

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: P561635

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561635  
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-12-4-LD4-2LO-40-UNV-93-85-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

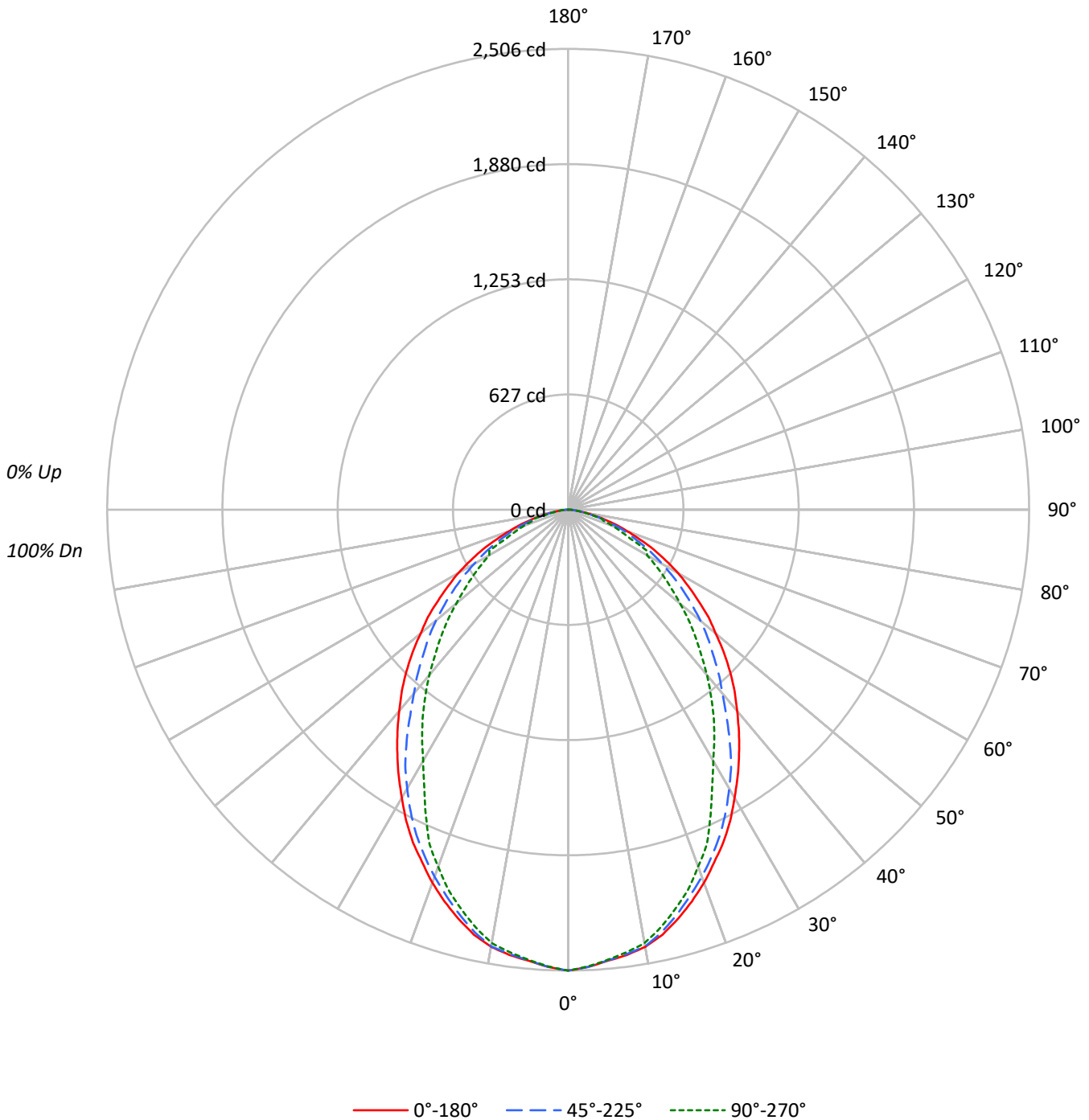
Lumens per Lamp: N/A  
Luminaire Lumens: 4920.0 lumens  
Efficiency: N/A  
Efficacy: 105.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																		
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°	6744	6744	6744
5°	6652	6645	6637
10°	6595	6587	6539
15°	6417	6352	6264
20°	6181	6082	5916
25°	5927	5798	5437
30°	5618	5438	4897
35°	5321	5026	4530
40°	5018	4580	4122
45°	4730	4234	3727
50°	4379	3930	3324
55°	4051	3561	2977
60°	3711	3181	2666
65°	3265	2786	2362
70°	2690	2439	2006
75°	2139	1867	1958
80°	1437	1347	1257
85°	895	1074	1254

