

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: P563554

Luminaire Tested: FSR-24-4-LD4-3STD-40-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563554  
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-LD4-3STD-40-UNV-93-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

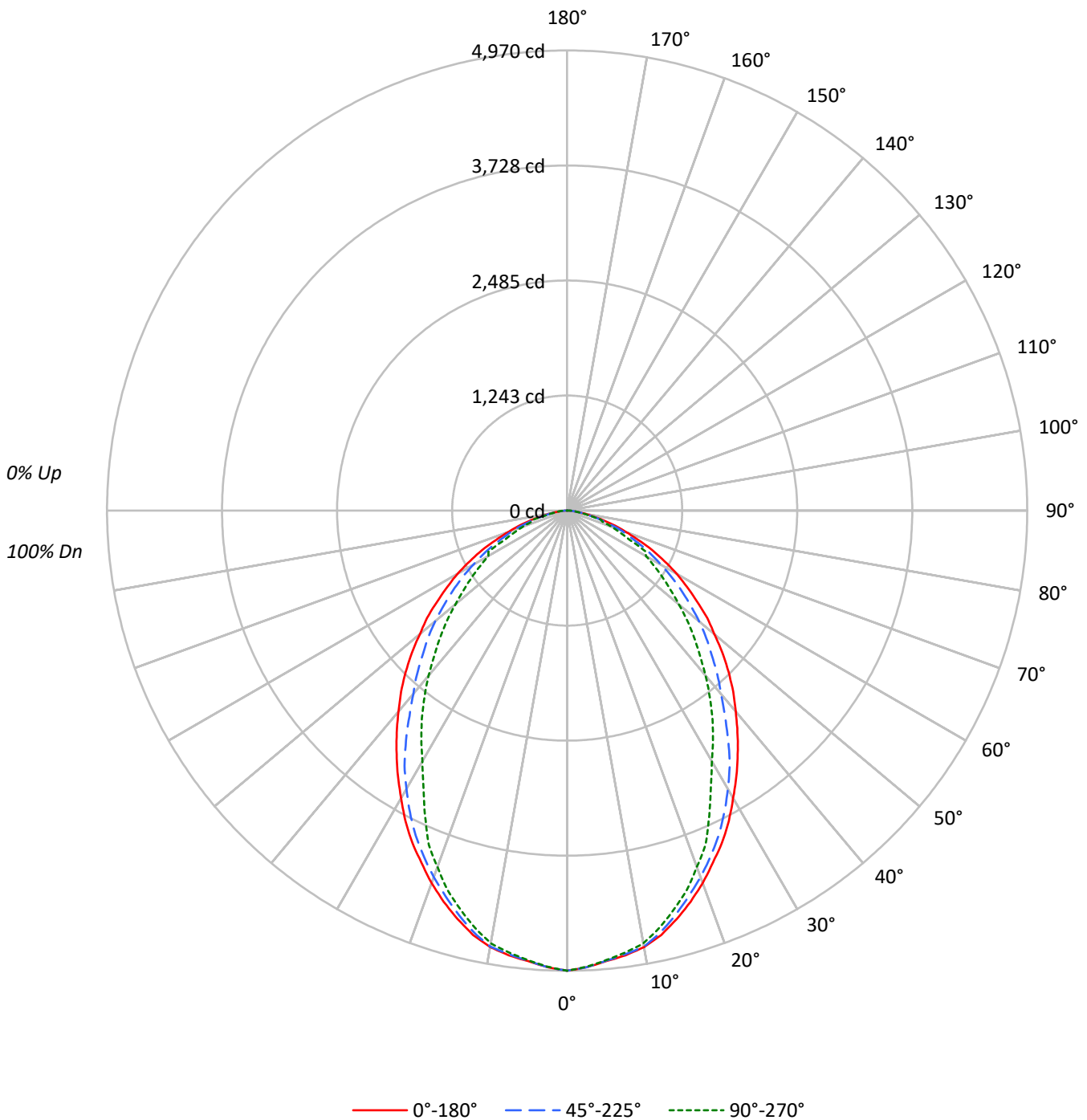
Lumens per Lamp: N/A  
Luminaire Lumens: 9757.0 lumens  
Efficiency: N/A  
Efficacy: 97.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6687	6687	6687
5°	6596	6589	6581
10°	6539	6531	6484
15°	6363	6299	6211
20°	6129	6030	5866
25°	5877	5749	5391
30°	5570	5392	4856
35°	5276	4983	4492
40°	4975	4541	4087
45°	4690	4198	3695
50°	4342	3897	3295
55°	4016	3531	2952
60°	3680	3154	2644
65°	3238	2762	2342
70°	2667	2419	1989
75°	2120	1852	1942
80°	1425	1336	1247
85°	888	1064	1241

