

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: P561681

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-82-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561681  
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-82-84-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

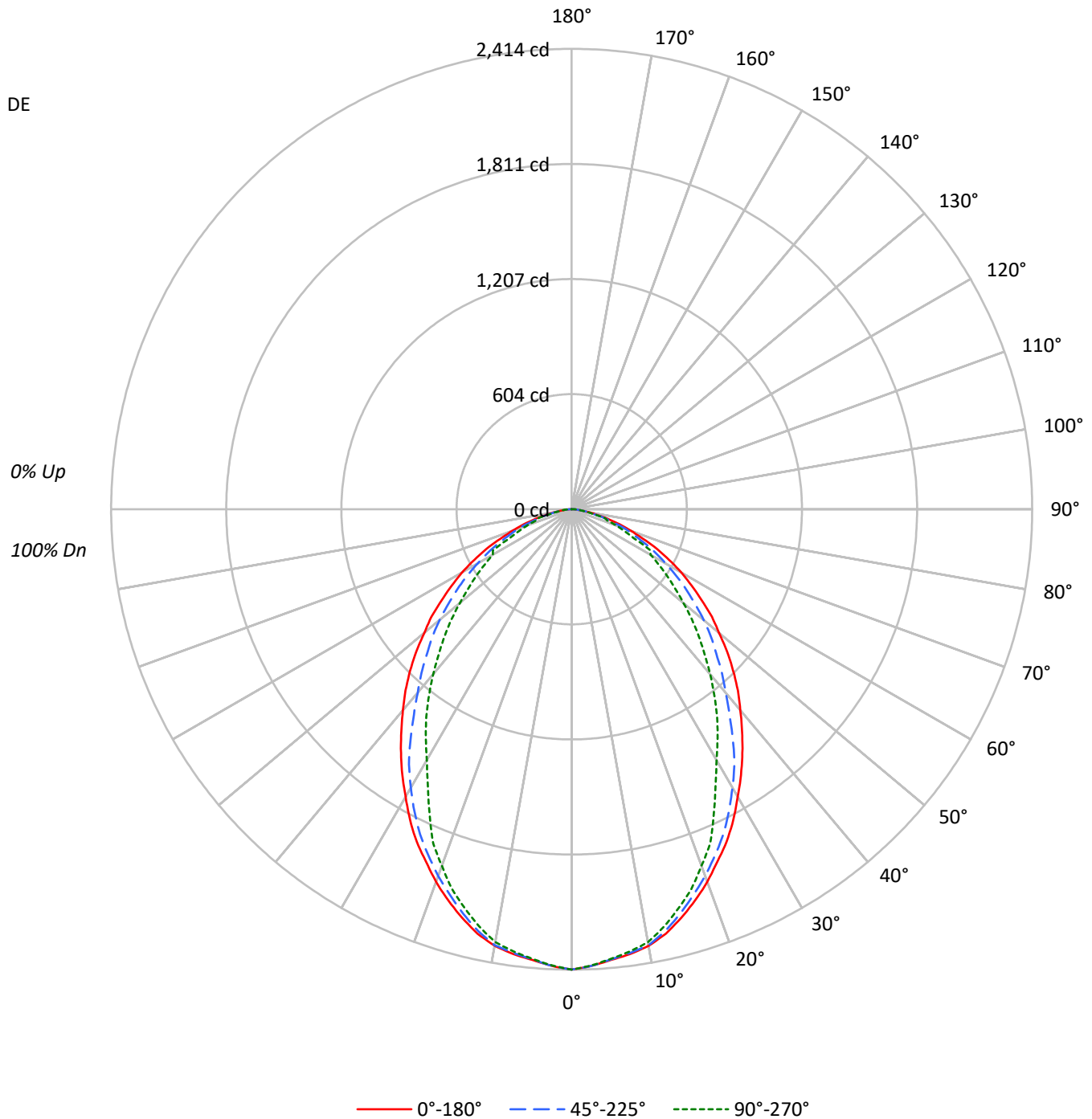
Lumens per Lamp: N/A  
Luminaire Lumens: 4738.0 lumens  
Efficiency: N/A  
Efficacy: 101.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6495	6495	6495
5°	6406	6399	6391
10°	6351	6343	6298
15°	6180	6117	6032
20°	5953	5857	5697
25°	5708	5584	5236
30°	5410	5236	4716
35°	5124	4840	4363
40°	4832	4411	3969
45°	4555	4077	3589
50°	4217	3785	3201
55°	3901	3430	2867
60°	3574	3063	2568
65°	3145	2683	2274
70°	2590	2349	1932
75°	2060	1799	1886
80°	1384	1297	1210
85°	861	1034	1207

