

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: P561946

Luminaire Tested: FSR-24-2-LD4-1LO-35-UNV-82-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561946  
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-24-2-LD4-1LO-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

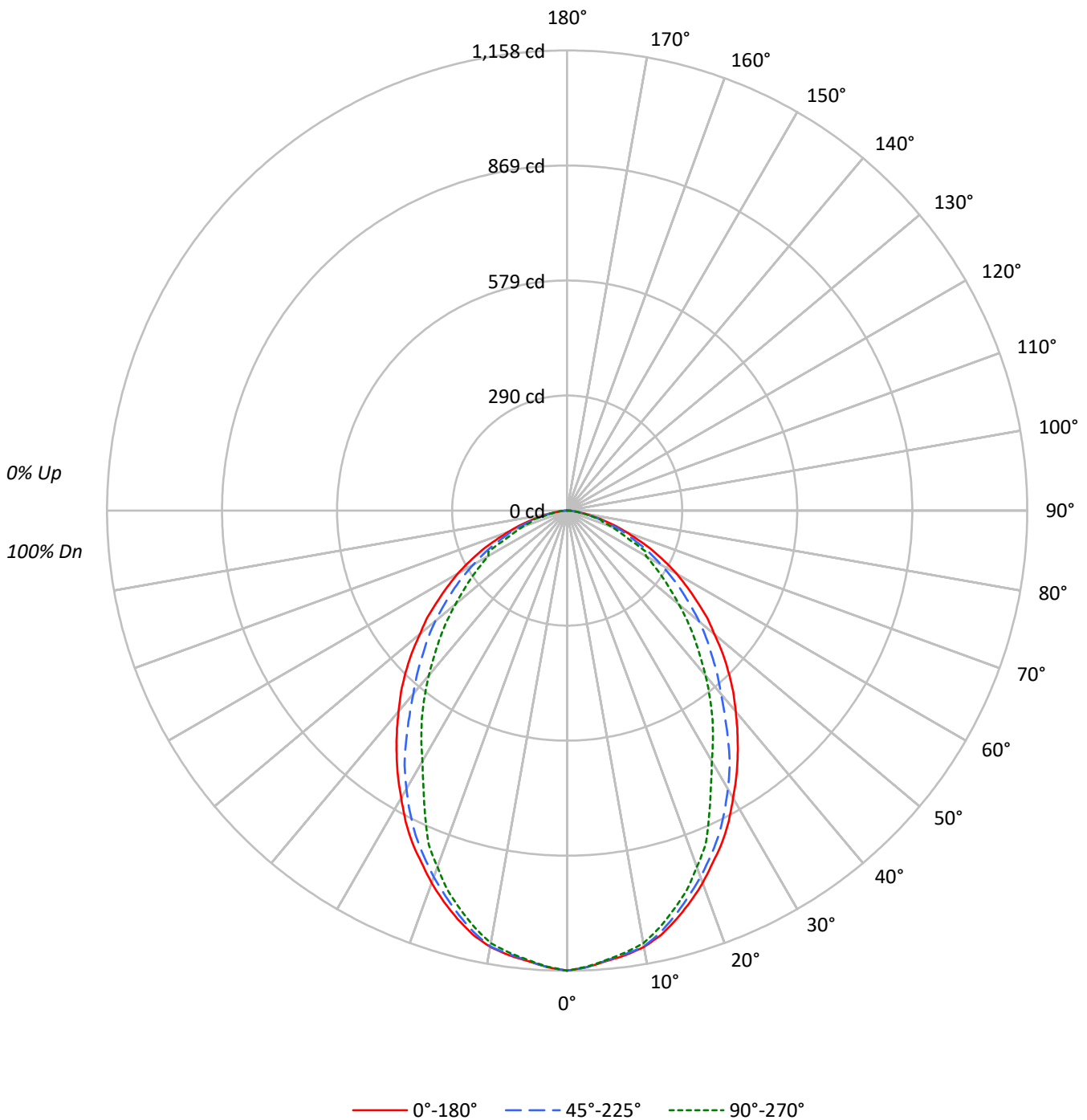
Lumens per Lamp: N/A  
Luminaire Lumens: 2273.0 lumens  
Efficiency: N/A  
Efficacy: 97.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P561946

CATALOG NUMBER: FSR-24-2-LD4-1LO-35-UNV-82-94-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561946

