

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: P562284

Luminaire Tested: FSR-24-4-LD4-1LO-50-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562284  
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-24-4-LD4-1LO-50-UNV-93-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

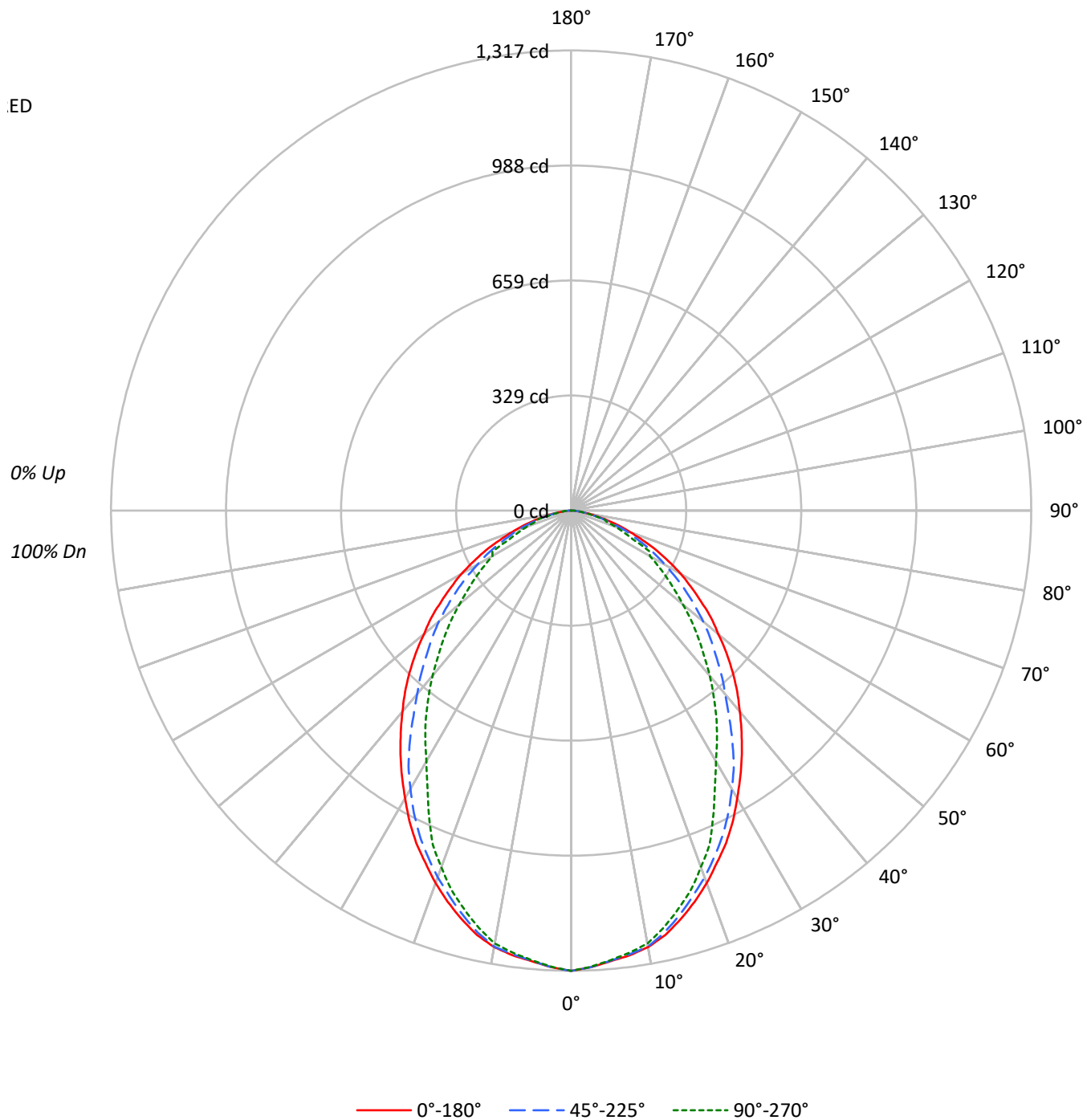
Lumens per Lamp: N/A  
Luminaire Lumens: 2586.0 lumens  
Efficiency: N/A  
Efficacy: 110.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	1772	1772	1772
5°	1748	1746	1744
10°	1733	1731	1719
15°	1686	1669	1646
20°	1624	1598	1555
25°	1558	1524	1429
30°	1476	1429	1287
35°	1398	1321	1191
40°	1319	1204	1083
45°	1243	1113	979
50°	1151	1033	873
55°	1065	936	782
60°	975	836	701
65°	858	732	621
70°	707	641	527
75°	562	491	515
80°	377	354	330
85°	235	283	329

