

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: P560860

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560860  
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-LD4-1HI-40-UNV-82-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

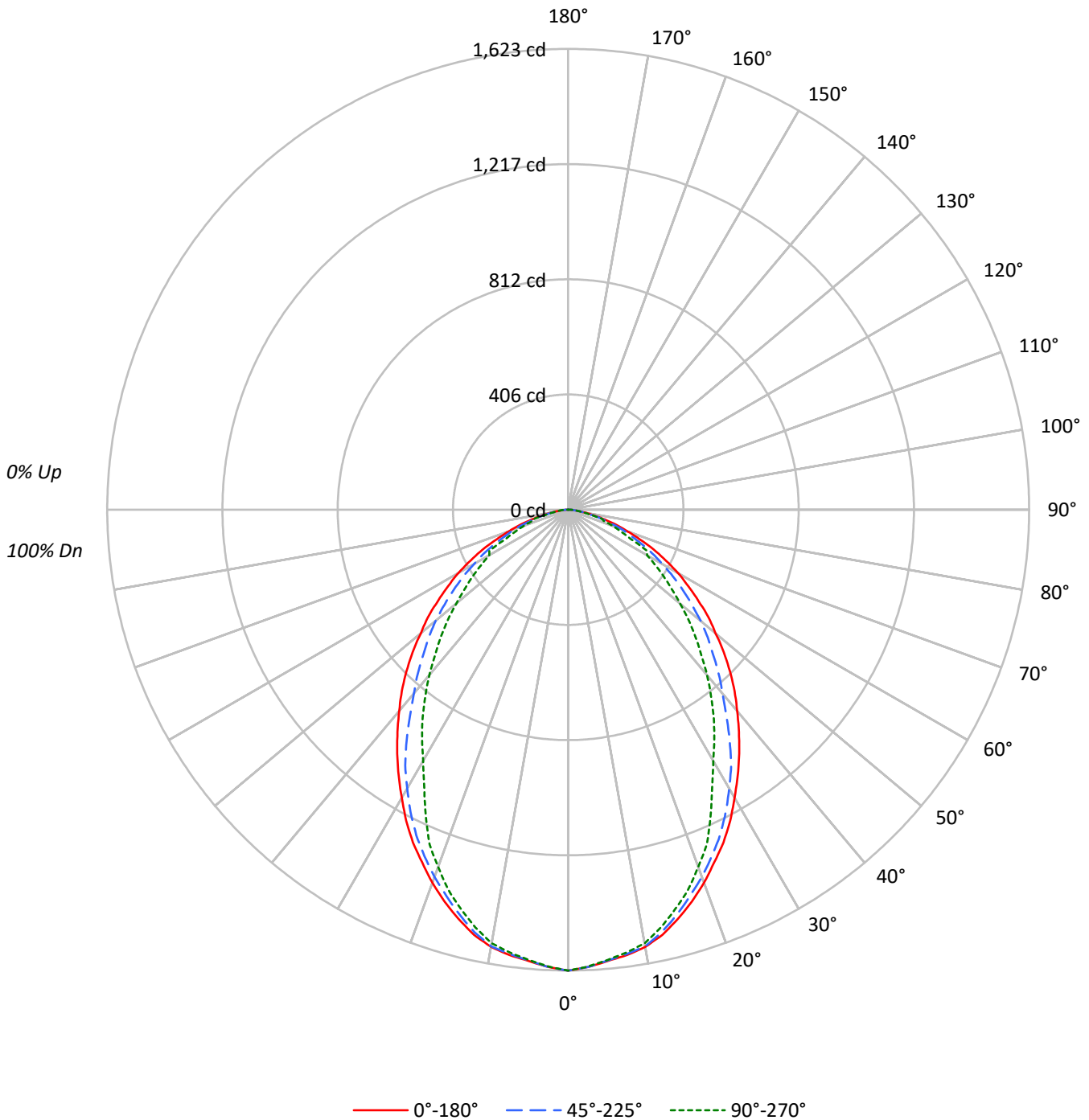
Lumens per Lamp: N/A  
Luminaire Lumens: 3187.0 lumens  
Efficiency: N/A  
Efficacy: 73.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4369	4369	4369
5°	4309	4304	4299
10°	4272	4267	4236
15°	4157	4115	4057
20°	4004	3940	3832
25°	3839	3756	3522
30°	3639	3522	3173
35°	3446	3255	2935
40°	3250	2967	2670
45°	3064	2743	2414
50°	2836	2546	2153
55°	2624	2307	1928
60°	2404	2061	1727
65°	2115	1805	1529
70°	1743	1580	1300
75°	1386	1210	1268
80°	931	872	814
85°	580	695	812