CATALOG NUMBER: FSR-24-2-LD4-1LO-35-UNV-82-94-EDD-90

**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°	1558	1558	1558
5°	1537	1535	1533
10°	1523	1522	1511
15°	1482	1467	1447
20°	1428	1405	1367
25°	1369	1339	1256
30°	1298	1256	1131
35°	1229	1161	1046
40°	1159	1058	952
45°	1093	978	861
50°	1011	908	768
55°	936	823	688
60°	857	735	616
65°	754	643	545
70°	621	563	463
75°	494	431	452
80°	332	311	291
85°	207	249	289

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1093 cd/sqm



TEST NUMBER: P561946

CATALOG NUMBER: FSR-24-2-LD4-1LO-35-UNV-82-94-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.8	4.7
10°-20°	295.8	13.0
20°-30°	409.5	18.0
30°-40°	436.6	19.2
40°-50°	398.4	17.5
50°-60°	312.1	13.7
60°-70°	203.4	8.9
70°-80°	90.1	4.0
80°-90°	19.3	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°	813.1	35.8
0°-40°	1249.7	55.0
0°-60°	1960.1	86.2
0°-90°	2273.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2273.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1158	1158	1158	1158	1158	
5°	1138	1136	1136	1135	1135	108
15°	1064	1064	1053	1043	1039	299
25°	922	917	902	870	846	423
35°	748	743	707	653	637	468
45°	574	562	514	471	452	442
55°	399	387	351	309	293	358
65°	237	224	202	206	171	233
75°	95	88	83	79	87	102
85°	13	15	16	17	19	19
90°	0	0	0	0	0	



TEST NUMBER: P561946

CATALOG NUMBER: FSR-24-2-LD4-1LO-35-UNV-82-94-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	<i>1157.8</i>	<i>1157.8</i>	<i>1157.8</i>	<i>1157.8</i>	<i>1157.8</i>
2.5°	<i>1149.8</i>	1149.8	1149.8	1148.5	1148.5
5°	<i>1137.8</i>	1136.4	1136.4	1135.1	1135.1
7.5°	<i>1128.4</i>	1127.0	1125.7	1124.4	1121.7
10°	<i>1115.0</i>	1115.0	1113.7	1107.0	1105.6
12.5°	<i>1093.6</i>	1092.2	1086.9	1077.5	1074.8
15°	<i>1064.1</i>	1064.1	1053.4	1042.7	1038.7
17.5°	<i>1032.0</i>	1030.7	1017.3	1006.6	1001.2
20°	<i>997.2</i>	994.5	981.1	963.7	954.4
22.5°	<i>958.4</i>	958.4	942.3	919.6	910.2
25°	<i>922.3</i>	916.9	902.2	870.1	846.0
27.5°	<i>880.8</i>	872.7	856.7	811.2	783.0
30°	<i>835.2</i>	831.2	808.5	749.6	728.2
32.5°	<i>792.4</i>	785.7	761.6	700.1	682.7
35°	<i>748.2</i>	742.9	706.7	653.2	637.1
37.5°	<i>704.1</i>	697.4	651.9	609.0	589.0
40°	<i>659.9</i>	651.9	602.3	563.5	542.1
42.5°	<i>618.4</i>	607.7	559.5	518.0	493.9
45°	<i>574.2</i>	562.2	514.0	471.2	452.4
47.5°	<i>530.1</i>	519.4	475.2	431.0	409.6
50°	<i>483.2</i>	473.8	433.7	389.5	366.8
52.5°	<i>444.4</i>	429.7	390.9	346.7	327.9
55°	<i>398.9</i>	386.8	350.7	309.2	293.1
57.5°	<i>357.4</i>	345.3	311.9	273.1	259.7
60°	<i>318.6</i>	301.2	273.1	239.6	228.9
62.5°	<i>275.7</i>	262.4	238.3	210.2	223.5
65°	<i>236.9</i>	223.5	202.1	206.1	171.3
67.5°	<i>194.1</i>	187.4	168.7	149.9	144.6
70°	<i>157.9</i>	149.9	143.2	123.1	117.8
72.5°	<i>125.8</i>	117.8	108.4	97.7	93.7
75°	<i>95.0</i>	88.3	83.0	79.0	87.0
77.5°	<i>65.6</i>	62.9	58.9	54.9	53.5
80°	<i>42.8</i>	41.5	40.2	38.8	37.5
82.5°	<i>25.4</i>	25.4	25.4	25.4	25.4
85°	<i>13.4</i>	14.7	16.1	17.4	18.7
87.5°	<i>8.0</i>	8.0	9.4	10.7	12.0
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)