

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: P562152

Luminaire Tested: FSR-24-4-LD4-1HI-50-UNV-93-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562152  
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-LD4-1HI-50-UNV-93-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

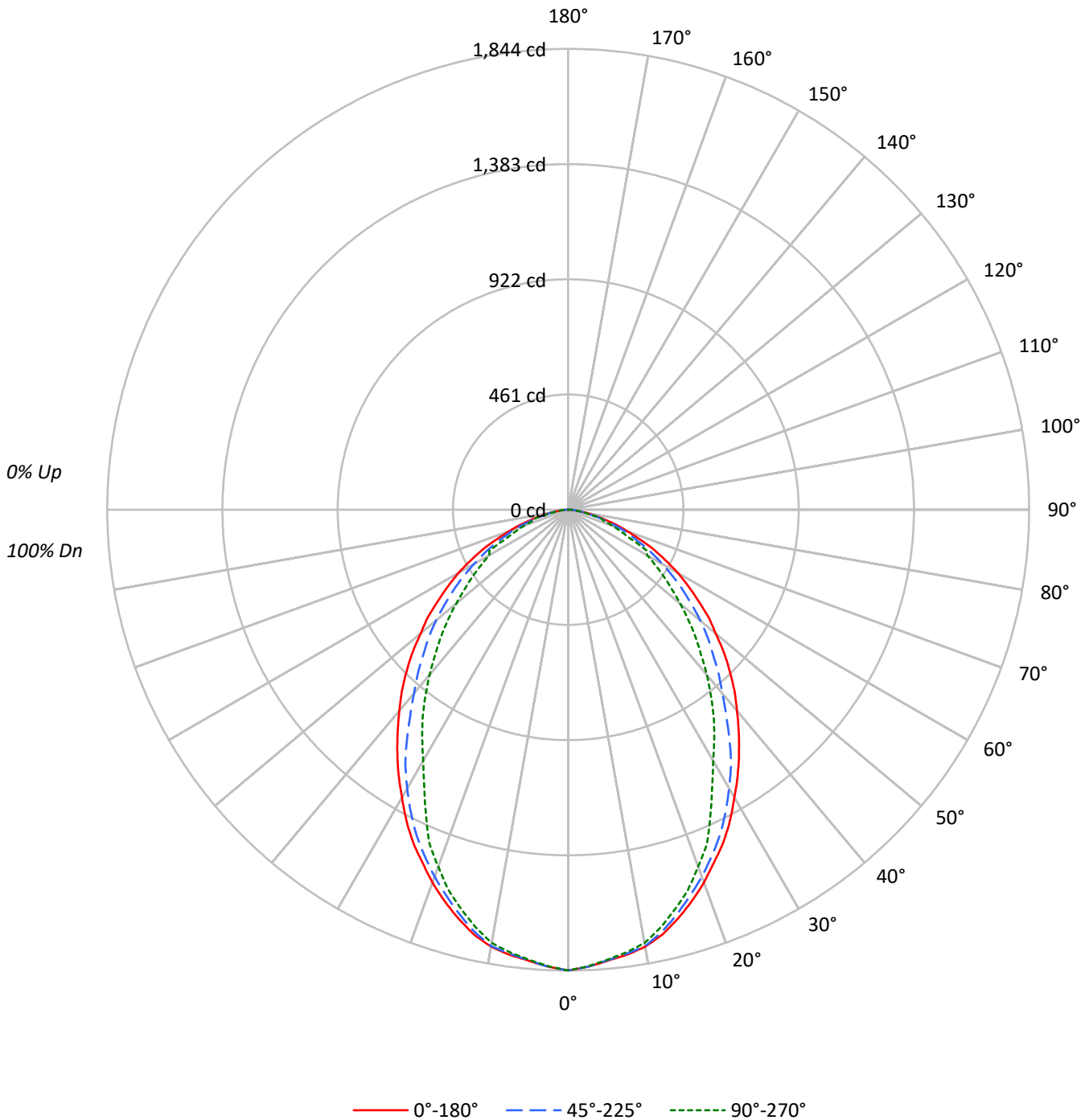
Lumens per Lamp: N/A  
Luminaire Lumens: 3619.0 lumens  
Efficiency: N/A  
Efficacy: 83.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2480	2480	2480
5°	2447	2444	2441
10°	2425	2422	2405
15°	2360	2336	2304
20°	2273	2237	2176
25°	2180	2132	2000
30°	2066	2000	1801
35°	1957	1848	1666
40°	1845	1684	1516
45°	1740	1557	1371
50°	1611	1445	1222
55°	1490	1310	1095
60°	1365	1170	981
65°	1201	1025	869
70°	989	897	738
75°	787	687	720
80°	528	495	463
85°	329	395	460

