

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: P561442

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561442  
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-LD4-2HI-40-UNV-93-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

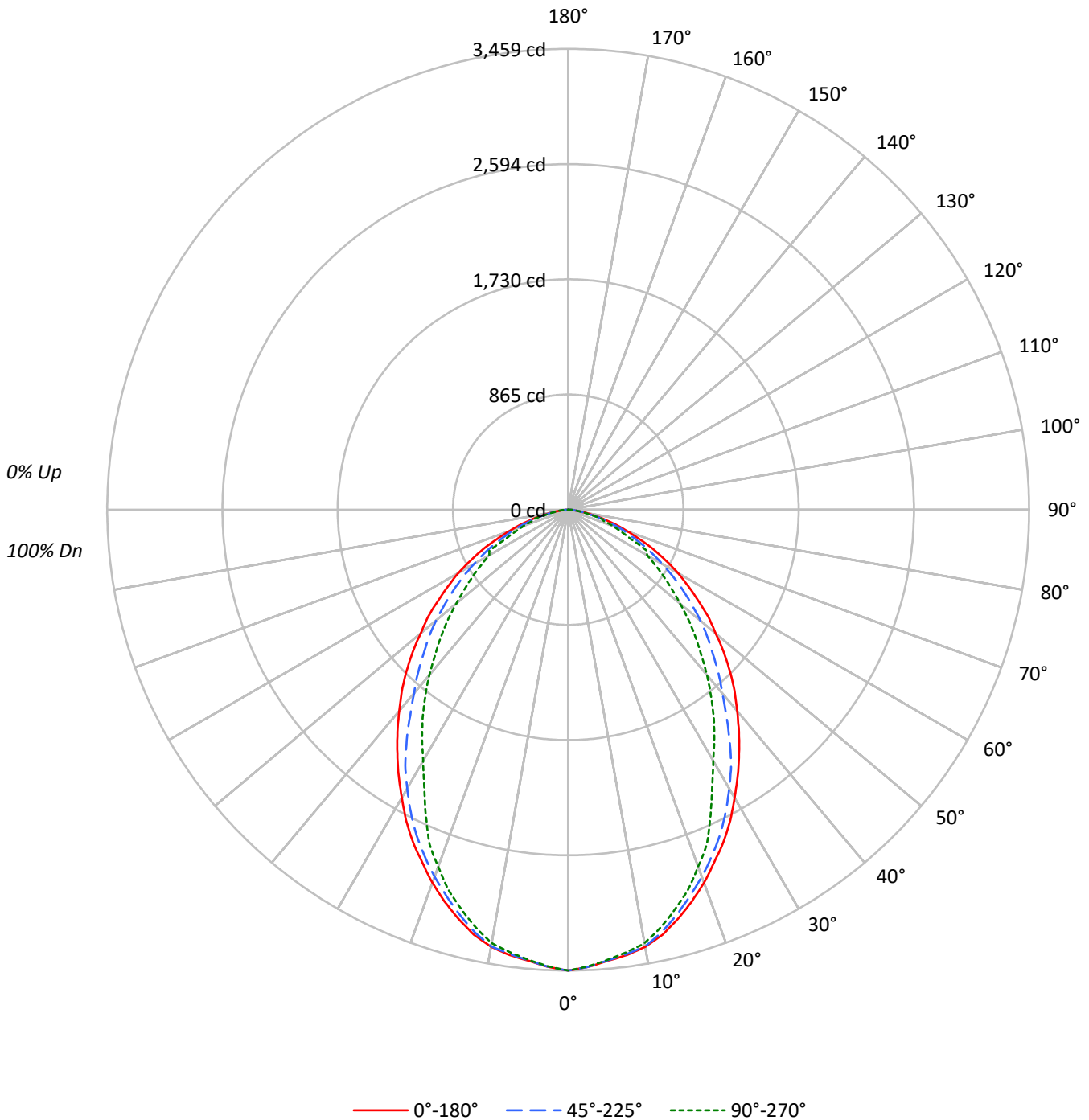
Lumens per Lamp: N/A  
Luminaire Lumens: 6791.0 lumens  
Efficiency: N/A  
Efficacy: 78.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	9309	9309	9309
5°	9182	9172	9161
10°	9103	9092	9026
15°	8857	8768	8646
20°	8532	8395	8165
25°	8181	8003	7504
30°	7754	7506	6760
35°	7344	6936	6253
40°	6926	6322	5689
45°	6529	5844	5144
50°	6044	5424	4587
55°	5591	4916	4109
60°	5123	4391	3681
65°	4507	3845	3259
70°	3713	3367	2769
75°	2952	2577	2702
80°	1984	1860	1736
85°	1235	1482	1729