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4690 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	462.6	4.7
10°-20°	1269.7	13.0
20°-30°	1757.8	18.0
30°-40°	1874.3	19.2
40°-50°	1709.9	17.5
50°-60°	1339.6	13.7
60°-70°	873.1	8.9
70°-80°	386.8	4.0
80°-90°	83.1	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°	3490.1	35.8
0°-40°	5364.5	55.0
0°-60°	8414.0	86.2
0°-90°	9757.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9757.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4970	4970	4970	4970	4970	
5°	4884	4878	4878	4872	4872	464
15°	4568	4568	4522	4476	4459	1284
25°	3959	3936	3873	3735	3631	1817
35°	3212	3189	3034	2804	2735	2008
45°	2465	2413	2206	2022	1942	1899
55°	1712	1660	1505	1327	1258	1536
65°	1017	960	868	885	736	1002
75°	408	379	356	339	374	437
85°	58	63	69	75	80	80
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4970.1	4970.1	4970.1	4970.1	4970.1
2.5°	4935.6	4935.6	4935.6	4929.9	4929.9
5°	4883.9	4878.2	4878.2	4872.4	4872.4
7.5°	4843.7	4837.9	4832.2	4826.4	4814.9
10°	4786.2	4786.2	4780.5	4751.7	4746.0
12.5°	4694.3	4688.5	4665.6	4625.3	4613.8
15°	4567.9	4567.9	4521.9	4475.9	4458.7
17.5°	4430.0	4424.2	4366.8	4320.8	4297.8
20°	4280.6	4269.1	4211.6	4136.9	4096.7
22.5°	4114.0	4114.0	4045.0	3947.3	3907.1
25°	3958.8	3935.8	3872.6	3734.7	3631.3
27.5°	3780.7	3746.2	3677.3	3481.9	3361.3
30°	3585.4	3568.1	3470.4	3217.6	3125.7
32.5°	3401.5	3372.8	3269.3	3005.0	2930.3
35°	3211.9	3188.9	3033.8	2803.9	2735.0
37.5°	3022.3	2993.5	2798.2	2614.3	2528.1
40°	2832.7	2798.2	2585.6	2419.0	2327.0
42.5°	2654.5	2608.6	2401.7	2223.6	2120.2
45°	2464.9	2413.2	2206.4	2022.5	1942.1
47.5°	2275.3	2229.4	2039.7	1850.1	1758.2
50°	2074.2	2034.0	1861.6	1672.0	1574.3
52.5°	1907.6	1844.4	1677.8	1488.2	1407.7
55°	1712.2	1660.5	1505.4	1327.3	1258.3
57.5°	1534.1	1482.4	1338.8	1172.1	1114.7
60°	1367.5	1292.8	1172.1	1028.5	982.5
62.5°	1183.6	1126.2	1022.7	902.1	959.5
65°	1017.0	959.5	867.6	884.8	735.5
67.5°	833.1	804.4	724.0	643.5	620.5
70°	678.0	643.5	614.8	528.6	505.6
72.5°	540.1	505.6	465.4	419.4	402.2
75°	407.9	379.2	356.2	339.0	373.5
77.5°	281.5	270.1	252.8	235.6	229.8
80°	183.9	178.1	172.4	166.6	160.9
82.5°	109.2	109.2	109.2	109.2	109.2
85°	57.5	63.2	68.9	74.7	80.4
87.5°	34.5	34.5	40.2	46.0	51.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)