

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: P562464

Luminaire Tested: FSR-24-4-LD4-1STD-50-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562464  
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-93-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

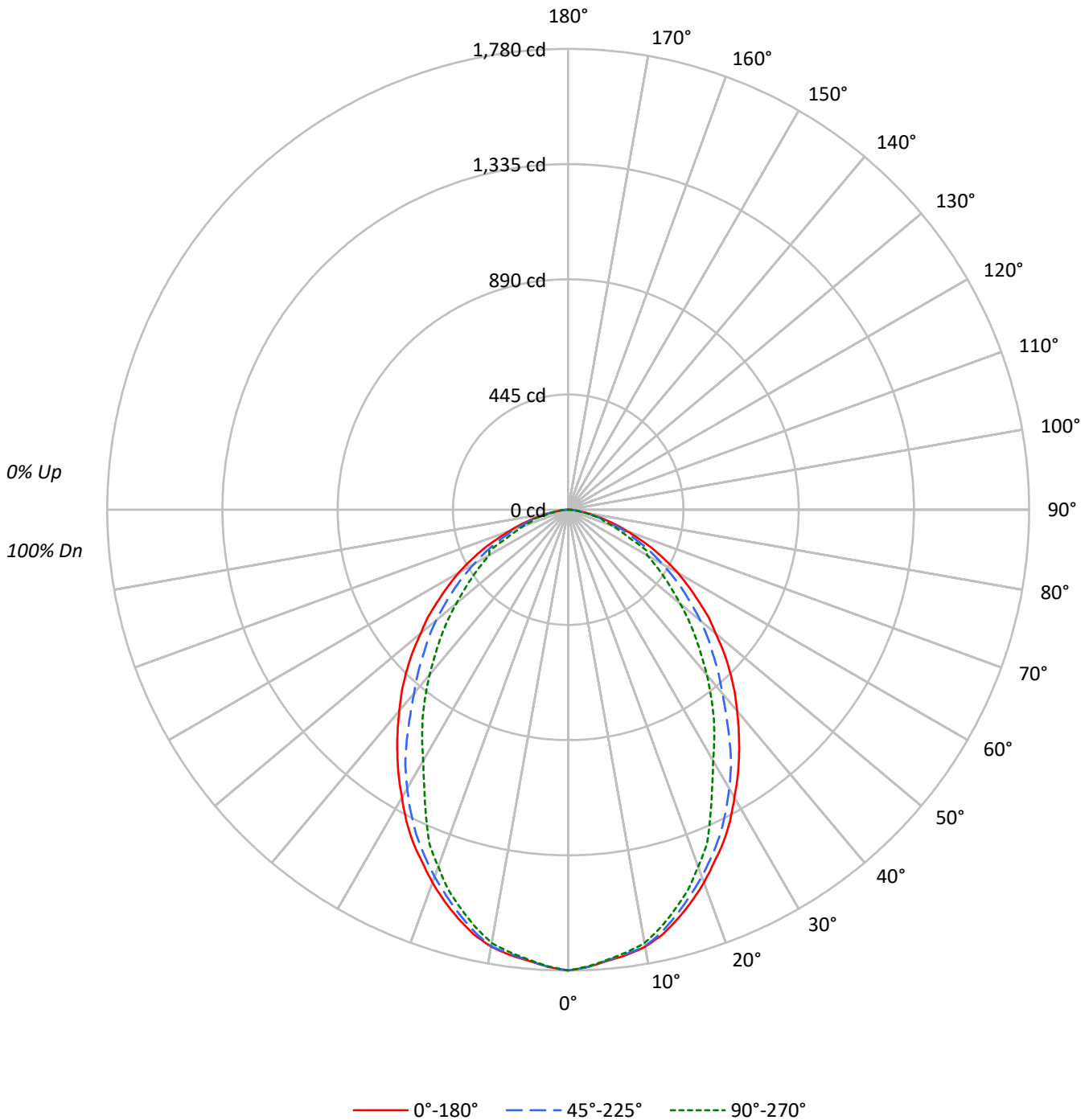
Lumens per Lamp: N/A  
Luminaire Lumens: 3494.0 lumens  
Efficiency: N/A  
Efficacy: 104.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	2395	2395	2395
5°	2362	2359	2357
10°	2342	2339	2322
15°	2279	2256	2224
20°	2195	2160	2101
25°	2105	2059	1931
30°	1995	1931	1739
35°	1889	1784	1609
40°	1782	1626	1464
45°	1680	1503	1323
50°	1555	1396	1180
55°	1438	1265	1057
60°	1318	1129	947
65°	1160	989	839
70°	955	866	712
75°	760	663	695
80°	510	478	446
85°	318	381	445

