

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: P561394

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-80-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561394  
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-40-UNV-80-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRON  
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

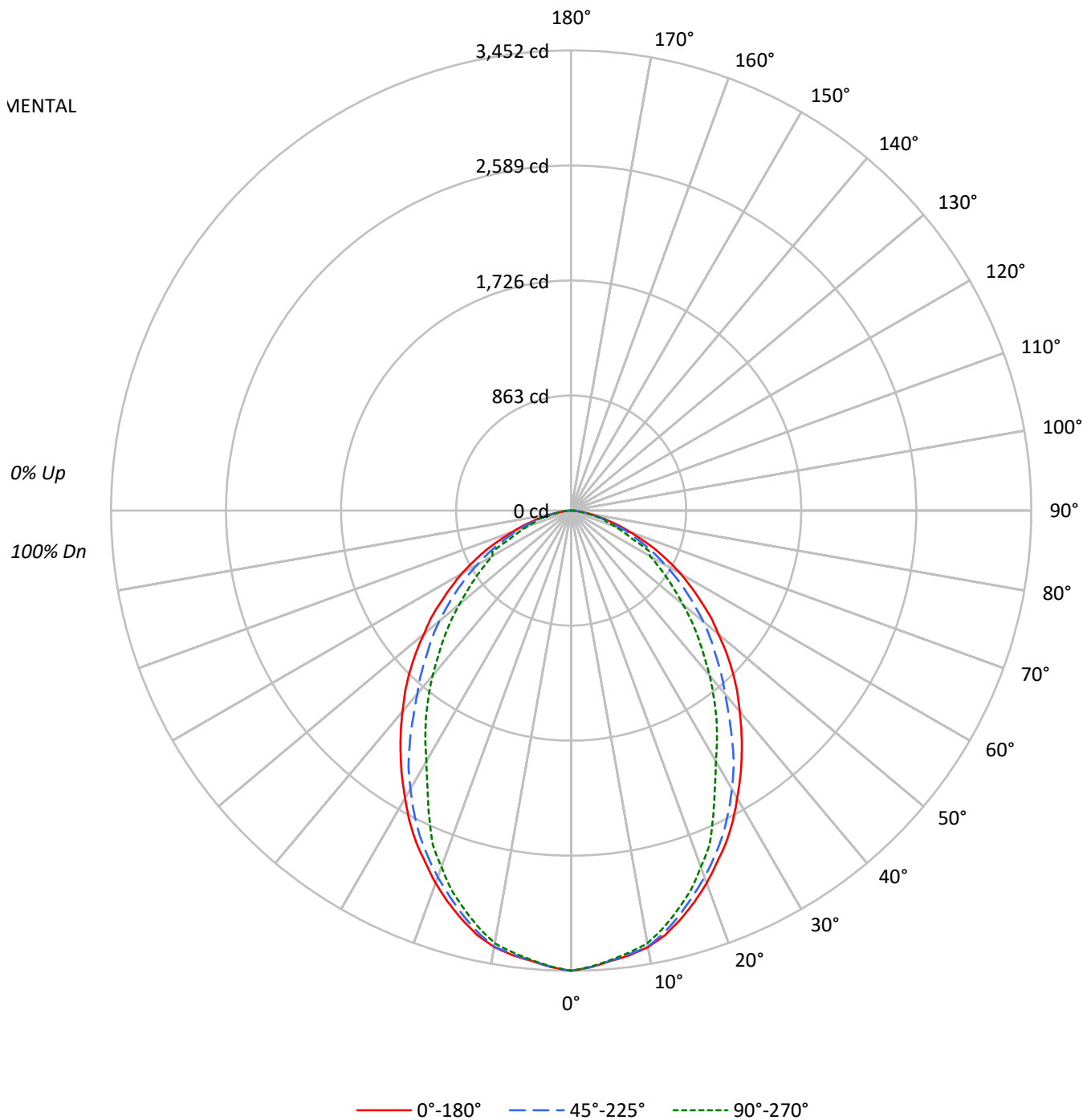
Lumens per Lamp: N/A  
Luminaire Lumens: 6777.0 lumens  
Efficiency: N/A  
Efficacy: 78.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561394

