

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: P590123

Luminaire Tested: FSR-24-2-LD4-1STD-50-UNV-82-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590123  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-1STD-50-UNV-82-96-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

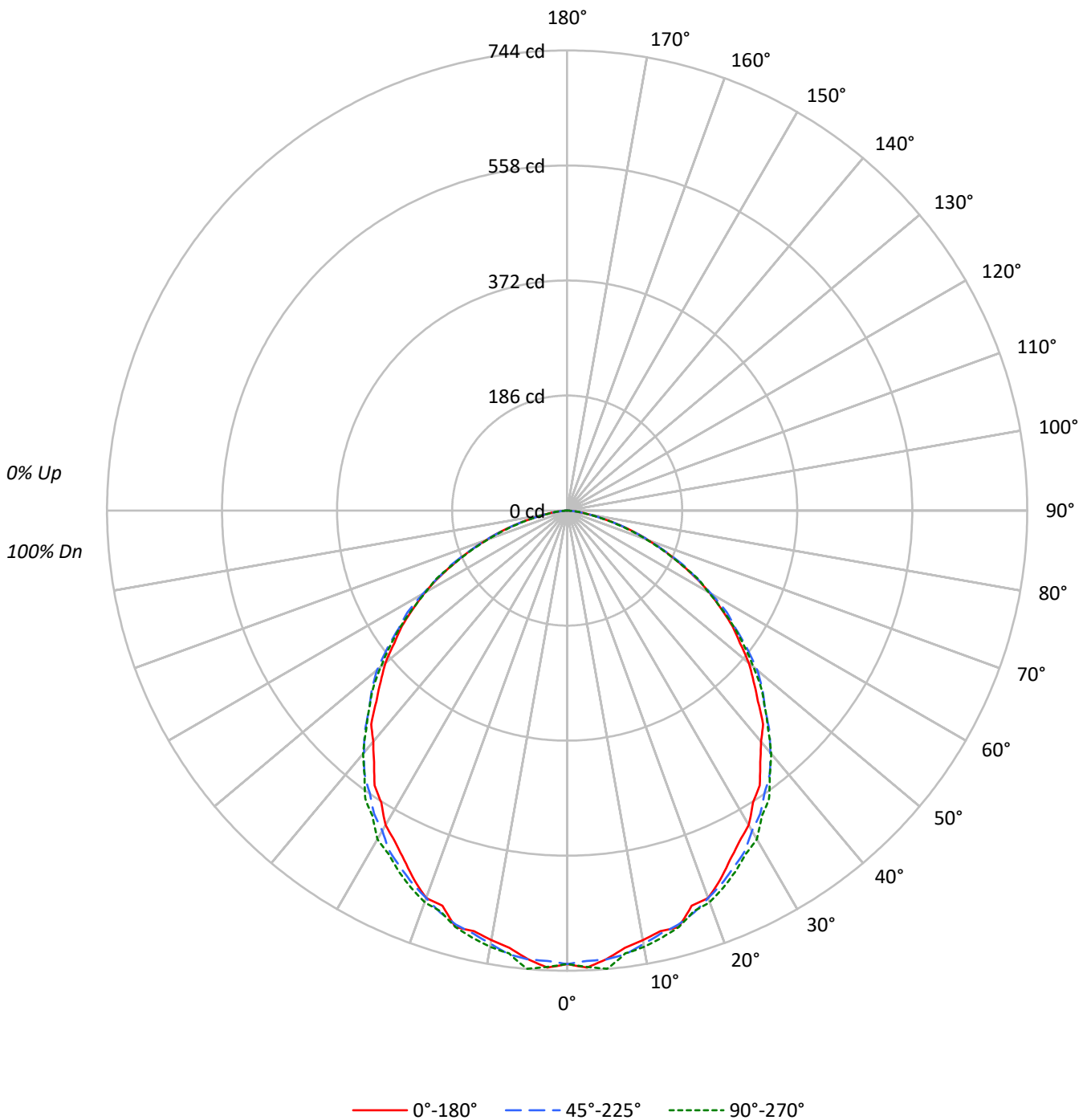
Lumens per Lamp: N/A  
Luminaire Lumens: 1848.0 lumens  
Efficiency: N/A  
Efficacy: 111.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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: P590123

