

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: P590419

Luminaire Tested: FSR-24-2-LD4-2STD-50-UNV-93-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590419  
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-LD4-2STD-50-UNV-93-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

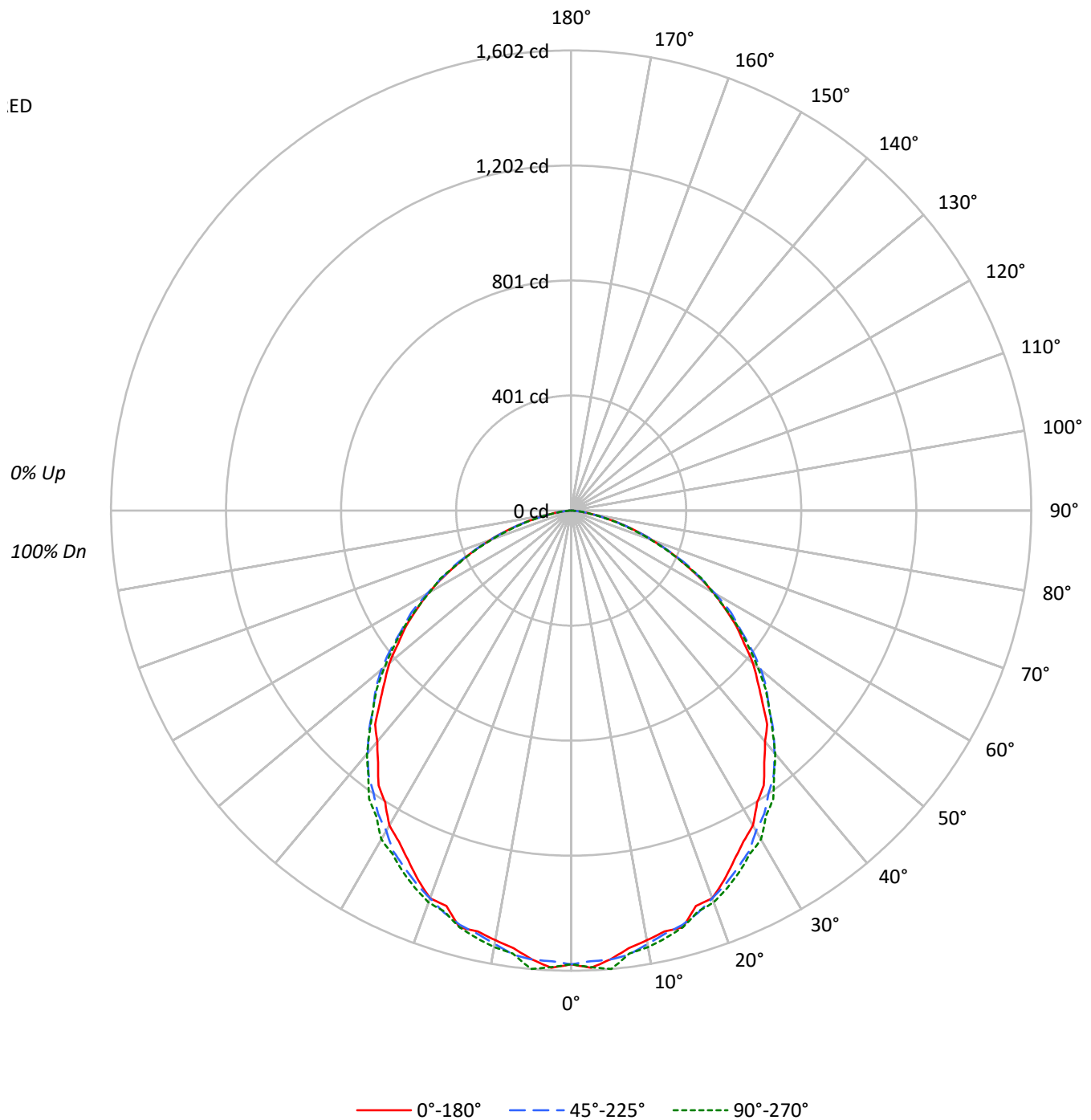
Lumens per Lamp: N/A  
Luminaire Lumens: 3981.0 lumens  
Efficiency: N/A  
Efficacy: 119.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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