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-80-85-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561394

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-80-85-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	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°	9290	9290	9290
5°	9163	9153	9142
10°	9084	9073	9008
15°	8839	8750	8628
20°	8514	8377	8149
25°	8164	7987	7489
30°	7738	7490	6746
35°	7329	6922	6241
40°	6911	6309	5678
45°	6516	5832	5133
50°	6031	5413	4578
55°	5580	4906	4100
60°	5112	4381	3673
65°	4498	3837	3252
70°	3705	3360	2763
75°	2947	2572	2697
80°	1979	1855	1731
85°	1232	1479	1726

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6516 cd/sqm



TEST NUMBER: P561394

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-80-85-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	321.3	4.7
10°-20°	881.9	13.0
20°-30°	1220.9	18.0
30°-40°	1301.9	19.2
40°-50°	1187.7	17.5
50°-60°	930.5	13.7
60°-70°	606.4	8.9
70°-80°	268.7	4.0
80°-90°	57.7	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°	2424.2	35.8
0°-40°	3726.1	55.0
0°-60°	5844.2	86.2
0°-90°	6777.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6777.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3452	3452	3452	3452	3452	
5°	3392	3388	3388	3384	3384	322
15°	3173	3173	3141	3109	3097	892
25°	2750	2734	2690	2594	2522	1262
35°	2231	2215	2107	1948	1900	1395
45°	1712	1676	1532	1405	1349	1319
55°	1189	1153	1046	922	874	1067
65°	706	666	603	615	511	696
75°	283	263	247	236	259	304
85°	40	44	48	52	56	55
90°	0	0	0	0	0	



TEST NUMBER: P561394

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-80-85-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3452.1	3452.1	3452.1	3452.1	3452.1
2.5°	3428.2	3428.2	3428.2	3424.2	3424.2
5°	3392.3	3388.3	3388.3	3384.3	3384.3
7.5°	3364.3	3360.3	3356.3	3352.3	3344.4
10°	3324.4	3324.4	3320.4	3300.5	3296.5
12.5°	3260.6	3256.6	3240.6	3212.7	3204.7
15°	3172.8	3172.8	3140.8	3108.9	3096.9
17.5°	3077.0	3073.0	3033.1	3001.1	2985.2
20°	2973.2	2965.2	2925.3	2873.4	2845.5
22.5°	2857.5	2857.5	2809.6	2741.7	2713.8
25°	2749.7	2733.8	2689.9	2594.1	2522.2
27.5°	2626.0	2602.1	2554.2	2418.5	2334.7
30°	2490.3	2478.3	2410.5	2234.9	2171.0
32.5°	2362.6	2342.6	2270.8	2087.2	2035.4
35°	2230.9	2214.9	2107.2	1947.6	1899.7
37.5°	2099.2	2079.2	1943.6	1815.9	1756.0
40°	1967.5	1943.6	1795.9	1680.2	1616.3
42.5°	1843.8	1811.9	1668.2	1544.5	1472.6
45°	1712.1	1676.2	1532.5	1404.8	1348.9
47.5°	1580.4	1548.5	1416.8	1285.1	1221.2
50°	1440.7	1412.8	1293.0	1161.3	1093.5
52.5°	1325.0	1281.1	1165.3	1033.6	977.8
55°	1189.3	1153.4	1045.6	921.9	874.0
57.5°	1065.6	1029.6	929.9	814.1	774.2
60°	949.8	897.9	814.1	714.4	682.4
62.5°	822.1	782.2	710.4	626.6	666.5
65°	706.4	666.5	602.6	614.6	510.8
67.5°	578.7	558.7	502.9	447.0	431.0
70°	470.9	447.0	427.0	367.2	351.2
72.5°	375.1	351.2	323.3	291.3	279.4
75°	283.4	263.4	247.4	235.5	259.4
77.5°	195.6	187.6	175.6	163.6	159.6
80°	127.7	123.7	119.7	115.7	111.7
82.5°	75.8	75.8	75.8	75.8	75.8
85°	39.9	43.9	47.9	51.9	55.9
87.5°	23.9	23.9	27.9	31.9	35.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)