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1680 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.7	4.7
10°-20°	454.7	13.0
20°-30°	629.5	18.0
30°-40°	671.2	19.2
40°-50°	612.3	17.5
50°-60°	479.7	13.7
60°-70°	312.7	8.9
70°-80°	138.5	4.0
80°-90°	29.7	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°	1249.8	35.8
0°-40°	1921.0	55.0
0°-60°	3013.1	86.2
0°-90°	3494.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3494.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1780	1780	1780	1780	1780	
5°	1749	1747	1747	1745	1745	166
15°	1636	1636	1619	1603	1597	460
25°	1418	1409	1387	1337	1300	651
35°	1150	1142	1086	1004	979	719
45°	883	864	790	724	696	680
55°	613	595	539	475	451	550
65°	364	344	311	317	263	359
75°	146	136	128	121	134	157
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1779.8	1779.8	1779.8	1779.8	1779.8
2.5°	1767.5	1767.5	1767.5	1765.4	1765.4
5°	1748.9	1746.9	1746.9	1744.8	1744.8
7.5°	1734.5	1732.5	1730.4	1728.4	1724.2
10°	1714.0	1714.0	1711.9	1701.6	1699.6
12.5°	1681.0	1679.0	1670.7	1656.3	1652.2
15°	1635.8	1635.8	1619.3	1602.8	1596.7
17.5°	1586.4	1584.3	1563.8	1547.3	1539.1
20°	1532.9	1528.8	1508.2	1481.4	1467.0
22.5°	1473.2	1473.2	1448.5	1413.5	1399.1
25°	1417.7	1409.4	1386.8	1337.4	1300.4
27.5°	1353.9	1341.5	1316.8	1246.9	1203.7
30°	1283.9	1277.8	1242.8	1152.2	1119.3
32.5°	1218.1	1207.8	1170.8	1076.1	1049.4
35°	1150.2	1142.0	1086.4	1004.1	979.4
37.5°	1082.3	1072.0	1002.0	936.2	905.3
40°	1014.4	1002.0	925.9	866.2	833.3
42.5°	950.6	934.1	860.1	796.3	759.2
45°	882.7	864.2	790.1	724.3	695.5
47.5°	814.8	798.3	730.4	662.5	629.6
50°	742.8	728.4	666.7	598.8	563.8
52.5°	683.1	660.5	600.8	532.9	504.1
55°	613.2	594.6	539.1	475.3	450.6
57.5°	549.4	530.9	479.4	419.7	399.2
60°	489.7	463.0	419.7	368.3	351.8
62.5°	423.9	403.3	366.2	323.0	343.6
65°	364.2	343.6	310.7	316.9	263.4
67.5°	298.3	288.1	259.3	230.4	222.2
70°	242.8	230.4	220.2	189.3	181.1
72.5°	193.4	181.1	166.7	150.2	144.0
75°	146.1	135.8	127.6	121.4	133.7
77.5°	100.8	96.7	90.5	84.4	82.3
80°	65.8	63.8	61.7	59.7	57.6
82.5°	39.1	39.1	39.1	39.1	39.1
85°	20.6	22.6	24.7	26.7	28.8
87.5°	12.3	12.3	14.4	16.5	18.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)