

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: P562149

Luminaire Tested: FSR-24-4-LD4-1HI-50-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562149  
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-LD4-1HI-50-UNV-93-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

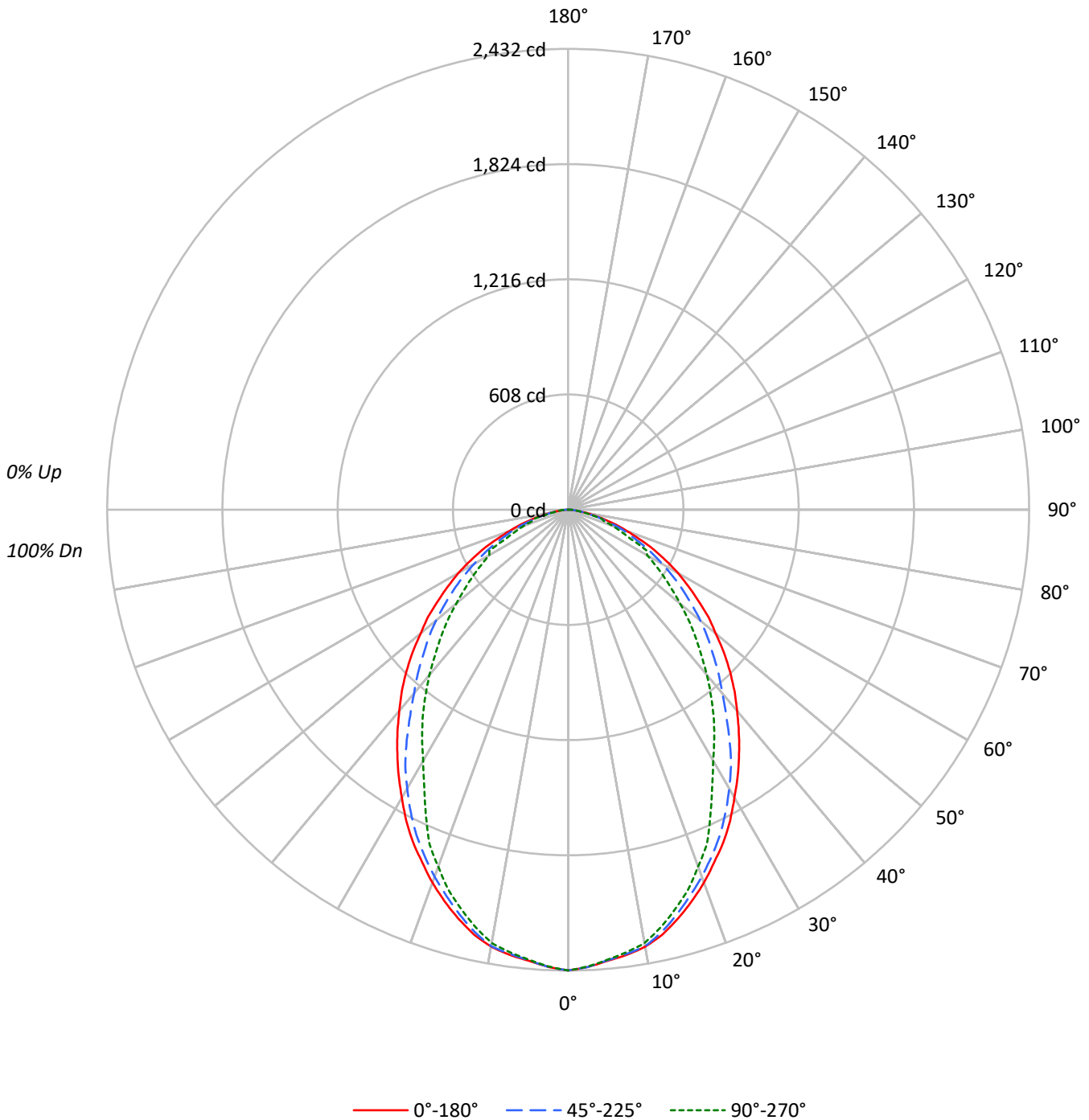
Lumens per Lamp: N/A  
Luminaire Lumens: 4774.0 lumens  
Efficiency: N/A  
Efficacy: 110.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3272	3272	3272
5°	3227	3224	3220
10°	3199	3196	3173
15°	3113	3082	3039
20°	2999	2951	2870
25°	2876	2813	2638
30°	2726	2638	2376
35°	2581	2438	2198
40°	2434	2222	2000
45°	2295	2054	1808
50°	2124	1907	1612
55°	1965	1728	1444
60°	1801	1543	1294
65°	1584	1351	1146
70°	1305	1183	973
75°	1038	906	950
80°	697	653	610
85°	434	520	608

