

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: P562188

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562188  
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-81-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

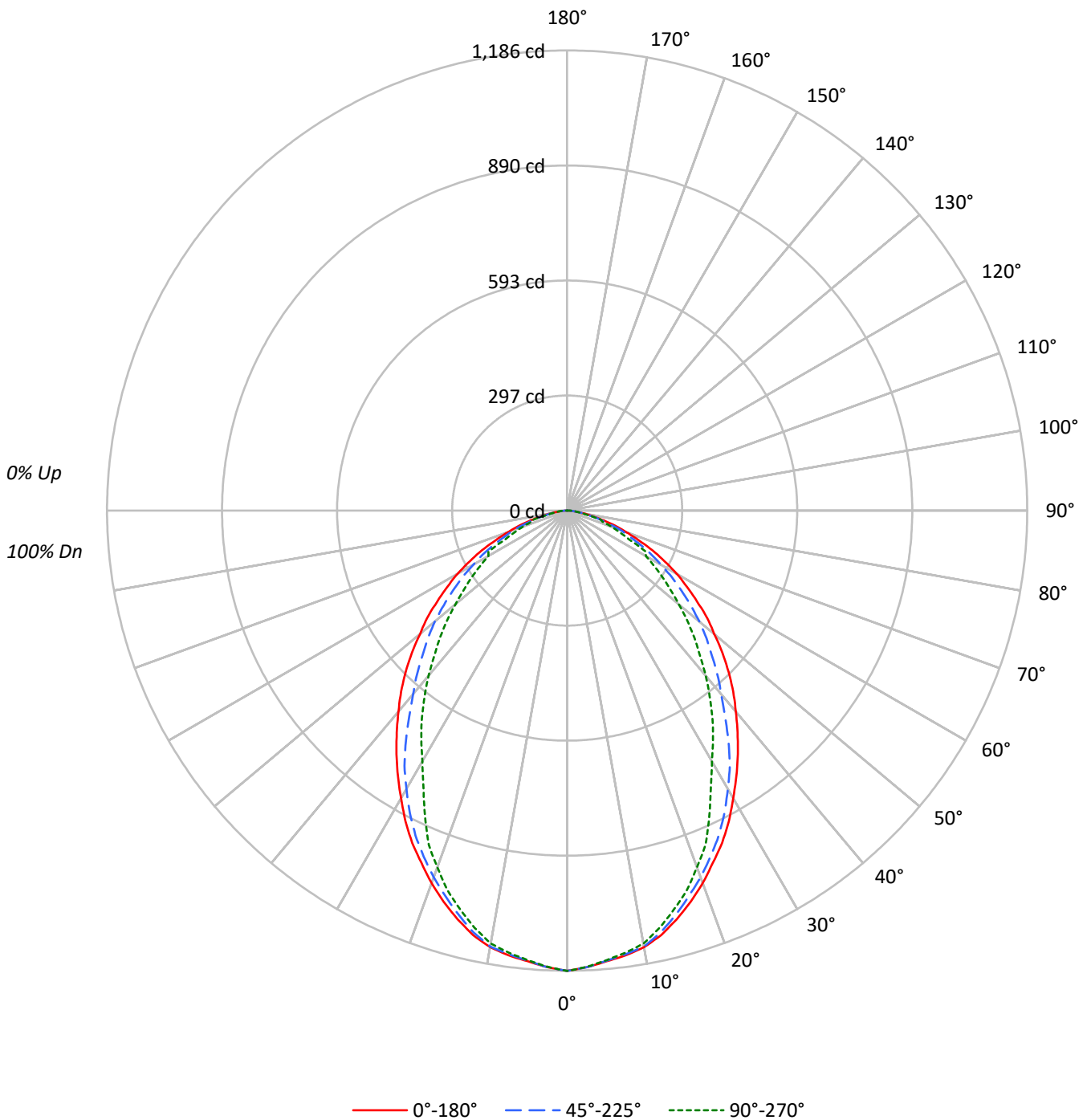
Lumens per Lamp: N/A  
Luminaire Lumens: 2329.0 lumens  
Efficiency: N/A  
Efficacy: 99.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	1596	1596	1596
5°	1575	1573	1571
10°	1561	1559	1548
15°	1519	1504	1483
20°	1463	1439	1400
25°	1403	1372	1287
30°	1330	1287	1159
35°	1259	1190	1072
40°	1188	1084	976
45°	1120	1002	882
50°	1036	930	787
55°	959	843	705
60°	878	753	631
65°	773	659	559
70°	637	578	475
75°	506	442	463
80°	340	318	298
85°	211	255	296

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1120 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.4	4.7
10°-20°	303.1	13.0
20°-30°	419.6	18.0
30°-40°	447.4	19.2
40°-50°	408.2	17.5
50°-60°	319.8	13.7
60°-70°	208.4	8.9
70°-80°	92.3	4.0
80°-90°	19.8	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°	833.1	35.8
0°-40°	1280.5	55.0
0°-60°	2008.4	86.2
0°-90°	2329.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2329.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1186	1186	1186	1186	1186	
5°	1166	1164	1164	1163	1163	111
15°	1090	1090	1079	1068	1064	307
25°	945	940	924	892	867	434
35°	767	761	724	669	653	479
45°	588	576	527	483	464	453
55°	409	396	359	317	300	367
65°	243	229	207	211	176	239
75°	97	90	85	81	89	104
85°	14	15	16	18	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1186.4	1186.4	1186.4	1186.4	1186.4
2.5°	1178.1	1178.1	1178.1	1176.8	1176.8
5°	1165.8	1164.4	1164.4	1163.0	1163.0
7.5°	1156.2	1154.8	1153.4	1152.1	1149.3
10°	1142.5	1142.5	1141.1	1134.2	1132.9
12.5°	1120.5	1119.2	1113.7	1104.1	1101.3
15°	1090.4	1090.4	1079.4	1068.4	1064.3
17.5°	1057.4	1056.1	1042.4	1031.4	1025.9
20°	1021.8	1019.0	1005.3	987.5	977.9
22.5°	982.0	982.0	965.5	942.2	932.6
25°	945.0	939.5	924.4	891.5	866.8
27.5°	902.5	894.2	877.8	831.1	802.3
30°	855.8	851.7	828.4	768.0	746.1
32.5°	811.9	805.1	780.4	717.3	699.5
35°	766.7	761.2	724.2	669.3	652.8
37.5°	721.4	714.6	667.9	624.0	603.5
40°	676.2	667.9	617.2	577.4	555.5
42.5°	633.6	622.7	573.3	530.8	506.1
45°	588.4	576.0	526.7	482.8	463.6
47.5°	543.1	532.1	486.9	441.6	419.7
50°	495.1	485.5	444.4	399.1	375.8
52.5°	455.3	440.3	400.5	355.2	336.0
55°	408.7	396.4	359.3	316.8	300.4
57.5°	366.2	353.9	319.6	279.8	266.1
60°	326.4	308.6	279.8	245.5	234.5
62.5°	282.5	268.8	244.1	215.3	229.0
65°	242.8	229.0	207.1	211.2	175.6
67.5°	198.9	192.0	172.8	153.6	148.1
70°	161.8	153.6	146.8	126.2	120.7
72.5°	128.9	120.7	111.1	100.1	96.0
75°	97.4	90.5	85.0	80.9	89.1
77.5°	67.2	64.5	60.3	56.2	54.9
80°	43.9	42.5	41.1	39.8	38.4
82.5°	26.1	26.1	26.1	26.1	26.1
85°	13.7	15.1	16.5	17.8	19.2
87.5°	8.2	8.2	9.6	11.0	12.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)