

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: P561486

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561486  
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-LD4-2HI-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

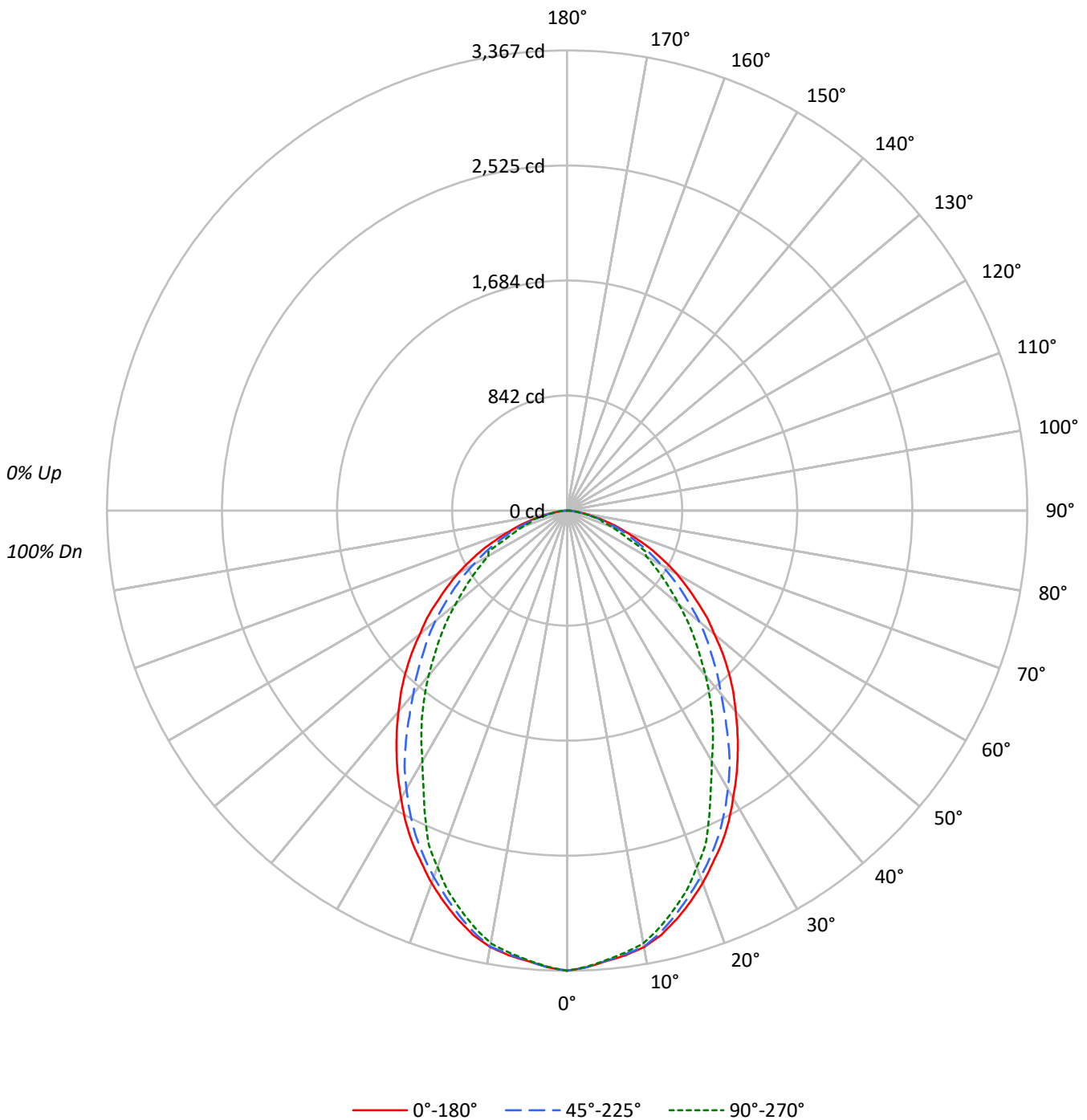
Lumens per Lamp: N/A  
Luminaire Lumens: 6610.0 lumens  
Efficiency: N/A  
Efficacy: 76.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9061	9061	9061
5°	8938	8927	8917
10°	8860	8849	8786
15°	8621	8534	8415
20°	8304	8171	7948
25°	7963	7790	7304
30°	7547	7306	6580
35°	7148	6752	6087
40°	6741	6153	5538
45°	6355	5688	5007
50°	5883	5280	4465
55°	5442	4784	4000
60°	4986	4274	3582
65°	4387	3743	3172
70°	3614	3277	2695
75°	2874	2509	2630
80°	1931	1810	1689
85°	1201	1442	1683

