

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: P561158

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-81-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561158  
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-35-UNV-81-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

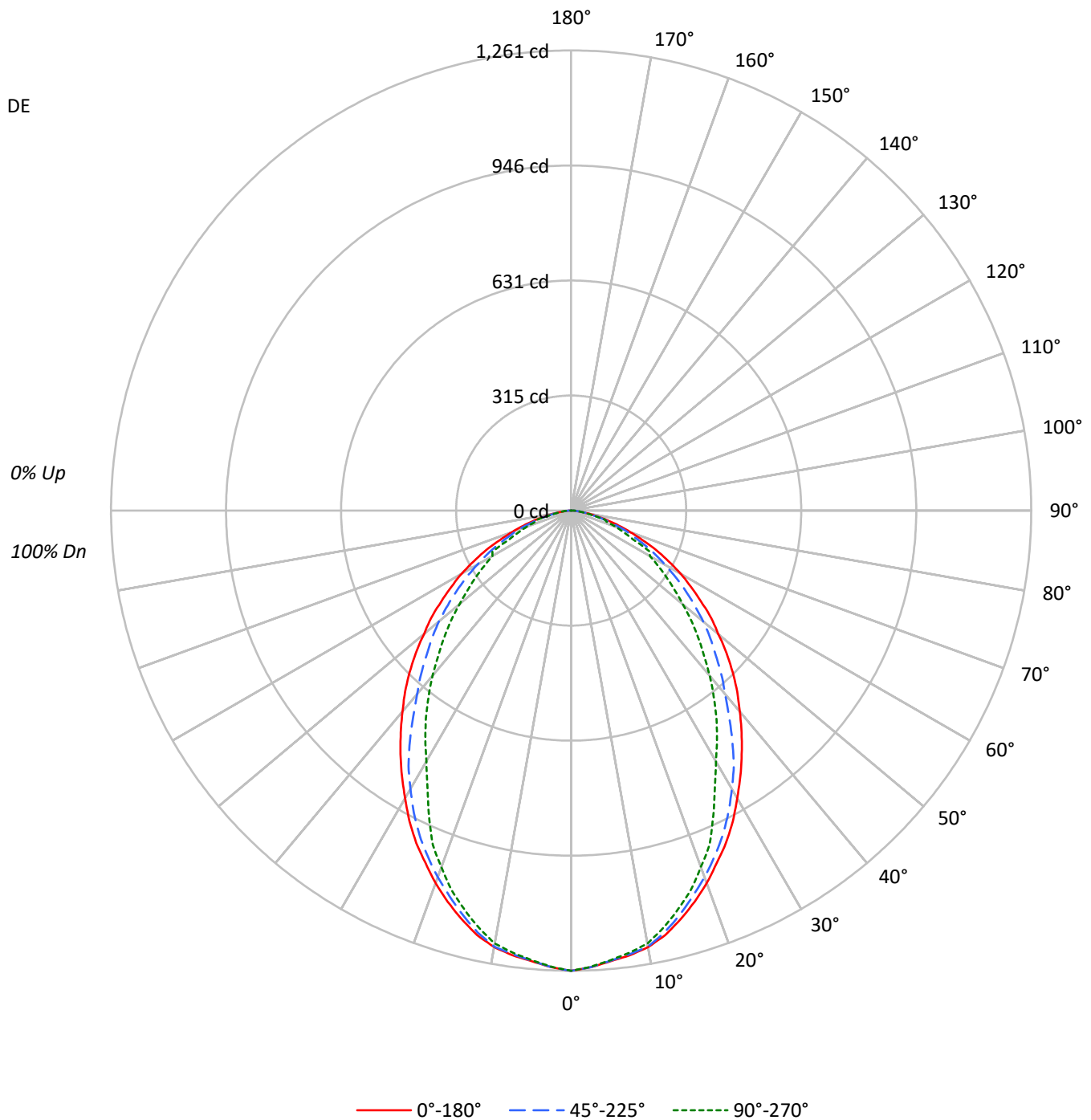
Lumens per Lamp: N/A  
Luminaire Lumens: 2476.0 lumens  
Efficiency: N/A  
Efficacy: 74.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3394	3394	3394
5°	3348	3344	3340
10°	3319	3315	3291
15°	3229	3197	3152
20°	3111	3061	2977
25°	2983	2918	2736
30°	2827	2737	2465
35°	2678	2529	2280
40°	2525	2305	2074
45°	2380	2131	1875
50°	2204	1978	1672
55°	2038	1792	1498
60°	1868	1601	1342
65°	1643	1402	1188
70°	1354	1227	1009
75°	1076	940	986
80°	724	677	632
85°	451	540	630

