

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: P563814

Luminaire Tested: FSR-24-4-LD4-4HI-50-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563814  
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-LD4-4HI-50-UNV-93-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

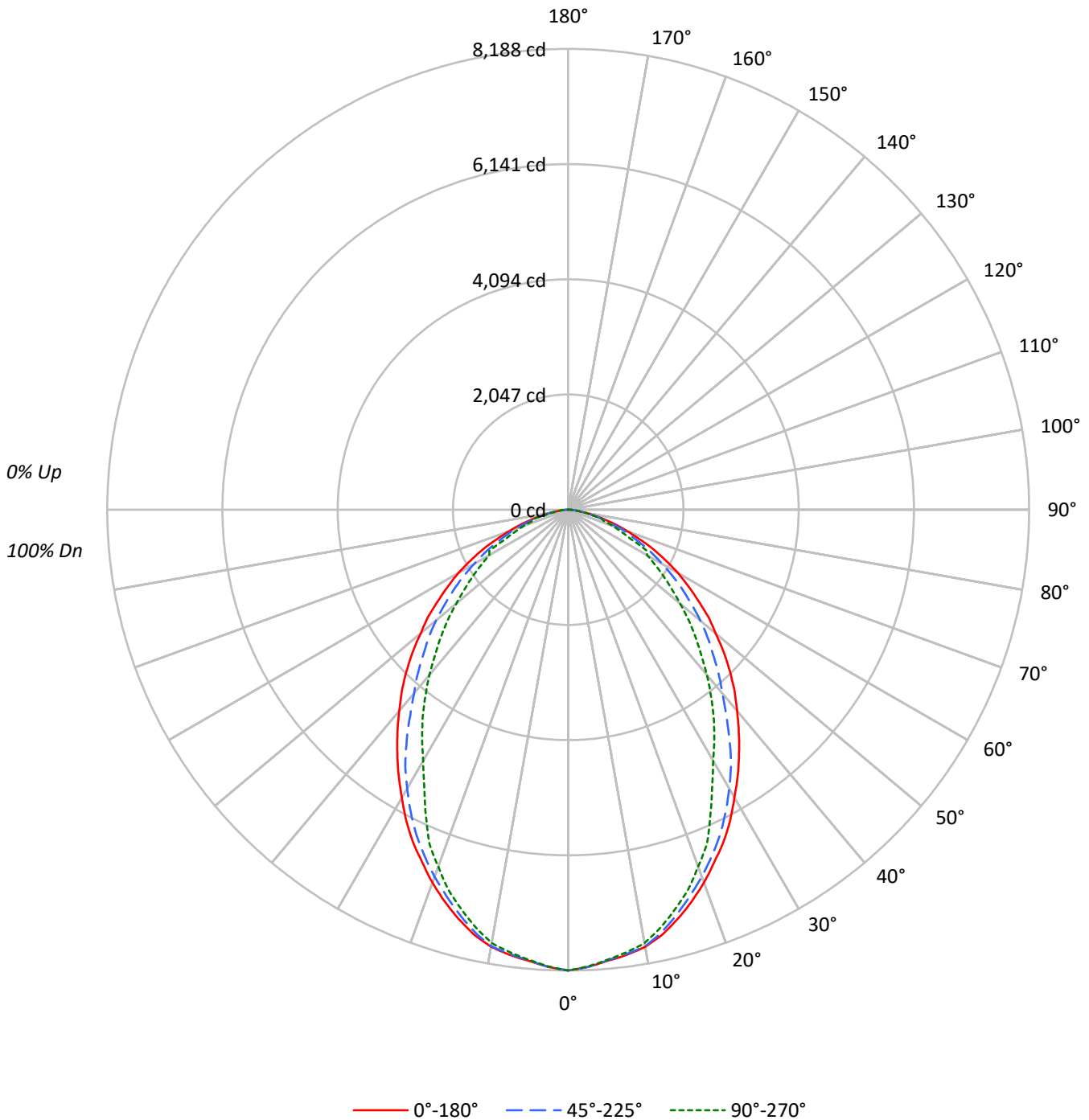
Lumens per Lamp: N/A  
Luminaire Lumens: 16074.0 lumens  
Efficiency: N/A  
Efficacy: 93.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P563814

CATALOG NUMBER: FSR-24-4-LD4-4HI-50-UNV-93-87-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563814

