

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: P590286

Luminaire Tested: FSR-24-2-LD4-2LO-40-UNV-93-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590286  
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-40-UNV-93-85-EDD  
Description: 2X2 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**

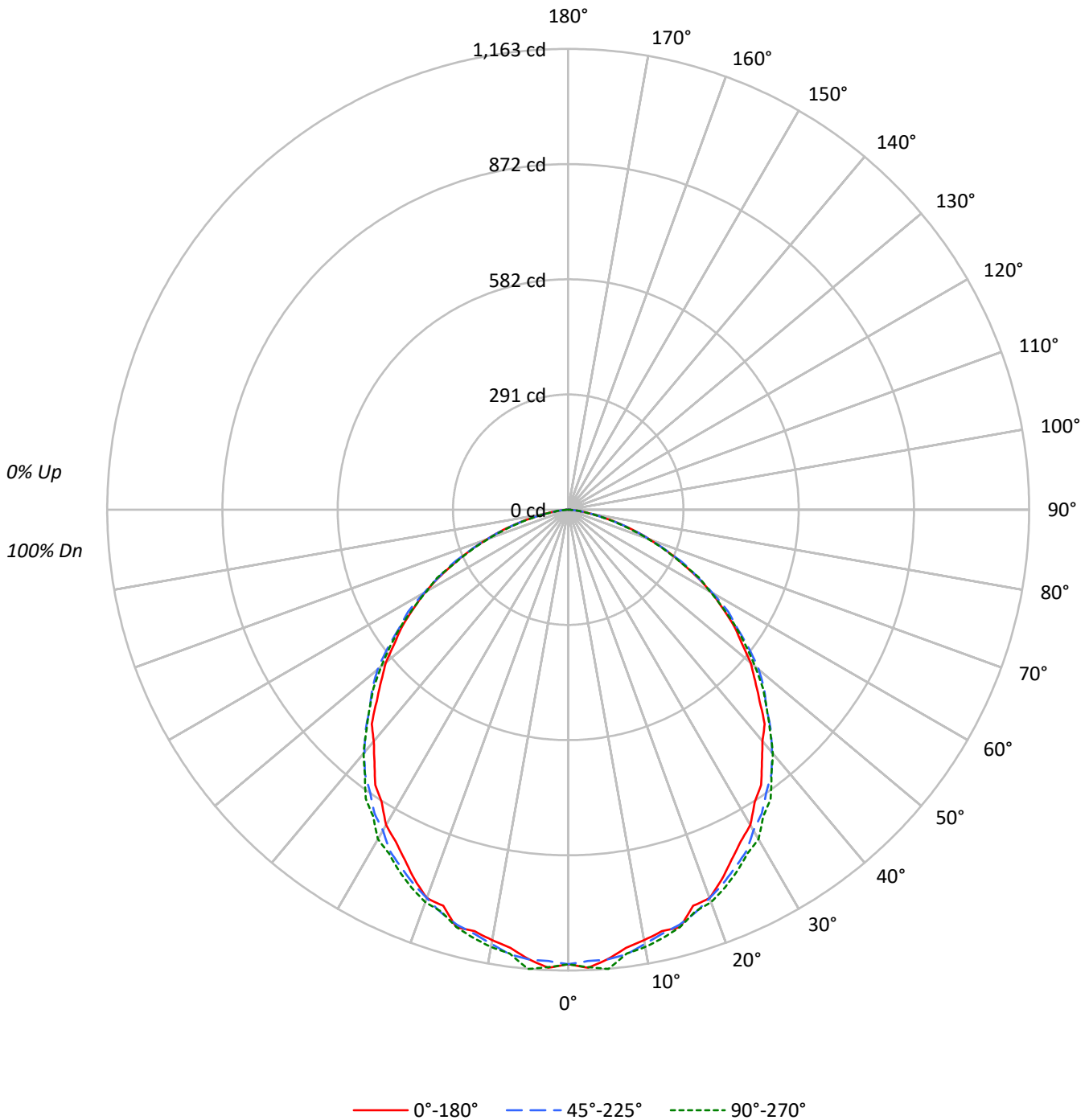
Lumens per Lamp: N/A  
Luminaire Lumens: 2891.0 lumens  
Efficiency: N/A  
Efficacy: 123.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	3087	3087	3087
5°	3076	3078	3143
10°	3014	3040	3062
15°	3038	3022	3038
20°	2987	2987	3019
25°	2895	2958	2991
30°	2855	2905	2983
35°	2788	2861	2925
40°	2679	2809	2821
45°	2598	2691	2695
50°	2513	2627	2576
55°	2395	2441	2424
60°	2239	2261	2221
65°	1996	2047	1982
70°	1713	1719	1671
75°	1357	1354	1301
80°	908	883	849
85°	494	488	457

