

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: P562753

Luminaire Tested: FSR-24-4-LD4-2LO-40-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562753  
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-LD4-2LO-40-UNV-81-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

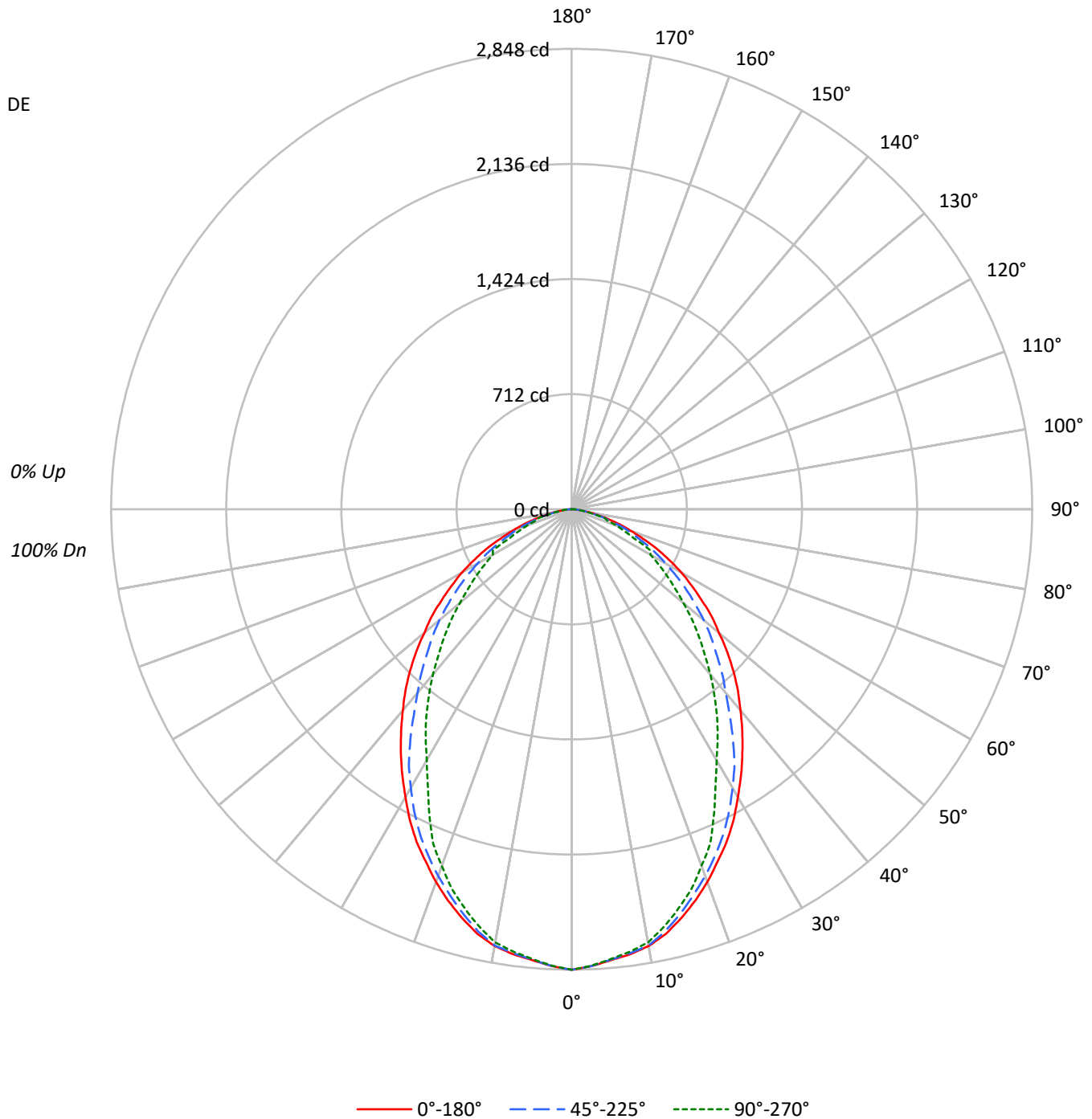
Lumens per Lamp: N/A  
Luminaire Lumens: 5592.0 lumens  
Efficiency: N/A  
Efficacy: 119.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3833	3833	3833
5°	3781	3776	3772
10°	3748	3743	3716
15°	3647	3610	3560
20°	3513	3456	3362
25°	3368	3295	3090
30°	3193	3090	2783
35°	3024	2856	2575
40°	2852	2603	2343
45°	2688	2406	2118
50°	2488	2233	1889
55°	2302	2024	1692
60°	2109	1808	1515
65°	1856	1583	1342
70°	1529	1386	1140
75°	1215	1062	1112
80°	817	766	714
85°	508	610	712

