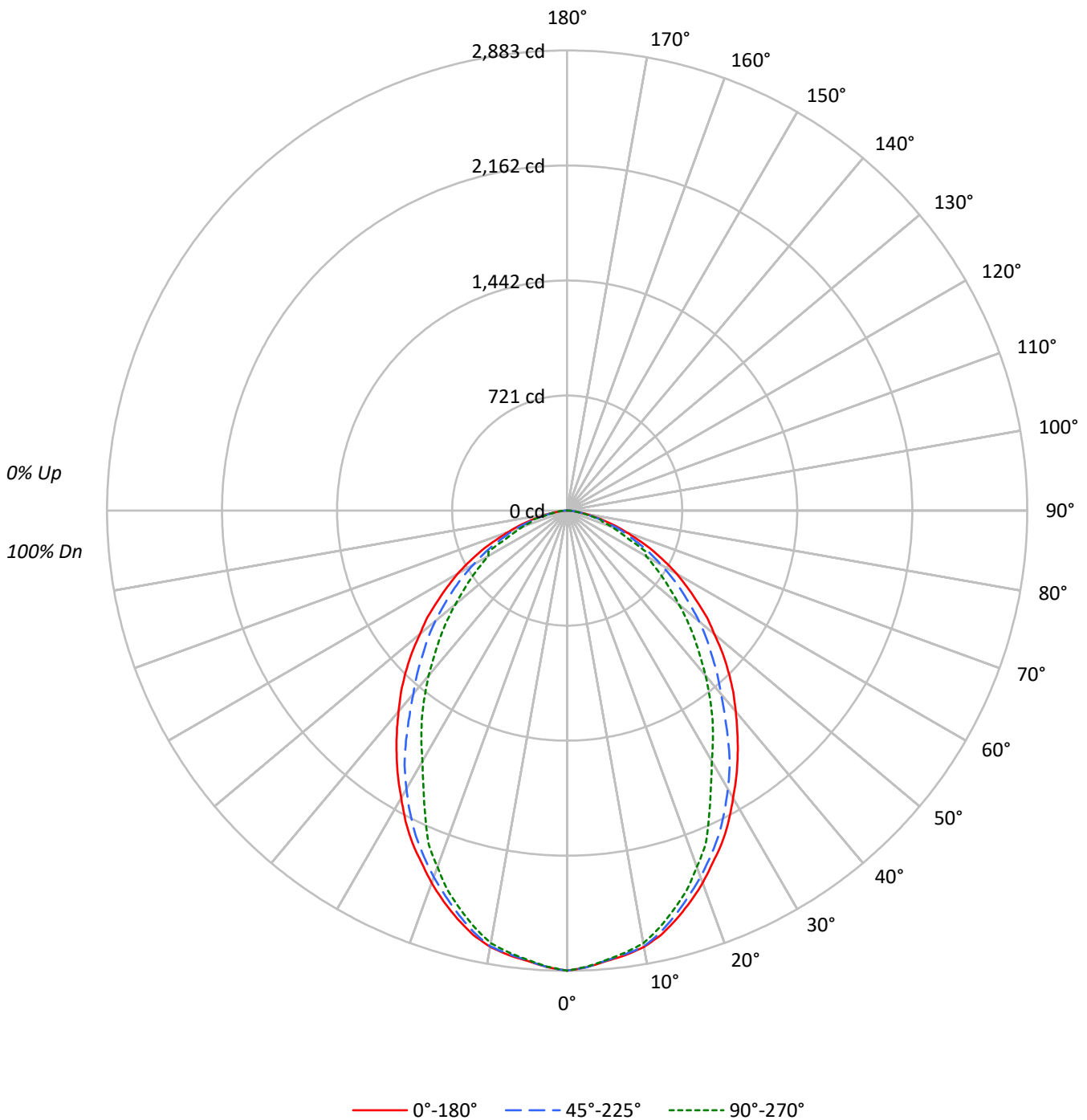
Lumens per Lamp: N/A  
Luminaire Lumens: 5659.0 lumens  
Efficiency: N/A  
Efficacy: 120.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3879	3879	3879
5°	3826	3821	3817
10°	3793	3788	3761
15°	3690	3653	3602
20°	3555	3498	3402
25°	3409	3335	3127
30°	3231	3127	2817
35°	3060	2890	2606
40°	2886	2634	2371
45°	2720	2435	2143
50°	2518	2260	1911
55°	2330	2048	1712
60°	2134	1829	1534
65°	1878	1602	1358
70°	1547	1403	1154
75°	1230	1074	1126
80°	826	775	723
85°	514	618	721

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2720 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	268.3	4.7
10°-20°	736.4	13.0
20°-30°	1019.5	18.0
30°-40°	1087.1	19.2
40°-50°	991.8	17.5
50°-60°	777.0	13.7
60°-70°	506.4	8.9
70°-80°	224.3	4.0
80°-90°	48.2	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°	2024.3	35.8
0°-40°	3111.4	55.0
0°-60°	4880.1	86.2
0°-90°	5659.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5659.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2883	2883	2883	2883	2883	
5°	2833	2829	2829	2826	2826	269
15°	2649	2649	2623	2596	2586	745
25°	2296	2283	2246	2166	2106	1054
35°	1863	1850	1760	1626	1586	1165
45°	1430	1400	1280	1173	1126	1101
55°	993	963	873	770	730	891
65°	590	556	503	513	427	581
75°	237	220	207	197	217	254
85°	33	37	40	43	47	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2882.6	2882.6	2882.6	2882.6	2882.6