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-82-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590123

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-82-96-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																												
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

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

	0°	45°	90°
0°	1973	1973	1973
5°	1967	1967	2009
10°	1927	1944	1957
15°	1942	1931	1942
20°	1909	1909	1930
25°	1850	1891	1912
30°	1825	1857	1907
35°	1782	1829	1870
40°	1713	1795	1803
45°	1661	1720	1722
50°	1606	1679	1647
55°	1530	1560	1549
60°	1431	1446	1420
65°	1276	1309	1267
70°	1095	1098	1068
75°	867	865	832
80°	581	564	542
85°	315	312	293

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1764 cd/sqm



TEST NUMBER: P590123

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-82-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	69.0	3.7
10°-20°	195.5	10.6
20°-30°	292.9	15.8
30°-40°	347.1	18.8
40°-50°	347.7	18.8
50°-60°	295.2	16.0
60°-70°	199.0	10.8
70°-80°	87.4	4.7
80°-90°	14.2	0.8
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°	557.3	30.2
0°-40°	904.4	48.9
0°-60°	1547.3	83.7
0°-90°	1848.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1848.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	733	733	733	733	733	
5°	728	726	728	726	744	69
15°	697	689	693	697	697	194
25°	623	627	637	645	644	288
35°	542	544	557	570	569	337
45°	436	445	452	464	453	338
55°	326	324	333	330	330	290
65°	200	198	206	198	199	199
75°	83	82	83	77	80	89
85°	10	10	10	10	10	15
90°	0	0	0	0	0	



TEST NUMBER: P590123

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-82-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	733.2	733.2	733.2	733.2	733.2
2.5°	739.6	734.0	728.8	734.8	738.5
5°	728.0	726.3	728.3	726.1	743.7
7.5°	713.1	719.6	723.4	721.0	722.1
10°	705.1	702.8	711.3	717.1	716.3
12.5°	696.6	700.0	700.5	706.8	707.4
15°	697.1	689.0	693.3	696.9	697.2
17.5°	670.0	678.7	681.6	689.9	679.7
20°	666.7	660.3	666.7	675.1	673.8
22.5°	646.3	639.2	652.9	660.3	659.9
25°	623.2	626.6	636.9	645.2	643.9
27.5°	603.0	606.9	621.5	633.0	625.6
30°	587.3	585.4	597.7	607.9	613.6
32.5°	559.4	566.6	581.0	591.1	585.7
35°	542.5	544.1	556.7	569.6	569.2
37.5°	512.8	520.3	538.0	541.6	538.3
40°	487.6	495.0	511.0	514.9	513.3
42.5°	468.9	470.2	484.0	488.4	481.3
45°	436.4	444.6	452.0	463.6	452.6
47.5°	408.8	412.6	428.5	431.6	425.8
50°	383.7	385.0	401.0	397.2	393.4
52.5°	352.2	357.8	366.8	366.0	361.6
55°	326.2	324.1	332.6	330.3	330.2
57.5°	295.1	298.9	305.9	302.3	296.5
60°	265.9	266.0	268.6	264.5	263.8
62.5°	233.5	234.6	235.2	230.1	238.3
65°	200.4	197.8	205.5	197.7	199.0
67.5°	170.0	171.4	170.6	165.7	167.6
70°	139.2	140.9	139.6	134.1	135.8
72.5°	111.0	108.9	110.2	103.2	106.4
75°	83.4	81.7	83.2	77.3	80.0
77.5°	56.8	58.1	57.2	54.1	55.9
80°	37.5	36.4	36.4	34.7	35.0
82.5°	21.9	20.8	20.5	20.0	20.8
85°	10.2	9.9	10.1	9.8	9.5
87.5°	3.7	3.8	3.8	3.6	3.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)