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2688 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	265.2	4.7
10°-20°	727.7	13.0
20°-30°	1007.4	18.0
30°-40°	1074.2	19.2
40°-50°	980.0	17.5
50°-60°	767.8	13.7
60°-70°	500.4	8.9
70°-80°	221.7	4.0
80°-90°	47.6	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°	2000.3	35.8
0°-40°	3074.5	55.0
0°-60°	4822.3	86.2
0°-90°	5592.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5592.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2848	2848	2848	2848	2848	
5°	2799	2796	2796	2792	2792	266
15°	2618	2618	2592	2565	2555	736
25°	2269	2256	2220	2140	2081	1042
35°	1841	1828	1739	1607	1568	1151
45°	1413	1383	1264	1159	1113	1088
55°	981	952	863	761	721	880
65°	583	550	497	507	422	574
75°	234	217	204	194	214	251
85°	33	36	40	43	46	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2848.5	2848.5	2848.5	2848.5	2848.5
2.5°	2828.7	2828.7	2828.7	2825.4	2825.4
5°	2799.1	2795.8	2795.8	2792.5	2792.5
7.5°	2776.0	2772.7	2769.5	2766.2	2759.6
10°	2743.1	2743.1	2739.8	2723.4	2720.1
12.5°	2690.4	2687.1	2674.0	2650.9	2644.3
15°	2618.0	2618.0	2591.6	2565.3	2555.4
17.5°	2538.9	2535.7	2502.7	2476.4	2463.2
20°	2453.3	2446.7	2413.8	2371.0	2347.9
22.5°	2357.8	2357.8	2318.3	2262.3	2239.3
25°	2268.9	2255.7	2219.5	2140.5	2081.2
27.5°	2166.8	2147.1	2107.6	1995.6	1926.4
30°	2054.9	2045.0	1989.0	1844.1	1791.4
32.5°	1949.5	1933.0	1873.7	1722.3	1679.5
35°	1840.8	1827.6	1738.7	1607.0	1567.5
37.5°	1732.1	1715.7	1603.7	1498.3	1448.9
40°	1623.5	1603.7	1481.9	1386.4	1333.7
42.5°	1521.4	1495.0	1376.5	1274.4	1215.1
45°	1412.7	1383.1	1264.5	1159.2	1113.1
47.5°	1304.0	1277.7	1169.0	1060.4	1007.7
50°	1188.8	1165.7	1066.9	958.3	902.3
52.5°	1093.3	1057.1	961.6	852.9	806.8
55°	981.3	951.7	862.8	760.7	721.2
57.5°	879.2	849.6	767.3	671.8	638.9
60°	783.7	740.9	671.8	589.5	563.1
62.5°	678.4	645.4	586.2	517.0	549.9
65°	582.9	549.9	497.3	507.1	421.5
67.5°	477.5	461.0	414.9	368.8	355.6
70°	388.6	368.8	352.4	303.0	289.8
72.5°	309.5	289.8	266.7	240.4	230.5
75°	233.8	217.3	204.2	194.3	214.0
77.5°	161.4	154.8	144.9	135.0	131.7
80°	105.4	102.1	98.8	95.5	92.2
82.5°	62.6	62.6	62.6	62.6	62.6
85°	32.9	36.2	39.5	42.8	46.1
87.5°	19.8	19.8	23.1	26.3	29.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)