

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: P562113

Luminaire Tested: FSR-24-4-LD4-1HI-50-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562113  
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-81-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

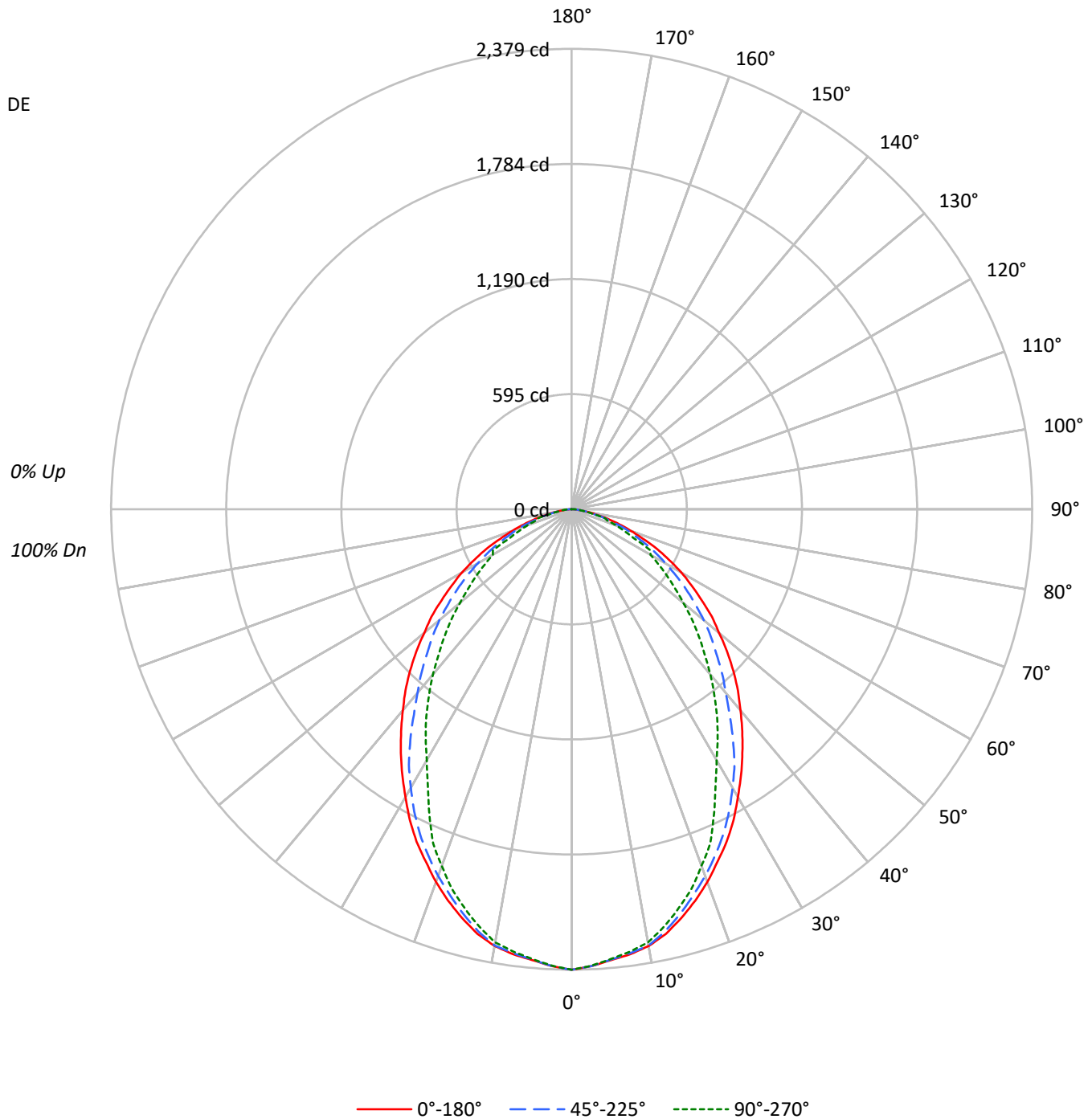
Lumens per Lamp: N/A  
Luminaire Lumens: 4671.0 lumens  
Efficiency: N/A  
Efficacy: 108.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P562113

CATALOG NUMBER: FSR-24-4-LD4-1HI-50-UNV-81-84-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P562113

