

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: P563932

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-82-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563932  
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-LD4-4LO-40-UNV-82-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

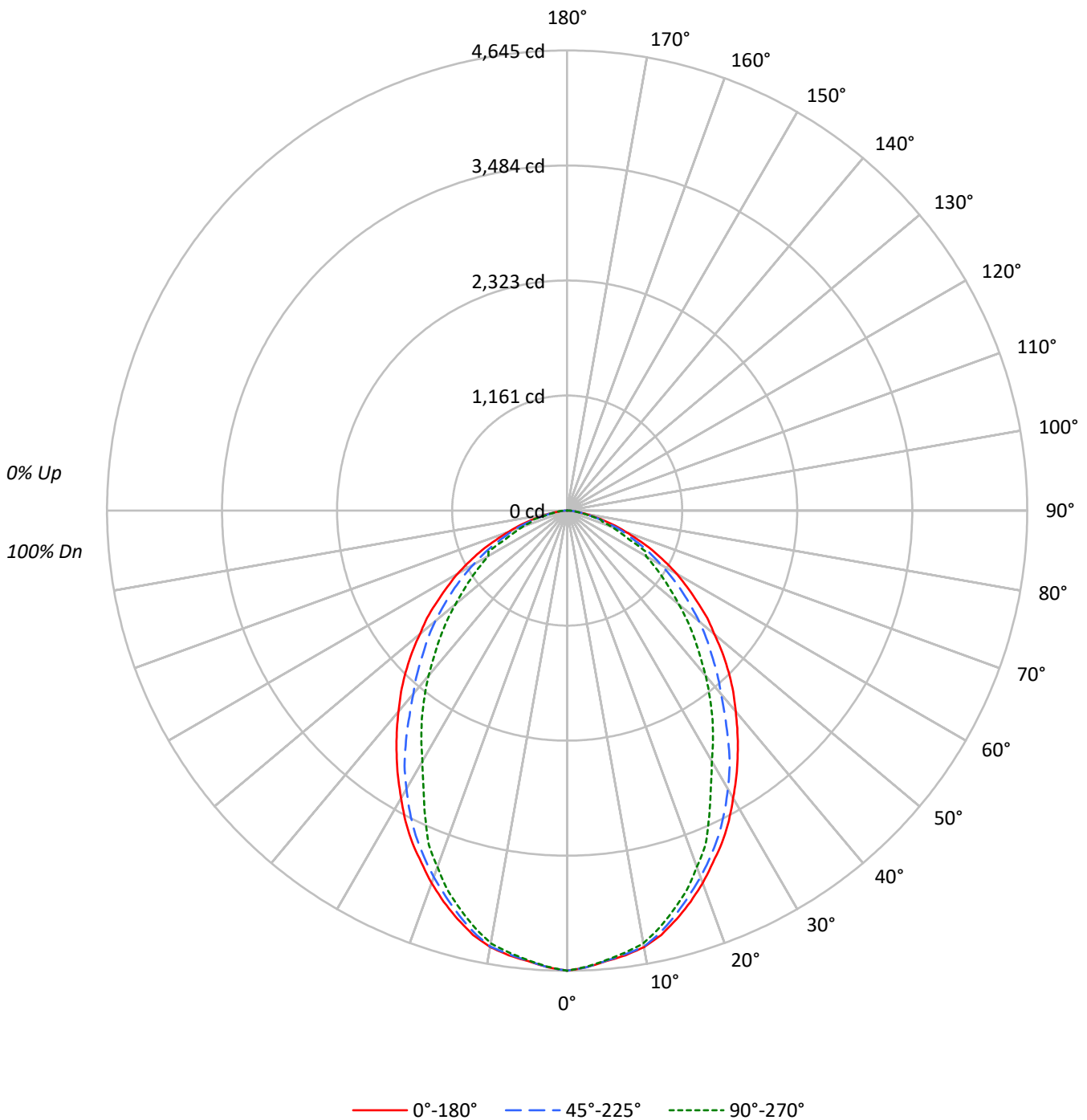
Lumens per Lamp: N/A  
Luminaire Lumens: 9119.0 lumens  
Efficiency: N/A  
Efficacy: 97.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6250	6250	6250
5°	6165	6158	6150
10°	6112	6104	6060
15°	5947	5887	5805
20°	5728	5636	5482
25°	5493	5373	5039
30°	5206	5039	4539
35°	4931	4657	4198
40°	4650	4244	3820
45°	4384	3924	3454
50°	4058	3642	3080
55°	3754	3301	2759
60°	3439	2948	2471
65°	3026	2582	2188
70°	2493	2260	1859
75°	1982	1731	1815
80°	1331	1248	1165
85°	829	994	1161

