

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: P560862

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560862  
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-82-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

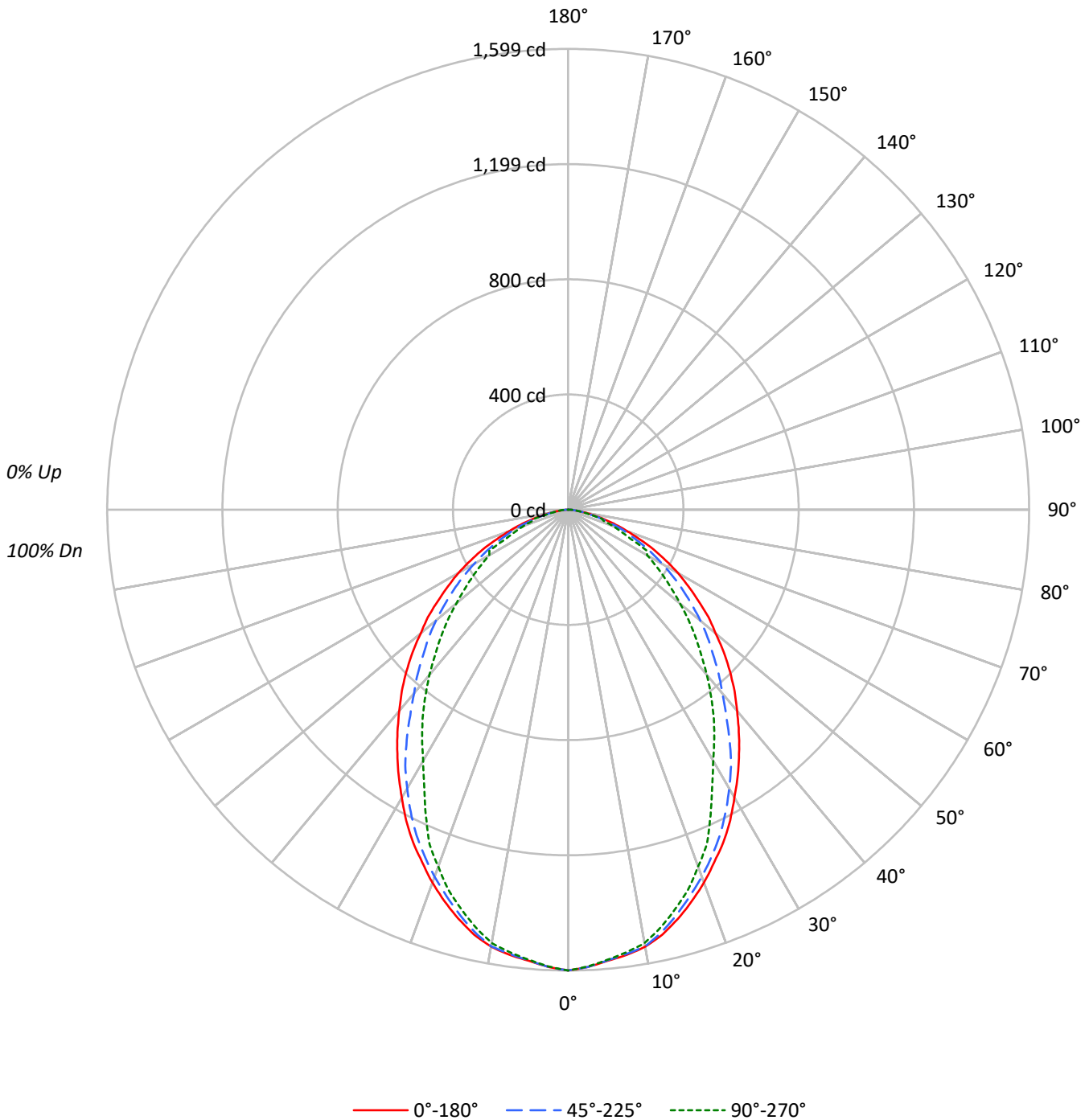
Lumens per Lamp: N/A  
Luminaire Lumens: 3139.0 lumens  
Efficiency: N/A  
Efficacy: 72.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4303	4303	4303
5°	4244	4239	4234
10°	4207	4203	4172
15°	4094	4053	3996
20°	3944	3880	3774
25°	3782	3699	3469
30°	3584	3469	3125
35°	3394	3206	2891
40°	3201	2922	2630
45°	3018	2701	2378
50°	2794	2507	2120
55°	2585	2272	1899
60°	2368	2030	1701
65°	2083	1777	1507
70°	1716	1556	1280
75°	1364	1192	1250
80°	917	860	803
85°	571	685	800

