

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: P561996

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561996  
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-81-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

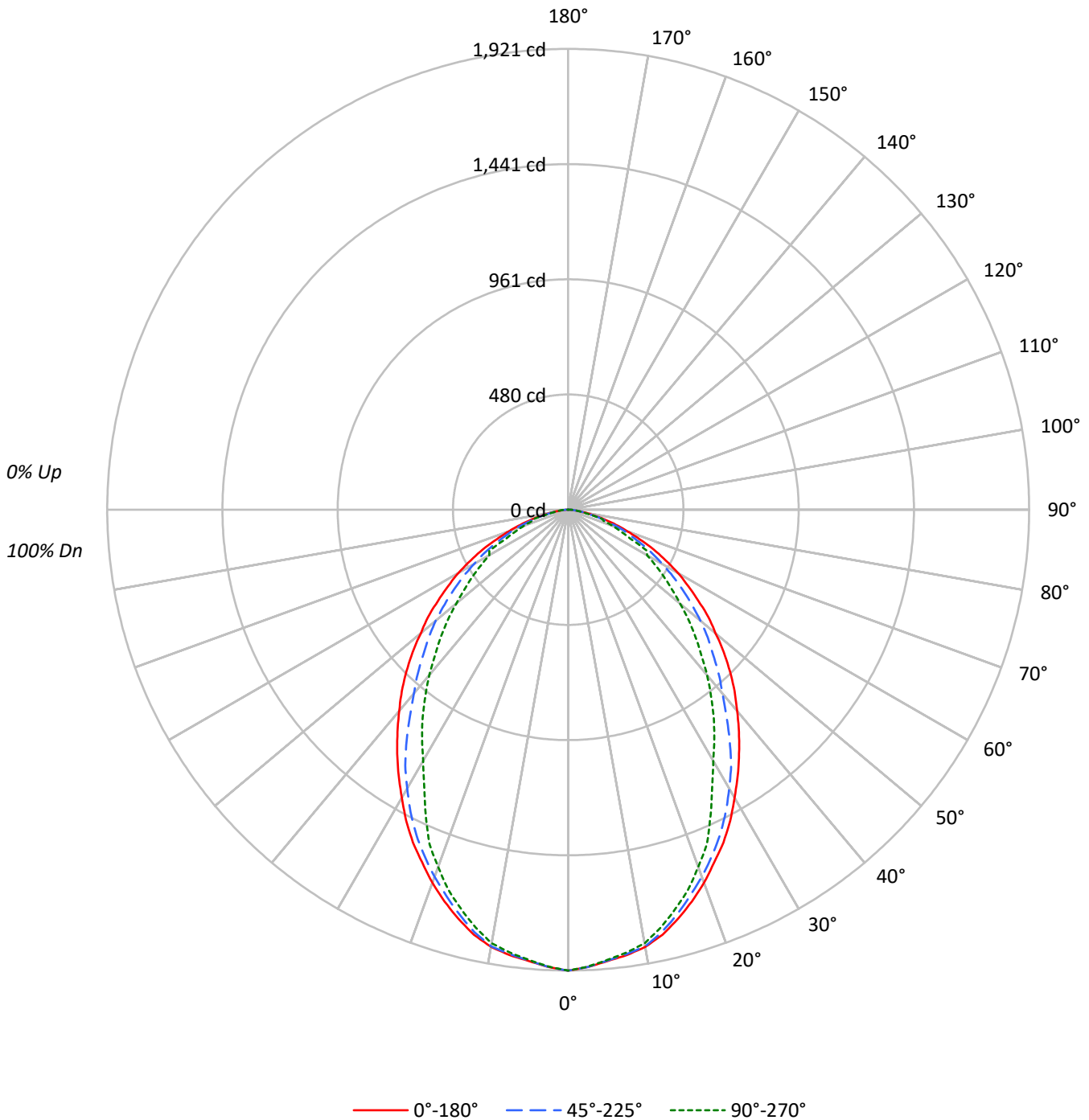
Lumens per Lamp: N/A  
Luminaire Lumens: 3772.0 lumens  
Efficiency: N/A  
Efficacy: 87.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2585	2585	2585
5°	2550	2547	2544
10°	2528	2525	2507
15°	2460	2435	2401
20°	2370	2331	2268
25°	2272	2223	2084
30°	2153	2085	1877
35°	2040	1926	1737
40°	1923	1756	1580
45°	1813	1623	1429
50°	1679	1506	1274
55°	1553	1365	1141
60°	1423	1219	1022
65°	1252	1068	905
70°	1031	935	769
75°	820	716	751
80°	551	516	482
85°	343	412	480