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2380 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.4	4.7
10°-20°	322.2	13.0
20°-30°	446.1	18.0
30°-40°	475.6	19.2
40°-50°	433.9	17.5
50°-60°	339.9	13.7
60°-70°	221.6	8.9
70°-80°	98.2	4.0
80°-90°	21.1	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°	885.7	35.8
0°-40°	1361.3	55.0
0°-60°	2135.2	86.2
0°-90°	2476.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2476.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1261	1261	1261	1261	1261	
5°	1239	1238	1238	1236	1236	118
15°	1159	1159	1148	1136	1132	326
25°	1005	999	983	948	922	461
35°	815	809	770	712	694	510
45°	626	612	560	513	493	482
55°	434	421	382	337	319	390
65°	258	244	220	224	187	254
75°	104	96	90	86	95	111
85°	15	16	18	19	20	20
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1261.2	1261.2	1261.2	1261.2	1261.2
2.5°	1252.5	1252.5	1252.5	1251.0	1251.0
5°	1239.4	1237.9	1237.9	1236.5	1236.5
7.5°	1229.2	1227.7	1226.2	1224.8	1221.9
10°	1214.6	1214.6	1213.1	1205.8	1204.4
12.5°	1191.3	1189.8	1184.0	1173.8	1170.8
15°	1159.2	1159.2	1147.5	1135.8	1131.5
17.5°	1124.2	1122.7	1108.1	1096.5	1090.6
20°	1086.3	1083.4	1068.8	1049.8	1039.6
22.5°	1044.0	1044.0	1026.5	1001.7	991.5
25°	1004.6	998.8	982.7	947.8	921.5
27.5°	959.4	950.7	933.2	883.6	853.0
30°	909.8	905.5	880.7	816.5	793.2
32.5°	863.2	855.9	829.6	762.6	743.6
35°	815.1	809.2	769.9	711.5	694.0
37.5°	767.0	759.7	710.1	663.4	641.6
40°	718.8	710.1	656.1	613.9	590.5
42.5°	673.6	662.0	609.5	564.3	538.0
45°	625.5	612.4	559.9	513.2	492.8
47.5°	577.4	565.7	517.6	469.5	446.2
50°	526.4	516.2	472.4	424.3	399.5
52.5°	484.1	468.0	425.8	377.6	357.2
55°	434.5	421.4	382.0	336.8	319.3
57.5°	389.3	376.2	339.7	297.4	282.9
60°	347.0	328.1	297.4	261.0	249.3
62.5°	300.4	285.8	259.5	228.9	243.5
65°	258.1	243.5	220.2	224.5	186.6
67.5°	211.4	204.1	183.7	163.3	157.5
70°	172.1	163.3	156.0	134.1	128.3
72.5°	137.1	128.3	118.1	106.4	102.1
75°	103.5	96.2	90.4	86.0	94.8
77.5°	71.4	68.5	64.2	59.8	58.3
80°	46.7	45.2	43.7	42.3	40.8
82.5°	27.7	27.7	27.7	27.7	27.7
85°	14.6	16.0	17.5	19.0	20.4
87.5°	8.7	8.7	10.2	11.7	13.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)