

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: P562702

Luminaire Tested: FSR-24-4-LD4-2LO-35-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562702  
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-35-UNV-81-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

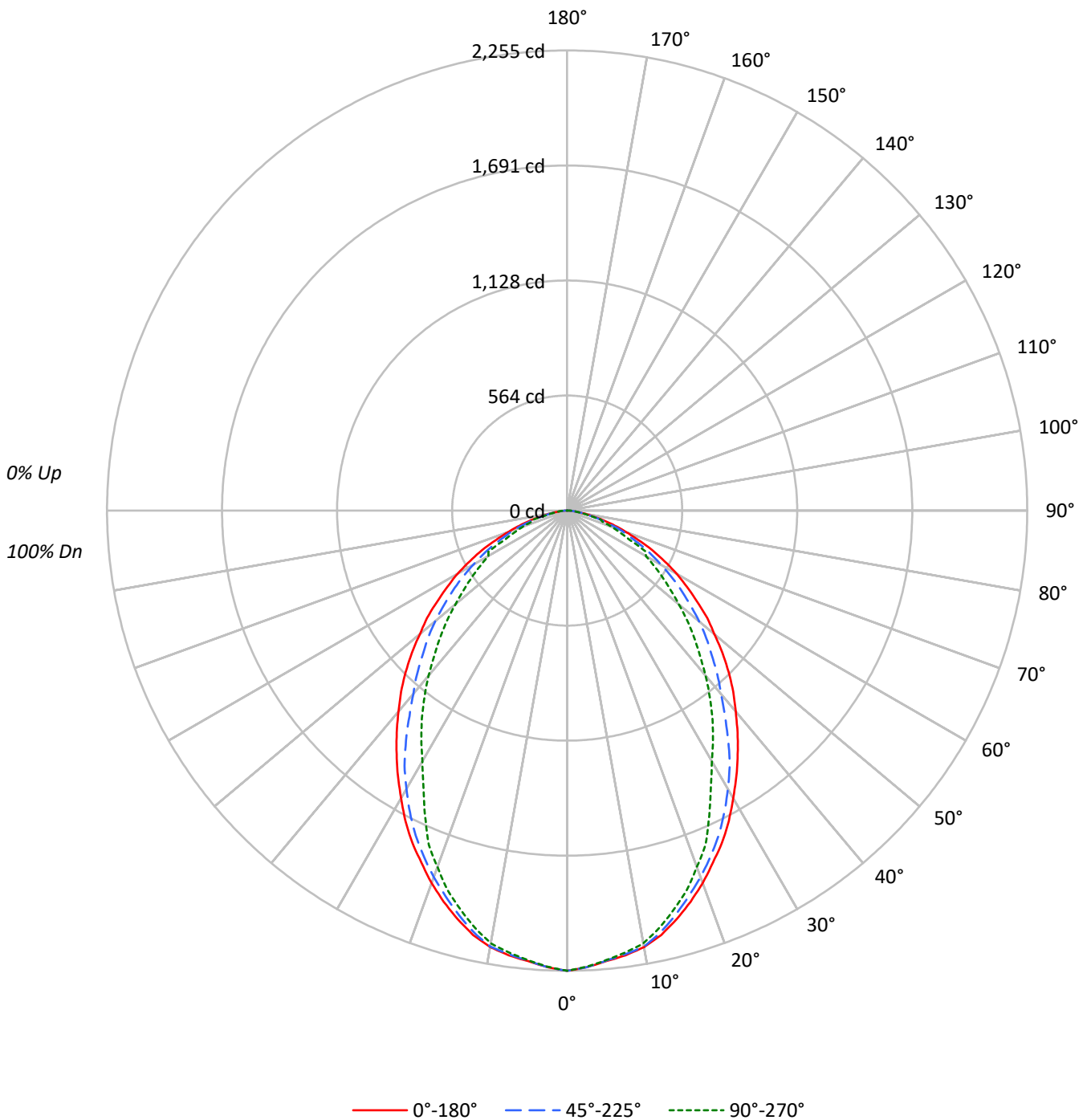
Lumens per Lamp: N/A  
Luminaire Lumens: 4427.0 lumens  
Efficiency: N/A  
Efficacy: 94.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3034	3034	3034
5°	2993	2989	2986
10°	2967	2963	2942
15°	2887	2858	2818
20°	2781	2736	2662
25°	2667	2609	2446
30°	2527	2446	2203
35°	2394	2261	2038
40°	2258	2060	1854
45°	2128	1905	1677
50°	1970	1768	1495
55°	1822	1602	1339
60°	1670	1431	1200
65°	1469	1253	1062
70°	1210	1097	902
75°	962	840	881
80°	646	606	566
85°	403	483	563

