

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: P563930

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563930  
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-LD4-4LO-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**

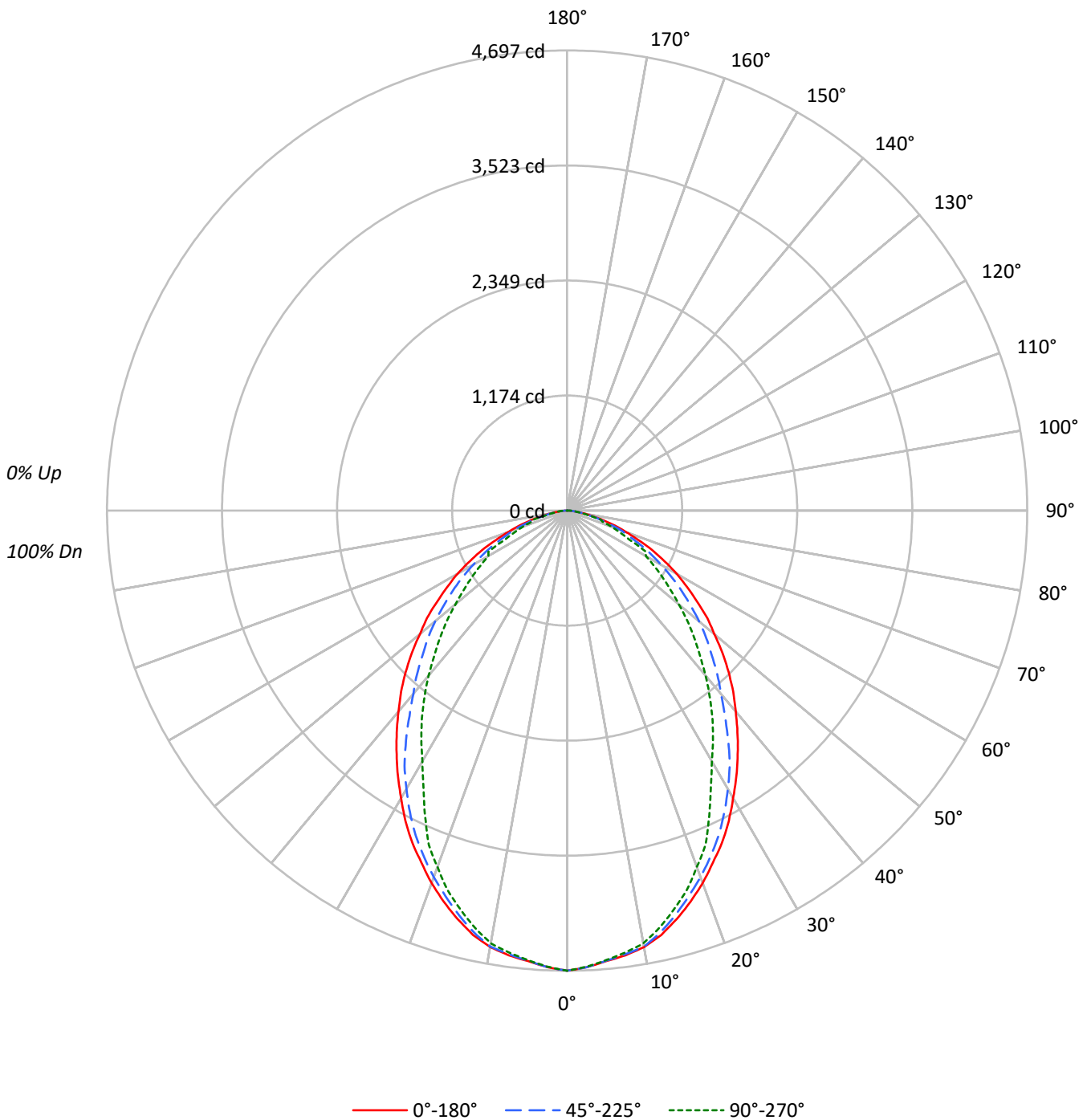
Lumens per Lamp: N/A  
Luminaire Lumens: 9221.0 lumens  
Efficiency: N/A  
Efficacy: 98.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P563930

CATALOG NUMBER: FSR-24-4-LD4-4LO-40-UNV-82-94-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563930

