

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: P561695

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561695  
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-12-4-LD4-2LO-50-UNV-82-97-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

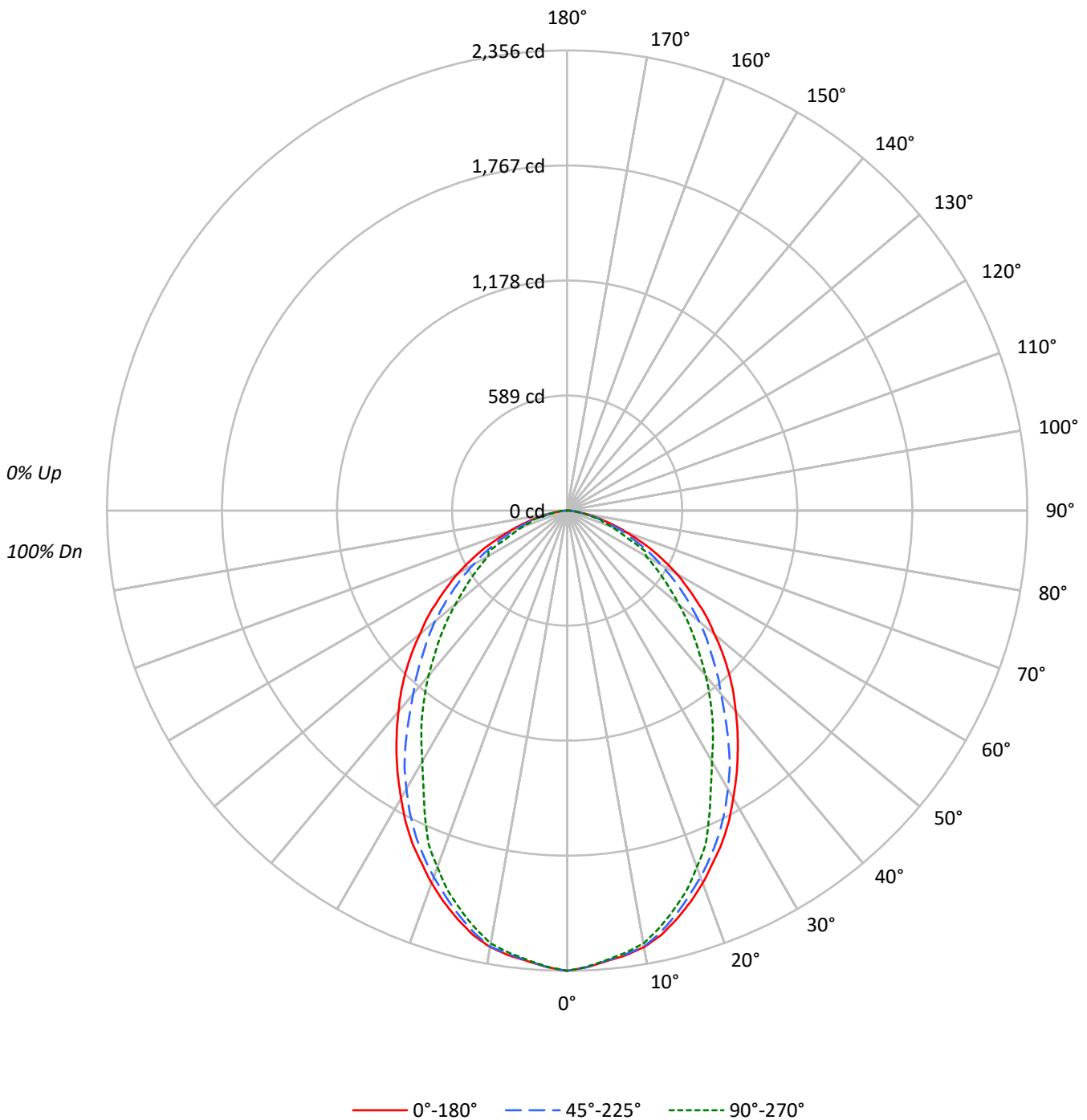
Lumens per Lamp: N/A  
Luminaire Lumens: 4626.0 lumens  
Efficiency: N/A  
Efficacy: 98.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6341	6341	6341
5°	6255	6247	6240
10°	6201	6193	6149
15°	6033	5973	5889
20°	5812	5718	5562
25°	5573	5452	5112
30°	5282	5113	4605
35°	5003	4725	4260
40°	4718	4306	3876
45°	4448	3981	3504
50°	4117	3695	3125
55°	3809	3348	2799
60°	3490	2991	2507
65°	3070	2620	2220
70°	2530	2293	1886
75°	2011	1756	1841
80°	1351	1266	1182
85°	840	1010	1176

