

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: P561999

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-81-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561999  
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-35-UNV-81-97-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

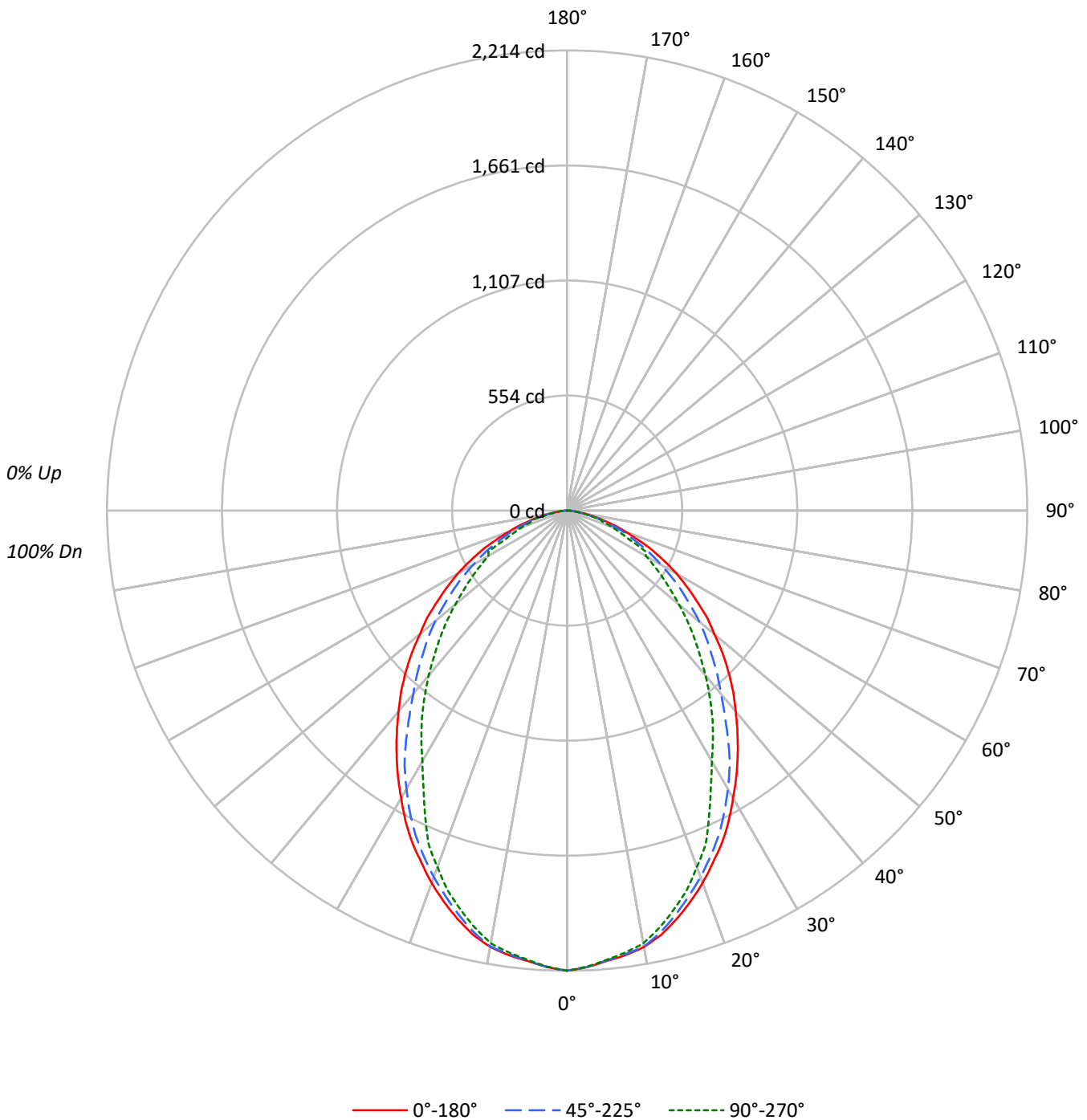
Lumens per Lamp: N/A  
Luminaire Lumens: 4346.0 lumens  
Efficiency: N/A  
Efficacy: 100.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2979	2979	2979
5°	2938	2935	2931
10°	2913	2909	2888
15°	2834	2806	2766
20°	2730	2686	2613
25°	2618	2561	2401
30°	2481	2402	2163
35°	2350	2220	2001
40°	2216	2023	1821
45°	2089	1870	1646
50°	1934	1736	1468
55°	1789	1573	1315
60°	1639	1405	1178
65°	1442	1230	1043
70°	1188	1077	886
75°	945	825	865
80°	635	595	556
85°	395	474	553