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4555 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	224.7	4.7
10°-20°	616.6	13.0
20°-30°	853.6	18.0
30°-40°	910.2	19.2
40°-50°	830.4	17.5
50°-60°	650.5	13.7
60°-70°	424.0	8.9
70°-80°	187.8	4.0
80°-90°	40.3	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°	1694.8	35.8
0°-40°	2605.0	55.0
0°-60°	4085.9	86.2
0°-90°	4738.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4738.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2414	2414	2414	2414	2414	
5°	2372	2369	2369	2366	2366	225
15°	2218	2218	2196	2174	2165	624
25°	1922	1911	1881	1814	1763	883
35°	1560	1548	1473	1362	1328	975
45°	1197	1172	1071	982	943	922
55°	832	806	731	644	611	746
65°	494	466	421	430	357	487
75°	198	184	173	165	181	212
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°	2413.5	2413.5	2413.5	2413.5	2413.5
2.5°	2396.7	2396.7	2396.7	2393.9	2393.9
5°	2371.6	2368.8	2368.8	2366.0	2366.0
7.5°	2352.1	2349.3	2346.5	2343.7	2338.1
10°	2324.2	2324.2	2321.4	2307.4	2304.7
12.5°	2279.5	2276.8	2265.6	2246.1	2240.5
15°	2218.2	2218.2	2195.8	2173.5	2165.2
17.5°	2151.2	2148.4	2120.5	2098.2	2087.0
20°	2078.7	2073.1	2045.2	2008.9	1989.4
22.5°	1997.7	1997.7	1964.3	1916.8	1897.3
25°	1922.4	1911.2	1880.6	1813.6	1763.4
27.5°	1835.9	1819.2	1785.7	1690.8	1632.2
30°	1741.0	1732.7	1685.2	1562.5	1517.8
32.5°	1651.8	1637.8	1587.6	1459.2	1423.0
35°	1559.7	1548.5	1473.2	1361.6	1328.1
37.5°	1467.6	1453.7	1358.8	1269.5	1227.7
40°	1375.5	1358.8	1255.6	1174.7	1130.0
42.5°	1289.0	1266.7	1166.3	1079.8	1029.6
45°	1197.0	1171.9	1071.4	982.1	943.1
47.5°	1104.9	1082.6	990.5	898.4	853.8
50°	1007.2	987.7	904.0	811.9	764.5
52.5°	926.3	895.6	814.7	722.6	683.6
55°	831.5	806.4	731.0	644.5	611.0
57.5°	745.0	719.9	650.1	569.2	541.3
60°	664.1	627.8	569.2	499.4	477.1
62.5°	574.8	546.9	496.6	438.1	466.0
65°	493.9	466.0	421.3	429.7	357.1
67.5°	404.6	390.6	351.6	312.5	301.3
70°	329.2	312.5	298.5	256.7	245.5
72.5°	262.3	245.5	226.0	203.7	195.3
75°	198.1	184.1	173.0	164.6	181.4
77.5°	136.7	131.1	122.8	114.4	111.6
80°	89.3	86.5	83.7	80.9	78.1
82.5°	53.0	53.0	53.0	53.0	53.0
85°	27.9	30.7	33.5	36.3	39.1
87.5°	16.7	16.7	19.5	22.3	25.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)