

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: P562852

Luminaire Tested: FSR-24-4-LD4-2LO-50-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562852  
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-50-UNV-93-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

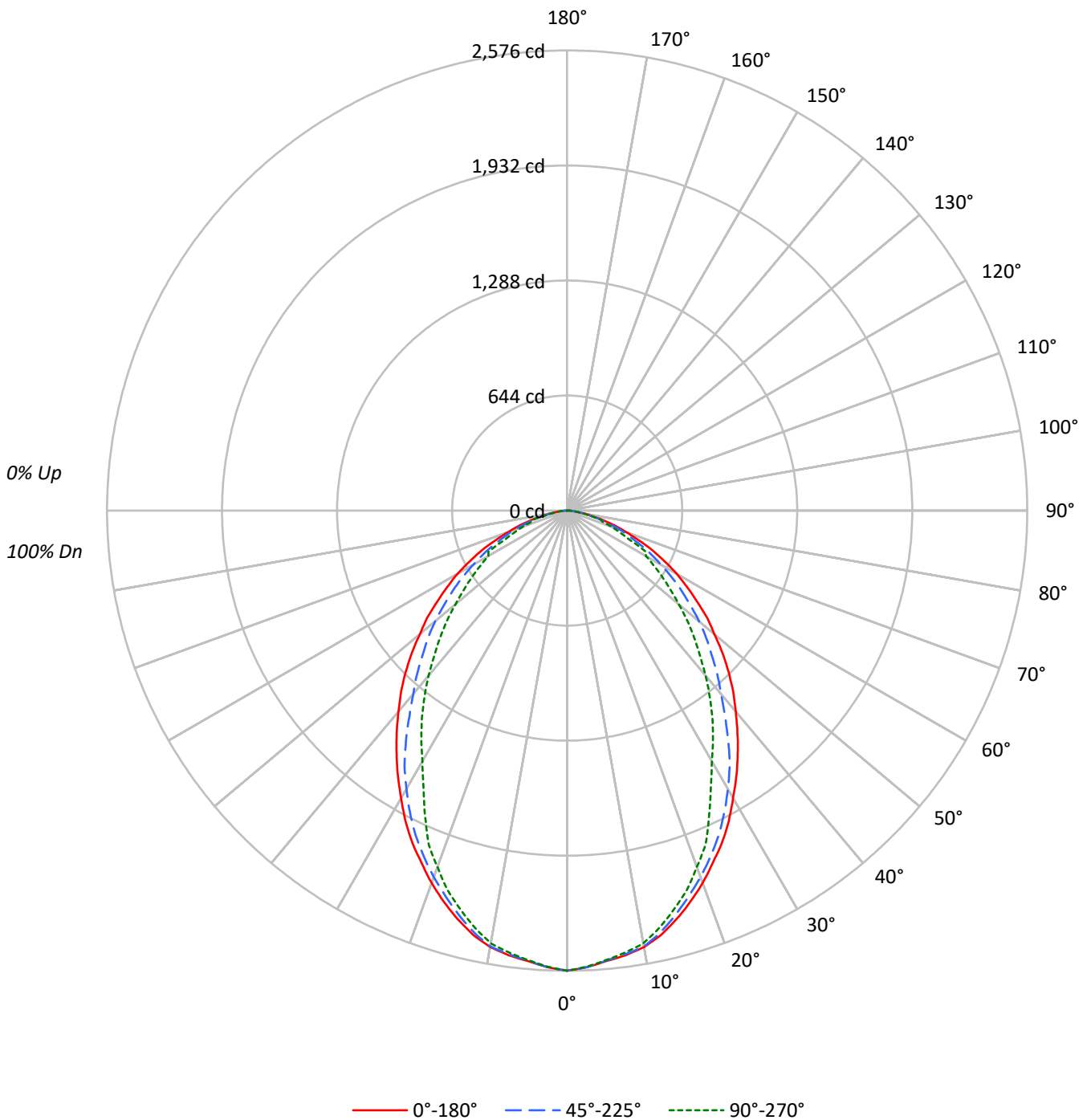
Lumens per Lamp: N/A  
Luminaire Lumens: 5057.0 lumens  
Efficiency: N/A  
Efficacy: 108.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3466	3466	3466
5°	3419	3415	3411
10°	3389	3385	3361
15°	3298	3265	3219
20°	3177	3126	3040
25°	3046	2980	2794
30°	2887	2795	2517
35°	2734	2583	2328
40°	2579	2354	2118
45°	2431	2176	1915
50°	2250	2020	1708
55°	2082	1830	1530
60°	1907	1635	1370
65°	1678	1432	1214
70°	1382	1253	1031
75°	1099	960	1006
80°	738	692	646
85°	460	551	644

