

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: P562216

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-93-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562216  
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-93-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

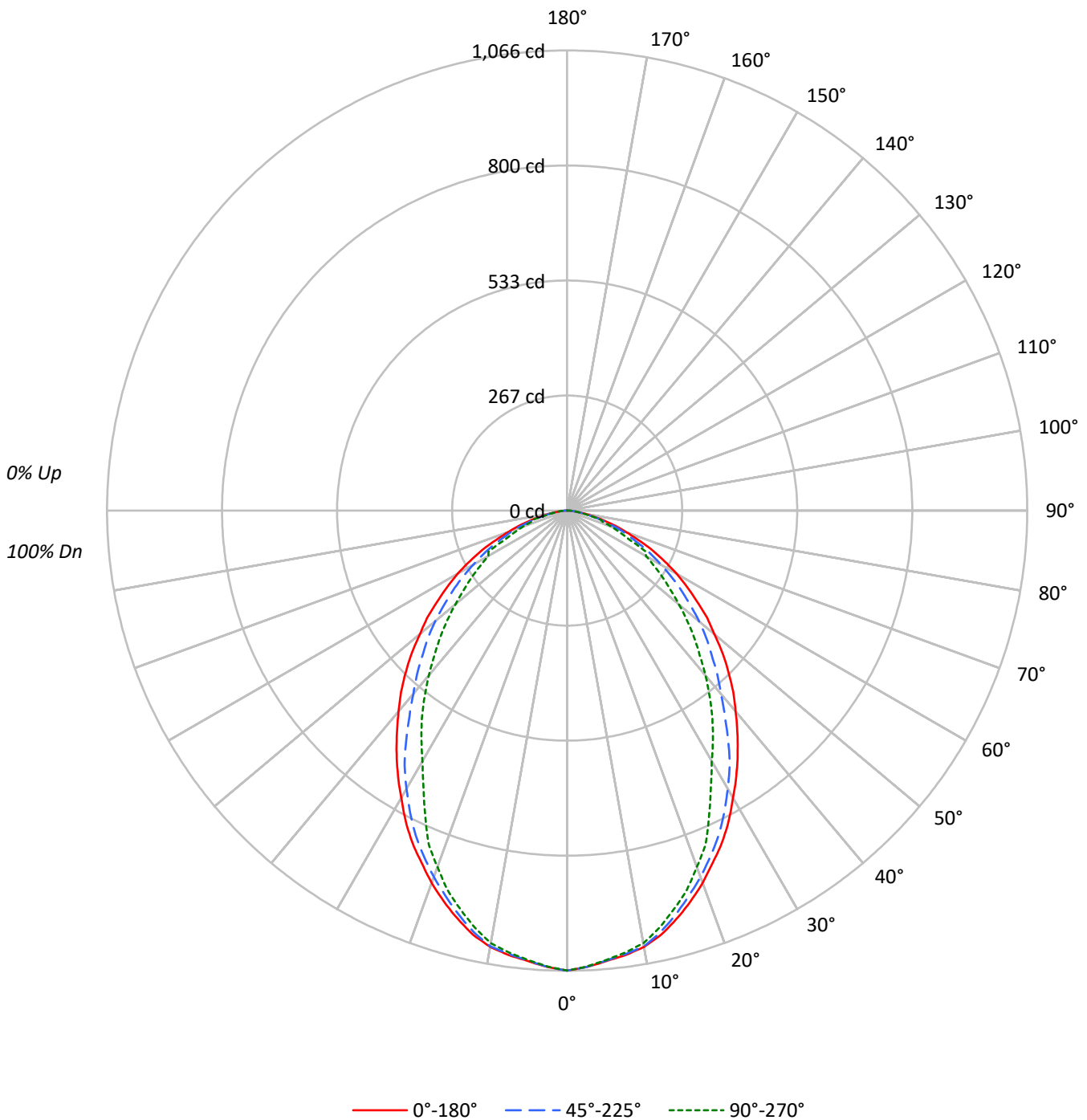
Lumens per Lamp: N/A  
Luminaire Lumens: 2092.0 lumens  
Efficiency: N/A  
Efficacy: 89.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	1434	1434	1434
5°	1414	1413	1411
10°	1402	1400	1390
15°	1364	1350	1332
20°	1314	1293	1258
25°	1260	1233	1156
30°	1194	1156	1041
35°	1131	1068	963
40°	1067	974	876
45°	1006	900	792
50°	931	836	707
55°	861	757	633
60°	789	676	567
65°	694	592	502
70°	572	518	426
75°	455	397	416
80°	305	287	267
85°	190	228	266

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1006 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.2	4.7
10°-20°	272.2	13.0
20°-30°	376.9	18.0
30°-40°	401.9	19.2
40°-50°	366.6	17.5
50°-60°	287.2	13.7
60°-70°	187.2	8.9
70°-80°	82.9	4.0
80°-90°	17.8	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°	748.3	35.8
0°-40°	1150.2	55.0
0°-60°	1804.1	86.2
0°-90°	2092.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2092.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1066	1066	1066	1066	1066	
5°	1047	1046	1046	1045	1045	99
15°	979	979	970	960	956	275
25°	849	844	830	801	779	390
35°	689	684	650	601	586	431
45°	528	517	473	434	416	407
55°	367	356	323	285	270	329
65°	218	206	186	190	158	215
75°	88	81	76	73	80	94
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1065.6	1065.6	1065.6	1065.6	1065.6
2.5°	1058.2	1058.2	1058.2	1057.0	1057.0
5°	1047.2	1045.9	1045.9	1044.7	1044.7
7.5°	1038.5	1037.3	1036.1	1034.8	1032.4
10°	1026.2	1026.2	1025.0	1018.8	1017.6
12.5°	1006.5	1005.3	1000.3	991.7	989.3
15°	979.4	979.4	969.5	959.7	956.0
17.5°	949.8	948.6	936.3	926.4	921.5
20°	917.8	915.3	903.0	887.0	878.4
22.5°	882.1	882.1	867.3	846.3	837.7
25°	848.8	843.9	830.3	800.8	778.6
27.5°	810.6	803.2	788.4	746.6	720.7
30°	768.7	765.0	744.1	689.9	670.2
32.5°	729.3	723.2	701.0	644.3	628.3
35°	688.7	683.7	650.5	601.2	586.4
37.5°	648.0	641.8	600.0	560.5	542.1
40°	607.4	600.0	554.4	518.7	498.9
42.5°	569.2	559.3	515.0	476.8	454.6
45°	528.5	517.4	473.1	433.6	416.4
47.5°	487.9	478.0	437.3	396.7	377.0
50°	444.7	436.1	399.2	358.5	337.6
52.5°	409.0	395.5	359.7	319.1	301.8
55°	367.1	356.0	322.8	284.6	269.8
57.5°	328.9	317.8	287.0	251.3	239.0
60°	293.2	277.2	251.3	220.5	210.7
62.5°	253.8	241.5	219.3	193.4	205.7
65°	218.1	205.7	186.0	189.7	157.7
67.5°	178.6	172.5	155.2	138.0	133.1
70°	145.4	138.0	131.8	113.3	108.4
72.5°	115.8	108.4	99.8	89.9	86.2
75°	87.5	81.3	76.4	72.7	80.1
77.5°	60.4	57.9	54.2	50.5	49.3
80°	39.4	38.2	37.0	35.7	34.5
82.5°	23.4	23.4	23.4	23.4	23.4
85°	12.3	13.6	14.8	16.0	17.2
87.5°	7.4	7.4	8.6	9.9	11.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)