

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: P562471

Luminaire Tested: FSR-24-4-LD4-1STD-50-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562471  
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-24-4-LD4-1STD-50-UNV-93-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

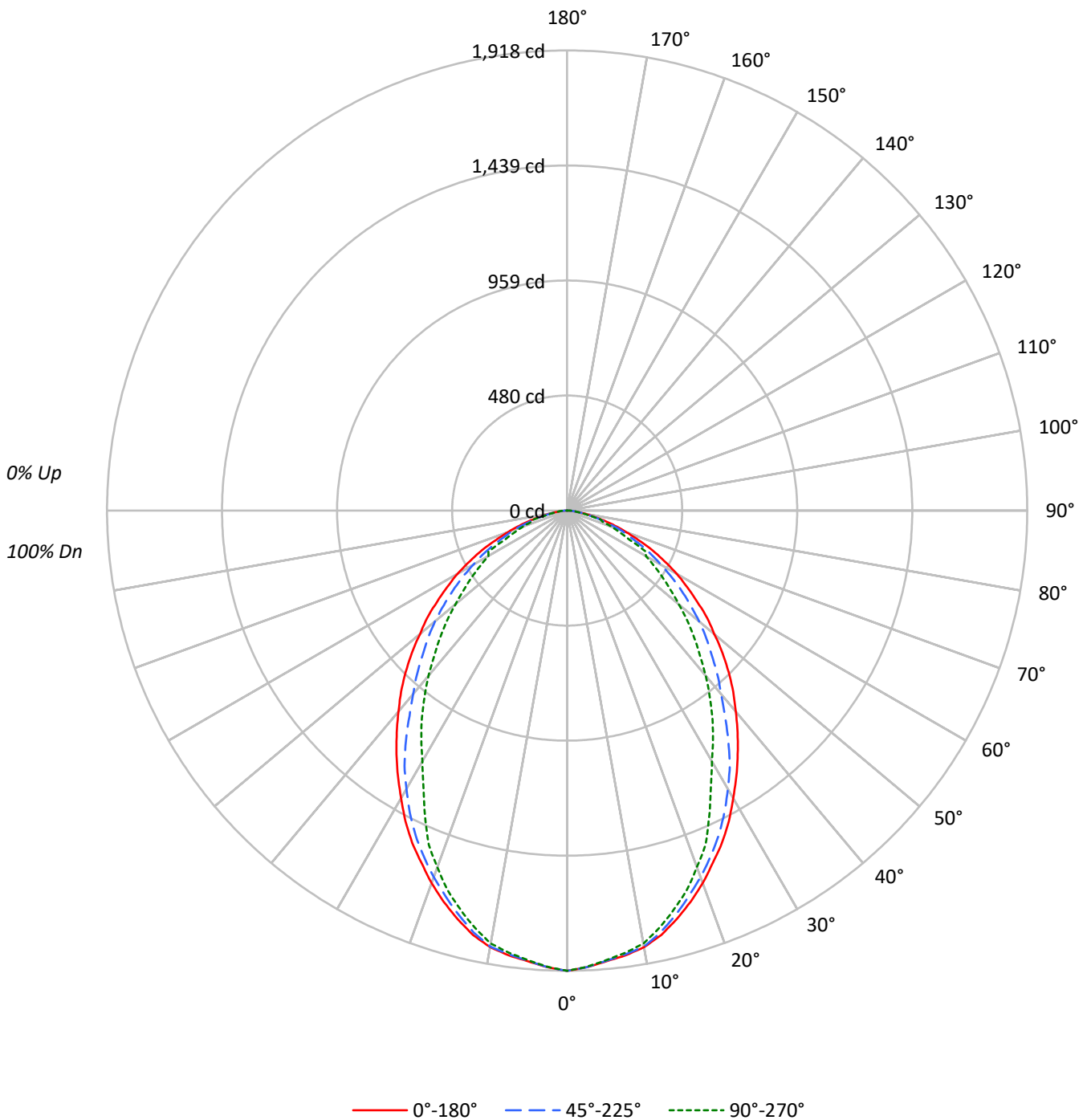
Lumens per Lamp: N/A  
Luminaire Lumens: 3766.0 lumens  
Efficiency: N/A  
Efficacy: 113.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2581	2581	2581
5°	2546	2543	2540
10°	2524	2521	2503
15°	2456	2431	2397
20°	2366	2328	2264
25°	2268	2219	2081
30°	2150	2081	1874
35°	2036	1923	1734
40°	1920	1753	1578
45°	1810	1620	1426
50°	1676	1504	1272
55°	1550	1363	1139
60°	1420	1217	1020
65°	1250	1066	904
70°	1030	934	768
75°	819	715	750
80°	550	515	481
85°	343	411	479