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1243 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.6	4.7
10°-20°	336.5	13.0
20°-30°	465.9	18.0
30°-40°	496.8	19.2
40°-50°	453.2	17.5
50°-60°	355.0	13.7
60°-70°	231.4	8.9
70°-80°	102.5	4.0
80°-90°	22.0	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°	925.0	35.8
0°-40°	1421.8	55.0
0°-60°	2230.1	86.2
0°-90°	2586.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2586.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1317	1317	1317	1317	1317	
5°	1294	1293	1293	1291	1291	123
15°	1211	1211	1198	1186	1182	340
25°	1049	1043	1026	990	962	482
35°	851	845	804	743	725	532
45°	653	640	585	536	515	503
55°	454	440	399	352	334	407
65°	270	254	230	234	195	266
75°	108	100	94	90	99	116
85°	15	17	18	20	21	21
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1317.3	1317.3	1317.3	1317.3	1317.3
2.5°	1308.1	1308.1	1308.1	1306.6	1306.6
5°	1294.4	1292.9	1292.9	1291.4	1291.4
7.5°	1283.8	1282.2	1280.7	1279.2	1276.2
10°	1268.5	1268.5	1267.0	1259.4	1257.9
12.5°	1244.2	1242.7	1236.6	1225.9	1222.9
15°	1210.7	1210.7	1198.5	1186.3	1181.7
17.5°	1174.1	1172.6	1157.4	1145.2	1139.1
20°	1134.5	1131.5	1116.3	1096.5	1085.8
22.5°	1090.4	1090.4	1072.1	1046.2	1035.5
25°	1049.3	1043.2	1026.4	989.9	962.4
27.5°	1002.0	992.9	974.6	922.9	890.9
30°	950.3	945.7	919.8	852.8	828.4
32.5°	901.5	893.9	866.5	796.5	776.7
35°	851.3	845.2	804.1	743.2	724.9
37.5°	801.0	793.4	741.6	692.9	670.1
40°	750.8	741.6	685.3	641.1	616.8
42.5°	703.6	691.4	636.6	589.3	561.9
45°	653.3	639.6	584.8	536.0	514.7
47.5°	603.1	590.9	540.6	490.4	466.0
50°	549.8	539.1	493.4	443.2	417.3
52.5°	505.6	488.8	444.7	394.4	373.1
55°	453.8	440.1	399.0	351.8	333.5
57.5°	406.6	392.9	354.8	310.7	295.4
60°	362.4	342.6	310.7	272.6	260.4
62.5°	313.7	298.5	271.1	239.1	254.3
65°	269.5	254.3	230.0	234.5	194.9
67.5°	220.8	213.2	191.9	170.6	164.5
70°	179.7	170.6	162.9	140.1	134.0
72.5°	143.1	134.0	123.4	111.2	106.6
75°	108.1	100.5	94.4	89.8	99.0
77.5°	74.6	71.6	67.0	62.4	60.9
80°	48.7	47.2	45.7	44.2	42.6
82.5°	28.9	28.9	28.9	28.9	28.9
85°	15.2	16.8	18.3	19.8	21.3
87.5°	9.1	9.1	10.7	12.2	13.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)