CATALOG NUMBER: FSR-24-4-LD4-1HI-50-UNV-81-84-EDD

**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°	3201	3201	3201
5°	3158	3154	3150
10°	3130	3127	3104
15°	3046	3015	2973
20°	2934	2887	2808
25°	2814	2752	2581
30°	2667	2581	2325
35°	2526	2386	2151
40°	2382	2174	1957
45°	2245	2010	1769
50°	2079	1865	1578
55°	1923	1691	1413
60°	1762	1510	1266
65°	1550	1323	1121
70°	1277	1158	952
75°	1015	886	930
80°	682	639	597
85°	425	509	594

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2245 cd/sqm



TEST NUMBER: P562113

CATALOG NUMBER: FSR-24-4-LD4-1HI-50-UNV-81-84-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.5	4.7
10°-20°	607.8	13.0
20°-30°	841.5	18.0
30°-40°	897.3	19.2
40°-50°	818.6	17.5
50°-60°	641.3	13.7
60°-70°	418.0	8.9
70°-80°	185.2	4.0
80°-90°	39.8	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°	1670.9	35.8
0°-40°	2568.2	55.0
0°-60°	4028.1	86.2
0°-90°	4671.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4671.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2379	2379	2379	2379	2379	
5°	2338	2335	2335	2333	2333	222
15°	2187	2187	2165	2143	2134	615
25°	1895	1884	1854	1788	1738	870
35°	1538	1527	1452	1342	1309	961
45°	1180	1155	1056	968	930	909
55°	820	795	721	635	602	735
65°	487	459	415	424	352	480
75°	195	182	170	162	179	209
85°	28	30	33	36	38	38
90°	0	0	0	0	0	



TEST NUMBER: P562113

CATALOG NUMBER: FSR-24-4-LD4-1HI-50-UNV-81-84-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2379.3	2379.3	2379.3	2379.3	2379.3
2.5°	2362.8	2362.8	2362.8	2360.1	2360.1
5°	2338.1	2335.3	2335.3	2332.6	2332.6
7.5°	2318.8	2316.1	2313.3	2310.6	2305.1
10°	2291.3	2291.3	2288.6	2274.8	2272.1
12.5°	2247.3	2244.6	2233.6	2214.3	2208.8
15°	2186.8	2186.8	2164.8	2142.8	2134.5
17.5°	2120.8	2118.0	2090.5	2068.5	2057.5
20°	2049.3	2043.8	2016.3	1980.5	1961.2
22.5°	1969.5	1969.5	1936.5	1889.7	1870.5
25°	1895.2	1884.2	1854.0	1787.9	1738.4
27.5°	1810.0	1793.4	1760.4	1666.9	1609.2
30°	1716.4	1708.2	1661.4	1540.4	1496.4
32.5°	1628.4	1614.7	1565.1	1438.6	1402.9
35°	1537.6	1526.6	1452.4	1342.3	1309.3
37.5°	1446.9	1433.1	1339.6	1251.6	1210.3
40°	1356.1	1339.6	1237.8	1158.0	1114.0
42.5°	1270.8	1248.8	1149.8	1064.5	1015.0
45°	1180.0	1155.3	1056.3	968.2	929.7
47.5°	1089.3	1067.3	976.5	885.7	841.7
50°	993.0	973.7	891.2	800.5	753.7
52.5°	913.2	883.0	803.2	712.4	673.9
55°	819.7	794.9	720.7	635.4	602.4
57.5°	734.4	709.7	640.9	561.1	533.6
60°	654.7	618.9	561.1	492.4	470.4
62.5°	566.6	539.1	489.6	431.9	459.4
65°	486.9	459.4	415.4	423.6	352.1
67.5°	398.8	385.1	346.6	308.1	297.1
70°	324.6	308.1	294.3	253.1	242.1
72.5°	258.6	242.1	222.8	200.8	192.5
75°	195.3	181.5	170.5	162.3	178.8
77.5°	134.8	129.3	121.0	112.8	110.0
80°	88.0	85.3	82.5	79.8	77.0
82.5°	52.3	52.3	52.3	52.3	52.3
85°	27.5	30.3	33.0	35.8	38.5
87.5°	16.5	16.5	19.3	22.0	24.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)