

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: P561806

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561806  
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-LD4-2STD-40-UNV-81-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

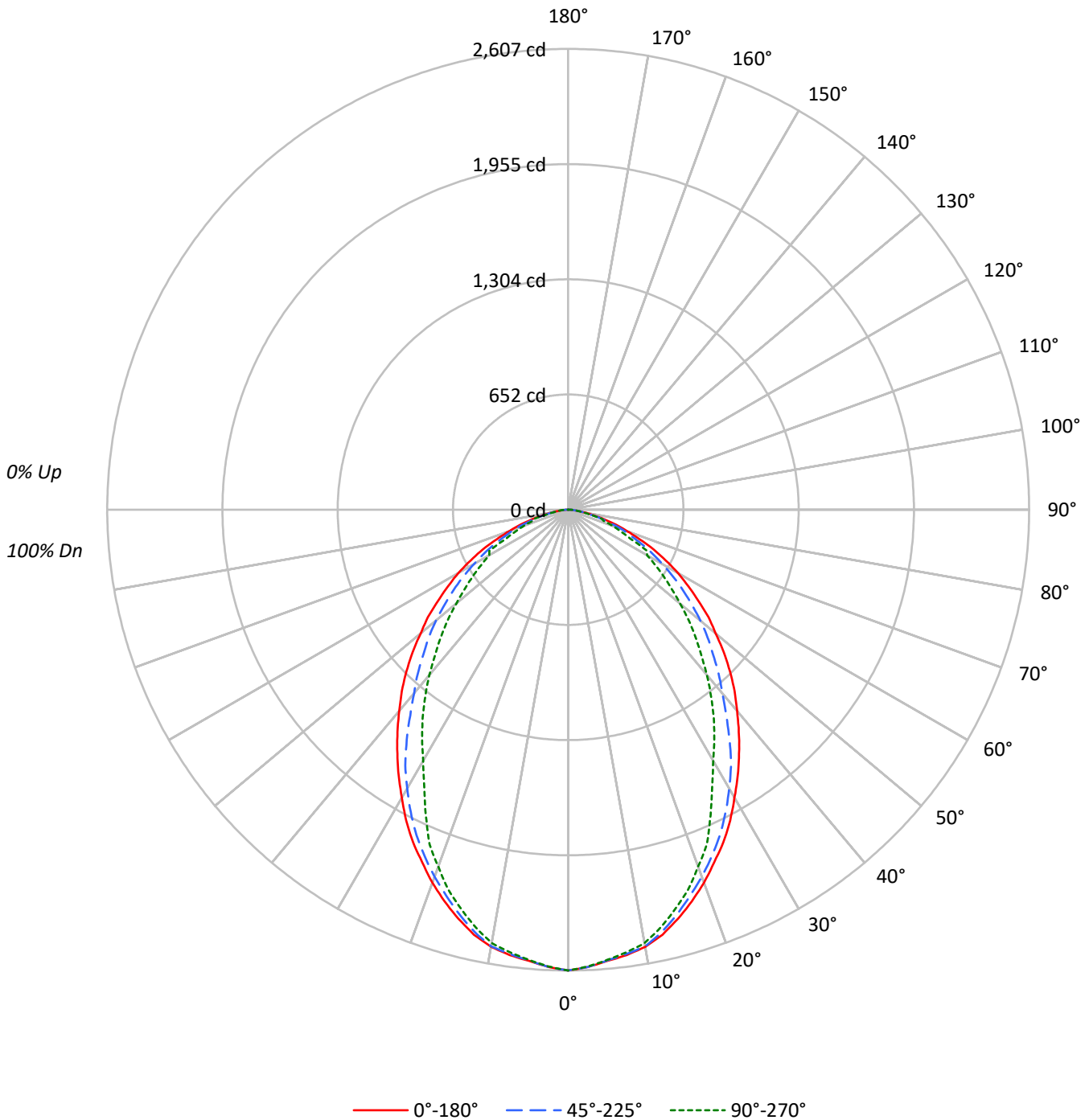
Lumens per Lamp: N/A  
Luminaire Lumens: 5118.0 lumens  
Efficiency: N/A  
Efficacy: 76.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	7015	7015	7015
5°	6920	6912	6904
10°	6860	6852	6803
15°	6675	6608	6516
20°	6430	6326	6154
25°	6166	6032	5656
30°	5844	5656	5095
35°	5535	5228	4713
40°	5220	4764	4288
45°	4921	4404	3877
50°	4555	4088	3457
55°	4214	3704	3096
60°	3860	3309	2774
65°	3397	2898	2457
70°	2798	2537	2087
75°	2225	1943	2037
80°	1494	1401	1308
85°	929	1118	1303