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4730 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	233.3	4.7
10°-20°	640.2	13.0
20°-30°	886.4	18.0
30°-40°	945.1	19.2
40°-50°	862.3	17.5
50°-60°	675.5	13.7
60°-70°	440.3	8.9
70°-80°	195.1	4.0
80°-90°	41.9	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°	1759.9	35.8
0°-40°	2705.1	55.0
0°-60°	4242.8	86.2
0°-90°	4920.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4920.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2506	2506	2506	2506	2506	
5°	2463	2460	2460	2457	2457	234
15°	2303	2303	2280	2257	2248	648
25°	1996	1985	1953	1883	1831	916
35°	1620	1608	1530	1414	1379	1013
45°	1243	1217	1113	1020	979	957
55°	863	837	759	669	634	774
65°	513	484	438	446	371	505
75°	206	191	180	171	188	220
85°	29	32	35	38	41	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2506.2	2506.2	2506.2	2506.2	2506.2
2.5°	2488.8	2488.8	2488.8	2485.9	2485.9
5°	2462.7	2459.8	2459.8	2456.9	2456.9
7.5°	2442.4	2439.5	2436.6	2433.7	2428.0
10°	2413.5	2413.5	2410.6	2396.1	2393.2
12.5°	2367.1	2364.2	2352.6	2332.3	2326.5
15°	2303.4	2303.4	2280.2	2257.0	2248.3
17.5°	2233.8	2230.9	2202.0	2178.8	2167.2
20°	2158.5	2152.7	2123.7	2086.1	2065.8
22.5°	2074.5	2074.5	2039.7	1990.5	1970.2
25°	1996.3	1984.7	1952.8	1883.3	1831.1
27.5°	1906.4	1889.1	1854.3	1755.8	1694.9
30°	1807.9	1799.2	1750.0	1622.5	1576.1
32.5°	1715.2	1700.7	1648.6	1515.3	1477.6
35°	1619.6	1608.0	1529.8	1413.9	1379.1
37.5°	1524.0	1509.5	1411.0	1318.3	1274.8
40°	1428.4	1411.0	1303.8	1219.8	1173.4
42.5°	1338.6	1315.4	1211.1	1121.3	1069.1
45°	1243.0	1216.9	1112.6	1019.9	979.3
47.5°	1147.3	1124.2	1028.5	932.9	886.6
50°	1045.9	1025.7	938.7	843.1	793.9
52.5°	961.9	930.0	846.0	750.4	709.8
55°	863.4	837.3	759.1	669.3	634.5
57.5°	773.6	747.5	675.1	591.1	562.1
60°	689.6	651.9	591.1	518.6	495.4
62.5°	596.8	567.9	515.7	454.9	483.9
65°	512.8	483.9	437.5	446.2	370.9
67.5°	420.1	405.6	365.1	324.5	312.9
70°	341.9	324.5	310.0	266.6	255.0
72.5°	272.3	255.0	234.7	211.5	202.8
75°	205.7	191.2	179.6	170.9	188.3
77.5°	142.0	136.2	127.5	118.8	115.9
80°	92.7	89.8	86.9	84.0	81.1
82.5°	55.0	55.0	55.0	55.0	55.0
85°	29.0	31.9	34.8	37.7	40.6
87.5°	17.4	17.4	20.3	23.2	26.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)