

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: P561298

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-82-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561298  
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-LD4-1STD-50-UNV-82-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

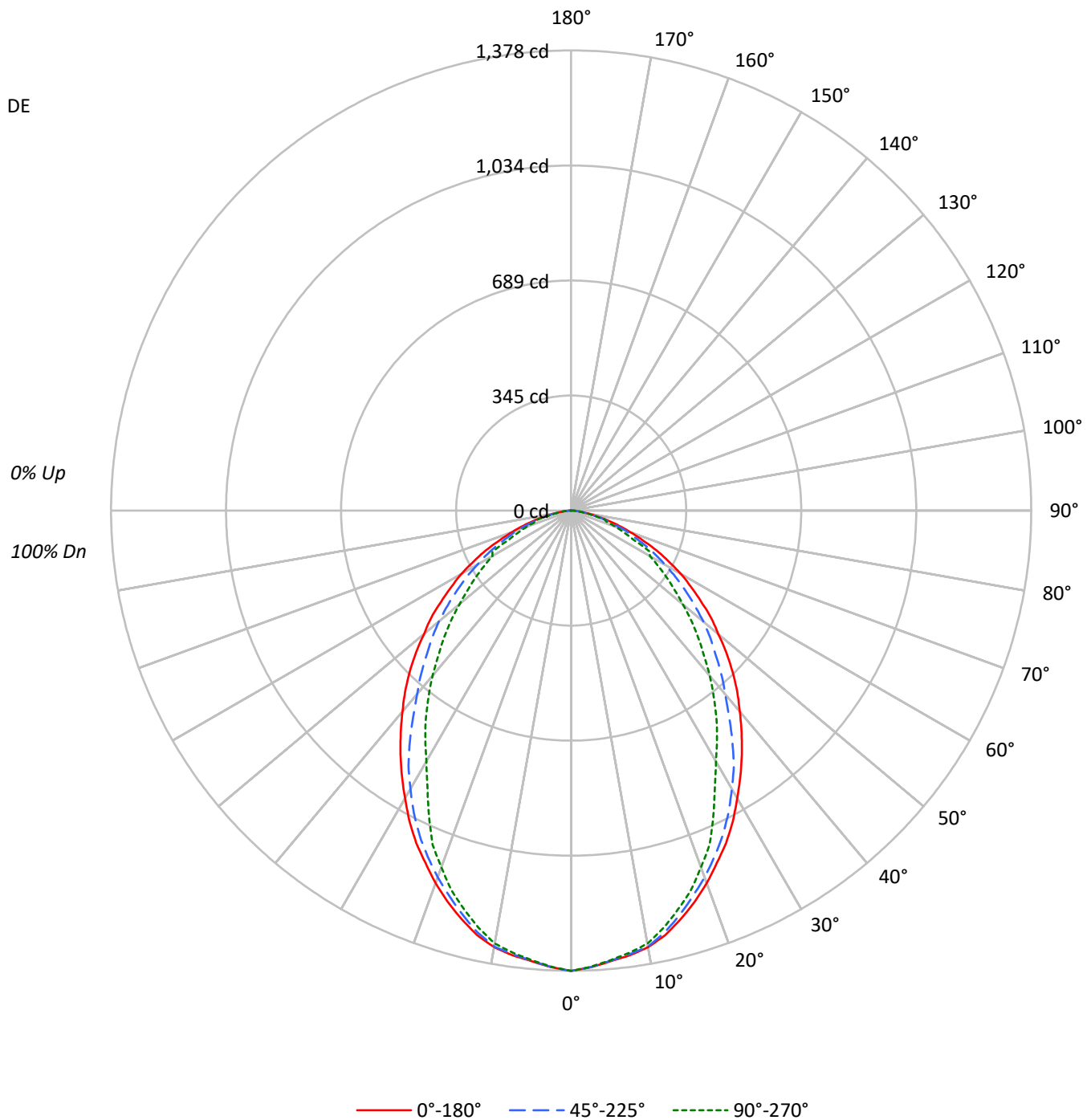
Lumens per Lamp: N/A  
Luminaire Lumens: 2706.0 lumens  
Efficiency: N/A  
Efficacy: 81.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3709	3709	3709
5°	3659	3655	3650
10°	3627	3623	3597
15°	3529	3494	3445
20°	3400	3345	3254
25°	3260	3189	2990
30°	3090	2991	2694
35°	2926	2764	2492
40°	2760	2519	2267
45°	2602	2329	2050
50°	2408	2161	1828
55°	2228	1959	1637
60°	2041	1750	1467
65°	1796	1532	1299
70°	1479	1341	1103
75°	1176	1027	1077
80°	790	741	691
85°	491	590	689

