

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: P560930

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560930  
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-LD4-1HI-50-UNV-93-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

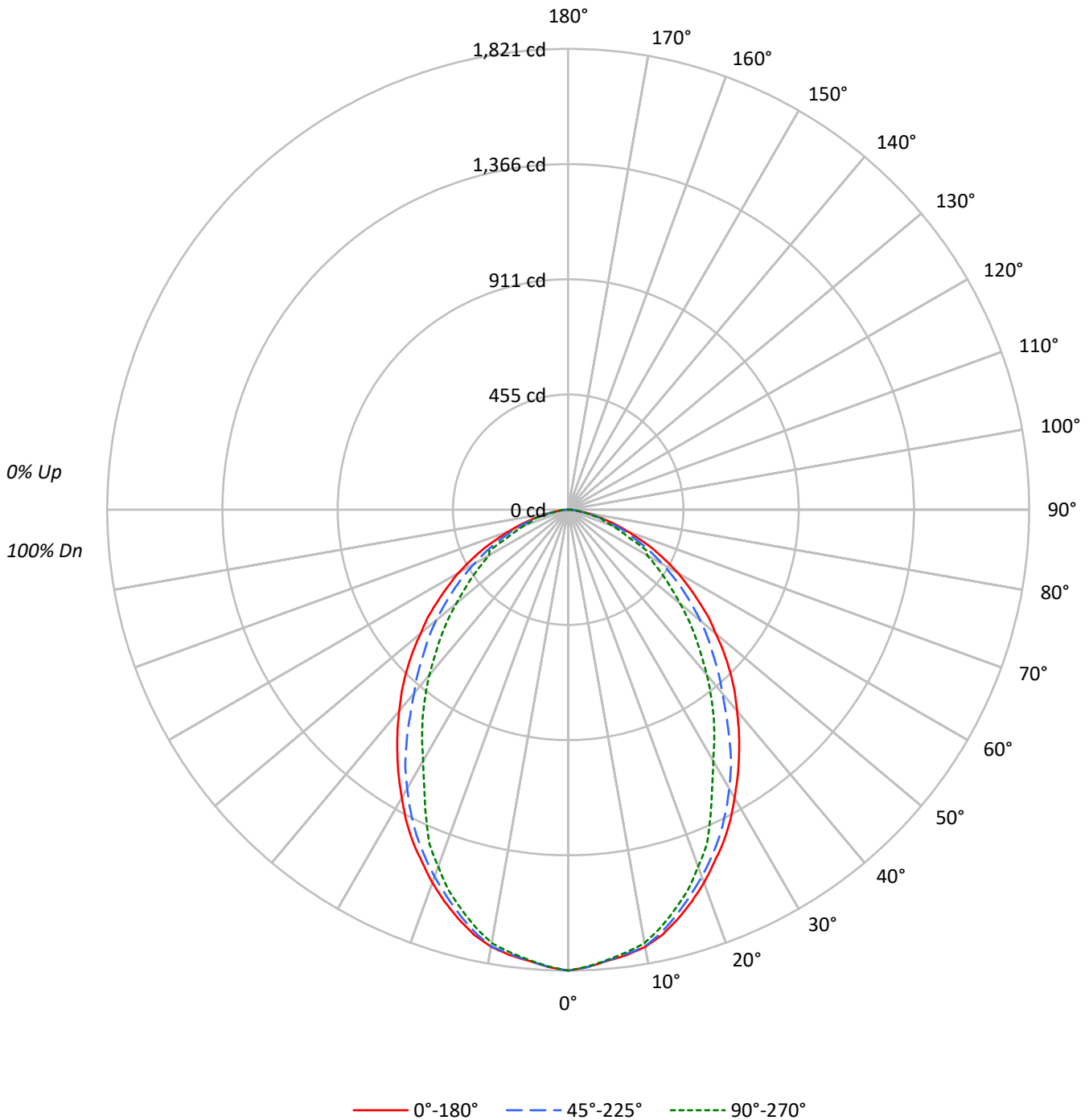
Lumens per Lamp: N/A  
Luminaire Lumens: 3575.0 lumens  
Efficiency: N/A  
Efficacy: 82.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P560930

