

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: P562766

Luminaire Tested: FSR-24-4-LD4-2LO-40-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562766  
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-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

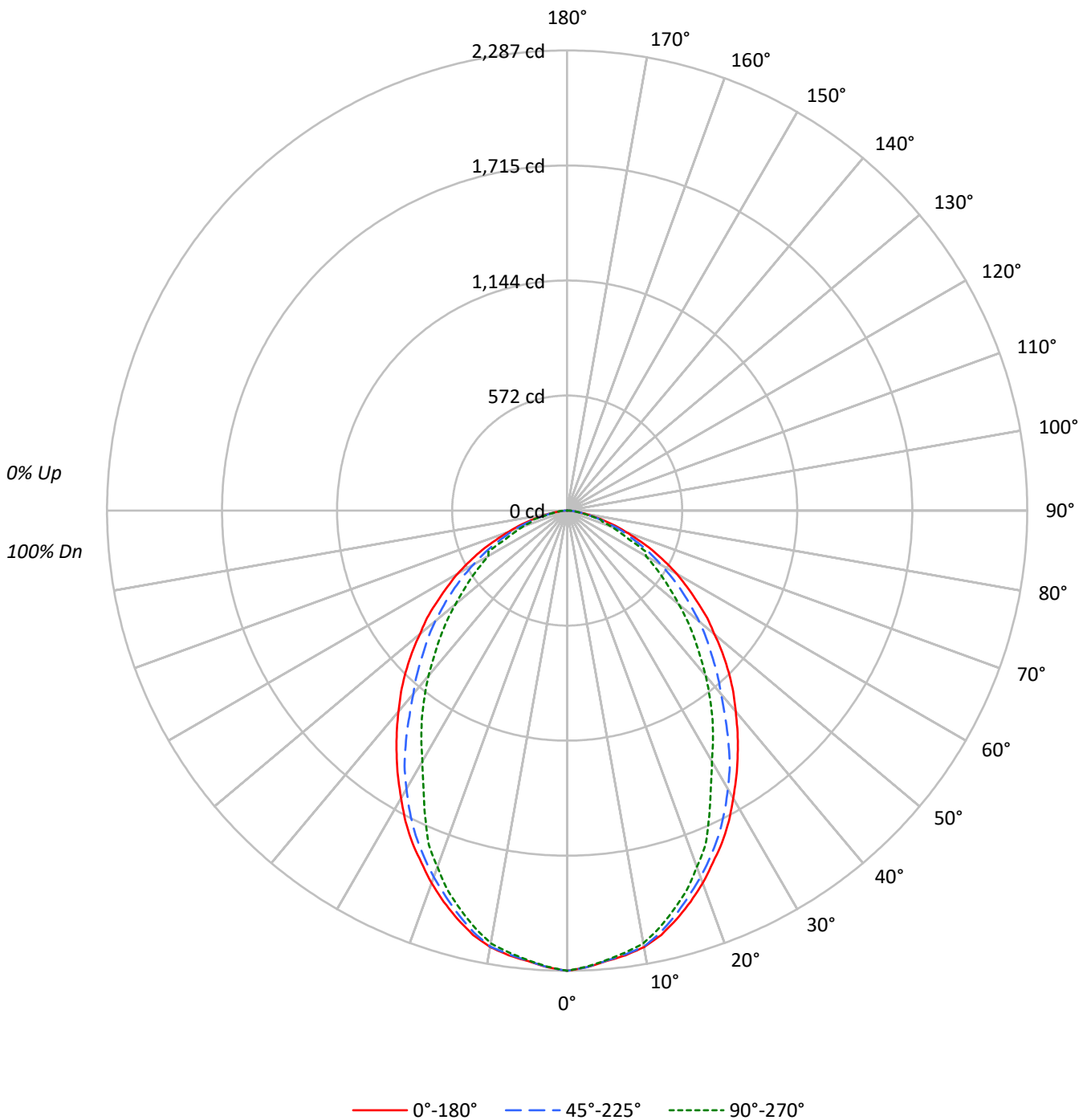
Lumens per Lamp: N/A  
Luminaire Lumens: 4490.0 lumens  
Efficiency: N/A  
Efficacy: 95.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3077	3077	3077
5°	3036	3032	3028
10°	3009	3006	2984
15°	2928	2899	2858
20°	2821	2775	2699
25°	2705	2646	2481
30°	2563	2481	2235
35°	2428	2293	2067
40°	2289	2090	1881
45°	2158	1932	1701
50°	1998	1793	1517
55°	1848	1625	1358
60°	1693	1452	1217
65°	1490	1271	1077
70°	1227	1113	915
75°	976	852	894
80°	656	614	573
85°	408	489	571

