

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: P562724

Luminaire Tested: FSR-24-4-LD4-2LO-35-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562724  
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-LD4-2LO-35-UNV-93-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

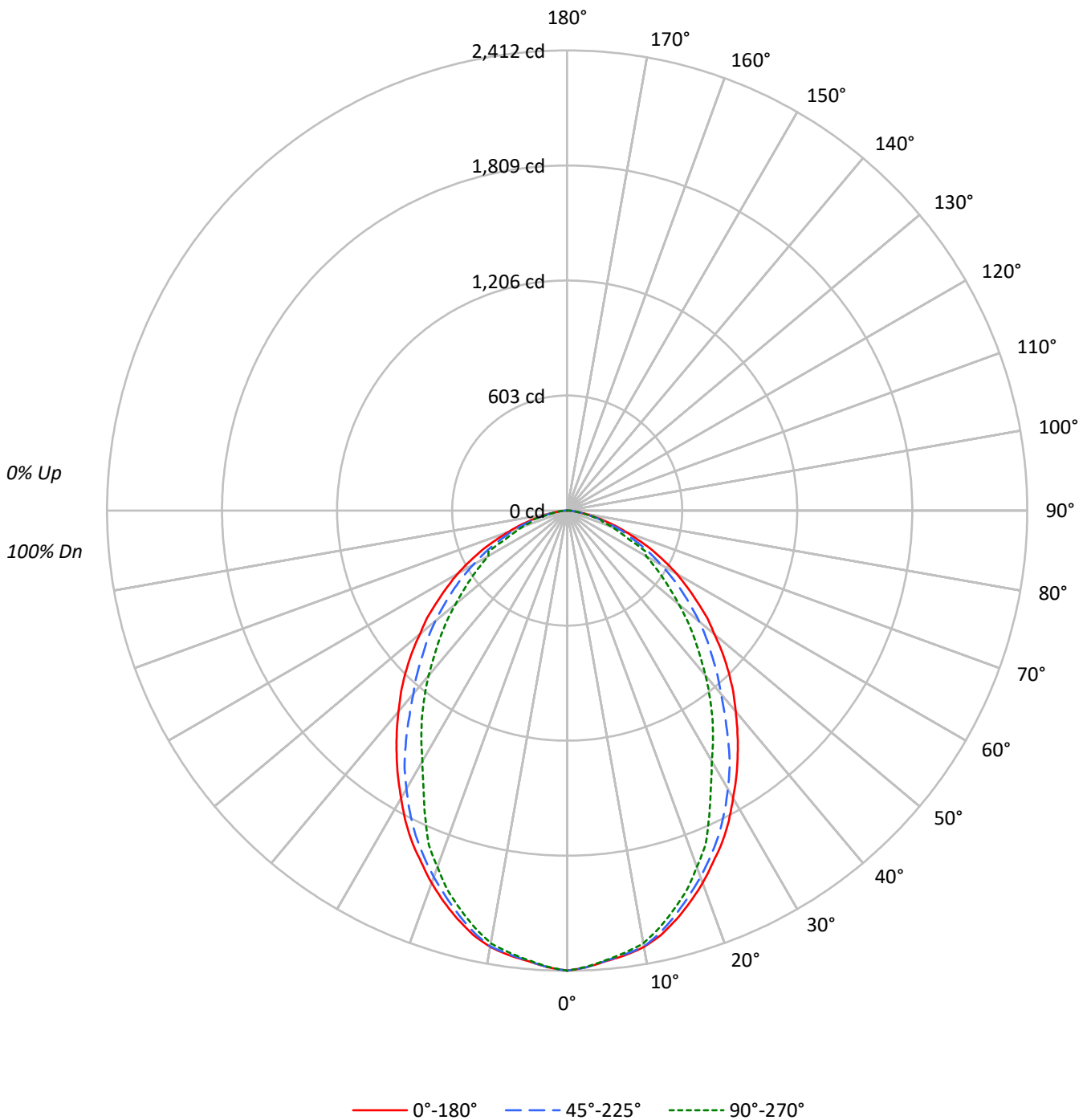
Lumens per Lamp: N/A  
Luminaire Lumens: 4735.0 lumens  
Efficiency: N/A  
Efficacy: 101.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																												
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°	3245	3245	3245
5°	3201	3197	3194
10°	3173	3170	3147
15°	3088	3057	3014
20°	2974	2927	2847
25°	2852	2790	2616
30°	2703	2617	2357
35°	2560	2418	2180
40°	2415	2204	1984
45°	2276	2037	1793
50°	2107	1891	1599
55°	1949	1714	1433
60°	1786	1531	1283
65°	1571	1340	1136
70°	1294	1174	965
75°	1029	899	942
80°	691	649	605
85°	431	517	602

