

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: P561063

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561063  
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-LD4-1LO-40-UNV-93-87-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

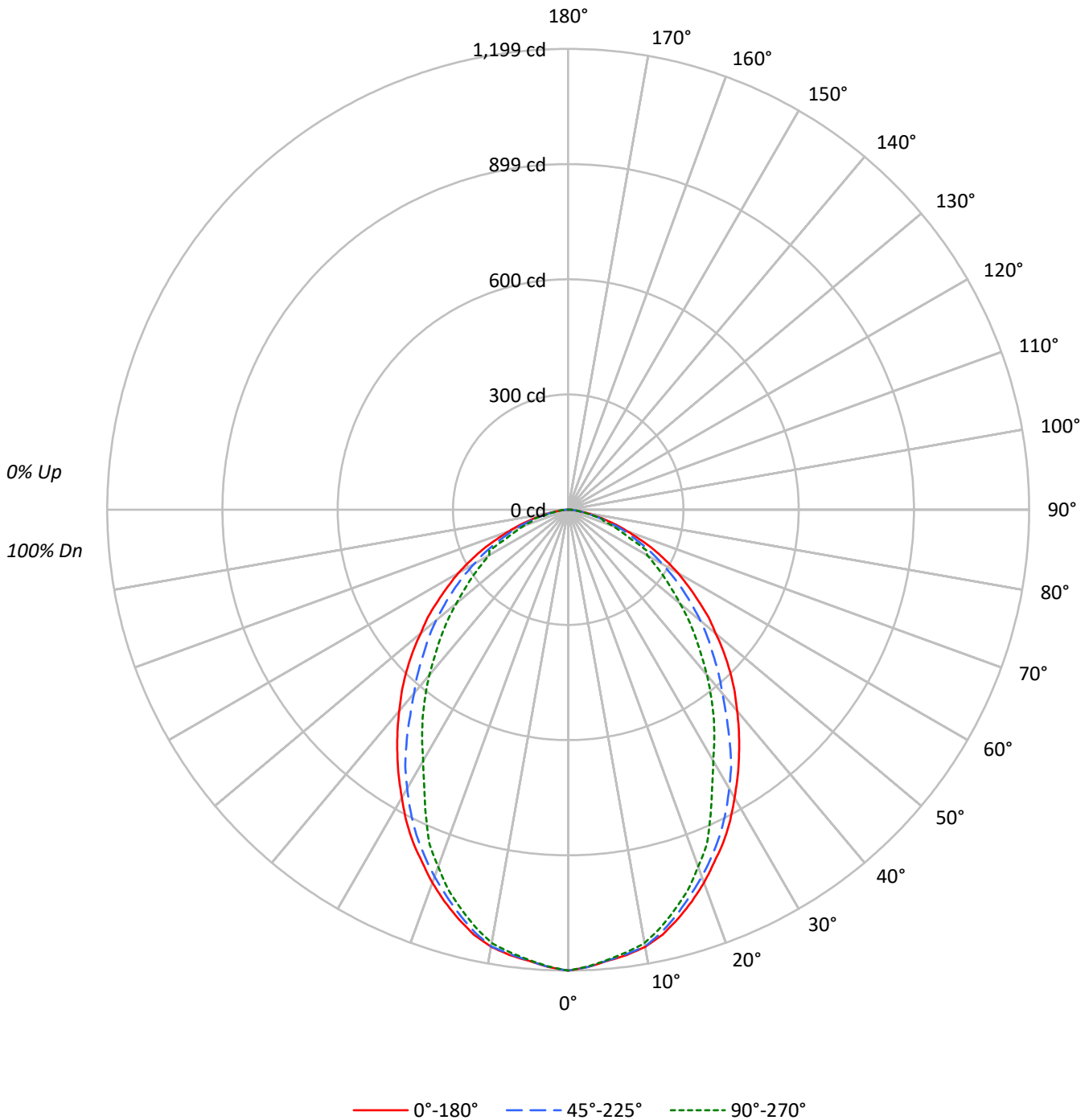
Lumens per Lamp: N/A  
Luminaire Lumens: 2354.0 lumens  
Efficiency: N/A  
Efficacy: 100.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3227	3227	3227
5°	3183	3179	3175
10°	3155	3152	3129
15°	3070	3039	2997
20°	2957	2910	2830
25°	2836	2774	2601
30°	2688	2602	2343
35°	2546	2404	2167
40°	2401	2191	1972
45°	2263	2026	1783
50°	2095	1880	1590
55°	1938	1704	1424
60°	1776	1522	1276
65°	1563	1333	1130
70°	1287	1167	960
75°	1023	893	937
80°	688	645	601
85°	429	513	599

