

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: P562202

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-82-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562202  
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-82-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

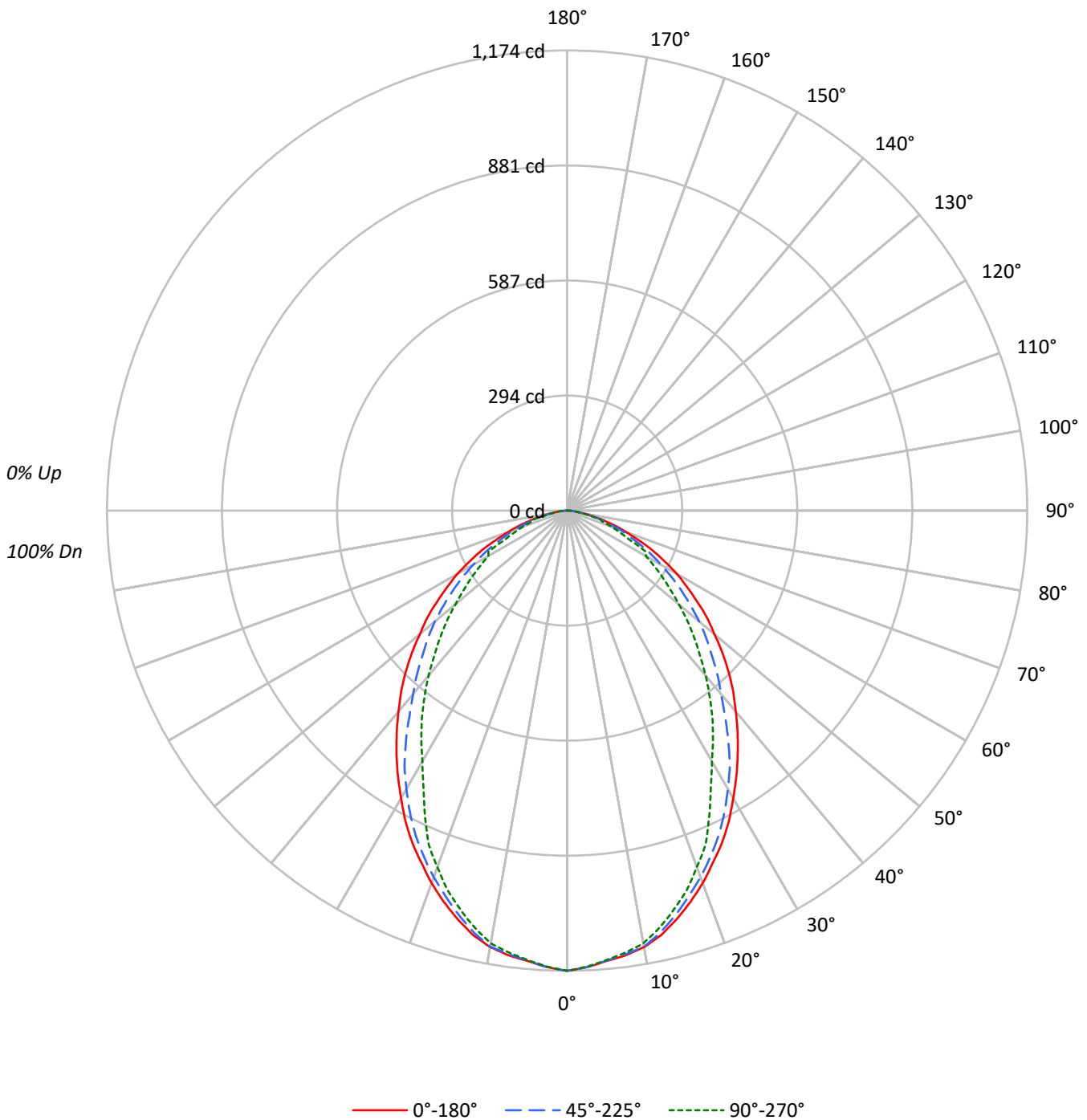
Lumens per Lamp: N/A  
Luminaire Lumens: 2305.0 lumens  
Efficiency: N/A  
Efficacy: 98.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	1580	1580	1580
5°	1558	1556	1555
10°	1545	1543	1532
15°	1503	1488	1467
20°	1448	1425	1386
25°	1388	1358	1274
30°	1316	1274	1147
35°	1246	1177	1061
40°	1175	1073	965
45°	1108	992	873
50°	1026	921	778
55°	949	834	697
60°	869	745	625
65°	765	653	553
70°	630	571	470
75°	501	438	459
80°	336	315	294
85°	210	252	293

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1108 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.3	4.7
10°-20°	300.0	13.0
20°-30°	415.3	18.0
30°-40°	442.8	19.2
40°-50°	404.0	17.5
50°-60°	316.5	13.7
60°-70°	206.2	8.9
70°-80°	91.4	4.0
80°-90°	19.6	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°	824.5	35.8
0°-40°	1267.3	55.0
0°-60°	1987.8	86.2
0°-90°	2305.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2305.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1174	1174	1174	1174	1174	
5°	1154	1152	1152	1151	1151	110
15°	1079	1079	1068	1057	1053	303
25°	935	930	915	882	858	429
35°	759	753	717	662	646	474
45°	582	570	521	478	459	449
55°	404	392	356	314	297	363
65°	240	227	205	209	174	237
75°	96	90	84	80	88	103
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°	1174.1	1174.1	1174.1	1174.1	1174.1
2.5°	1166.0	1166.0	1166.0	1164.6	1164.6
5°	1153.8	1152.4	1152.4	1151.1	1151.1
7.5°	1144.3	1142.9	1141.6	1140.2	1137.5
10°	1130.7	1130.7	1129.3	1122.6	1121.2
12.5°	1109.0	1107.6	1102.2	1092.7	1090.0
15°	1079.1	1079.1	1068.3	1057.4	1053.3
17.5°	1046.5	1045.2	1031.6	1020.8	1015.3
20°	1011.3	1008.5	995.0	977.3	967.8
22.5°	971.9	971.9	955.6	932.5	923.0
25°	935.2	929.8	914.9	882.3	857.9
27.5°	893.2	885.0	868.7	822.6	794.1
30°	847.0	842.9	819.9	760.1	738.4
32.5°	803.6	796.8	772.4	709.9	692.3
35°	758.8	753.3	716.7	662.4	646.1
37.5°	714.0	707.2	661.0	617.6	597.2
40°	669.2	661.0	610.8	571.5	549.7
42.5°	627.1	616.3	567.4	525.3	500.9
45°	582.3	570.1	521.2	477.8	458.8
47.5°	537.5	526.7	481.9	437.1	415.4
50°	490.0	480.5	439.8	395.0	371.9
52.5°	450.7	435.7	396.4	351.6	332.6
55°	404.5	392.3	355.6	313.6	297.3
57.5°	362.4	350.2	316.3	276.9	263.3
60°	323.1	305.4	276.9	243.0	232.1
62.5°	279.6	266.0	241.6	213.1	226.7
65°	240.3	226.7	205.0	209.0	173.7
67.5°	196.8	190.0	171.0	152.0	146.6
70°	160.2	152.0	145.2	124.9	119.4
72.5°	127.6	119.4	109.9	99.1	95.0
75°	96.4	89.6	84.2	80.1	88.2
77.5°	66.5	63.8	59.7	55.7	54.3
80°	43.4	42.1	40.7	39.4	38.0
82.5°	25.8	25.8	25.8	25.8	25.8
85°	13.6	14.9	16.3	17.6	19.0
87.5°	8.1	8.1	9.5	10.9	12.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)