2.5°	2862.6	2862.6	2862.6	2859.3	2859.3
5°	2832.6	2829.3	2829.3	2826.0	2826.0
7.5°	2809.3	2806.0	2802.6	2799.3	2792.6
10°	2776.0	2776.0	2772.6	2756.0	2752.7
12.5°	2722.7	2719.3	2706.0	2682.7	2676.0
15°	2649.3	2649.3	2622.7	2596.0	2586.0
17.5°	2569.4	2566.0	2532.7	2506.0	2492.7
20°	2482.7	2476.1	2442.7	2399.4	2376.1
22.5°	2386.1	2386.1	2346.1	2289.4	2266.1
25°	2296.1	2282.8	2246.1	2166.1	2106.1
27.5°	2192.8	2172.8	2132.8	2019.5	1949.5
30°	2079.5	2069.5	2012.8	1866.2	1812.9
32.5°	1972.8	1956.2	1896.2	1742.9	1699.6
35°	1862.9	1849.5	1759.6	1626.3	1586.3
37.5°	1752.9	1736.2	1622.9	1516.3	1466.3
40°	1642.9	1622.9	1499.6	1403.0	1349.7
42.5°	1539.6	1513.0	1393.0	1289.7	1229.7
45°	1429.6	1399.7	1279.7	1173.0	1126.4
47.5°	1319.7	1293.0	1183.0	1073.1	1019.7
50°	1203.0	1179.7	1079.7	969.8	913.1
52.5°	1106.4	1069.7	973.1	863.1	816.5
55°	993.1	963.1	873.1	769.8	729.8
57.5°	889.8	859.8	776.5	679.8	646.5
60°	793.1	749.8	679.8	596.5	569.9
62.5°	686.5	653.2	593.2	523.2	556.5
65°	589.9	556.5	503.2	513.2	426.6
67.5°	483.2	466.6	419.9	373.2	359.9
70°	393.2	373.2	356.6	306.6	293.3
72.5°	313.3	293.3	269.9	243.3	233.3
75°	236.6	219.9	206.6	196.6	216.6
77.5°	163.3	156.6	146.6	136.6	133.3
80°	106.6	103.3	100.0	96.6	93.3
82.5°	63.3	63.3	63.3	63.3	63.3
85°	33.3	36.7	40.0	43.3	46.7
87.5°	20.0	20.0	23.3	26.7	30.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)