

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: P563598

Luminaire Tested: FSR-24-4-LD4-3STD-50-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563598  
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-50-UNV-81-97-EDD-90  
Description: 2X4 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**

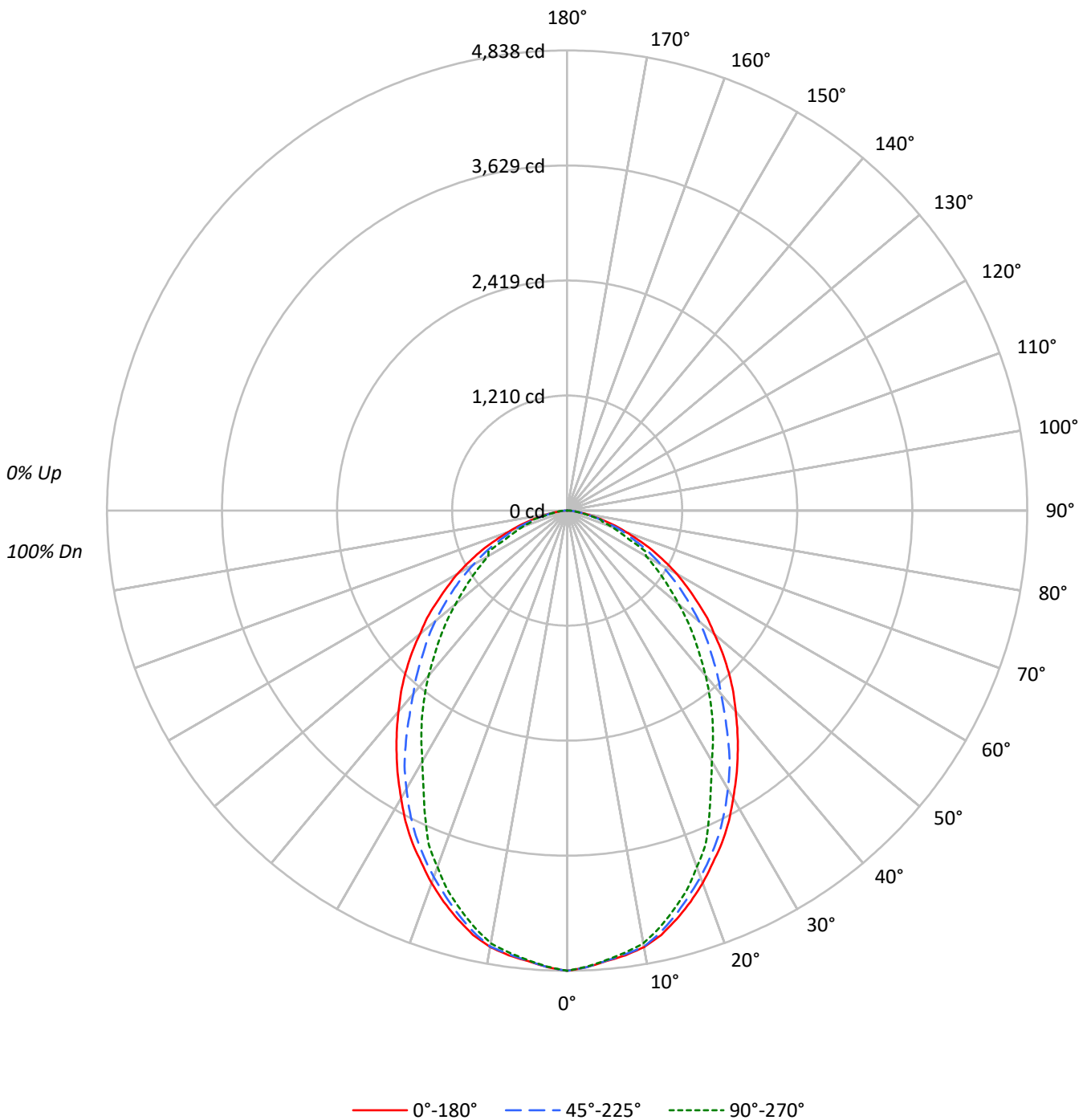
Lumens per Lamp: N/A  
Luminaire Lumens: 9498.0 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6510	6510	6510
5°	6421	6414	6406
10°	6366	6358	6312
15°	6194	6132	6046
20°	5966	5870	5710
25°	5721	5597	5248
30°	5423	5249	4727
35°	5136	4851	4373
40°	4843	4421	3979
45°	4566	4087	3597
50°	4227	3793	3208
55°	3910	3438	2873
60°	3582	3070	2574
65°	3152	2689	2279
70°	2596	2354	1936
75°	2064	1803	1890
80°	1387	1300	1213
85°	863	1036	1209

