

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: P563332

Luminaire Tested: FSR-24-4-LD4-3LO-40-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563332  
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-81-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

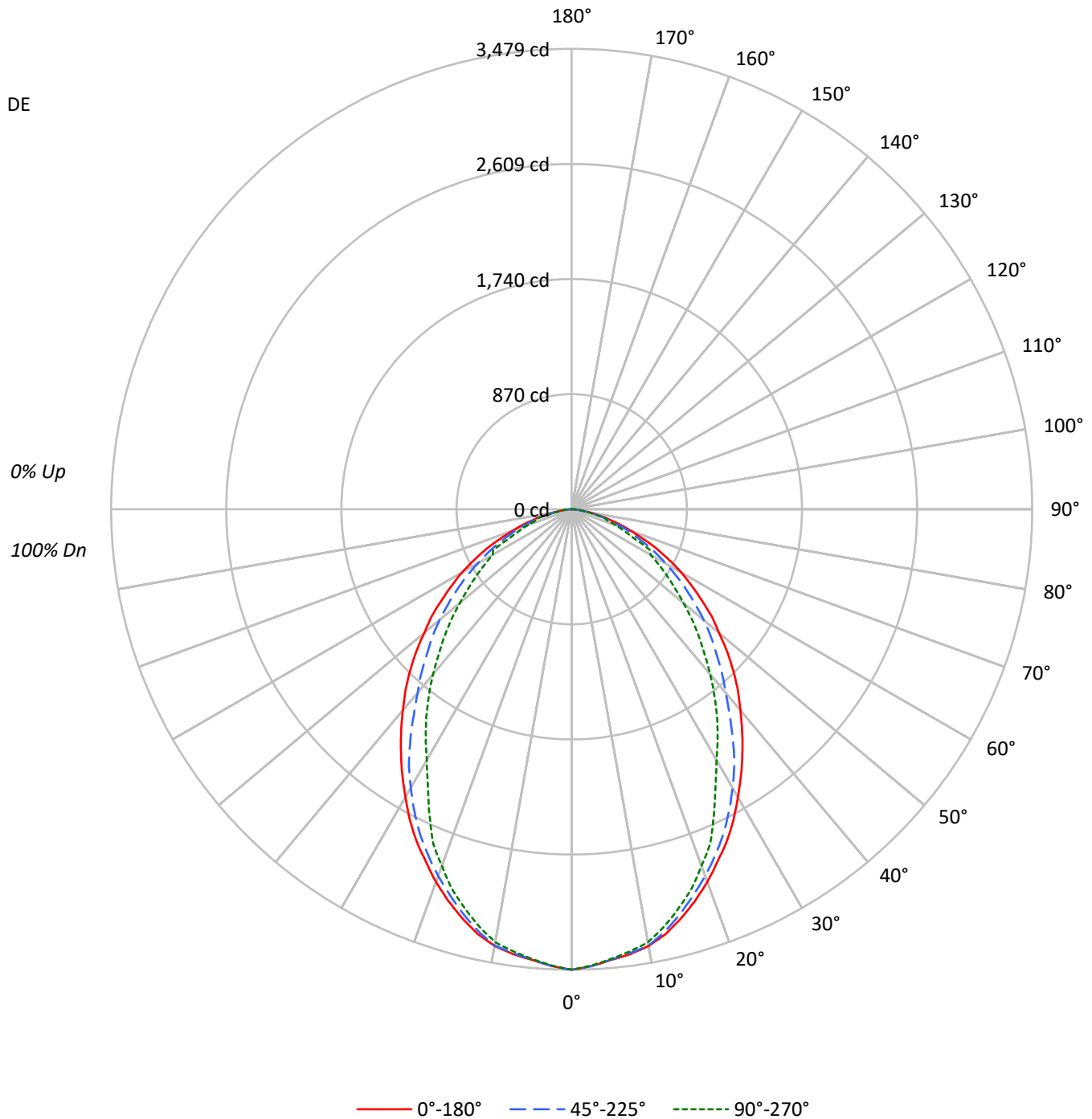
Lumens per Lamp: N/A  
Luminaire Lumens: 6830.0 lumens  
Efficiency: N/A  
Efficacy: 97.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4681	4681	4681
5°	4618	4612	4607
10°	4577	4572	4539
15°	4454	4409	4348
20°	4291	4221	4106
25°	4114	4025	3774
30°	3899	3774	3399
35°	3693	3488	3145
40°	3483	3179	2861
45°	3283	2939	2587
50°	3039	2728	2307
55°	2812	2472	2066
60°	2576	2208	1851
65°	2266	1933	1639
70°	1867	1693	1392
75°	1485	1297	1359
80°	997	935	872
85°	621	746	869