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2128 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	209.9	4.7
10°-20°	576.1	13.0
20°-30°	797.6	18.0
30°-40°	850.4	19.2
40°-50°	775.8	17.5
50°-60°	607.8	13.7
60°-70°	396.1	8.9
70°-80°	175.5	4.0
80°-90°	37.7	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°	1583.6	35.8
0°-40°	2434.0	55.0
0°-60°	3817.6	86.2
0°-90°	4427.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4427.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2255	2255	2255	2255	2255	
5°	2216	2213	2213	2211	2211	210
15°	2073	2073	2052	2031	2023	583
25°	1796	1786	1757	1694	1648	825
35°	1457	1447	1376	1272	1241	911
45°	1118	1095	1001	918	881	861
55°	777	753	683	602	571	697
65°	461	435	394	402	334	455
75°	185	172	162	154	170	198
85°	26	29	31	34	36	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2255.1	2255.1	2255.1	2255.1	2255.1
2.5°	2239.4	2239.4	2239.4	2236.8	2236.8
5°	2215.9	2213.3	2213.3	2210.7	2210.7
7.5°	2197.7	2195.1	2192.5	2189.9	2184.7
10°	2171.6	2171.6	2169.0	2156.0	2153.4
12.5°	2129.9	2127.3	2116.9	2098.6	2093.4
15°	2072.6	2072.6	2051.7	2030.9	2023.0
17.5°	2010.0	2007.4	1981.3	1960.5	1950.0
20°	1942.2	1937.0	1910.9	1877.0	1858.8
22.5°	1866.6	1866.6	1835.3	1791.0	1772.8
25°	1796.2	1785.8	1757.1	1694.5	1647.6
27.5°	1715.4	1699.8	1668.5	1579.8	1525.1
30°	1626.8	1618.9	1574.6	1459.9	1418.2
32.5°	1543.3	1530.3	1483.4	1363.5	1329.6
35°	1457.3	1446.9	1376.5	1272.2	1240.9
37.5°	1371.3	1358.2	1269.6	1186.2	1147.1
40°	1285.3	1269.6	1173.1	1097.5	1055.8
42.5°	1204.4	1183.6	1089.7	1008.9	962.0
45°	1118.4	1094.9	1001.1	917.7	881.2
47.5°	1032.4	1011.5	925.5	839.5	797.7
50°	941.1	922.9	844.7	758.6	714.3
52.5°	865.5	836.8	761.2	675.2	638.7
55°	776.9	753.4	683.0	602.2	570.9
57.5°	696.1	672.6	607.4	531.8	505.8
60°	620.5	586.6	531.8	466.7	445.8
62.5°	537.0	511.0	464.0	409.3	435.4
65°	461.4	435.4	393.7	401.5	333.7
67.5°	378.0	365.0	328.5	292.0	281.6
70°	307.6	292.0	278.9	239.8	229.4
72.5°	245.1	229.4	211.2	190.3	182.5
75°	185.1	172.1	161.6	153.8	169.5
77.5°	127.7	122.5	114.7	106.9	104.3
80°	83.4	80.8	78.2	75.6	73.0
82.5°	49.5	49.5	49.5	49.5	49.5
85°	26.1	28.7	31.3	33.9	36.5
87.5°	15.6	15.6	18.2	20.9	23.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)