

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: P590256

Luminaire Tested: FSR-24-2-LD4-2LO-35-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590256  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-2LO-35-UNV-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

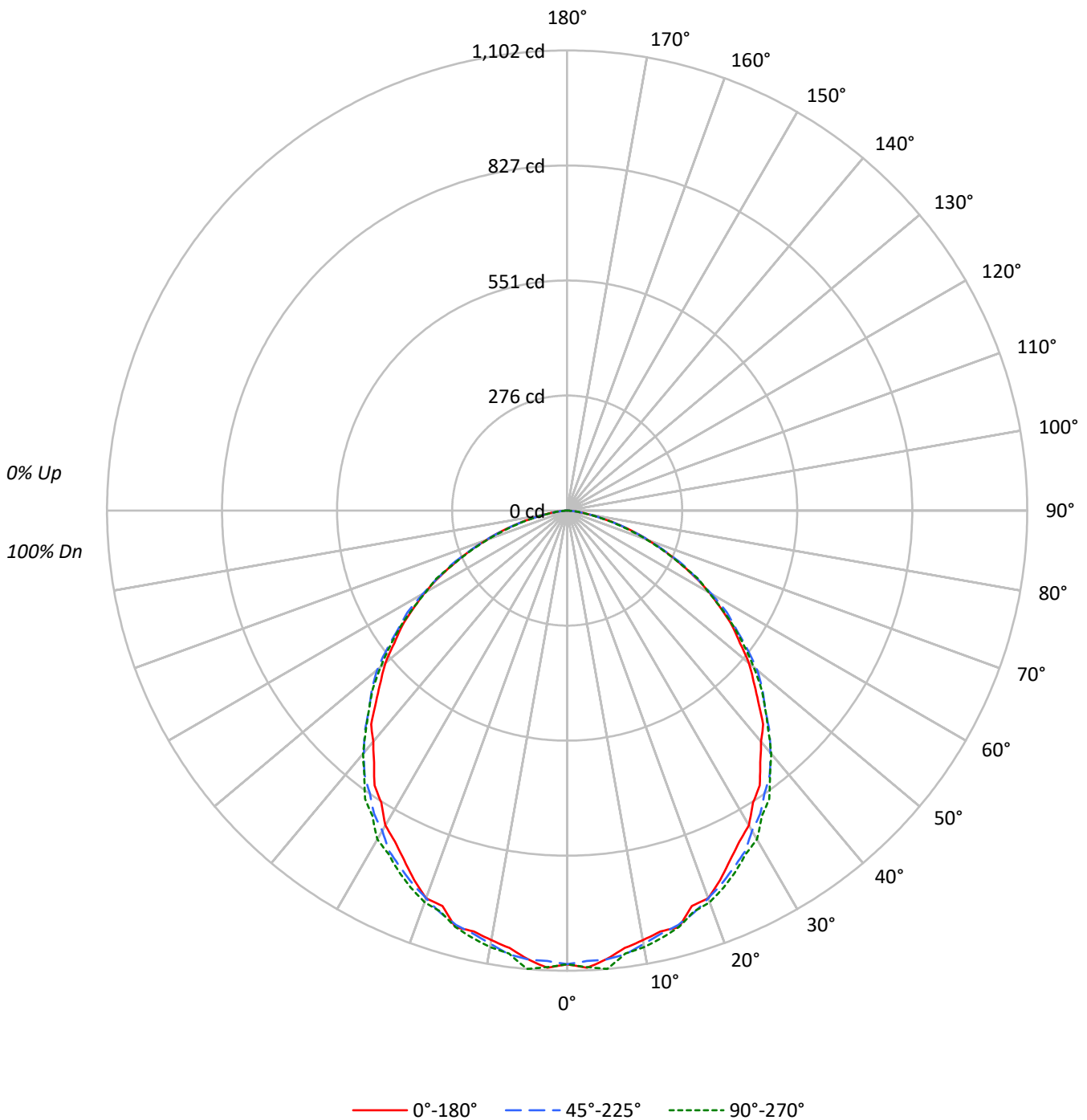
Lumens per Lamp: N/A  
Luminaire Lumens: 2738.0 lumens  
Efficiency: N/A  
Efficacy: 117.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88					86				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2923	2923	2923
5°	2914	2915	2976
10°	2855	2879	2900
15°	2877	2862	2878
20°	2829	2829	2859
25°	2742	2802	2833
30°	2704	2751	2825
35°	2640	2710	2770
40°	2538	2660	2672
45°	2461	2548	2552
50°	2380	2488	2440
55°	2268	2312	2296
60°	2120	2141	2103
65°	1890	1939	1877
70°	1622	1628	1582
75°	1285	1282	1232
80°	860	837	804
85°	466	463	432