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3283 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	323.9	4.7
10°-20°	888.8	13.0
20°-30°	1230.5	18.0
30°-40°	1312.1	19.2
40°-50°	1197.0	17.5
50°-60°	937.7	13.7
60°-70°	611.2	8.9
70°-80°	270.8	4.0
80°-90°	58.1	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°	2443.1	35.8
0°-40°	3755.2	55.0
0°-60°	5889.9	86.2
0°-90°	6830.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6830.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3479	3479	3479	3479	3479	
5°	3419	3415	3415	3411	3411	325
15°	3198	3198	3165	3133	3121	899
25°	2771	2755	2711	2614	2542	1272
35°	2248	2232	2124	1963	1914	1406
45°	1726	1689	1544	1416	1360	1329
55°	1199	1162	1054	929	881	1075
65°	712	672	607	619	515	702
75°	286	266	249	237	261	306
85°	40	44	48	52	56	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3479.1	3479.1	3479.1	3479.1	3479.1
2.5°	3455.0	3455.0	3455.0	3451.0	3451.0
5°	3418.8	3414.8	3414.8	3410.7	3410.7
7.5°	3390.6	3386.6	3382.6	3378.6	3370.5
10°	3350.4	3350.4	3346.4	3326.3	3322.2
12.5°	3286.1	3282.0	3265.9	3237.8	3229.7
15°	3197.6	3197.6	3165.4	3133.2	3121.1
17.5°	3101.0	3097.0	3056.8	3024.6	3008.5
20°	2996.5	2988.4	2948.2	2895.9	2867.8
22.5°	2879.8	2879.8	2831.6	2763.2	2735.0
25°	2771.2	2755.1	2710.9	2614.4	2542.0
27.5°	2646.5	2622.4	2574.1	2437.4	2352.9
30°	2509.8	2497.7	2429.3	2252.4	2188.0
32.5°	2381.1	2361.0	2288.6	2103.6	2051.3
35°	2248.4	2232.3	2123.7	1962.8	1914.5
37.5°	2115.6	2095.5	1958.8	1830.1	1769.7
40°	1982.9	1958.8	1809.9	1693.3	1628.9
42.5°	1858.2	1826.0	1681.2	1556.6	1484.2
45°	1725.5	1689.3	1544.5	1415.8	1359.5
47.5°	1592.7	1560.6	1427.8	1295.1	1230.8
50°	1452.0	1423.8	1303.2	1170.4	1102.1
52.5°	1335.3	1291.1	1174.5	1041.7	985.4
55°	1198.6	1162.4	1053.8	929.1	880.8
57.5°	1073.9	1037.7	937.1	820.5	780.3
60°	957.3	905.0	820.5	720.0	687.8
62.5°	828.6	788.3	715.9	631.5	671.7
65°	711.9	671.7	607.3	619.4	514.8
67.5°	583.2	563.1	506.8	450.5	434.4
70°	474.6	450.5	430.4	370.0	353.9
72.5°	378.1	353.9	325.8	293.6	281.5
75°	285.6	265.5	249.4	237.3	261.4
77.5°	197.1	189.0	177.0	164.9	160.9
80°	128.7	124.7	120.7	116.6	112.6
82.5°	76.4	76.4	76.4	76.4	76.4
85°	40.2	44.2	48.3	52.3	56.3
87.5°	24.1	24.1	28.2	32.2	36.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)