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6529 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	322.0	4.7
10°-20°	883.7	13.0
20°-30°	1223.5	18.0
30°-40°	1304.6	19.2
40°-50°	1190.1	17.5
50°-60°	932.4	13.7
60°-70°	607.7	8.9
70°-80°	269.2	4.0
80°-90°	57.8	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°	2429.2	35.8
0°-40°	3733.8	55.0
0°-60°	5856.3	86.2
0°-90°	6791.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6791.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3459	3459	3459	3459	3459	
5°	3399	3395	3395	3391	3391	323
15°	3179	3179	3147	3115	3103	894
25°	2755	2739	2695	2599	2527	1265
35°	2236	2220	2112	1952	1904	1398
45°	1716	1680	1536	1408	1352	1322
55°	1192	1156	1048	924	876	1069
65°	708	668	604	616	512	698
75°	284	264	248	236	260	304
85°	40	44	48	52	56	55
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3459.2	3459.2	3459.2	3459.2	3459.2
2.5°	3435.2	3435.2	3435.2	3431.3	3431.3
5°	3399.3	3395.3	3395.3	3391.3	3391.3
7.5°	3371.3	3367.3	3363.3	3359.3	3351.3
10°	3331.3	3331.3	3327.3	3307.3	3303.3
12.5°	3267.3	3263.3	3247.3	3219.3	3211.3
15°	3179.3	3179.3	3147.3	3115.3	3103.3
17.5°	3083.3	3079.3	3039.3	3007.3	2991.3
20°	2979.3	2971.4	2931.4	2879.4	2851.4
22.5°	2863.4	2863.4	2815.4	2747.4	2719.4
25°	2755.4	2739.4	2695.4	2599.4	2527.4
27.5°	2631.4	2607.4	2559.4	2423.5	2339.5
30°	2495.5	2483.5	2415.5	2239.5	2175.5
32.5°	2367.5	2347.5	2275.5	2091.5	2039.6
35°	2235.5	2219.5	2111.5	1951.6	1903.6
37.5°	2103.5	2083.5	1947.6	1819.6	1759.6
40°	1971.6	1947.6	1799.6	1683.6	1619.6
42.5°	1847.6	1815.6	1671.6	1547.7	1475.7
45°	1715.6	1679.6	1535.7	1407.7	1351.7
47.5°	1583.7	1551.7	1419.7	1287.7	1223.7
50°	1443.7	1415.7	1295.7	1163.7	1095.8
52.5°	1327.7	1283.7	1167.7	1035.8	979.8
55°	1191.7	1155.7	1047.8	923.8	875.8
57.5°	1067.8	1031.8	931.8	815.8	775.8
60°	951.8	899.8	815.8	715.8	683.9
62.5°	823.8	783.8	711.8	627.9	667.9
65°	707.8	667.9	603.9	615.9	511.9
67.5°	579.9	559.9	503.9	447.9	431.9
70°	471.9	447.9	427.9	367.9	351.9
72.5°	375.9	351.9	323.9	291.9	279.9
75°	283.9	263.9	247.9	235.9	259.9
77.5°	196.0	188.0	176.0	164.0	160.0
80°	128.0	124.0	120.0	116.0	112.0
82.5°	76.0	76.0	76.0	76.0	76.0
85°	40.0	44.0	48.0	52.0	56.0
87.5°	24.0	24.0	28.0	32.0	36.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)