

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: P590290

Luminaire Tested: FSR-24-2-LD4-2LO-40-UNV-93-94-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P590290
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-93-94-EDD
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

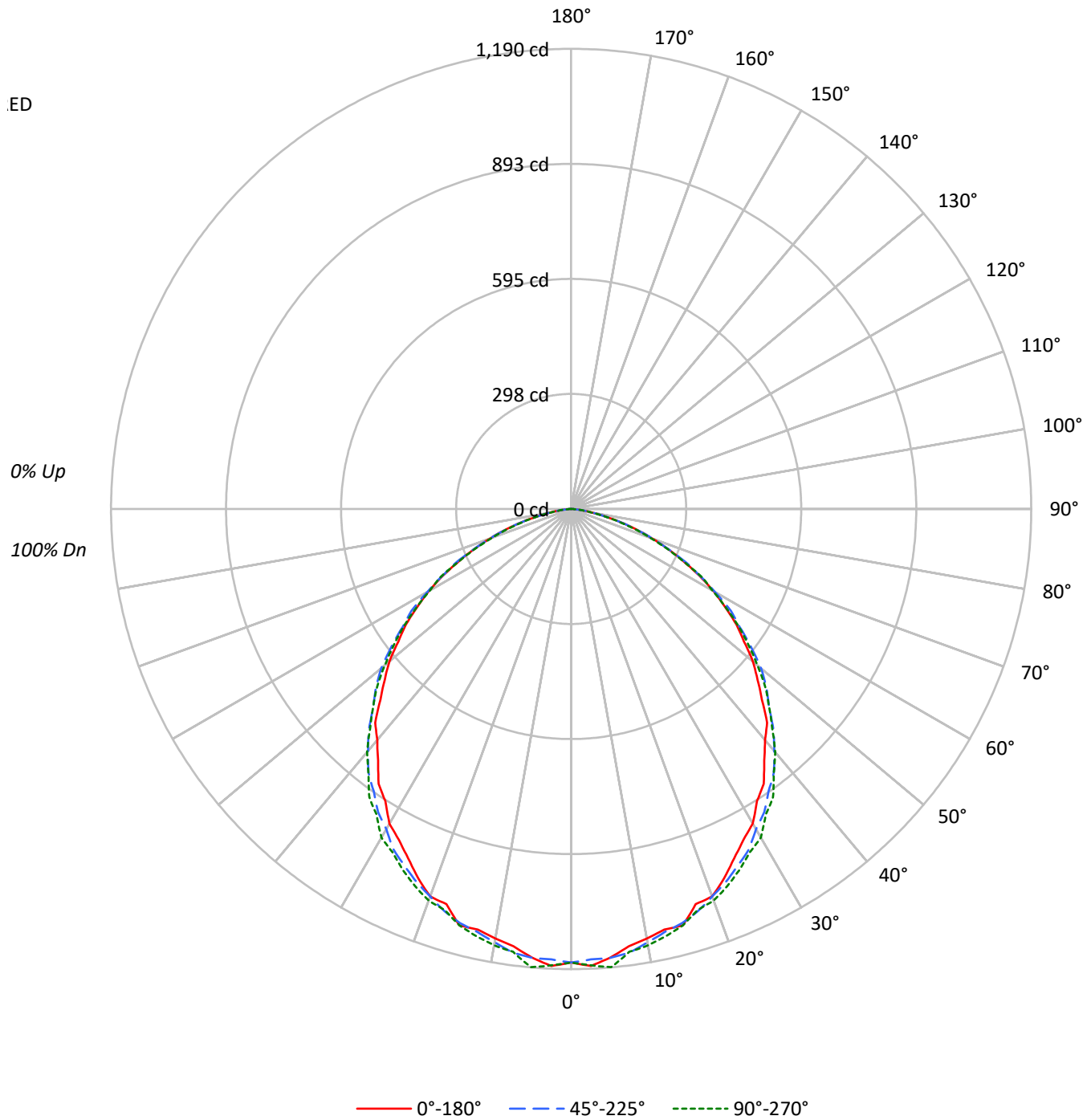
Lumens per Lamp: N/A
Luminaire Lumens: 2956.0 lumens
Efficiency: N/A
Efficacy: 126.3 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

