

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: P590411

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

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590411  
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-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**

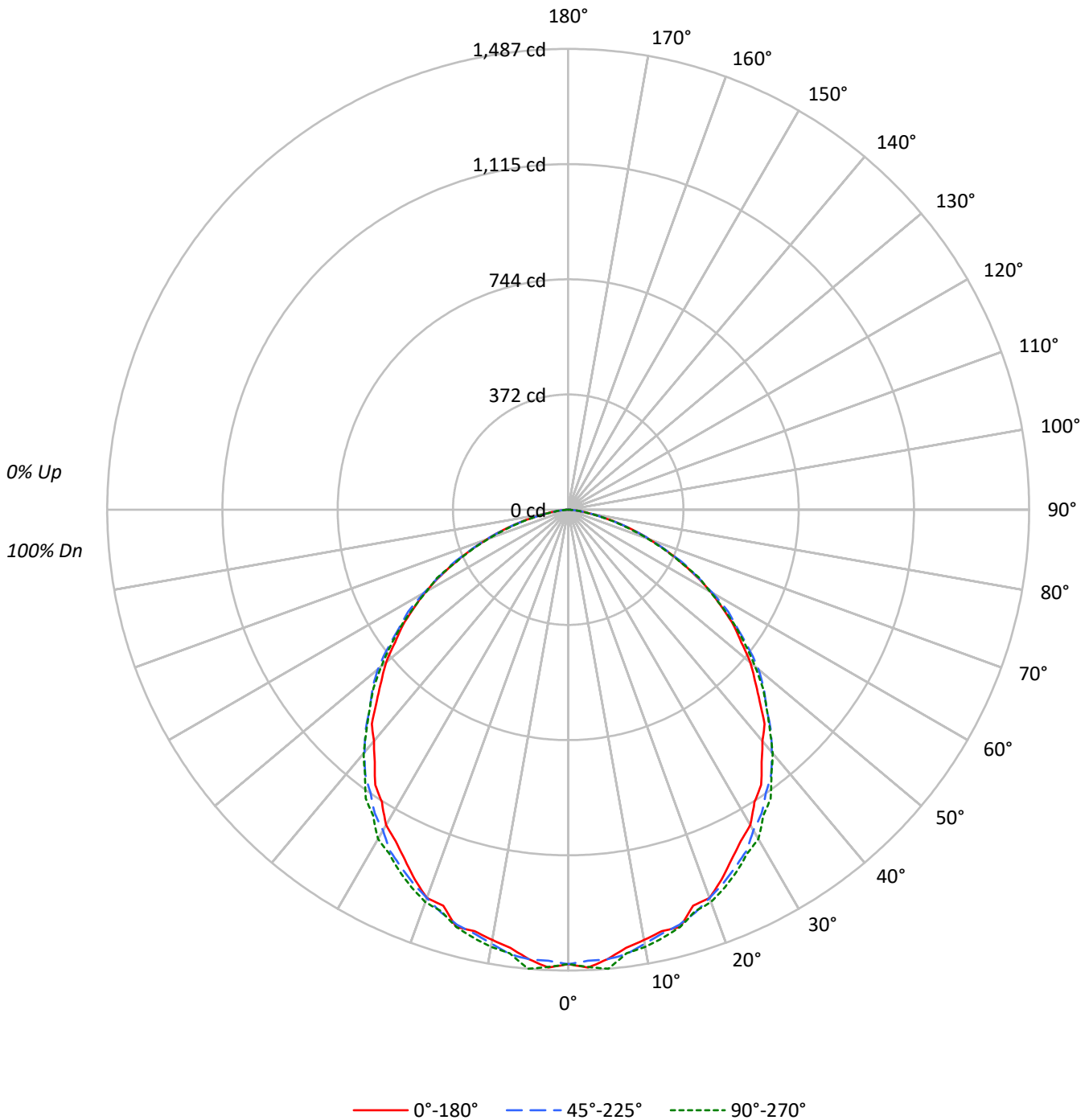
Lumens per Lamp: N/A  
Luminaire Lumens: 3695.0 lumens  
Efficiency: N/A  
Efficacy: 111.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	3945	3945	3945
5°	3932	3934	4017
10°	3853	3886	3913
15°	3883	3862	3884
20°	3817	3817	3858
25°	3700	3781	3823
30°	3649	3713	3812
35°	3563	3656	3738
40°	3425	3589	3606
45°	3321	3439	3444
50°	3212	3357	3293
55°	3060	3120	3098
60°	2862	2890	2838
65°	2551	2617	2534
70°	2190	2197	2135
75°	1734	1730	1664
80°	1162	1130	1085
85°	630	627	584