CATALOG NUMBER: FSR-24-4-LD4-4LO-40-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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	6320	6320	6320
5°	6234	6227	6219
10°	6180	6173	6128
15°	6013	5953	5870
20°	5792	5699	5544
25°	5554	5433	5095
30°	5264	5096	4589
35°	4986	4709	4245
40°	4702	4292	3863
45°	4433	3968	3492
50°	4103	3683	3114
55°	3796	3337	2790
60°	3478	2981	2499
65°	3060	2610	2213
70°	2521	2286	1880
75°	2004	1750	1835
80°	1347	1262	1178
85°	838	1007	1173

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4433 cd/sqm



TEST NUMBER: P563930

CATALOG NUMBER: FSR-24-4-LD4-4LO-40-UNV-82-94-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	437.2	4.7
10°-20°	1199.9	13.0
20°-30°	1661.3	18.0
30°-40°	1771.4	19.2
40°-50°	1616.0	17.5
50°-60°	1266.0	13.7
60°-70°	825.1	8.9
70°-80°	365.6	4.0
80°-90°	78.5	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°	3298.4	35.8
0°-40°	5069.8	55.0
0°-60°	7951.8	86.2
0°-90°	9221.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9221.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4697	4697	4697	4697	4697	
5°	4616	4610	4610	4605	4605	438
15°	4317	4317	4274	4230	4214	1214
25°	3741	3720	3660	3530	3432	1718
35°	3035	3014	2867	2650	2585	1898
45°	2330	2281	2085	1911	1835	1794
55°	1618	1569	1423	1254	1189	1451
65°	961	907	820	836	695	947
75°	386	358	337	320	353	413
85°	54	60	65	71	76	75
90°	0	0	0	0	0	



TEST NUMBER: P563930

CATALOG NUMBER: FSR-24-4-LD4-4LO-40-UNV-82-94-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4697.1	4697.1	4697.1	4697.1	4697.1
2.5°	4664.5	4664.5	4664.5	4659.0	4659.0
5°	4615.6	4610.2	4610.2	4604.7	4604.7
7.5°	4577.6	4572.2	4566.7	4561.3	4550.4
10°	4523.3	4523.3	4517.9	4490.7	4485.3
12.5°	4436.4	4431.0	4409.3	4371.2	4360.4
15°	4316.9	4316.9	4273.5	4230.1	4213.8
17.5°	4186.6	4181.2	4126.9	4083.5	4061.7
20°	4045.4	4034.6	3980.3	3909.7	3871.7
22.5°	3888.0	3888.0	3822.8	3730.5	3692.5
25°	3741.4	3719.6	3659.9	3529.6	3431.8
27.5°	3573.0	3540.4	3475.3	3290.7	3176.6
30°	3388.4	3372.1	3279.8	3040.9	2954.0
32.5°	3214.6	3187.5	3089.7	2840.0	2769.4
35°	3035.4	3013.7	2867.1	2649.9	2584.7
37.5°	2856.2	2829.1	2644.5	2470.7	2389.3
40°	2677.0	2644.5	2443.6	2286.1	2199.2
42.5°	2508.7	2465.3	2269.8	2101.5	2003.7
45°	2329.5	2280.7	2085.2	1911.4	1835.4
47.5°	2150.3	2106.9	1927.7	1748.5	1661.6
50°	1960.3	1922.3	1759.4	1580.2	1487.9
52.5°	1802.8	1743.1	1585.6	1406.4	1330.4
55°	1618.2	1569.3	1422.7	1254.4	1189.2
57.5°	1449.8	1401.0	1265.2	1107.7	1053.4
60°	1292.4	1221.8	1107.7	972.0	928.6
62.5°	1118.6	1064.3	966.6	852.5	906.8
65°	961.1	906.8	819.9	836.2	695.1
67.5°	787.4	760.2	684.2	608.2	586.5
70°	640.8	608.2	581.0	499.6	477.9
72.5°	510.4	477.9	439.8	396.4	380.1
75°	385.5	358.4	336.7	320.4	353.0
77.5°	266.1	255.2	238.9	222.6	217.2
80°	173.8	168.3	162.9	157.5	152.0
82.5°	103.2	103.2	103.2	103.2	103.2
85°	54.3	59.7	65.2	70.6	76.0
87.5°	32.6	32.6	38.0	43.4	48.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)