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2614 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.2	3.7
10°-20°	289.6	10.6
20°-30°	433.9	15.8
30°-40°	514.3	18.8
40°-50°	515.2	18.8
50°-60°	437.3	16.0
60°-70°	294.9	10.8
70°-80°	129.6	4.7
80°-90°	21.0	0.8
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°	825.7	30.2
0°-40°	1340.0	48.9
0°-60°	2292.5	83.7
0°-90°	2738.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2738.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1086	1086	1086	1086	1086	
5°	1079	1076	1079	1076	1102	102
15°	1033	1021	1027	1032	1033	288
25°	923	928	944	956	954	427
35°	804	806	825	844	843	499
45°	647	659	670	687	671	500
55°	483	480	493	489	489	430
65°	297	293	304	293	295	295
75°	124	121	123	115	118	132
85°	15	15	15	15	14	22
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1086.4	1086.4	1086.4	1086.4	1086.4
2.5°	1095.8	1087.5	1079.8	1088.8	1094.2
5°	1078.7	1076.1	1079.1	1075.8	1101.8
7.5°	1056.5	1066.2	1071.8	1068.3	1069.8
10°	1044.7	1041.3	1053.8	1062.5	1061.3
12.5°	1032.1	1037.1	1037.8	1047.2	1048.1
15°	1032.8	1020.9	1027.2	1032.5	1032.9
17.5°	992.7	1005.6	1009.9	1022.1	1007.0
20°	987.8	978.4	987.8	1000.2	998.3
22.5°	957.6	947.1	967.3	978.4	977.7
25°	923.4	928.4	943.6	955.9	954.0
27.5°	893.4	899.3	920.9	937.8	926.9
30°	870.2	867.3	885.5	900.7	909.1
32.5°	828.8	839.5	860.8	875.8	867.8
35°	803.7	806.1	824.8	843.8	843.3
37.5°	759.8	770.9	797.1	802.5	797.6
40°	722.4	733.5	757.2	762.9	760.5
42.5°	694.7	696.7	717.0	723.6	713.1
45°	646.6	658.7	669.6	686.9	670.6
47.5°	605.7	611.3	634.8	639.5	630.9
50°	568.5	570.5	594.2	588.4	582.8
52.5°	521.8	530.1	543.4	542.3	535.7
55°	483.4	480.1	492.8	489.4	489.3
57.5°	437.2	442.8	453.2	447.9	439.3
60°	394.0	394.2	397.9	391.9	390.8
62.5°	345.9	347.6	348.4	341.0	353.1
65°	296.9	293.0	304.5	292.9	294.8
67.5°	251.9	253.9	252.8	245.5	248.3
70°	206.2	208.7	206.9	198.6	201.1
72.5°	164.4	161.3	163.3	152.9	157.7
75°	123.6	121.1	123.3	114.6	118.5
77.5°	84.2	86.1	84.7	80.1	82.8
80°	55.5	54.0	54.0	51.3	51.9
82.5°	32.4	30.9	30.4	29.6	30.9
85°	15.1	14.7	15.0	14.6	14.0
87.5°	5.5	5.6	5.6	5.3	5.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)