

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: P561507

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561507  
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-12-4-LD4-2HI-50-UNV-93-85-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

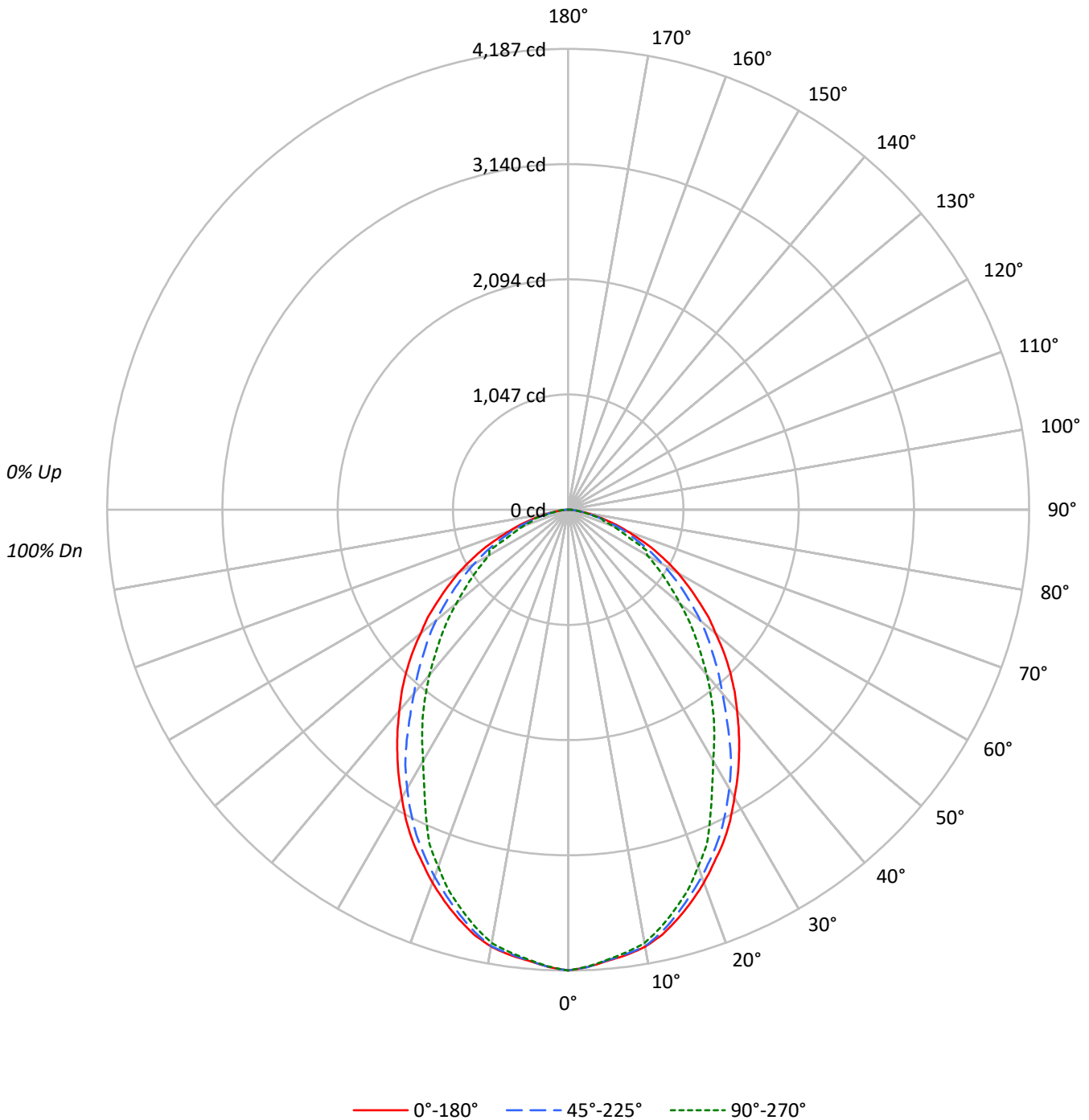
Lumens per Lamp: N/A  
Luminaire Lumens: 8219.0 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561507

CATALOG NUMBER: FSR-12-4-LD4-2HI-50-UNV-93-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P561507

