

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: P562211

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562211  
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-40-UNV-93-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

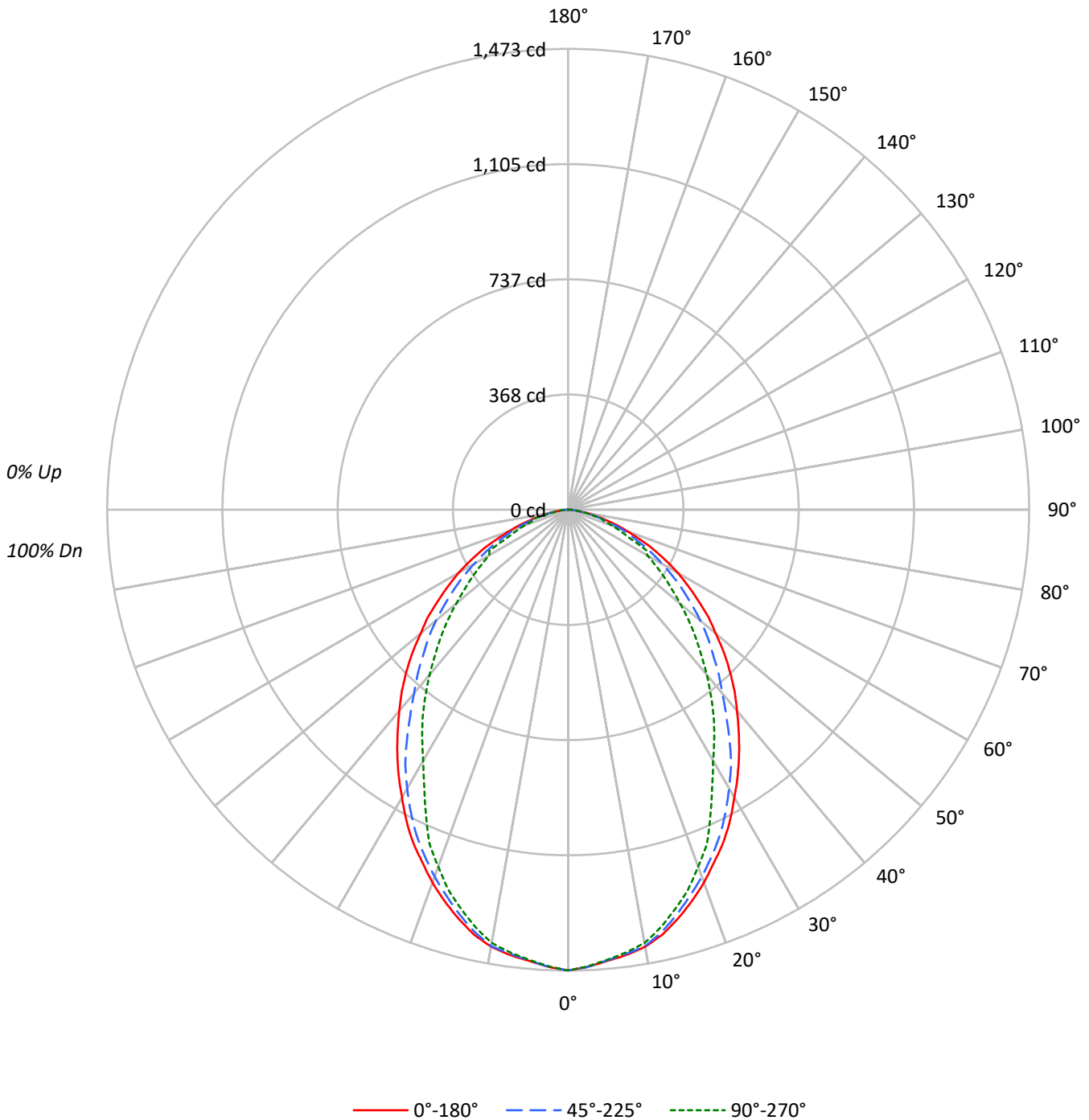
Lumens per Lamp: N/A  
Luminaire Lumens: 2891.0 lumens  
Efficiency: N/A  
Efficacy: 123.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	1981	1981	1981
5°	1954	1952	1950
10°	1938	1935	1921
15°	1885	1866	1840
20°	1816	1787	1738
25°	1741	1704	1597
30°	1650	1598	1439
35°	1563	1476	1331
40°	1474	1346	1211
45°	1390	1244	1095
50°	1286	1155	976
55°	1190	1046	875
60°	1090	935	783
65°	959	819	694
70°	790	717	589
75°	629	549	575
80°	422	396	370
85°	262	315	367

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1390 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.1	4.7
10°-20°	376.2	13.0
20°-30°	520.8	18.0
30°-40°	555.4	19.2
40°-50°	506.7	17.5
50°-60°	396.9	13.7
60°-70°	258.7	8.9
70°-80°	114.6	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°	1034.1	35.8
0°-40°	1589.5	55.0
0°-60°	2493.1	86.2
0°-90°	2891.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2891.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1473	1473	1473	1473	1473	
5°	1447	1445	1445	1444	1444	137
15°	1354	1354	1340	1326	1321	380
25°	1173	1166	1148	1107	1076	539
35°	952	945	899	831	810	595
45°	730	715	654	599	575	563
55°	507	492	446	393	373	455
65°	301	284	257	262	218	297
75°	121	112	106	100	111	130
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°	1472.6	1472.6	1472.6	1472.6	1472.6
2.5°	1462.4	1462.4	1462.4	1460.7	1460.7
5°	1447.1	1445.4	1445.4	1443.7	1443.7
7.5°	1435.2	1433.5	1431.8	1430.1	1426.7
10°	1418.2	1418.2	1416.5	1407.9	1406.2
12.5°	1390.9	1389.2	1382.4	1370.5	1367.1
15°	1353.5	1353.5	1339.8	1326.2	1321.1
17.5°	1312.6	1310.9	1293.9	1280.3	1273.4
20°	1268.3	1264.9	1247.9	1225.8	1213.9
22.5°	1219.0	1219.0	1198.5	1169.6	1157.7
25°	1173.0	1166.2	1147.5	1106.6	1076.0
27.5°	1120.2	1110.0	1089.6	1031.7	995.9
30°	1062.3	1057.2	1028.3	953.4	926.1
32.5°	1007.9	999.4	968.7	890.4	868.3
35°	951.7	944.9	898.9	830.8	810.4
37.5°	895.5	887.0	829.1	774.6	749.1
40°	839.3	829.1	766.1	716.7	689.5
42.5°	786.5	772.9	711.6	658.9	628.2
45°	730.4	715.0	653.7	599.3	575.4
47.5°	674.2	660.6	604.4	548.2	521.0
50°	614.6	602.7	551.6	495.4	466.5
52.5°	565.2	546.5	497.1	440.9	417.1
55°	507.3	492.0	446.0	393.3	372.8
57.5°	454.6	439.2	396.7	347.3	330.3
60°	405.2	383.1	347.3	304.7	291.1
62.5°	350.7	333.7	303.0	267.3	284.3
65°	301.3	284.3	257.1	262.2	217.9
67.5°	246.9	238.3	214.5	190.7	183.9
70°	200.9	190.7	182.2	156.6	149.8
72.5°	160.0	149.8	137.9	124.3	119.2
75°	120.9	112.4	105.6	100.4	110.7
77.5°	83.4	80.0	74.9	69.8	68.1
80°	54.5	52.8	51.1	49.4	47.7
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)