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2431 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	239.8	4.7
10°-20°	658.1	13.0
20°-30°	911.1	18.0
30°-40°	971.5	19.2
40°-50°	886.3	17.5
50°-60°	694.3	13.7
60°-70°	452.5	8.9
70°-80°	200.5	4.0
80°-90°	43.0	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°	1808.9	35.8
0°-40°	2780.4	55.0
0°-60°	4361.0	86.2
0°-90°	5057.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5057.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2576	2576	2576	2576	2576	
5°	2531	2528	2528	2525	2525	240
15°	2368	2368	2344	2320	2311	666
25°	2052	2040	2007	1936	1882	942
35°	1665	1653	1572	1453	1418	1041
45°	1278	1251	1144	1048	1007	984
55°	887	861	780	688	652	796
65°	527	497	450	459	381	519
75°	211	196	185	176	194	227
85°	30	33	36	39	42	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2576.0	2576.0	2576.0	2576.0	2576.0
2.5°	2558.1	2558.1	2558.1	2555.1	2555.1
5°	2531.3	2528.3	2528.3	2525.3	2525.3
7.5°	2510.5	2507.5	2504.5	2501.5	2495.6
10°	2480.7	2480.7	2477.7	2462.8	2459.8
12.5°	2433.0	2430.0	2418.1	2397.3	2391.3
15°	2367.5	2367.5	2343.7	2319.9	2310.9
17.5°	2296.0	2293.1	2263.3	2239.5	2227.5
20°	2218.6	2212.7	2182.9	2144.2	2123.3
22.5°	2132.2	2132.2	2096.5	2045.9	2025.0
25°	2051.8	2039.9	2007.2	1935.7	1882.1
27.5°	1959.5	1941.7	1905.9	1804.7	1742.1
30°	1858.3	1849.3	1798.7	1667.7	1620.0
32.5°	1763.0	1748.1	1694.5	1557.5	1518.8
35°	1664.7	1652.8	1572.4	1453.3	1417.5
37.5°	1566.4	1551.5	1450.3	1355.0	1310.3
40°	1468.2	1450.3	1340.1	1253.7	1206.1
42.5°	1375.8	1352.0	1244.8	1152.5	1098.9
45°	1277.6	1250.8	1143.6	1048.3	1006.6
47.5°	1179.3	1155.5	1057.2	958.9	911.3
50°	1075.1	1054.2	964.9	866.6	816.0
52.5°	988.7	955.9	869.6	771.3	729.6
55°	887.4	860.6	780.2	687.9	652.2
57.5°	795.1	768.3	693.9	607.5	577.7
60°	708.8	670.0	607.5	533.1	509.2
62.5°	613.5	583.7	530.1	467.5	497.3
65°	527.1	497.3	449.7	458.6	381.2
67.5°	431.8	416.9	375.2	333.5	321.6
70°	351.4	333.5	318.6	274.0	262.1
72.5°	279.9	262.1	241.2	217.4	208.5
75°	211.4	196.5	184.6	175.7	193.6
77.5°	145.9	140.0	131.0	122.1	119.1
80°	95.3	92.3	89.3	86.4	83.4
82.5°	56.6	56.6	56.6	56.6	56.6
85°	29.8	32.8	35.7	38.7	41.7
87.5°	17.9	17.9	20.8	23.8	26.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)