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1813 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.9	4.7
10°-20°	490.9	13.0
20°-30°	679.6	18.0
30°-40°	724.6	19.2
40°-50°	661.1	17.5
50°-60°	517.9	13.7
60°-70°	337.5	8.9
70°-80°	149.5	4.0
80°-90°	32.1	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°	1349.3	35.8
0°-40°	2073.9	55.0
0°-60°	3252.8	86.2
0°-90°	3772.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3772.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1921	1921	1921	1921	1921	
5°	1888	1886	1886	1884	1884	179
15°	1766	1766	1748	1730	1724	496
25°	1530	1522	1497	1444	1404	703
35°	1242	1233	1173	1084	1057	776
45°	953	933	853	782	751	734
55°	662	642	582	513	486	594
65°	393	371	335	342	284	387
75°	158	147	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°	1921.4	1921.4	1921.4	1921.4	1921.4
2.5°	1908.1	1908.1	1908.1	1905.9	1905.9
5°	1888.1	1885.9	1885.9	1883.6	1883.6
7.5°	1872.5	1870.3	1868.1	1865.9	1861.4
10°	1850.3	1850.3	1848.1	1837.0	1834.8
12.5°	1814.8	1812.6	1803.7	1788.1	1783.7
15°	1765.9	1765.9	1748.1	1730.4	1723.7
17.5°	1712.6	1710.4	1688.2	1670.4	1661.5
20°	1654.9	1650.4	1628.2	1599.3	1583.8
22.5°	1590.4	1590.4	1563.8	1526.0	1510.5
25°	1530.5	1521.6	1497.1	1443.8	1403.8
27.5°	1461.6	1448.3	1421.6	1346.1	1299.4
30°	1386.1	1379.4	1341.7	1243.9	1208.4
32.5°	1315.0	1303.9	1263.9	1161.7	1132.9
35°	1241.7	1232.8	1172.8	1084.0	1057.3
37.5°	1168.4	1157.3	1081.8	1010.7	977.4
40°	1095.1	1081.8	999.6	935.2	899.6
42.5°	1026.2	1008.5	928.5	859.6	819.7
45°	952.9	932.9	853.0	781.9	750.8
47.5°	879.6	861.9	788.6	715.3	679.7
50°	801.9	786.3	719.7	646.4	608.6
52.5°	737.5	713.0	648.6	575.3	544.2
55°	661.9	641.9	582.0	513.1	486.5
57.5°	593.1	573.1	517.6	453.1	430.9
60°	528.7	499.8	453.1	397.6	379.8
62.5°	457.6	435.4	395.4	348.7	371.0
65°	393.2	371.0	335.4	342.1	284.3
67.5°	322.1	311.0	279.9	248.8	239.9
70°	262.1	248.8	237.7	204.4	195.5
72.5°	208.8	195.5	179.9	162.2	155.5
75°	157.7	146.6	137.7	131.1	144.4
77.5°	108.8	104.4	97.7	91.1	88.9
80°	71.1	68.9	66.6	64.4	62.2
82.5°	42.2	42.2	42.2	42.2	42.2
85°	22.2	24.4	26.7	28.9	31.1
87.5°	13.3	13.3	15.5	17.8	20.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)