CATALOG NUMBER: FSR-12-4-LD4-2HI-50-UNV-93-85-EDD

**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°	11266	11266	11266
5°	11113	11100	11087
10°	11017	11003	10924
15°	10720	10612	10464
20°	10326	10160	9883
25°	9902	9686	9082
30°	9385	9084	8181
35°	8888	8395	7568
40°	8382	7651	6886
45°	7902	7073	6226
50°	7315	6565	5552
55°	6767	5949	4973
60°	6199	5314	4454
65°	5455	4653	3945
70°	4493	4075	3351
75°	3572	3120	3271
80°	2400	2250	2100
85°	1494	1794	2093

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7902 cd/sqm



TEST NUMBER: P561507

CATALOG NUMBER: FSR-12-4-LD4-2HI-50-UNV-93-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	389.7	4.7
10°-20°	1069.6	13.0
20°-30°	1480.7	18.0
30°-40°	1578.9	19.2
40°-50°	1440.4	17.5
50°-60°	1128.5	13.7
60°-70°	735.5	8.9
70°-80°	325.8	4.0
80°-90°	70.0	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°	2940.0	35.8
0°-40°	4518.9	55.0
0°-60°	7087.7	86.2
0°-90°	8219.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8219.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4187	4187	4187	4187	4187	
5°	4114	4109	4109	4104	4104	391
15°	3848	3848	3809	3770	3756	1082
25°	3335	3315	3262	3146	3059	1531
35°	2706	2686	2556	2362	2304	1691
45°	2076	2033	1859	1704	1636	1599
55°	1442	1399	1268	1118	1060	1294
65°	857	808	731	745	620	844
75°	344	319	300	286	315	368
85°	48	53	58	63	68	67
90°	0	0	0	0	0	



TEST NUMBER: P561507

CATALOG NUMBER: FSR-12-4-LD4-2HI-50-UNV-93-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4186.6	4186.6	4186.6	4186.6	4186.6
2.5°	4157.6	4157.6	4157.6	4152.8	4152.8
5°	4114.0	4109.2	4109.2	4104.4	4104.4
7.5°	4080.2	4075.3	4070.5	4065.6	4056.0
10°	4031.8	4031.8	4026.9	4002.7	3997.9
12.5°	3954.3	3949.5	3930.1	3896.2	3886.6
15°	3847.8	3847.8	3809.1	3770.4	3755.9
17.5°	3731.7	3726.8	3678.4	3639.7	3620.4
20°	3605.8	3596.2	3547.8	3484.8	3451.0
22.5°	3465.5	3465.5	3407.4	3325.1	3291.2
25°	3334.8	3315.4	3262.2	3146.0	3058.9
27.5°	3184.8	3155.7	3097.6	2933.1	2831.4
30°	3020.2	3005.7	2923.4	2710.4	2633.0
32.5°	2865.3	2841.1	2754.0	2531.3	2468.4
35°	2705.6	2686.2	2555.5	2361.9	2303.9
37.5°	2545.9	2521.7	2357.1	2202.2	2129.6
40°	2386.1	2357.1	2178.0	2037.7	1960.2
42.5°	2236.1	2197.4	2023.1	1873.1	1786.0
45°	2076.4	2032.8	1858.6	1703.7	1635.9
47.5°	1916.7	1877.9	1718.2	1558.5	1481.1
50°	1747.3	1713.4	1568.2	1408.5	1326.2
52.5°	1606.9	1553.7	1413.3	1253.6	1185.8
55°	1442.3	1398.8	1268.1	1118.1	1060.0
57.5°	1292.3	1248.7	1127.7	987.4	939.0
60°	1151.9	1089.0	987.4	866.4	827.6
62.5°	997.1	948.7	861.5	759.9	808.3
65°	856.7	808.3	730.8	745.4	619.5
67.5°	701.8	677.6	609.8	542.1	522.7
70°	571.1	542.1	517.9	445.3	425.9
72.5°	455.0	425.9	392.0	353.3	338.8
75°	343.6	319.4	300.1	285.6	314.6
77.5°	237.2	227.5	213.0	198.4	193.6
80°	154.9	150.0	145.2	140.4	135.5
82.5°	92.0	92.0	92.0	92.0	92.0
85°	48.4	53.2	58.1	62.9	67.8
87.5°	29.0	29.0	33.9	38.7	43.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)