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4384 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	432.4	4.7
10°-20°	1186.7	13.0
20°-30°	1642.9	18.0
30°-40°	1751.8	19.2
40°-50°	1598.1	17.5
50°-60°	1252.0	13.7
60°-70°	816.0	8.9
70°-80°	361.5	4.0
80°-90°	77.6	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°	3261.9	35.8
0°-40°	5013.7	55.0
0°-60°	7863.9	86.2
0°-90°	9119.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9119.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4645	4645	4645	4645	4645	
5°	4564	4559	4559	4554	4554	433
15°	4269	4269	4226	4183	4167	1200
25°	3700	3678	3619	3490	3394	1699
35°	3002	2980	2835	2621	2556	1877
45°	2304	2255	2062	1890	1815	1775
55°	1600	1552	1407	1240	1176	1435
65°	950	897	811	827	687	937
75°	381	354	333	317	349	409
85°	54	59	64	70	75	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4645.1	4645.1	4645.1	4645.1	4645.1
2.5°	4612.9	4612.9	4612.9	4607.5	4607.5
5°	4564.5	4559.2	4559.2	4553.8	4553.8
7.5°	4527.0	4521.6	4516.2	4510.8	4500.1
10°	4473.3	4473.3	4467.9	4441.0	4435.7
12.5°	4387.3	4382.0	4360.5	4322.9	4312.2
15°	4269.2	4269.2	4226.2	4183.3	4167.2
17.5°	4140.3	4134.9	4081.2	4038.3	4016.8
20°	4000.7	3990.0	3936.2	3866.4	3828.8
22.5°	3845.0	3845.0	3780.5	3689.2	3651.6
25°	3700.0	3678.5	3619.4	3490.5	3393.9
27.5°	3533.5	3501.3	3436.8	3254.3	3141.5
30°	3350.9	3334.8	3243.5	3007.2	2921.3
32.5°	3179.1	3152.2	3055.6	2808.5	2738.7
35°	3001.9	2980.4	2835.4	2620.6	2556.1
37.5°	2824.6	2797.8	2615.2	2443.4	2362.8
40°	2647.4	2615.2	2416.5	2260.8	2174.9
42.5°	2481.0	2438.0	2244.7	2078.2	1981.5
45°	2303.8	2255.4	2062.1	1890.3	1815.1
47.5°	2126.5	2083.6	1906.4	1729.2	1643.2
50°	1938.6	1901.0	1739.9	1562.7	1471.4
52.5°	1782.9	1723.8	1568.1	1390.8	1315.7
55°	1600.3	1551.9	1407.0	1240.5	1176.0
57.5°	1433.8	1385.5	1251.2	1095.5	1041.8
60°	1278.1	1208.3	1095.5	961.2	918.3
62.5°	1106.2	1052.5	955.9	843.1	896.8
65°	950.5	896.8	810.9	827.0	687.4
67.5°	778.7	751.8	676.6	601.4	580.0
70°	633.7	601.4	574.6	494.0	472.6
72.5°	504.8	472.6	435.0	392.0	375.9
75°	381.3	354.4	332.9	316.8	349.1
77.5°	263.1	252.4	236.3	220.2	214.8
80°	171.8	166.5	161.1	155.7	150.4
82.5°	102.0	102.0	102.0	102.0	102.0
85°	53.7	59.1	64.4	69.8	75.2
87.5°	32.2	32.2	37.6	43.0	48.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)