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6355 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	313.4	4.7
10°-20°	860.2	13.0
20°-30°	1190.9	18.0
30°-40°	1269.8	19.2
40°-50°	1158.4	17.5
50°-60°	907.5	13.7
60°-70°	591.5	8.9
70°-80°	262.1	4.0
80°-90°	56.3	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°	2364.4	35.8
0°-40°	3634.2	55.0
0°-60°	5700.2	86.2
0°-90°	6610.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6610.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3367	3367	3367	3367	3367	
5°	3309	3305	3305	3301	3301	314
15°	3095	3095	3063	3032	3021	870
25°	2682	2666	2624	2530	2460	1231
35°	2176	2160	2055	1900	1853	1360
45°	1670	1635	1495	1370	1316	1286
55°	1160	1125	1020	899	852	1040
65°	689	650	588	600	498	679
75°	276	257	241	230	253	296
85°	39	43	47	51	54	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3367.0	3367.0	3367.0	3367.0	3367.0
2.5°	3343.7	3343.7	3343.7	3339.8	3339.8
5°	3308.7	3304.8	3304.8	3300.9	3300.9
7.5°	3281.4	3277.5	3273.6	3269.7	3261.9
10°	3242.5	3242.5	3238.6	3219.1	3215.2
12.5°	3180.2	3176.3	3160.7	3133.5	3125.7
15°	3094.6	3094.6	3063.4	3032.3	3020.6
17.5°	3001.1	2997.3	2958.3	2927.2	2911.6
20°	2899.9	2892.2	2853.2	2802.6	2775.4
22.5°	2787.1	2787.1	2740.3	2674.2	2646.9
25°	2682.0	2666.4	2623.6	2530.1	2460.1
27.5°	2561.3	2537.9	2491.2	2358.9	2277.1
30°	2428.9	2417.3	2351.1	2179.8	2117.5
32.5°	2304.4	2284.9	2214.9	2035.8	1985.2
35°	2175.9	2160.4	2055.3	1899.6	1852.8
37.5°	2047.5	2028.0	1895.7	1771.1	1712.7
40°	1919.0	1895.7	1751.6	1638.8	1576.5
42.5°	1798.4	1767.2	1627.1	1506.4	1436.3
45°	1669.9	1634.9	1494.7	1370.2	1315.7
47.5°	1541.4	1510.3	1381.9	1253.4	1191.1
50°	1405.2	1378.0	1261.2	1132.7	1066.6
52.5°	1292.3	1249.5	1136.6	1008.2	953.7
55°	1160.0	1124.9	1019.8	899.2	852.5
57.5°	1039.3	1004.3	907.0	794.1	755.2
60°	926.4	875.8	794.1	696.8	665.6
62.5°	801.9	762.9	692.9	611.1	650.1
65°	689.0	650.1	587.8	599.5	498.2
67.5°	564.4	545.0	490.5	436.0	420.4
70°	459.3	436.0	416.5	358.1	342.5
72.5°	365.9	342.5	315.3	284.2	272.5
75°	276.4	256.9	241.3	229.7	253.0
77.5°	190.7	182.9	171.3	159.6	155.7
80°	124.6	120.7	116.8	112.9	109.0
82.5°	74.0	74.0	74.0	74.0	74.0
85°	38.9	42.8	46.7	50.6	54.5
87.5°	23.4	23.4	27.2	31.1	35.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)