

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: P561645

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561645  
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-LD4-2LO-40-UNV-93-96-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

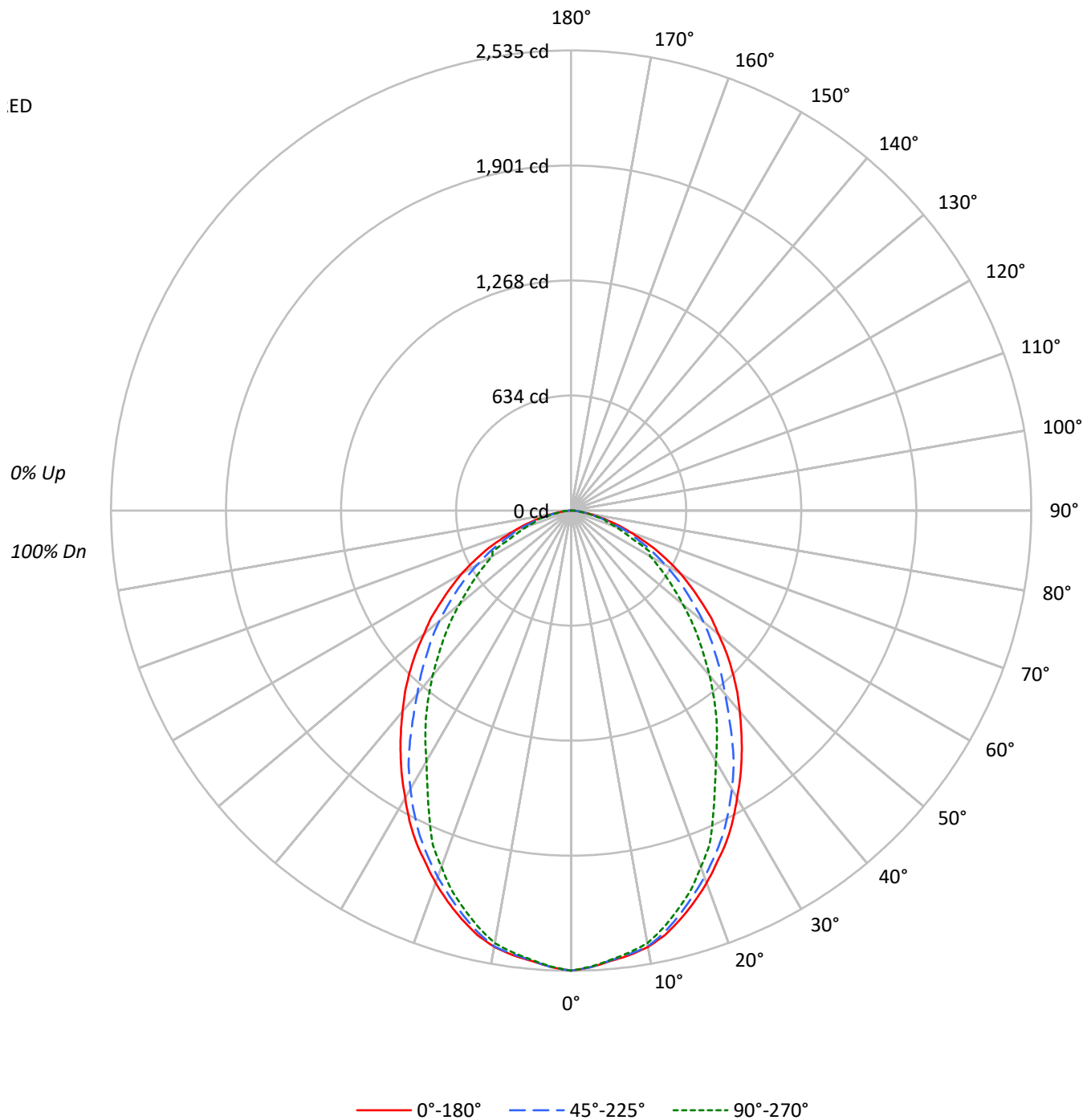
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4976.0 lumens  
Efficiency: N/A  
Efficacy: 106.3 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): 46.8  
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: P561645  
CATALOG NUMBER: FSR-12-4-LD4-2LO-40-UNV-93-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P561645