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1740 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.6	4.7
10°-20°	470.9	13.0
20°-30°	652.0	18.0
30°-40°	695.2	19.2
40°-50°	634.2	17.5
50°-60°	496.9	13.7
60°-70°	323.8	8.9
70°-80°	143.5	4.0
80°-90°	30.8	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°	1294.5	35.8
0°-40°	1989.8	55.0
0°-60°	3120.9	86.2
0°-90°	3619.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3619.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1844	1844	1844	1844	1844	
5°	1812	1809	1809	1807	1807	172
15°	1694	1694	1677	1660	1654	476
25°	1468	1460	1436	1385	1347	674
35°	1191	1183	1125	1040	1014	745
45°	914	895	818	750	720	704
55°	635	616	558	492	467	570
65°	377	356	322	328	273	372
75°	151	141	132	126	138	162
85°	21	23	26	28	30	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1843.5	1843.5	1843.5	1843.5	1843.5
2.5°	1830.7	1830.7	1830.7	1828.6	1828.6
5°	1811.5	1809.4	1809.4	1807.2	1807.2
7.5°	1796.6	1794.5	1792.3	1790.2	1785.9
10°	1775.3	1775.3	1773.1	1762.5	1760.4
12.5°	1741.2	1739.0	1730.5	1715.6	1711.3
15°	1694.3	1694.3	1677.2	1660.2	1653.8
17.5°	1643.1	1641.0	1619.7	1602.6	1594.1
20°	1587.7	1583.5	1562.2	1534.4	1519.5
22.5°	1525.9	1525.9	1500.4	1464.1	1449.2
25°	1468.4	1459.9	1436.4	1385.3	1346.9
27.5°	1402.3	1389.5	1364.0	1291.5	1246.7
30°	1329.9	1323.5	1287.2	1193.5	1159.4
32.5°	1261.7	1251.0	1212.6	1114.6	1086.9
35°	1191.3	1182.8	1125.3	1040.0	1014.4
37.5°	1121.0	1110.3	1037.9	969.7	937.7
40°	1050.7	1037.9	959.0	897.2	863.1
42.5°	984.6	967.6	890.8	824.8	786.4
45°	914.3	895.1	818.4	750.2	720.3
47.5°	843.9	826.9	756.6	686.2	652.1
50°	769.4	754.4	690.5	620.2	583.9
52.5°	707.6	684.1	622.3	552.0	522.1
55°	635.1	615.9	558.4	492.3	466.7
57.5°	569.0	549.8	496.6	434.8	413.4
60°	507.2	479.5	434.8	381.5	364.4
62.5°	439.0	417.7	379.3	334.6	355.9
65°	377.2	355.9	321.8	328.2	272.8
67.5°	309.0	298.4	268.5	238.7	230.2
70°	251.5	238.7	228.0	196.1	187.5
72.5°	200.3	187.5	172.6	155.6	149.2
75°	151.3	140.7	132.1	125.7	138.5
77.5°	104.4	100.2	93.8	87.4	85.2
80°	68.2	66.1	63.9	61.8	59.7
82.5°	40.5	40.5	40.5	40.5	40.5
85°	21.3	23.4	25.6	27.7	29.8
87.5°	12.8	12.8	14.9	17.0	19.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)