

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: P560808

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-93-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560808  
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-35-UNV-93-88-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

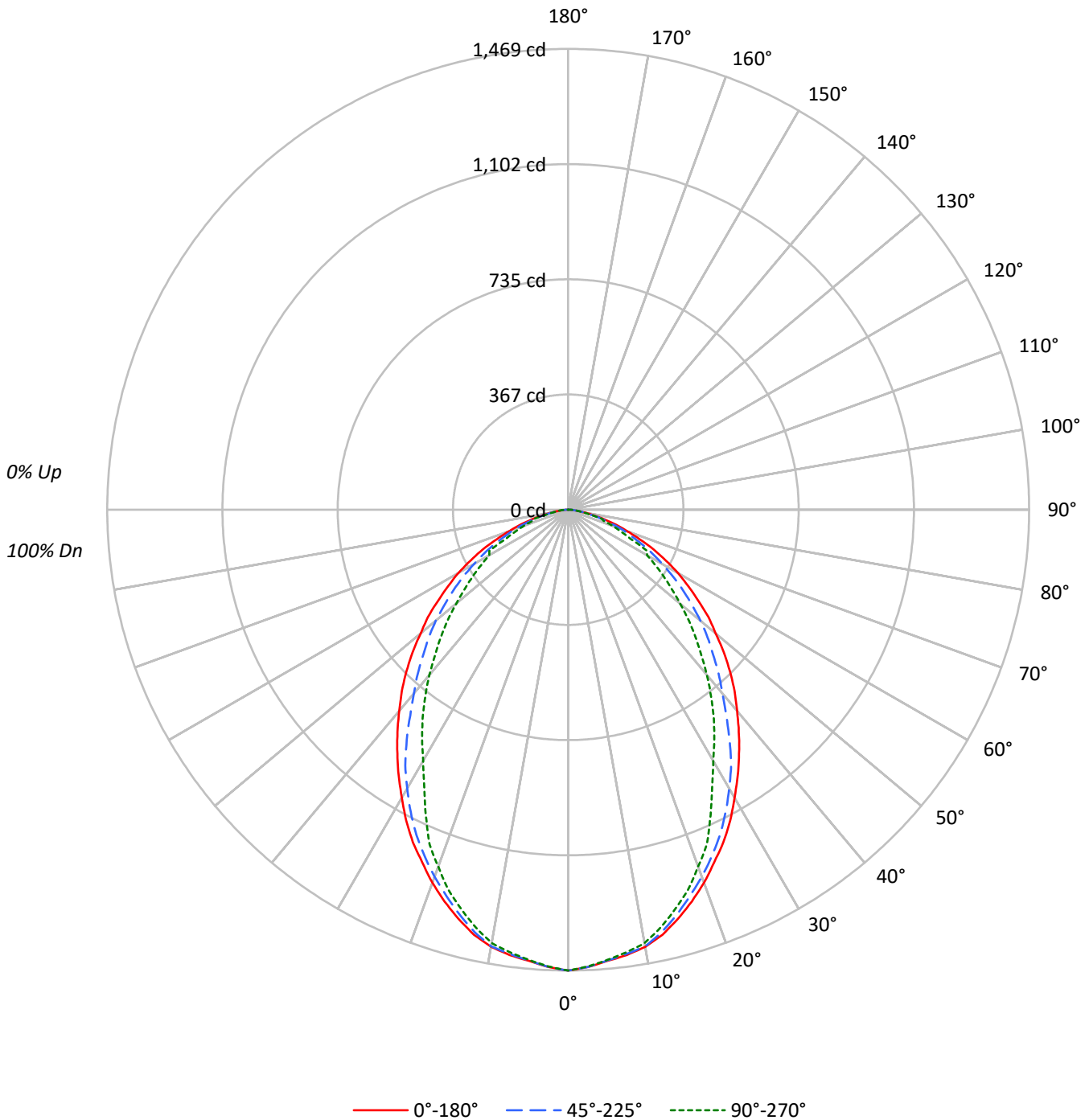
Lumens per Lamp: N/A  
Luminaire Lumens: 2884.0 lumens  
Efficiency: N/A  
Efficacy: 66.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3953	3953	3953
5°	3900	3895	3890
10°	3866	3861	3833
15°	3762	3724	3672
20°	3623	3565	3468
25°	3475	3399	3187
30°	3293	3187	2871
35°	3119	2946	2656
40°	2941	2685	2416
45°	2773	2482	2184
50°	2567	2304	1948
55°	2374	2088	1745
60°	2175	1865	1563
65°	1914	1633	1384
70°	1577	1430	1176
75°	1254	1095	1148
80°	841	790	738
85°	525	630	735

