

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: P563348

Luminaire Tested: FSR-24-4-LD4-3LO-40-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563348  
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-LD4-3LO-40-UNV-82-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

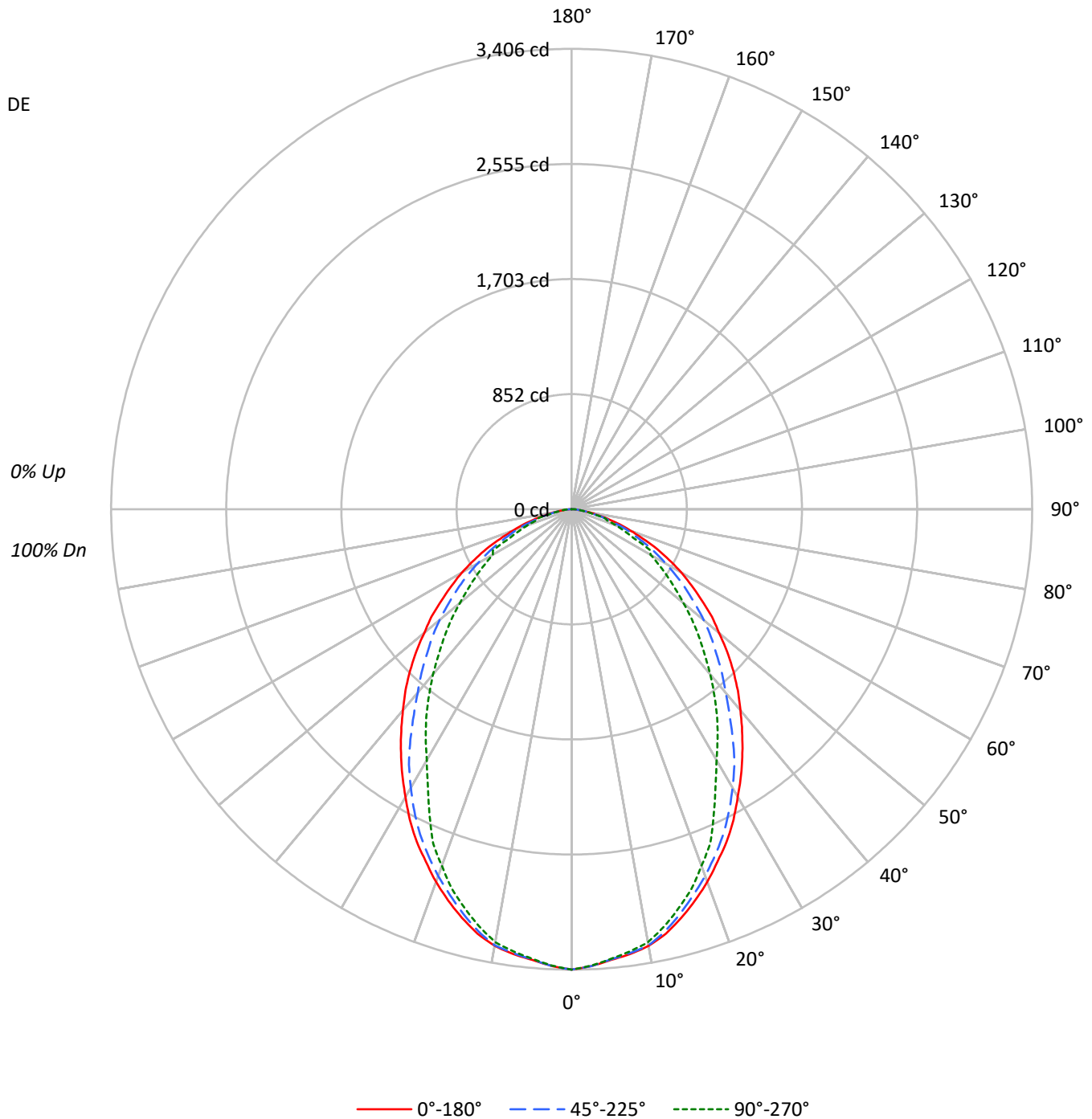
Lumens per Lamp: N/A  
Luminaire Lumens: 6686.0 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4582	4582	4582
5°	4520	4515	4509
10°	4481	4476	4443
15°	4360	4316	4256
20°	4200	4132	4020
25°	4027	3940	3694
30°	3817	3695	3328
35°	3615	3415	3078
40°	3409	3112	2801
45°	3214	2877	2532
50°	2975	2670	2258
55°	2752	2420	2023
60°	2522	2161	1812
65°	2219	1893	1605
70°	1828	1657	1363
75°	1453	1269	1330
80°	976	915	854
85°	608	729	851