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2158 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	212.9	4.7
10°-20°	584.3	13.0
20°-30°	808.9	18.0
30°-40°	862.5	19.2
40°-50°	786.9	17.5
50°-60°	616.5	13.7
60°-70°	401.8	8.9
70°-80°	178.0	4.0
80°-90°	38.2	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°	1606.1	35.8
0°-40°	2468.7	55.0
0°-60°	3872.0	86.2
0°-90°	4490.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4490.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2287	2287	2287	2287	2287	
5°	2248	2245	2245	2242	2242	213
15°	2102	2102	2081	2060	2052	591
25°	1822	1811	1782	1719	1671	836
35°	1478	1468	1396	1290	1259	924
45°	1134	1110	1015	931	894	874
55°	788	764	693	611	579	707
65°	468	442	399	407	338	461
75°	188	174	164	156	172	201
85°	26	29	32	34	37	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2287.1	2287.1	2287.1	2287.1	2287.1
2.5°	2271.3	2271.3	2271.3	2268.6	2268.6
5°	2247.5	2244.8	2244.8	2242.2	2242.2
7.5°	2229.0	2226.3	2223.7	2221.0	2215.8
10°	2202.5	2202.5	2199.9	2186.7	2184.0
12.5°	2160.2	2157.6	2147.0	2128.5	2123.2
15°	2102.1	2102.1	2080.9	2059.8	2051.8
17.5°	2038.6	2036.0	2009.5	1988.4	1977.8
20°	1969.9	1964.6	1938.1	1903.8	1885.2
22.5°	1893.2	1893.2	1861.4	1816.5	1798.0
25°	1821.8	1811.2	1782.1	1718.7	1671.1
27.5°	1739.8	1724.0	1692.2	1602.3	1546.8
30°	1649.9	1642.0	1597.0	1480.7	1438.4
32.5°	1565.3	1552.1	1504.5	1382.9	1348.5
35°	1478.1	1467.5	1396.1	1290.3	1258.6
37.5°	1390.8	1377.6	1287.7	1203.1	1163.4
40°	1303.5	1287.7	1189.8	1113.2	1070.9
42.5°	1221.6	1200.4	1105.2	1023.3	975.7
45°	1134.3	1110.5	1015.3	930.7	893.7
47.5°	1047.1	1025.9	938.7	851.4	809.1
50°	954.5	936.0	856.7	769.4	724.5
52.5°	877.8	848.8	772.1	684.8	647.8
55°	787.9	764.1	692.8	610.8	579.1
57.5°	706.0	682.2	616.1	539.4	513.0
60°	629.3	594.9	539.4	473.3	452.1
62.5°	544.7	518.2	470.6	415.1	441.6
65°	468.0	441.6	399.3	407.2	338.4
67.5°	383.4	370.2	333.2	296.1	285.6
70°	312.0	296.1	282.9	243.3	232.7
72.5°	248.5	232.7	214.2	193.0	185.1
75°	187.7	174.5	163.9	156.0	171.9
77.5°	129.6	124.3	116.3	108.4	105.8
80°	84.6	82.0	79.3	76.7	74.0
82.5°	50.2	50.2	50.2	50.2	50.2
85°	26.4	29.1	31.7	34.4	37.0
87.5°	15.9	15.9	18.5	21.2	23.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)