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2760 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.9	3.7
10°-20°	305.8	10.6
20°-30°	458.2	15.8
30°-40°	543.0	18.8
40°-50°	544.0	18.8
50°-60°	461.8	16.0
60°-70°	311.3	10.8
70°-80°	136.8	4.7
80°-90°	22.2	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°	871.9	30.2
0°-40°	1414.9	48.9
0°-60°	2420.6	83.7
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°	1147	1147	1147	1147	1147	
5°	1139	1136	1139	1136	1163	107
15°	1090	1078	1085	1090	1091	304
25°	975	980	996	1009	1007	451
35°	849	851	871	891	890	527
45°	683	696	707	725	708	528
55°	510	507	520	517	517	454
65°	314	309	322	309	311	312
75°	130	128	130	121	125	140
85°	16	16	16	15	15	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1147.1	1147.1	1147.1	1147.1	1147.1
2.5°	1157.0	1148.3	1140.1	1149.6	1155.4
5°	1138.9	1136.3	1139.4	1136.0	1163.4
7.5°	1115.5	1125.7	1131.7	1128.0	1129.6
10°	1103.1	1099.5	1112.7	1121.9	1120.6
12.5°	1089.8	1095.1	1095.8	1105.8	1106.6
15°	1090.5	1077.9	1084.6	1090.2	1090.6
17.5°	1048.1	1061.8	1066.4	1079.2	1063.2
20°	1043.0	1033.0	1043.0	1056.1	1054.1
22.5°	1011.1	1000.0	1021.3	1033.0	1032.3
25°	975.0	980.3	996.3	1009.3	1007.3
27.5°	943.3	949.5	972.3	990.2	978.7
30°	918.8	915.7	935.0	951.0	959.9
32.5°	875.2	886.4	908.9	924.8	916.3
35°	848.6	851.2	870.9	891.0	890.4
37.5°	802.3	814.0	841.7	847.3	842.1
40°	762.7	774.4	799.5	805.5	803.0
42.5°	733.6	735.6	757.1	764.1	753.0
45°	682.8	695.5	707.1	725.3	708.1
47.5°	639.5	645.4	670.3	675.2	666.2
50°	600.3	602.3	627.4	621.3	615.4
52.5°	551.0	559.7	573.8	572.6	565.6
55°	510.4	507.0	520.3	516.7	516.6
57.5°	461.6	467.6	478.5	472.9	463.9
60°	416.0	416.2	420.2	413.8	412.6
62.5°	365.2	367.0	367.9	360.0	372.8
65°	313.5	309.4	321.5	309.2	311.3
67.5°	266.0	268.1	266.9	259.2	262.1
70°	217.7	220.4	218.5	209.7	212.4
72.5°	173.6	170.3	172.4	161.4	166.5
75°	130.5	127.8	130.2	121.0	125.1
77.5°	88.9	90.9	89.5	84.6	87.4
80°	58.6	57.0	57.0	54.2	54.8
82.5°	34.2	32.6	32.1	31.3	32.6
85°	16.0	15.6	15.8	15.4	14.8
87.5°	5.8	5.9	5.9	5.6	5.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)