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3214 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	317.0	4.7
10°-20°	870.1	13.0
20°-30°	1204.5	18.0
30°-40°	1284.4	19.2
40°-50°	1171.7	17.5
50°-60°	918.0	13.7
60°-70°	598.3	8.9
70°-80°	265.1	4.0
80°-90°	56.9	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°	2391.6	35.8
0°-40°	3676.0	55.0
0°-60°	5765.7	86.2
0°-90°	6686.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6686.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3406	3406	3406	3406	3406	
5°	3347	3343	3343	3339	3339	318
15°	3130	3130	3099	3067	3055	880
25°	2713	2697	2654	2559	2488	1245
35°	2201	2185	2079	1921	1874	1376
45°	1689	1654	1512	1386	1331	1301
55°	1173	1138	1032	910	862	1052
65°	697	658	594	606	504	687
75°	280	260	244	232	256	300
85°	39	43	47	51	55	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3405.8	3405.8	3405.8	3405.8	3405.8
2.5°	3382.1	3382.1	3382.1	3378.2	3378.2
5°	3346.7	3342.8	3342.8	3338.8	3338.8
7.5°	3319.1	3315.2	3311.3	3307.3	3299.5
10°	3279.8	3279.8	3275.8	3256.1	3252.2
12.5°	3216.8	3212.8	3197.1	3169.5	3161.6
15°	3130.1	3130.1	3098.7	3067.2	3055.3
17.5°	3035.7	3031.7	2992.3	2960.8	2945.1
20°	2933.3	2925.4	2886.0	2834.9	2807.3
22.5°	2819.1	2819.1	2771.9	2704.9	2677.4
25°	2712.8	2697.0	2653.7	2559.2	2488.4
27.5°	2590.7	2567.1	2519.9	2386.0	2303.3
30°	2456.9	2445.1	2378.1	2204.9	2141.9
32.5°	2330.9	2311.2	2240.3	2059.2	2008.0
35°	2200.9	2185.2	2078.9	1921.4	1874.2
37.5°	2071.0	2051.3	1917.5	1791.5	1732.4
40°	1941.1	1917.5	1771.8	1657.6	1594.6
42.5°	1819.0	1787.5	1645.8	1523.7	1452.9
45°	1689.1	1653.7	1511.9	1385.9	1330.8
47.5°	1559.2	1527.7	1397.7	1267.8	1204.8
50°	1421.4	1393.8	1275.7	1145.8	1078.8
52.5°	1307.2	1263.9	1149.7	1019.8	964.6
55°	1173.3	1137.9	1031.6	909.5	862.3
57.5°	1051.3	1015.8	917.4	803.2	763.8
60°	937.1	885.9	803.2	704.8	673.3
62.5°	811.1	771.7	700.8	618.2	657.5
65°	696.9	657.5	594.5	606.3	504.0
67.5°	570.9	551.2	496.1	441.0	425.2
70°	464.6	441.0	421.3	362.2	346.5
72.5°	370.1	346.5	318.9	287.4	275.6
75°	279.5	259.9	244.1	232.3	255.9
77.5°	192.9	185.1	173.2	161.4	157.5
80°	126.0	122.1	118.1	114.2	110.2
82.5°	74.8	74.8	74.8	74.8	74.8
85°	39.4	43.3	47.2	51.2	55.1
87.5°	23.6	23.6	27.6	31.5	35.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)