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3528 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.9	3.7
10°-20°	390.8	10.6
20°-30°	585.6	15.8
30°-40°	694.0	18.8
40°-50°	695.3	18.8
50°-60°	590.2	16.0
60°-70°	397.9	10.8
70°-80°	174.9	4.7
80°-90°	28.4	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°	1114.3	30.2
0°-40°	1808.3	48.9
0°-60°	3093.8	83.7
0°-90°	3695.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3695.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1466	1466	1466	1466	1466	
5°	1456	1452	1456	1452	1487	137
15°	1394	1378	1386	1393	1394	388
25°	1246	1253	1273	1290	1287	576
35°	1085	1088	1113	1139	1138	673
45°	873	889	904	927	905	675
55°	652	648	665	660	660	580
65°	401	395	411	395	398	399
75°	167	163	166	155	160	179
85°	20	20	20	20	19	30
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1466.1	1466.1	1466.1	1466.1	1466.1
2.5°	1478.8	1467.6	1457.2	1469.3	1476.7
5°	1455.7	1452.3	1456.2	1451.9	1486.9
7.5°	1425.8	1438.8	1446.4	1441.7	1443.7
10°	1409.9	1405.3	1422.2	1433.9	1432.2
12.5°	1392.8	1399.6	1400.6	1413.3	1414.4
15°	1393.8	1377.7	1386.2	1393.4	1394.0
17.5°	1339.6	1357.0	1362.9	1379.4	1358.9
20°	1333.0	1320.3	1333.0	1349.9	1347.2
22.5°	1292.3	1278.1	1305.4	1320.3	1319.4
25°	1246.1	1252.9	1273.4	1290.0	1287.4
27.5°	1205.6	1213.6	1242.7	1265.6	1250.9
30°	1174.4	1170.4	1195.0	1215.5	1226.8
32.5°	1118.5	1132.9	1161.7	1182.0	1171.2
35°	1084.7	1087.9	1113.0	1138.8	1138.0
37.5°	1025.4	1040.4	1075.8	1083.0	1076.3
40°	974.9	989.8	1021.8	1029.6	1026.4
42.5°	937.6	940.2	967.7	976.6	962.4
45°	872.6	888.9	903.7	927.0	905.0
47.5°	817.4	824.9	856.7	863.0	851.4
50°	767.2	769.9	801.8	794.1	786.5
52.5°	704.2	715.3	733.3	731.8	722.9
55°	652.3	648.0	665.0	660.4	660.3
57.5°	590.0	597.6	611.6	604.4	592.9
60°	531.7	531.9	537.0	528.9	527.4
62.5°	466.8	469.1	470.2	460.2	476.5
65°	400.7	395.4	411.0	395.2	397.9
67.5°	340.0	342.6	341.1	331.3	335.1
70°	278.3	281.7	279.2	268.0	271.4
72.5°	221.9	217.7	220.3	206.3	212.8
75°	166.8	163.4	166.4	154.7	160.0
77.5°	113.6	116.2	114.3	108.1	111.7
80°	75.0	72.9	72.9	69.3	70.0
82.5°	43.7	41.6	41.1	39.9	41.6
85°	20.4	19.9	20.3	19.7	18.9
87.5°	7.4	7.6	7.6	7.2	6.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)