

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: P561834

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561834  
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-93-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

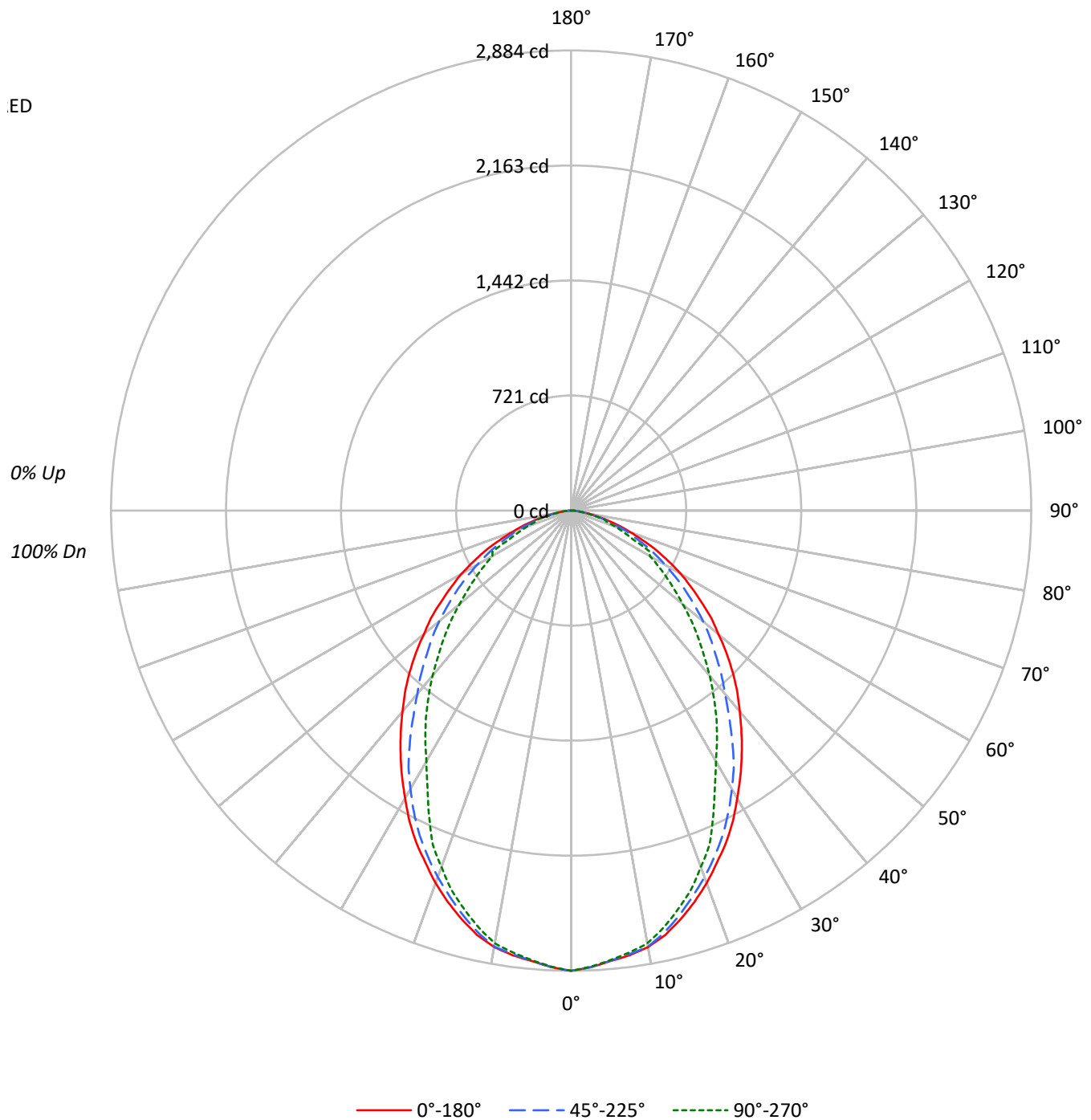
Lumens per Lamp: N/A  
Luminaire Lumens: 5662.0 lumens  
Efficiency: N/A  
Efficacy: 85.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7761	7761	7761
5°	7656	7647	7638
10°	7589	7580	7526
15°	7385	7310	7208
20°	7113	6999	6808
25°	6821	6673	6257
30°	6465	6258	5636
35°	6123	5783	5214
40°	5774	5271	4744
45°	5444	4873	4289
50°	5039	4523	3825
55°	4662	4099	3426
60°	4271	3661	3069
65°	3758	3206	2718
70°	3095	2807	2308
75°	2461	2149	2253
80°	1654	1550	1447
85°	1028	1235	1442

