

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: P562768

Luminaire Tested: FSR-24-4-LD4-2LO-40-UNV-82-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562768  
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-82-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

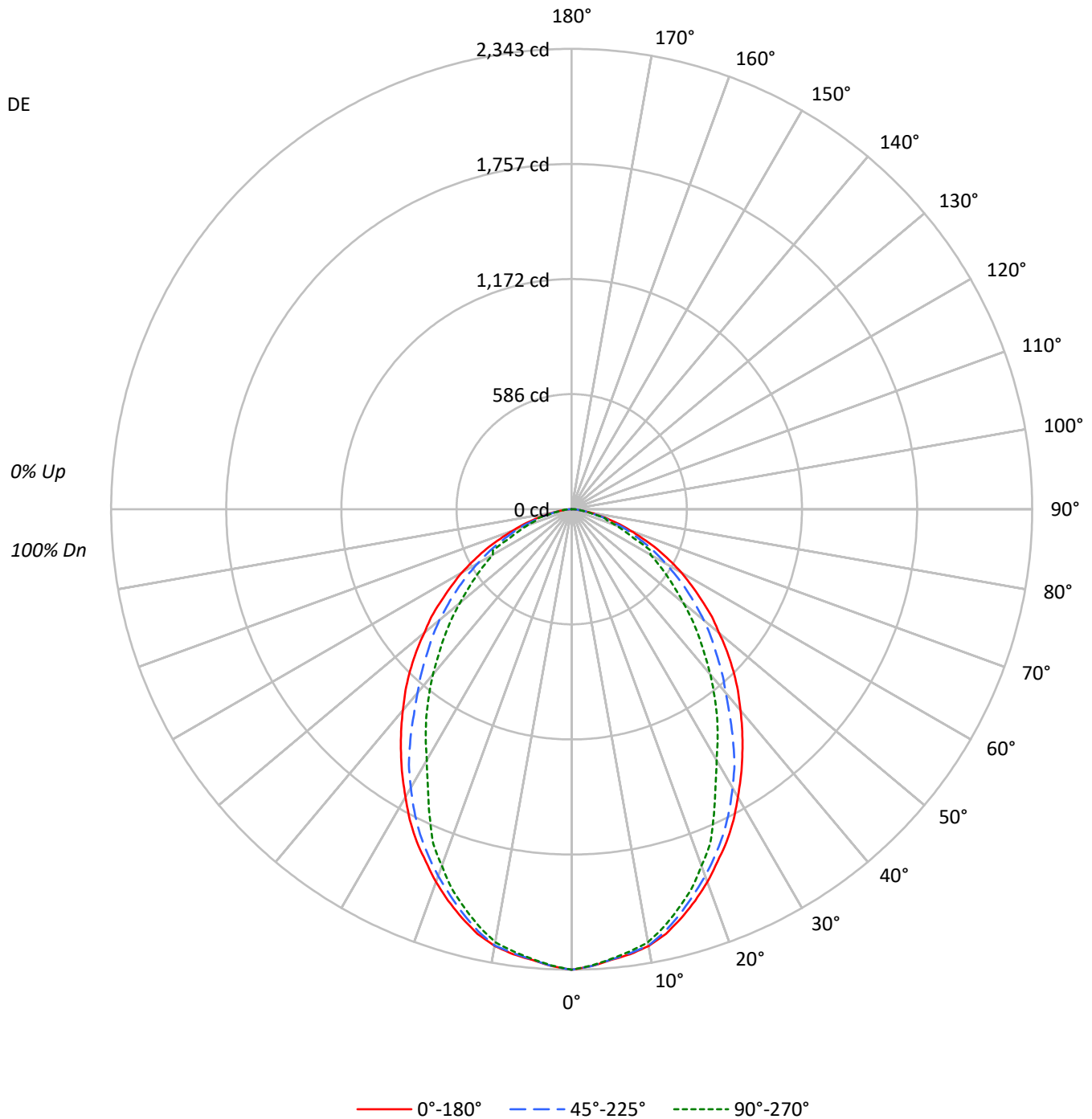
Lumens per Lamp: N/A  
Luminaire Lumens: 4600.0 lumens  
Efficiency: N/A  
Efficacy: 98.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3153	3153	3153
5°	3110	3106	3103
10°	3083	3079	3057
15°	3000	2970	2928
20°	2890	2843	2765
25°	2771	2711	2542
30°	2626	2542	2289
35°	2487	2349	2118
40°	2346	2141	1927
45°	2211	1979	1742
50°	2047	1837	1554
55°	1894	1665	1392
60°	1735	1487	1246
65°	1527	1302	1104
70°	1257	1140	938
75°	1000	873	915
80°	672	630	587
85°	418	502	585