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																		
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	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°	3156	3156	3156
5°	3146	3147	3213
10°	3082	3109	3131
15°	3106	3090	3107
20°	3054	3054	3086
25°	2960	3025	3058
30°	2919	2971	3050
35°	2850	2925	2991
40°	2740	2871	2884
45°	2657	2751	2755
50°	2570	2686	2634
55°	2448	2496	2478
60°	2289	2312	2271
65°	2041	2094	2027
70°	1751	1758	1709
75°	1387	1384	1331
80°	930	903	868
85°	506	500	466

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 2822 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.3	3.7
10°-20°	312.7	10.6
20°-30°	468.5	15.8
30°-40°	555.2	18.8
40°-50°	556.3	18.8
50°-60°	472.2	16.0
60°-70°	318.3	10.8
70°-80°	139.9	4.7
80°-90°	22.7	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°	891.5	30.2
0°-40°	1446.7	48.9
0°-60°	2475.1	83.7
0°-90°	2956.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2956.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1173	1173	1173	1173	1173	
5°	1164	1162	1165	1162	1190	110
15°	1115	1102	1109	1115	1115	311
25°	997	1002	1019	1032	1030	461
35°	868	870	890	911	910	539
45°	698	711	723	742	724	540
55°	522	518	532	528	528	464
65°	321	316	329	316	318	319
75°	133	131	133	124	128	143
85°	16	16	16	16	15	24
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1172.9	1172.9	1172.9	1172.9	<i>1172.9</i>
2.5°	1183.0	1174.1	1165.7	1175.4	<i>1181.3</i>
5°	<i>1164.5</i>	<i>1161.8</i>	<i>1165.0</i>	<i>1161.5</i>	<i>1189.5</i>
7.5°	1140.6	1151.1	1157.1	1153.3	<i>1155.0</i>
10°	1127.9	1124.3	1137.7	1147.1	<i>1145.8</i>
12.5°	1114.3	1119.7	1120.5	1130.6	<i>1131.5</i>
15°	1115.0	1102.1	1109.0	1114.7	<i>1115.2</i>
17.5°	1071.7	1085.6	1090.3	1103.5	<i>1087.2</i>
20°	1066.4	1056.3	1066.4	1079.9	<i>1077.8</i>
22.5°	1033.8	1022.5	1044.3	1056.3	<i>1055.5</i>
25°	996.9	1002.4	1018.7	1032.0	<i>1029.9</i>
27.5°	964.5	970.9	994.2	1012.5	<i>1000.7</i>
30°	939.5	936.3	956.0	972.4	<i>981.5</i>
32.5°	894.8	906.3	929.4	945.6	<i>936.9</i>
35°	867.7	870.3	890.4	911.0	<i>910.4</i>
37.5°	820.3	832.3	860.6	866.4	<i>861.1</i>
40°	779.9	791.9	817.4	823.7	<i>821.1</i>
42.5°	750.1	752.2	774.1	781.3	<i>769.9</i>
45°	698.1	711.1	723.0	741.6	<i>724.0</i>
47.5°	653.9	660.0	685.4	690.4	<i>681.2</i>
50°	613.8	615.9	641.5	635.3	<i>629.2</i>
52.5°	563.3	572.3	586.7	585.4	<i>578.3</i>
55°	521.8	518.4	532.0	528.4	<i>528.2</i>
57.5°	472.0	478.1	489.3	483.5	<i>474.3</i>
60°	425.4	425.5	429.6	423.1	<i>421.9</i>
62.5°	373.4	375.3	376.2	368.1	<i>381.2</i>
65°	320.6	316.3	328.8	316.2	<i>318.3</i>
67.5°	272.0	274.1	272.9	265.0	<i>268.0</i>
70°	222.6	225.3	223.4	214.4	<i>217.2</i>
72.5°	177.5	174.2	176.3	165.1	<i>170.2</i>
75°	133.4	130.7	133.1	123.7	<i>128.0</i>
77.5°	90.9	93.0	91.5	86.5	<i>89.3</i>
80°	60.0	58.3	58.3	55.4	<i>56.0</i>
82.5°	35.0	33.3	32.9	32.0	<i>33.3</i>
85°	16.4	15.9	16.2	15.7	<i>15.1</i>
87.5°	5.9	6.1	6.1	5.8	<i>5.5</i>
90°	0.0	0.0	0.0	0.0	<i>0.0</i>

(END OF REPORT)