

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: P563502

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563502  
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-35-UNV-93-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

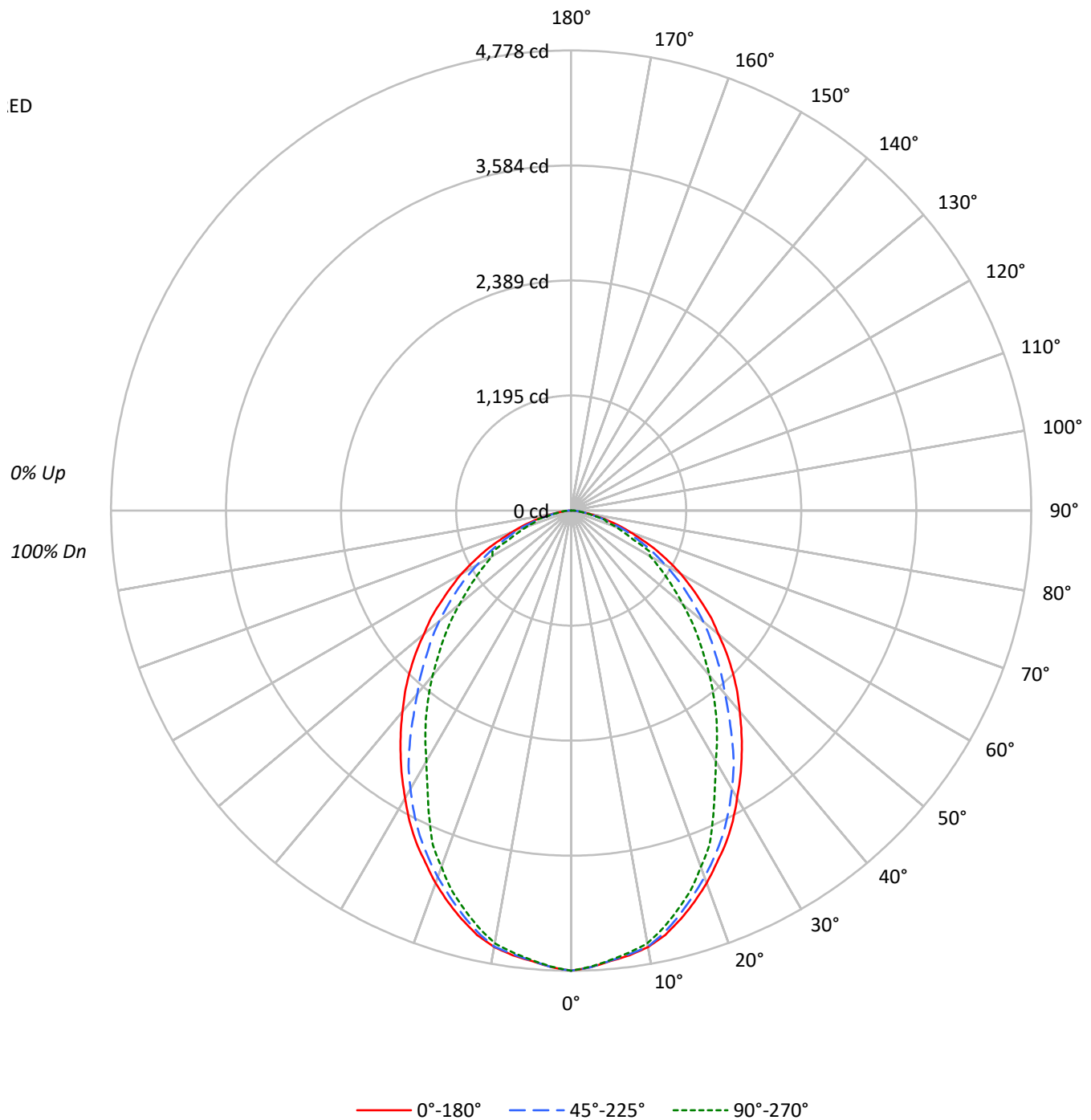
Lumens per Lamp: N/A  
Luminaire Lumens: 9380.0 lumens  
Efficiency: N/A  
Efficacy: 93.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6429	6429	6429
5°	6341	6334	6326
10°	6287	6279	6234
15°	6117	6055	5971
20°	5892	5797	5639
25°	5650	5527	5183
30°	5355	5183	4669
35°	5072	4790	4319
40°	4783	4366	3929
45°	4509	4036	3553
50°	4174	3746	3168
55°	3861	3395	2838
60°	3538	3032	2542
65°	3113	2656	2251
70°	2564	2325	1912
75°	2039	1781	1866
80°	1370	1284	1199
85°	852	1024	1193