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4566 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	450.4	4.7
10°-20°	1236.0	13.0
20°-30°	1711.2	18.0
30°-40°	1824.6	19.2
40°-50°	1664.6	17.5
50°-60°	1304.0	13.7
60°-70°	849.9	8.9
70°-80°	376.6	4.0
80°-90°	80.9	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°	3397.5	35.8
0°-40°	5222.1	55.0
0°-60°	8190.7	86.2
0°-90°	9498.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9498.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4838	4838	4838	4838	4838	
5°	4754	4749	4749	4743	4743	451
15°	4447	4447	4402	4357	4340	1250
25°	3854	3831	3770	3636	3535	1769
35°	3127	3104	2953	2730	2662	1955
45°	2400	2349	2148	1969	1890	1848
55°	1667	1616	1465	1292	1225	1495
65°	990	934	845	861	716	976
75°	397	369	347	330	364	426
85°	56	62	67	73	78	78
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4838.2	4838.2	4838.2	4838.2	4838.2
2.5°	4804.6	4804.6	4804.6	4799.0	4799.0
5°	4754.3	4748.7	4748.7	4743.1	4743.1
7.5°	4715.1	4709.5	4703.9	4698.3	4687.1
10°	4659.2	4659.2	4653.6	4625.6	4620.0
12.5°	4569.7	4564.1	4541.7	4502.6	4491.4
15°	4446.6	4446.6	4401.9	4357.1	4340.4
17.5°	4312.4	4306.8	4250.9	4206.1	4183.7
20°	4167.0	4155.8	4099.8	4027.1	3988.0
22.5°	4004.8	4004.8	3937.6	3842.6	3803.4
25°	3853.7	3831.4	3769.8	3635.6	3534.9
27.5°	3680.4	3646.8	3579.7	3389.5	3272.0
30°	3490.2	3473.4	3378.3	3132.2	3042.7
32.5°	3311.2	3283.2	3182.6	2925.3	2852.6
35°	3126.6	3104.2	2953.2	2729.5	2662.4
37.5°	2942.0	2914.1	2723.9	2544.9	2461.0
40°	2757.5	2723.9	2517.0	2354.8	2265.3
42.5°	2584.1	2539.3	2338.0	2164.6	2063.9
45°	2399.5	2349.2	2147.8	1968.8	1890.5
47.5°	2214.9	2170.2	1985.6	1801.0	1711.5
50°	2019.2	1980.0	1812.2	1627.6	1532.5
52.5°	1857.0	1795.4	1633.2	1448.6	1370.3
55°	1666.8	1616.4	1465.4	1292.0	1224.9
57.5°	1493.4	1443.1	1303.2	1141.0	1085.1
60°	1331.2	1258.5	1141.0	1001.2	956.4
62.5°	1152.2	1096.3	995.6	878.1	934.1
65°	990.0	934.1	844.6	861.4	715.9
67.5°	811.0	783.1	704.7	626.4	604.1
70°	660.0	626.4	598.5	514.6	492.2
72.5°	525.8	492.2	453.1	408.3	391.5
75°	397.1	369.2	346.8	330.0	363.6
77.5°	274.1	262.9	246.1	229.3	223.7
80°	179.0	173.4	167.8	162.2	156.6
82.5°	106.3	106.3	106.3	106.3	106.3
85°	55.9	61.5	67.1	72.7	78.3
87.5°	33.6	33.6	39.2	44.7	50.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)