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1810 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.6	4.7
10°-20°	490.1	13.0
20°-30°	678.5	18.0
30°-40°	723.5	19.2
40°-50°	660.0	17.5
50°-60°	517.1	13.7
60°-70°	337.0	8.9
70°-80°	149.3	4.0
80°-90°	32.0	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°	1347.1	35.8
0°-40°	2070.6	55.0
0°-60°	3247.6	86.2
0°-90°	3766.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3766.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1918	1918	1918	1918	1918	
5°	1885	1883	1883	1881	1881	179
15°	1763	1763	1745	1728	1721	496
25°	1528	1519	1495	1442	1402	702
35°	1240	1231	1171	1082	1056	775
45°	951	932	852	781	750	733
55°	661	641	581	512	486	593
65°	392	370	335	342	284	387
75°	158	146	138	131	144	169
85°	22	24	27	29	31	31
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1918.4	1918.4	1918.4	1918.4	1918.4
2.5°	1905.0	1905.0	1905.0	1902.8	1902.8
5°	1885.1	1882.9	1882.9	1880.6	1880.6
7.5°	1869.6	1867.3	1865.1	1862.9	1858.5
10°	1847.4	1847.4	1845.2	1834.1	1831.9
12.5°	1811.9	1809.7	1800.8	1785.3	1780.8
15°	1763.1	1763.1	1745.4	1727.6	1721.0
17.5°	1709.9	1707.7	1685.5	1667.7	1658.9
20°	1652.2	1647.8	1625.6	1596.8	1581.3
22.5°	1587.9	1587.9	1561.3	1523.6	1508.1
25°	1528.0	1519.2	1494.8	1441.5	1401.6
27.5°	1459.3	1446.0	1419.4	1344.0	1297.4
30°	1383.9	1377.2	1339.5	1241.9	1206.5
32.5°	1312.9	1301.8	1261.9	1159.9	1131.1
35°	1239.7	1230.8	1171.0	1082.3	1055.6
37.5°	1166.5	1155.4	1080.0	1009.1	975.8
40°	1093.3	1080.0	998.0	933.7	898.2
42.5°	1024.6	1006.9	927.0	858.3	818.3
45°	951.4	931.5	851.6	780.6	749.6
47.5°	878.2	860.5	787.3	714.1	678.6
50°	800.6	785.1	718.5	645.4	607.7
52.5°	736.3	711.9	647.6	574.4	543.3
55°	660.9	640.9	581.0	512.3	485.7
57.5°	592.1	572.2	516.7	452.4	430.2
60°	527.8	499.0	452.4	397.0	379.2
62.5°	456.9	434.7	394.8	348.2	370.4
65°	392.5	370.4	334.9	341.5	283.9
67.5°	321.6	310.5	279.4	248.4	239.5
70°	261.7	248.4	237.3	204.0	195.2
72.5°	208.5	195.2	179.6	161.9	155.2
75°	157.5	146.4	137.5	130.8	144.2
77.5°	108.7	104.2	97.6	90.9	88.7
80°	71.0	68.8	66.5	64.3	62.1
82.5°	42.1	42.1	42.1	42.1	42.1
85°	22.2	24.4	26.6	28.8	31.0
87.5°	13.3	13.3	15.5	17.7	20.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)