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4921 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	242.7	4.7
10°-20°	666.0	13.0
20°-30°	922.1	18.0
30°-40°	983.2	19.2
40°-50°	896.9	17.5
50°-60°	702.7	13.7
60°-70°	458.0	8.9
70°-80°	202.9	4.0
80°-90°	43.6	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°	1830.8	35.8
0°-40°	2813.9	55.0
0°-60°	4413.5	86.2
0°-90°	5118.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5118.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2607	2607	2607	2607	2607	
5°	2562	2559	2559	2556	2556	243
15°	2396	2396	2372	2348	2339	674
25°	2077	2064	2031	1959	1905	953
35°	1685	1673	1591	1471	1435	1053
45°	1293	1266	1157	1061	1019	996
55°	898	871	790	696	660	806
65°	534	503	455	464	386	526
75°	214	199	187	178	196	229
85°	30	33	36	39	42	42
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2607.0	2607.0	2607.0	2607.0	2607.0
2.5°	2589.0	2589.0	2589.0	2585.9	2585.9
5°	2561.8	2558.8	2558.8	2555.8	2555.8
7.5°	2540.7	2537.7	2534.7	2531.7	2525.7
10°	2510.6	2510.6	2507.6	2492.5	2489.5
12.5°	2462.4	2459.4	2447.3	2426.2	2420.2
15°	2396.1	2396.1	2372.0	2347.8	2338.8
17.5°	2323.7	2320.7	2290.6	2266.5	2254.4
20°	2245.4	2239.3	2209.2	2170.0	2148.9
22.5°	2158.0	2158.0	2121.8	2070.6	2049.5
25°	2076.6	2064.5	2031.4	1959.0	1904.8
27.5°	1983.2	1965.1	1928.9	1826.4	1763.1
30°	1880.7	1871.6	1820.4	1687.8	1639.6
32.5°	1784.2	1769.2	1714.9	1576.3	1537.1
35°	1684.8	1672.7	1591.3	1470.8	1434.6
37.5°	1585.3	1570.3	1467.8	1371.3	1326.1
40°	1485.9	1467.8	1356.3	1268.9	1220.6
42.5°	1392.4	1368.3	1259.8	1166.4	1112.1
45°	1293.0	1265.8	1157.3	1060.9	1018.7
47.5°	1193.5	1169.4	1069.9	970.5	922.3
50°	1088.0	1066.9	976.5	877.1	825.8
52.5°	1000.6	967.5	880.1	780.6	738.4
55°	898.1	871.0	789.6	696.2	660.0
57.5°	804.7	777.6	702.2	614.8	584.7
60°	717.3	678.1	614.8	539.5	515.4
62.5°	620.9	590.7	536.5	473.2	503.3
65°	533.5	503.3	455.1	464.1	385.8
67.5°	437.0	421.9	379.8	337.6	325.5
70°	355.6	337.6	322.5	277.3	265.2
72.5°	283.3	265.2	244.1	220.0	211.0
75°	214.0	198.9	186.9	177.8	195.9
77.5°	147.7	141.7	132.6	123.6	120.6
80°	96.4	93.4	90.4	87.4	84.4
82.5°	57.3	57.3	57.3	57.3	57.3
85°	30.1	33.2	36.2	39.2	42.2
87.5°	18.1	18.1	21.1	24.1	27.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)