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3018 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.8	4.7
10°-20°	408.5	13.0
20°-30°	565.5	18.0
30°-40°	603.0	19.2
40°-50°	550.1	17.5
50°-60°	431.0	13.7
60°-70°	280.9	8.9
70°-80°	124.4	4.0
80°-90°	26.7	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°	1122.8	35.8
0°-40°	1725.8	55.0
0°-60°	2706.9	86.2
0°-90°	3139.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3139.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1599	1599	1599	1599	1599	
5°	1571	1569	1569	1568	1568	149
15°	1470	1470	1455	1440	1434	413
25°	1274	1266	1246	1202	1168	585
35°	1033	1026	976	902	880	646
45°	793	776	710	651	625	611
55°	551	534	484	427	405	494
65°	327	309	279	285	237	322
75°	131	122	115	109	120	141
85°	18	20	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°	1599.0	1599.0	1599.0	1599.0	1599.0
2.5°	1587.9	1587.9	1587.9	1586.0	1586.0
5°	1571.2	1569.4	1569.4	1567.5	1567.5
7.5°	1558.3	1556.4	1554.6	1552.8	1549.1
10°	1539.8	1539.8	1538.0	1528.7	1526.9
12.5°	1510.2	1508.4	1501.0	1488.1	1484.4
15°	1469.6	1469.6	1454.8	1440.0	1434.4
17.5°	1425.2	1423.4	1404.9	1390.1	1382.7
20°	1377.1	1373.4	1355.0	1330.9	1318.0
22.5°	1323.5	1323.5	1301.4	1269.9	1257.0
25°	1273.6	1266.2	1245.9	1201.5	1168.3
27.5°	1216.3	1205.2	1183.0	1120.2	1081.4
30°	1153.5	1147.9	1116.5	1035.2	1005.6
32.5°	1094.3	1085.1	1051.8	966.8	942.7
35°	1033.3	1025.9	976.0	902.1	879.9
37.5°	972.3	963.1	900.2	841.1	813.3
40°	911.3	900.2	831.8	778.2	748.6
42.5°	854.0	839.2	772.7	715.4	682.1
45°	793.0	776.4	709.8	650.7	624.8
47.5°	732.0	717.2	656.2	595.2	565.6
50°	667.3	654.4	598.9	537.9	506.5
52.5°	613.7	593.4	539.8	478.8	452.9
55°	550.9	534.2	484.3	427.0	404.8
57.5°	493.6	476.9	430.7	377.1	358.6
60°	439.9	415.9	377.1	330.9	316.1
62.5°	380.8	362.3	329.0	290.2	308.7
65°	327.2	308.7	279.1	284.7	236.6
67.5°	268.0	258.8	232.9	207.0	199.6
70°	218.1	207.0	197.8	170.1	162.7
72.5°	173.8	162.7	149.7	134.9	129.4
75°	131.2	122.0	114.6	109.1	120.2
77.5°	90.6	86.9	81.3	75.8	73.9
80°	59.2	57.3	55.5	53.6	51.8
82.5°	35.1	35.1	35.1	35.1	35.1
85°	18.5	20.3	22.2	24.0	25.9
87.5°	11.1	11.1	12.9	14.8	16.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)