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-93-85-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P560930

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-93-85-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	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																
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87												87																
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75												75																
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65												65																
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56												56																
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50												50																
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44												44																
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40												40																
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36												36																
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33												33																
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30												30																

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

	0°	45°	90°
0°	4901	4901	4901
5°	4834	4828	4823
10°	4792	4786	4752
15°	4663	4616	4551
20°	4491	4419	4299
25°	4307	4213	3950
30°	4082	3951	3559
35°	3866	3652	3292
40°	3646	3328	2995
45°	3437	3076	2708
50°	3182	2856	2415
55°	2943	2588	2163
60°	2697	2312	1938
65°	2372	2024	1716
70°	1954	1773	1458
75°	1554	1357	1422
80°	1044	979	913
85°	651	781	911

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3437 cd/sqm



TEST NUMBER: P560930

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-93-85-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	169.5	4.7
10°-20°	465.2	13.0
20°-30°	644.1	18.0
30°-40°	686.8	19.2
40°-50°	626.5	17.5
50°-60°	490.8	13.7
60°-70°	319.9	8.9
70°-80°	141.7	4.0
80°-90°	30.4	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°	1278.8	35.8
0°-40°	1965.6	55.0
0°-60°	3082.9	86.2
0°-90°	3575.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3575.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1821	1821	1821	1821	1821	
5°	1790	1787	1787	1785	1785	170
15°	1674	1674	1657	1640	1634	471
25°	1450	1442	1419	1368	1330	666
35°	1177	1168	1112	1027	1002	736
45°	903	884	808	741	712	696
55°	627	608	552	486	461	563
65°	373	352	318	324	270	367
75°	150	139	130	124	137	160
85°	21	23	25	27	30	29
90°	0	0	0	0	0	



TEST NUMBER: P560930

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-93-85-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1821.1	1821.1	1821.1	1821.1	1821.1
2.5°	1808.4	1808.4	1808.4	1806.3	1806.3
5°	1789.5	1787.4	1787.4	1785.3	1785.3
7.5°	1774.7	1772.6	1770.5	1768.4	1764.2
10°	1753.7	1753.7	1751.6	1741.1	1739.0
12.5°	1720.0	1717.9	1709.5	1694.7	1690.5
15°	1673.7	1673.7	1656.8	1640.0	1633.7
17.5°	1623.2	1621.1	1600.0	1583.2	1574.7
20°	1568.4	1564.2	1543.2	1515.8	1501.1
22.5°	1507.4	1507.4	1482.1	1446.3	1431.6
25°	1450.5	1442.1	1419.0	1368.4	1330.5
27.5°	1385.3	1372.6	1347.4	1275.8	1231.6
30°	1313.7	1307.4	1271.6	1179.0	1145.3
32.5°	1246.3	1235.8	1197.9	1101.1	1073.7
35°	1176.8	1168.4	1111.6	1027.4	1002.1
37.5°	1107.4	1096.8	1025.3	957.9	926.3
40°	1037.9	1025.3	947.4	886.3	852.6
42.5°	972.6	955.8	880.0	814.7	776.8
45°	903.2	884.2	808.4	741.1	711.6
47.5°	833.7	816.8	747.4	677.9	644.2
50°	760.0	745.3	682.1	612.6	576.8
52.5°	698.9	675.8	614.7	545.3	515.8
55°	627.4	608.4	551.6	486.3	461.1
57.5°	562.1	543.2	490.5	429.5	408.4
60°	501.1	473.7	429.5	376.8	360.0
62.5°	433.7	412.6	374.7	330.5	351.6
65°	372.6	351.6	317.9	324.2	269.5
67.5°	305.3	294.7	265.3	235.8	227.4
70°	248.4	235.8	225.3	193.7	185.3
72.5°	197.9	185.3	170.5	153.7	147.4
75°	149.5	138.9	130.5	124.2	136.8
77.5°	103.2	98.9	92.6	86.3	84.2
80°	67.4	65.3	63.2	61.1	58.9
82.5°	40.0	40.0	40.0	40.0	40.0
85°	21.1	23.2	25.3	27.4	29.5
87.5°	12.6	12.6	14.7	16.8	18.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)