CATALOG NUMBER: FSR-24-4-LD4-4HI-50-UNV-93-87-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°	11017	11017	11017
5°	10867	10854	10841
10°	10773	10760	10682
15°	10482	10377	10232
20°	10097	9935	9664
25°	9682	9471	8881
30°	9177	8883	8000
35°	8691	8209	7401
40°	8196	7482	6733
45°	7727	6917	6088
50°	7153	6420	5429
55°	6617	5818	4863
60°	6063	5196	4356
65°	5334	4550	3857
70°	4394	3984	3277
75°	3494	3051	3199
80°	2347	2201	2053
85°	1462	1754	2046

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7727 cd/sqm



TEST NUMBER: P563814

CATALOG NUMBER: FSR-24-4-LD4-4HI-50-UNV-93-87-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	762.2	4.7
10°-20°	2091.7	13.0
20°-30°	2895.9	18.0
30°-40°	3087.8	19.2
40°-50°	2817.0	17.5
50°-60°	2206.9	13.7
60°-70°	1438.4	8.9
70°-80°	637.3	4.0
80°-90°	136.8	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°	5749.8	35.8
0°-40°	8837.6	55.0
0°-60°	13861.6	86.2
0°-90°	16074.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16074.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8188	8188	8188	8188	8188	
5°	8046	8036	8036	8027	8027	764
15°	7525	7525	7450	7374	7345	2116
25°	6522	6484	6380	6153	5982	2994
35°	5291	5254	4998	4619	4506	3308
45°	4061	3976	3635	3332	3199	3128
55°	2821	2736	2480	2187	2073	2530
65°	1675	1581	1429	1458	1212	1651
75°	672	625	587	558	615	720
85°	95	104	114	123	132	131
90°	0	0	0	0	0	



TEST NUMBER: P563814

CATALOG NUMBER: FSR-24-4-LD4-4HI-50-UNV-93-87-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8187.9	8187.9	8187.9	8187.9	8187.9
2.5°	8131.1	8131.1	8131.1	8121.6	8121.6
5°	8045.9	8036.4	8036.4	8027.0	8027.0
7.5°	7979.6	7970.2	7960.7	7951.2	7932.3
10°	7885.0	7885.0	7875.5	7828.2	7818.7
12.5°	7733.5	7724.1	7686.2	7619.9	7601.0
15°	7525.3	7525.3	7449.6	7373.8	7345.4
17.5°	7298.1	7288.6	7194.0	7118.3	7080.4
20°	7052.0	7033.1	6938.4	6815.3	6749.1
22.5°	6777.5	6777.5	6663.9	6503.0	6436.7
25°	6521.9	6484.0	6379.9	6152.7	5982.4
27.5°	6228.5	6171.7	6058.1	5736.2	5537.5
30°	5906.6	5878.2	5717.3	5300.8	5149.4
32.5°	5603.7	5556.4	5386.0	4950.6	4827.5
35°	5291.4	5253.5	4997.9	4619.3	4505.7
37.5°	4979.0	4931.7	4609.8	4306.9	4164.9
40°	4666.6	4609.8	4259.6	3985.1	3833.6
42.5°	4373.2	4297.5	3956.7	3663.2	3492.9
45°	4060.8	3975.6	3634.9	3331.9	3199.4
47.5°	3748.4	3672.7	3360.3	3048.0	2896.5
50°	3417.1	3350.9	3066.9	2754.5	2593.6
52.5°	3142.6	3038.5	2764.0	2451.6	2319.1
55°	2820.8	2735.6	2480.0	2186.6	2073.0
57.5°	2527.4	2442.2	2205.5	1931.0	1836.4
60°	2252.9	2129.8	1931.0	1694.4	1618.6
62.5°	1949.9	1855.3	1684.9	1486.1	1580.8
65°	1675.4	1580.8	1429.3	1457.7	1211.6
67.5°	1372.5	1325.2	1192.7	1060.2	1022.3
70°	1117.0	1060.2	1012.8	870.8	833.0
72.5°	889.8	833.0	766.7	691.0	662.6
75°	672.1	624.7	586.9	558.5	615.3
77.5°	463.8	444.9	416.5	388.1	378.6
80°	302.9	293.4	284.0	274.5	265.0
82.5°	179.8	179.8	179.8	179.8	179.8
85°	94.7	104.1	113.6	123.1	132.5
87.5°	56.8	56.8	66.3	75.7	85.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)