CATALOG NUMBER: FSR-12-4-LD4-2LO-40-UNV-93-96-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	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°	6821	6821	6821
5°	6728	6720	6712
10°	6670	6662	6614
15°	6490	6425	6335
20°	6252	6151	5983
25°	5995	5864	5499
30°	5682	5500	4953
35°	5381	5083	4582
40°	5075	4632	4169
45°	4784	4282	3769
50°	4428	3975	3361
55°	4097	3602	3011
60°	3753	3217	2697
65°	3303	2818	2388
70°	2721	2467	2029
75°	2164	1889	1981
80°	1454	1362	1271
85°	905	1087	1266

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4784 cd/sqm



TEST NUMBER: P561645

CATALOG NUMBER: FSR-12-4-LD4-2LO-40-UNV-93-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	235.9	4.7
10°-20°	647.5	13.0
20°-30°	896.5	18.0
30°-40°	955.9	19.2
40°-50°	872.1	17.5
50°-60°	683.2	13.7
60°-70°	445.3	8.9
70°-80°	197.3	4.0
80°-90°	42.4	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°	1780.0	35.8
0°-40°	2735.9	55.0
0°-60°	4291.1	86.2
0°-90°	4976.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4976.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2535	2535	2535	2535	2535	
5°	2491	2488	2488	2485	2485	236
15°	2330	2330	2306	2283	2274	655
25°	2019	2007	1975	1905	1852	927
35°	1638	1626	1547	1430	1395	1024
45°	1257	1231	1125	1032	990	968
55°	873	847	768	677	642	783
65°	519	489	442	451	375	511
75°	208	193	182	173	190	223
85°	29	32	35	38	41	41
90°	0	0	0	0	0	



TEST NUMBER: P561645

CATALOG NUMBER: FSR-12-4-LD4-2LO-40-UNV-93-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2534.7	2534.7	2534.7	2534.7	2534.7
2.5°	2517.1	2517.1	2517.1	2514.2	2514.2
5°	2490.8	2487.8	2487.8	2484.9	2484.9
7.5°	2470.2	2467.3	2464.4	2461.5	2455.6
10°	2440.9	2440.9	2438.0	2423.4	2420.4
12.5°	2394.1	2391.1	2379.4	2358.9	2353.0
15°	2329.6	2329.6	2306.1	2282.7	2273.9
17.5°	2259.3	2256.3	2227.0	2203.6	2191.9
20°	2183.1	2177.2	2147.9	2109.8	2089.3
22.5°	2098.1	2098.1	2062.9	2013.1	1992.6
25°	2019.0	2007.3	1975.0	1904.7	1851.9
27.5°	1928.1	1910.6	1875.4	1775.8	1714.2
30°	1828.5	1819.7	1769.9	1641.0	1594.1
32.5°	1734.7	1720.1	1667.3	1532.5	1494.5
35°	1638.0	1626.3	1547.2	1430.0	1394.8
37.5°	1541.3	1526.7	1427.1	1333.3	1289.3
40°	1444.6	1427.1	1318.6	1233.7	1186.8
42.5°	1353.8	1330.4	1224.9	1134.0	1081.3
45°	1257.1	1230.7	1125.2	1031.5	990.4
47.5°	1160.4	1137.0	1040.3	943.6	896.7
50°	1057.8	1037.3	949.4	852.7	802.9
52.5°	972.9	940.6	855.6	758.9	717.9
55°	873.2	846.9	767.7	676.9	641.7
57.5°	782.4	756.0	682.8	597.8	568.5
60°	697.4	659.3	597.8	524.5	501.1
62.5°	603.6	574.3	521.6	460.1	489.4
65°	518.7	489.4	442.5	451.3	375.1
67.5°	424.9	410.2	369.2	328.2	316.5
70°	345.8	328.2	313.5	269.6	257.9
72.5°	275.4	257.9	237.4	213.9	205.1
75°	208.1	193.4	181.7	172.9	190.5
77.5°	143.6	137.7	128.9	120.1	117.2
80°	93.8	90.8	87.9	85.0	82.0
82.5°	55.7	55.7	55.7	55.7	55.7
85°	29.3	32.2	35.2	38.1	41.0
87.5°	17.6	17.6	20.5	23.4	26.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)