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2295 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	226.4	4.7
10°-20°	621.2	13.0
20°-30°	860.1	18.0
30°-40°	917.1	19.2
40°-50°	836.7	17.5
50°-60°	655.4	13.7
60°-70°	427.2	8.9
70°-80°	189.3	4.0
80°-90°	40.6	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°	1707.7	35.8
0°-40°	2624.8	55.0
0°-60°	4116.9	86.2
0°-90°	4774.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4774.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2432	2432	2432	2432	2432	
5°	2390	2387	2387	2384	2384	227
15°	2235	2235	2212	2190	2182	628
25°	1937	1926	1895	1827	1777	889
35°	1572	1560	1484	1372	1338	982
45°	1206	1181	1080	990	950	929
55°	838	812	737	649	616	751
65°	498	470	424	433	360	490
75°	200	186	174	166	183	214
85°	28	31	34	36	39	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2431.8	2431.8	2431.8	2431.8	2431.8
2.5°	2414.9	2414.9	2414.9	2412.1	2412.1
5°	2389.6	2386.8	2386.8	2384.0	2384.0
7.5°	2370.0	2367.2	2364.3	2361.5	2355.9
10°	2341.8	2341.8	2339.0	2325.0	2322.2
12.5°	2296.9	2294.1	2282.8	2263.1	2257.5
15°	2235.0	2235.0	2212.5	2190.0	2181.6
17.5°	2167.5	2164.7	2136.6	2114.1	2102.9
20°	2094.5	2088.8	2060.7	2024.2	2004.5
22.5°	2012.9	2012.9	1979.2	1931.4	1911.7
25°	1937.0	1925.8	1894.8	1827.4	1776.8
27.5°	1849.9	1833.0	1799.3	1703.7	1644.6
30°	1754.3	1745.8	1698.1	1574.4	1529.4
32.5°	1664.3	1650.3	1599.7	1470.3	1433.8
35°	1571.5	1560.3	1484.4	1371.9	1338.2
37.5°	1478.8	1464.7	1369.1	1279.2	1237.0
40°	1386.0	1369.1	1265.1	1183.6	1138.6
42.5°	1298.8	1276.3	1175.1	1088.0	1037.4
45°	1206.1	1180.8	1079.6	989.6	950.2
47.5°	1113.3	1090.8	998.0	905.3	860.3
50°	1014.9	995.2	910.9	818.1	770.3
52.5°	933.4	902.4	820.9	728.1	688.8
55°	837.8	812.5	736.6	649.4	615.7
57.5°	750.6	725.3	655.0	573.5	545.4
60°	669.1	632.6	573.5	503.2	480.7
62.5°	579.1	551.0	500.4	441.4	469.5
65°	497.6	469.5	424.5	432.9	359.9
67.5°	407.6	393.6	354.2	314.9	303.6
70°	331.7	314.9	300.8	258.6	247.4
72.5°	264.3	247.4	227.7	205.2	196.8
75°	199.6	185.5	174.3	165.9	182.7
77.5°	137.8	132.1	123.7	115.3	112.5
80°	90.0	87.2	84.3	81.5	78.7
82.5°	53.4	53.4	53.4	53.4	53.4
85°	28.1	30.9	33.7	36.5	39.4
87.5°	16.9	16.9	19.7	22.5	25.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)