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2211 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	218.1	4.7
10°-20°	598.6	13.0
20°-30°	828.7	18.0
30°-40°	883.7	19.2
40°-50°	806.2	17.5
50°-60°	631.6	13.7
60°-70°	411.6	8.9
70°-80°	182.4	4.0
80°-90°	39.2	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°	1645.5	35.8
0°-40°	2529.1	55.0
0°-60°	3966.8	86.2
0°-90°	4600.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4600.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2343	2343	2343	2343	2343	
5°	2302	2300	2300	2297	2297	219
15°	2154	2154	2132	2110	2102	605
25°	1866	1856	1826	1761	1712	857
35°	1514	1503	1430	1322	1289	947
45°	1162	1138	1040	954	916	895
55°	807	783	710	626	593	724
65°	480	452	409	417	347	473
75°	192	179	168	160	176	206
85°	27	30	32	35	38	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2343.2	2343.2	2343.2	2343.2	2343.2
2.5°	2326.9	2326.9	2326.9	2324.2	2324.2
5°	2302.5	2299.8	2299.8	2297.1	2297.1
7.5°	2283.6	2280.9	2278.2	2275.5	2270.0
10°	2256.5	2256.5	2253.8	2240.2	2237.5
12.5°	2213.2	2210.4	2199.6	2180.6	2175.2
15°	2153.6	2153.6	2131.9	2110.2	2102.1
17.5°	2088.5	2085.8	2058.7	2037.1	2026.2
20°	2018.1	2012.7	1985.6	1950.4	1931.4
22.5°	1939.6	1939.6	1907.0	1861.0	1842.0
25°	1866.4	1855.6	1825.8	1760.8	1712.0
27.5°	1782.4	1766.2	1733.7	1641.6	1584.7
30°	1690.3	1682.2	1636.2	1517.0	1473.6
32.5°	1603.7	1590.1	1541.4	1416.7	1381.5
35°	1514.3	1503.4	1430.3	1321.9	1289.4
37.5°	1424.9	1411.3	1319.2	1232.5	1191.9
40°	1335.5	1319.2	1219.0	1140.4	1097.1
42.5°	1251.5	1229.8	1132.3	1048.3	999.6
45°	1162.1	1137.7	1040.2	953.5	915.6
47.5°	1072.7	1051.0	961.7	872.3	828.9
50°	977.9	958.9	877.7	788.3	742.2
52.5°	899.3	869.5	791.0	701.6	663.7
55°	807.2	782.9	709.7	625.8	593.2
57.5°	723.3	698.9	631.2	552.6	525.5
60°	644.7	609.5	552.6	484.9	463.2
62.5°	558.0	530.9	482.2	425.3	452.4
65°	479.5	452.4	409.0	417.2	346.7
67.5°	392.8	379.2	341.3	303.4	292.6
70°	319.6	303.4	289.8	249.2	238.4
72.5°	254.6	238.4	219.4	197.7	189.6
75°	192.3	178.8	168.0	159.8	176.1
77.5°	132.7	127.3	119.2	111.1	108.4
80°	86.7	84.0	81.3	78.6	75.8
82.5°	51.5	51.5	51.5	51.5	51.5
85°	27.1	29.8	32.5	35.2	37.9
87.5°	16.3	16.3	19.0	21.7	24.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)