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2602 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.3	4.7
10°-20°	352.1	13.0
20°-30°	487.5	18.0
30°-40°	519.8	19.2
40°-50°	474.2	17.5
50°-60°	371.5	13.7
60°-70°	242.1	8.9
70°-80°	107.3	4.0
80°-90°	23.0	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°	968.0	35.8
0°-40°	1487.8	55.0
0°-60°	2333.5	86.2
0°-90°	2706.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2706.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1378	1378	1378	1378	1378	
5°	1354	1353	1353	1351	1351	129
15°	1267	1267	1254	1241	1237	356
25°	1098	1092	1074	1036	1007	504
35°	891	884	841	778	758	557
45°	684	669	612	561	539	527
55°	475	460	418	368	349	426
65°	282	266	241	245	204	278
75°	113	105	99	94	104	121
85°	16	18	19	21	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1378.4	1378.4	1378.4	1378.4	1378.4
2.5°	1368.8	1368.8	1368.8	1367.2	1367.2
5°	1354.5	1352.9	1352.9	1351.3	1351.3
7.5°	1343.3	1341.7	1340.2	1338.6	1335.4
10°	1327.4	1327.4	1325.8	1317.8	1316.3
12.5°	1301.9	1300.3	1293.9	1282.8	1279.6
15°	1266.9	1266.9	1254.1	1241.4	1236.6
17.5°	1228.6	1227.0	1211.1	1198.3	1192.0
20°	1187.2	1184.0	1168.1	1147.3	1136.2
22.5°	1141.0	1141.0	1121.8	1094.8	1083.6
25°	1097.9	1091.6	1074.0	1035.8	1007.1
27.5°	1048.5	1039.0	1019.9	965.7	932.2
30°	994.4	989.6	962.5	892.4	866.9
32.5°	943.4	935.4	906.7	833.4	812.7
35°	890.8	884.4	841.4	777.6	758.5
37.5°	838.2	830.2	776.0	725.1	701.2
40°	785.6	776.0	717.1	670.9	645.4
42.5°	736.2	723.5	666.1	616.7	588.0
45°	683.6	669.3	611.9	560.9	538.6
47.5°	631.0	618.3	565.7	513.1	487.6
50°	575.3	564.1	516.3	463.7	436.6
52.5°	529.1	511.5	465.3	412.7	390.4
55°	474.9	460.5	417.5	368.1	349.0
57.5°	425.5	411.1	371.3	325.1	309.1
60°	379.3	358.5	325.1	285.2	272.5
62.5°	328.3	312.3	283.6	250.2	266.1
65°	282.1	266.1	240.6	245.4	204.0
67.5°	231.1	223.1	200.8	178.5	172.1
70°	188.0	178.5	170.5	146.6	140.2
72.5°	149.8	140.2	129.1	116.3	111.5
75°	113.1	105.2	98.8	94.0	103.6
77.5°	78.1	74.9	70.1	65.3	63.7
80°	51.0	49.4	47.8	46.2	44.6
82.5°	30.3	30.3	30.3	30.3	30.3
85°	15.9	17.5	19.1	20.7	22.3
87.5°	9.6	9.6	11.2	12.7	14.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)