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4509 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	444.8	4.7
10°-20°	1220.6	13.0
20°-30°	1689.9	18.0
30°-40°	1801.9	19.2
40°-50°	1643.9	17.5
50°-60°	1287.8	13.7
60°-70°	839.4	8.9
70°-80°	371.9	4.0
80°-90°	79.9	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°	3355.3	35.8
0°-40°	5157.2	55.0
0°-60°	8088.9	86.2
0°-90°	9380.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9380.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4778	4778	4778	4778	4778	
5°	4695	4690	4690	4684	4684	446
15°	4391	4391	4347	4303	4286	1235
25°	3806	3784	3723	3590	3491	1747
35°	3088	3066	2916	2696	2629	1930
45°	2370	2320	2121	1944	1867	1825
55°	1646	1596	1447	1276	1210	1476
65°	978	922	834	851	707	964
75°	392	365	342	326	359	420
85°	55	61	66	72	77	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4778.0	4778.0	4778.0	4778.0	4778.0
2.5°	4744.9	4744.9	4744.9	4739.4	4739.4
5°	4695.2	4689.7	4689.7	4684.1	4684.1
7.5°	4656.5	4651.0	4645.5	4640.0	4628.9
10°	4601.3	4601.3	4595.8	4568.1	4562.6
12.5°	4512.9	4507.4	4485.3	4446.6	4435.6
15°	4391.4	4391.4	4347.2	4303.0	4286.4
17.5°	4258.8	4253.3	4198.1	4153.9	4131.8
20°	4115.2	4104.1	4048.9	3977.1	3938.4
22.5°	3955.0	3955.0	3888.7	3794.8	3756.2
25°	3805.9	3783.8	3723.0	3590.4	3491.0
27.5°	3634.6	3601.5	3535.2	3347.4	3231.4
30°	3446.8	3430.3	3336.3	3093.3	3004.9
32.5°	3270.1	3242.4	3143.0	2888.9	2817.1
35°	3087.8	3065.7	2916.5	2695.6	2629.3
37.5°	2905.5	2877.9	2690.1	2513.3	2430.5
40°	2723.2	2690.1	2485.7	2325.5	2237.1
42.5°	2552.0	2507.8	2308.9	2137.7	2038.3
45°	2369.7	2320.0	2121.1	1944.4	1867.0
47.5°	2187.4	2143.2	1960.9	1778.6	1690.3
50°	1994.1	1955.4	1789.7	1607.4	1513.5
52.5°	1833.9	1773.1	1612.9	1430.7	1353.3
55°	1646.1	1596.4	1447.2	1276.0	1209.7
57.5°	1474.8	1425.1	1287.0	1126.8	1071.6
60°	1314.7	1242.8	1126.8	988.8	944.6
62.5°	1137.9	1082.7	983.2	867.2	922.5
65°	977.7	922.5	834.1	850.7	707.0
67.5°	800.9	773.3	696.0	618.7	596.6
70°	651.8	618.7	591.0	508.2	486.1
72.5°	519.2	486.1	447.4	403.2	386.7
75°	392.2	364.6	342.5	325.9	359.0
77.5°	270.7	259.6	243.0	226.5	221.0
80°	176.8	171.2	165.7	160.2	154.7
82.5°	105.0	105.0	105.0	105.0	105.0
85°	55.2	60.8	66.3	71.8	77.3
87.5°	33.1	33.1	38.7	44.2	49.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)