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2773 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.8	4.7
10°-20°	375.3	13.0
20°-30°	519.6	18.0
30°-40°	554.0	19.2
40°-50°	505.4	17.5
50°-60°	396.0	13.7
60°-70°	258.1	8.9
70°-80°	114.3	4.0
80°-90°	24.6	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°	1031.6	35.8
0°-40°	1585.7	55.0
0°-60°	2487.1	86.2
0°-90°	2884.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2884.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1469	1469	1469	1469	1469	
5°	1444	1442	1442	1440	1440	137
15°	1350	1350	1337	1323	1318	380
25°	1170	1163	1145	1104	1073	537
35°	949	943	897	829	808	594
45°	729	713	652	598	574	561
55°	506	491	445	392	372	454
65°	301	284	256	262	217	296
75°	121	112	105	100	110	129
85°	17	19	20	22	24	24
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1469.1	1469.1	1469.1	1469.1	1469.1
2.5°	1458.9	1458.9	1458.9	1457.2	1457.2
5°	1443.6	1441.9	1441.9	1440.2	1440.2
7.5°	1431.7	1430.0	1428.3	1426.6	1423.2
10°	1414.7	1414.7	1413.0	1404.5	1402.8
12.5°	1387.6	1385.9	1379.1	1367.2	1363.8
15°	1350.2	1350.2	1336.6	1323.0	1317.9
17.5°	1309.4	1307.7	1290.7	1277.2	1270.4
20°	1265.3	1261.9	1244.9	1222.8	1210.9
22.5°	1216.0	1216.0	1195.6	1166.8	1154.9
25°	1170.2	1163.4	1144.7	1103.9	1073.4
27.5°	1117.5	1107.3	1086.9	1029.2	993.5
30°	1059.8	1054.7	1025.8	951.1	923.9
32.5°	1005.4	996.9	966.4	888.2	866.2
35°	949.4	942.6	896.7	828.8	808.4
37.5°	893.3	884.8	827.1	772.7	747.3
40°	837.3	827.1	764.3	715.0	687.8
42.5°	784.6	771.1	709.9	657.3	626.7
45°	728.6	713.3	652.2	597.8	574.0
47.5°	672.5	659.0	602.9	546.9	519.7
50°	613.1	601.2	550.3	494.2	465.3
52.5°	563.9	545.2	495.9	439.9	416.1
55°	506.1	490.8	445.0	392.3	371.9
57.5°	453.5	438.2	395.7	346.5	329.5
60°	404.2	382.1	346.5	304.0	290.4
62.5°	349.9	332.9	302.3	266.6	283.6
65°	300.6	283.6	256.5	261.5	217.4
67.5°	246.3	237.8	214.0	190.2	183.4
70°	200.4	190.2	181.7	156.2	149.5
72.5°	159.6	149.5	137.6	124.0	118.9
75°	120.6	112.1	105.3	100.2	110.4
77.5°	83.2	79.8	74.7	69.6	67.9
80°	54.3	52.6	51.0	49.3	47.6
82.5°	32.3	32.3	32.3	32.3	32.3
85°	17.0	18.7	20.4	22.1	23.8
87.5°	10.2	10.2	11.9	13.6	15.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)