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4448 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	219.4	4.7
10°-20°	602.0	13.0
20°-30°	833.4	18.0
30°-40°	888.7	19.2
40°-50°	810.7	17.5
50°-60°	635.1	13.7
60°-70°	413.9	8.9
70°-80°	183.4	4.0
80°-90°	39.4	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°	1654.8	35.8
0°-40°	2543.4	55.0
0°-60°	3989.3	86.2
0°-90°	4626.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4626.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2356	2356	2356	2356	2356	
5°	2316	2313	2313	2310	2310	220
15°	2166	2166	2144	2122	2114	609
25°	1877	1866	1836	1771	1722	862
35°	1523	1512	1438	1329	1297	952
45°	1169	1144	1046	959	921	900
55°	812	787	714	629	597	728
65°	482	455	411	420	349	475
75°	193	180	169	161	177	207
85°	27	30	33	35	38	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2356.4	2356.4	2356.4	2356.4	2356.4
2.5°	2340.1	2340.1	2340.1	2337.4	2337.4
5°	2315.6	2312.8	2312.8	2310.1	2310.1
7.5°	2296.5	2293.8	2291.0	2288.3	2282.9
10°	2269.2	2269.2	2266.5	2252.9	2250.2
12.5°	2225.7	2222.9	2212.0	2193.0	2187.5
15°	2165.7	2165.7	2143.9	2122.1	2114.0
17.5°	2100.3	2097.6	2070.4	2048.6	2037.7
20°	2029.5	2024.1	1996.8	1961.4	1942.3
22.5°	1950.5	1950.5	1917.8	1871.5	1852.4
25°	1877.0	1866.1	1836.1	1770.7	1721.7
27.5°	1792.5	1776.2	1743.5	1650.9	1593.6
30°	1699.9	1691.7	1645.4	1525.5	1482.0
32.5°	1612.7	1599.1	1550.1	1424.8	1389.3
35°	1522.8	1511.9	1438.4	1329.4	1296.7
37.5°	1432.9	1419.3	1326.7	1239.5	1198.6
40°	1343.0	1326.7	1225.9	1146.9	1103.3
42.5°	1258.6	1236.8	1138.7	1054.3	1005.2
45°	1168.7	1144.2	1046.1	958.9	920.8
47.5°	1078.8	1057.0	967.1	877.2	833.6
50°	983.4	964.4	882.6	792.7	746.4
52.5°	904.4	874.5	795.5	705.6	667.4
55°	811.8	787.3	713.7	629.3	596.6
57.5°	727.4	702.8	634.7	555.7	528.5
60°	648.4	612.9	555.7	487.6	465.8
62.5°	561.2	533.9	484.9	427.7	454.9
65°	482.2	454.9	411.4	419.5	348.7
67.5°	395.0	381.4	343.2	305.1	294.2
70°	321.5	305.1	291.5	250.6	239.7
72.5°	256.1	239.7	220.7	198.9	190.7
75°	193.4	179.8	168.9	160.7	177.1
77.5°	133.5	128.0	119.9	111.7	109.0
80°	87.2	84.4	81.7	79.0	76.3
82.5°	51.8	51.8	51.8	51.8	51.8
85°	27.2	30.0	32.7	35.4	38.1
87.5°	16.3	16.3	19.1	21.8	24.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)