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5444 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	268.5	4.7
10°-20°	736.8	13.0
20°-30°	1020.1	18.0
30°-40°	1087.7	19.2
40°-50°	992.3	17.5
50°-60°	777.4	13.7
60°-70°	506.7	8.9
70°-80°	224.5	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°	2025.3	35.8
0°-40°	3113.0	55.0
0°-60°	4882.7	86.2
0°-90°	5662.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5662.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2884	2884	2884	2884	2884	
5°	2834	2831	2831	2828	2828	269
15°	2651	2651	2624	2597	2587	745
25°	2297	2284	2247	2167	2107	1055
35°	1864	1850	1760	1627	1587	1165
45°	1430	1400	1280	1174	1127	1102
55°	994	964	874	770	730	891
65°	590	557	504	514	427	582
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°	2884.1	2884.1	2884.1	2884.1	2884.1
2.5°	2864.1	2864.1	2864.1	2860.8	2860.8
5°	2834.1	2830.8	2830.8	2827.5	2827.5
7.5°	2810.8	2807.5	2804.1	2800.8	2794.1
10°	2777.5	2777.5	2774.1	2757.4	2754.1
12.5°	2724.1	2720.8	2707.4	2684.1	2677.4
15°	2650.7	2650.7	2624.1	2597.4	2587.4
17.5°	2570.7	2567.4	2534.0	2507.4	2494.0
20°	2484.0	2477.4	2444.0	2400.7	2377.3
22.5°	2387.3	2387.3	2347.3	2290.6	2267.3
25°	2297.3	2284.0	2247.3	2167.3	2107.3
27.5°	2194.0	2173.9	2133.9	2020.6	1950.6
30°	2080.6	2070.6	2013.9	1867.2	1813.8
32.5°	1973.9	1957.2	1897.2	1743.8	1700.5
35°	1863.9	1850.5	1760.5	1627.1	1587.1
37.5°	1753.8	1737.2	1623.8	1517.1	1467.1
40°	1643.8	1623.8	1500.4	1403.7	1350.4
42.5°	1540.4	1513.8	1393.7	1290.4	1230.3
45°	1430.4	1400.4	1280.4	1173.7	1127.0
47.5°	1320.4	1293.7	1183.7	1073.6	1020.3
50°	1203.7	1180.3	1080.3	970.3	913.6
52.5°	1107.0	1070.3	973.6	863.6	816.9
55°	993.6	963.6	873.6	770.2	730.2
57.5°	890.3	860.2	776.9	680.2	646.8
60°	793.6	750.2	680.2	596.8	570.2
62.5°	686.9	653.5	593.5	523.5	556.8
65°	590.2	556.8	503.5	513.5	426.8
67.5°	483.5	466.8	420.1	373.4	360.1
70°	393.4	373.4	356.8	306.8	293.4
72.5°	313.4	293.4	270.1	243.4	233.4
75°	236.7	220.1	206.7	196.7	216.7
77.5°	163.4	156.7	146.7	136.7	133.4
80°	106.7	103.4	100.0	96.7	93.4
82.5°	63.4	63.4	63.4	63.4	63.4
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)