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### Luminous Intensity Polar Plot





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**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	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°	4251	4251	4251
5°	4236	4238	4327
10°	4151	4187	4217
15°	4184	4161	4184
20°	4113	4113	4157
25°	3986	4073	4118
30°	3932	4001	4107
35°	3839	3939	4028
40°	3690	3867	3884
45°	3578	3705	3711
50°	3460	3617	3548
55°	3297	3362	3338
60°	3083	3114	3058
65°	2749	2819	2730
70°	2359	2367	2301
75°	1868	1864	1791
80°	1252	1216	1170
85°	679	673	630

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3801 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.6	3.7
10°-20°	421.1	10.6
20°-30°	630.9	15.8
30°-40°	747.7	18.8
40°-50°	749.1	18.8
50°-60°	635.9	16.0
60°-70°	428.7	10.8
70°-80°	188.4	4.7
80°-90°	30.6	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°	1200.6	30.2
0°-40°	1948.3	48.9
0°-60°	3333.3	83.7
0°-90°	3981.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3981.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1580	1580	1580	1580	1580	
5°	1568	1565	1569	1564	1602	148
15°	1502	1484	1494	1501	1502	418
25°	1343	1350	1372	1390	1387	621
35°	1169	1172	1199	1227	1226	726
45°	940	958	974	999	975	727
55°	703	698	716	712	711	625
65°	432	426	443	426	429	429
75°	180	176	179	167	172	193
85°	22	21	22	21	20	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1579.6	1579.6	1579.6	1579.6	1579.6
2.5°	1593.2	1581.2	1570.0	1583.0	1591.0
5°	1568.3	1564.7	1569.0	1564.3	1602.0
7.5°	1536.1	1550.2	1558.3	1553.3	1555.5
10°	1519.0	1514.1	1532.2	1544.9	1543.1
12.5°	1500.6	1508.0	1509.0	1522.7	1523.9
15°	1501.7	1484.3	1493.5	1501.2	1501.9
17.5°	1443.3	1462.1	1468.4	1486.2	1464.1
20°	1436.2	1422.5	1436.2	1454.3	1451.5
22.5°	1392.3	1377.0	1406.4	1422.5	1421.5
25°	1342.6	1349.9	1371.9	1389.9	1387.0
27.5°	1298.9	1307.5	1338.9	1363.6	1347.7
30°	1265.3	1261.0	1287.5	1309.5	1321.8
32.5°	1205.1	1220.6	1251.6	1273.4	1261.8
35°	1168.6	1172.1	1199.2	1226.9	1226.1
37.5°	1104.8	1120.9	1159.0	1166.8	1159.6
40°	1050.3	1066.4	1100.9	1109.3	1105.8
42.5°	1010.1	1013.0	1042.6	1052.2	1036.9
45°	940.2	957.7	973.6	998.7	975.1
47.5°	880.6	888.8	923.1	929.8	917.3
50°	826.6	829.4	863.9	855.6	847.4
52.5°	758.7	770.7	790.1	788.5	778.9
55°	702.8	698.1	716.5	711.6	711.4
57.5°	635.7	643.9	658.9	651.2	638.8
60°	572.9	573.1	578.6	569.8	568.2
62.5°	502.9	505.4	506.6	495.8	513.3
65°	431.8	426.0	442.8	425.8	428.7
67.5°	366.3	369.1	367.5	356.9	361.0
70°	299.8	303.5	300.8	288.8	292.5
72.5°	239.0	234.5	237.4	222.3	229.2
75°	179.7	176.0	179.3	166.6	172.3
77.5°	122.4	125.2	123.2	116.5	120.3
80°	80.8	78.5	78.5	74.6	75.5
82.5°	47.1	44.9	44.3	43.0	44.9
85°	22.0	21.4	21.8	21.2	20.4
87.5°	8.0	8.2	8.2	7.7	7.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)