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2263 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.6	4.7
10°-20°	306.3	13.0
20°-30°	424.1	18.0
30°-40°	452.2	19.2
40°-50°	412.5	17.5
50°-60°	323.2	13.7
60°-70°	210.6	8.9
70°-80°	93.3	4.0
80°-90°	20.0	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°	842.0	35.8
0°-40°	1294.2	55.0
0°-60°	2030.0	86.2
0°-90°	2354.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2354.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1199	1199	1199	1199	1199	
5°	1178	1177	1177	1176	1176	112
15°	1102	1102	1091	1080	1076	310
25°	955	950	934	901	876	438
35°	775	769	732	676	660	484
45°	595	582	532	488	468	458
55°	413	401	363	320	304	371
65°	245	232	209	214	177	242
75°	98	92	86	82	90	105
85°	14	15	17	18	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1199.1	1199.1	1199.1	1199.1	1199.1
2.5°	1190.8	1190.8	1190.8	1189.4	1189.4
5°	1178.3	1176.9	1176.9	1175.5	1175.5
7.5°	1168.6	1167.2	1165.8	1164.4	1161.7
10°	1154.7	1154.7	1153.4	1146.4	1145.0
12.5°	1132.6	1131.2	1125.6	1115.9	1113.1
15°	1102.1	1102.1	1091.0	1079.9	1075.7
17.5°	1068.8	1067.4	1053.5	1042.5	1036.9
20°	1032.7	1030.0	1016.1	998.1	988.4
22.5°	992.5	992.5	975.9	952.3	942.6
25°	955.1	949.6	934.3	901.1	876.1
27.5°	912.1	903.8	887.2	840.1	810.9
30°	865.0	860.9	837.3	776.3	754.1
32.5°	820.7	813.7	788.8	725.0	707.0
35°	774.9	769.4	731.9	676.5	659.8
37.5°	729.2	722.2	675.1	630.7	609.9
40°	683.4	675.1	623.8	583.6	561.4
42.5°	640.4	629.4	579.4	536.5	511.5
45°	594.7	582.2	532.3	488.0	468.5
47.5°	549.0	537.9	492.1	446.4	424.2
50°	500.4	490.7	449.1	403.4	379.8
52.5°	460.2	445.0	404.8	359.0	339.6
55°	413.1	400.6	363.2	320.2	303.6
57.5°	370.1	357.6	323.0	282.8	268.9
60°	329.9	311.9	282.8	248.1	237.0
62.5°	285.6	271.7	246.8	217.6	231.5
65°	245.4	231.5	209.3	213.5	177.4
67.5°	201.0	194.1	174.7	155.3	149.7
70°	163.6	155.3	148.3	127.5	122.0
72.5°	130.3	122.0	112.3	101.2	97.0
75°	98.4	91.5	85.9	81.8	90.1
77.5°	67.9	65.2	61.0	56.8	55.4
80°	44.4	43.0	41.6	40.2	38.8
82.5°	26.3	26.3	26.3	26.3	26.3
85°	13.9	15.2	16.6	18.0	19.4
87.5°	8.3	8.3	9.7	11.1	12.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)