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3064 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.1	4.7
10°-20°	414.7	13.0
20°-30°	574.2	18.0
30°-40°	612.2	19.2
40°-50°	558.5	17.5
50°-60°	437.6	13.7
60°-70°	285.2	8.9
70°-80°	126.4	4.0
80°-90°	27.1	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°	1140.0	35.8
0°-40°	1752.2	55.0
0°-60°	2748.3	86.2
0°-90°	3187.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3187.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1623	1623	1623	1623	1623	
5°	1595	1593	1593	1592	1592	151
15°	1492	1492	1477	1462	1456	419
25°	1293	1286	1265	1220	1186	594
35°	1049	1042	991	916	893	656
45°	805	788	721	661	634	620
55°	559	542	492	434	411	502
65°	332	313	283	289	240	327
75°	133	124	116	111	122	143
85°	19	21	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1623.4	1623.4	1623.4	1623.4	1623.4
2.5°	1612.2	1612.2	1612.2	1610.3	1610.3
5°	1595.3	1593.4	1593.4	1591.5	1591.5
7.5°	1582.1	1580.2	1578.4	1576.5	1572.7
10°	1563.4	1563.4	1561.5	1552.1	1550.2
12.5°	1533.3	1531.5	1523.9	1510.8	1507.1
15°	1492.0	1492.0	1477.0	1462.0	1456.4
17.5°	1447.0	1445.1	1426.4	1411.3	1403.8
20°	1398.2	1394.4	1375.7	1351.3	1338.1
22.5°	1343.8	1343.8	1321.3	1289.3	1276.2
25°	1293.1	1285.6	1265.0	1219.9	1186.1
27.5°	1234.9	1223.7	1201.1	1137.3	1097.9
30°	1171.1	1165.5	1133.6	1051.0	1021.0
32.5°	1111.1	1101.7	1067.9	981.6	957.2
35°	1049.1	1041.6	990.9	915.9	893.3
37.5°	987.2	977.8	914.0	853.9	825.8
40°	925.3	914.0	844.6	790.1	760.1
42.5°	867.1	852.1	784.5	726.3	692.5
45°	805.1	788.2	720.7	660.6	634.4
47.5°	743.2	728.2	666.3	604.3	574.3
50°	677.5	664.4	608.1	546.1	514.2
52.5°	623.1	602.4	548.0	486.1	459.8
55°	559.3	542.4	491.7	433.5	411.0
57.5°	501.1	484.2	437.3	382.9	364.1
60°	446.7	422.3	382.9	335.9	320.9
62.5°	386.6	367.8	334.1	294.7	313.4
65°	332.2	313.4	283.4	289.0	240.2
67.5°	272.1	262.7	236.5	210.2	202.7
70°	221.5	210.2	200.8	172.7	165.2
72.5°	176.4	165.2	152.0	137.0	131.4
75°	133.3	123.9	116.4	110.7	122.0
77.5°	92.0	88.2	82.6	76.9	75.1
80°	60.1	58.2	56.3	54.4	52.5
82.5°	35.7	35.7	35.7	35.7	35.7
85°	18.8	20.6	22.5	24.4	26.3
87.5°	11.3	11.3	13.1	15.0	16.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)