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2276 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	224.5	4.7
10°-20°	616.2	13.0
20°-30°	853.1	18.0
30°-40°	909.6	19.2
40°-50°	829.8	17.5
50°-60°	650.1	13.7
60°-70°	423.7	8.9
70°-80°	187.7	4.0
80°-90°	40.3	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°	1693.8	35.8
0°-40°	2603.4	55.0
0°-60°	4083.3	86.2
0°-90°	4735.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4735.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2412	2412	2412	2412	2412	
5°	2370	2367	2367	2364	2364	225
15°	2217	2217	2194	2172	2164	623
25°	1921	1910	1879	1812	1762	882
35°	1559	1548	1472	1361	1327	974
45°	1196	1171	1071	982	942	921
55°	831	806	731	644	611	745
65°	494	466	421	429	357	486
75°	198	184	173	164	181	212
85°	28	31	34	36	39	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2411.9	2411.9	2411.9	2411.9	2411.9
2.5°	2395.2	2395.2	2395.2	2392.4	2392.4
5°	2370.1	2367.3	2367.3	2364.5	2364.5
7.5°	2350.6	2347.8	2345.0	2342.2	2336.7
10°	2322.7	2322.7	2319.9	2306.0	2303.2
12.5°	2278.1	2275.3	2264.2	2244.6	2239.1
15°	2216.8	2216.8	2194.5	2172.1	2163.8
17.5°	2149.8	2147.0	2119.2	2096.9	2085.7
20°	2077.3	2071.8	2043.9	2007.6	1988.1
22.5°	1996.5	1996.5	1963.0	1915.6	1896.1
25°	1921.2	1910.0	1879.4	1812.4	1762.3
27.5°	1834.8	1818.0	1784.6	1689.8	1631.2
30°	1739.9	1731.6	1684.2	1561.5	1516.9
32.5°	1650.7	1636.8	1586.6	1458.3	1422.1
35°	1558.7	1547.5	1472.3	1360.7	1327.3
37.5°	1466.7	1452.7	1357.9	1268.7	1226.9
40°	1374.7	1357.9	1254.8	1173.9	1129.3
42.5°	1288.2	1265.9	1165.5	1079.1	1028.9
45°	1196.2	1171.1	1070.7	981.5	942.5
47.5°	1104.2	1081.9	989.9	897.9	853.2
50°	1006.6	987.1	903.4	811.4	764.0
52.5°	925.7	895.1	814.2	722.2	683.2
55°	830.9	805.8	730.6	644.1	610.7
57.5°	744.5	719.4	649.7	568.8	540.9
60°	663.6	627.4	568.8	499.1	476.8
62.5°	574.4	546.5	496.3	437.8	465.7
65°	493.5	465.7	421.0	429.4	356.9
67.5°	404.3	390.4	351.3	312.3	301.1
70°	329.0	312.3	298.4	256.5	245.4
72.5°	262.1	245.4	225.9	203.6	195.2
75°	198.0	184.0	172.9	164.5	181.2
77.5°	136.6	131.1	122.7	114.3	111.5
80°	89.2	86.4	83.7	80.9	78.1
82.5°	53.0	53.0	53.0	53.0	53.0
85°	27.9	30.7	33.5	36.2	39.0
87.5°	16.7	16.7	19.5	22.3	25.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)