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2089 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	206.1	4.7
10°-20°	565.6	13.0
20°-30°	783.0	18.0
30°-40°	834.9	19.2
40°-50°	761.7	17.5
50°-60°	596.7	13.7
60°-70°	388.9	8.9
70°-80°	172.3	4.0
80°-90°	37.0	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°	1554.6	35.8
0°-40°	2389.5	55.0
0°-60°	3747.8	86.2
0°-90°	4346.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4346.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2214	2214	2214	2214	2214	
5°	2175	2173	2173	2170	2170	206
15°	2035	2035	2014	1994	1986	572
25°	1763	1753	1725	1664	1618	810
35°	1431	1420	1351	1249	1218	894
45°	1098	1075	983	901	865	846
55°	763	740	670	591	560	684
65°	453	427	386	394	328	446
75°	182	169	159	151	166	195
85°	26	28	31	33	36	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2213.8	2213.8	2213.8	2213.8	2213.8
2.5°	2198.4	2198.4	2198.4	2195.9	2195.9
5°	2175.4	2172.8	2172.8	2170.3	2170.3
7.5°	2157.5	2154.9	2152.4	2149.8	2144.7
10°	2131.9	2131.9	2129.3	2116.5	2114.0
12.5°	2090.9	2088.4	2078.2	2060.2	2055.1
15°	2034.6	2034.6	2014.2	1993.7	1986.0
17.5°	1973.2	1970.7	1945.1	1924.6	1914.4
20°	1906.7	1901.6	1876.0	1842.7	1824.8
22.5°	1832.5	1832.5	1801.7	1758.2	1740.3
25°	1763.4	1753.1	1725.0	1663.5	1617.5
27.5°	1684.0	1668.7	1638.0	1550.9	1497.2
30°	1597.0	1589.3	1545.8	1433.2	1392.3
32.5°	1515.1	1502.3	1456.2	1338.5	1305.2
35°	1430.6	1420.4	1351.3	1248.9	1218.2
37.5°	1346.2	1333.4	1246.4	1164.5	1126.1
40°	1261.7	1246.4	1151.7	1077.5	1036.5
42.5°	1182.4	1161.9	1069.8	990.4	944.4
45°	1097.9	1074.9	982.8	900.9	865.0
47.5°	1013.5	993.0	908.6	824.1	783.1
50°	923.9	906.0	829.2	744.8	701.2
52.5°	849.7	821.5	747.3	662.9	627.0
55°	762.7	739.6	670.5	591.2	560.5
57.5°	683.3	660.3	596.3	522.1	496.5
60°	609.1	575.8	522.1	458.1	437.6
62.5°	527.2	501.6	455.6	401.8	427.4
65°	453.0	427.4	386.5	394.1	327.6
67.5°	371.1	358.3	322.5	286.6	276.4
70°	302.0	286.6	273.8	235.5	225.2
72.5°	240.6	225.2	207.3	186.8	179.2
75°	181.7	168.9	158.7	151.0	166.4
77.5°	125.4	120.3	112.6	104.9	102.4
80°	81.9	79.3	76.8	74.2	71.7
82.5°	48.6	48.6	48.6	48.6	48.6
85°	25.6	28.2	30.7	33.3	35.8
87.5°	15.4	15.4	17.9	20.5	23.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)