

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: P590895

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-93-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590895  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4LO-50-UNV-93-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

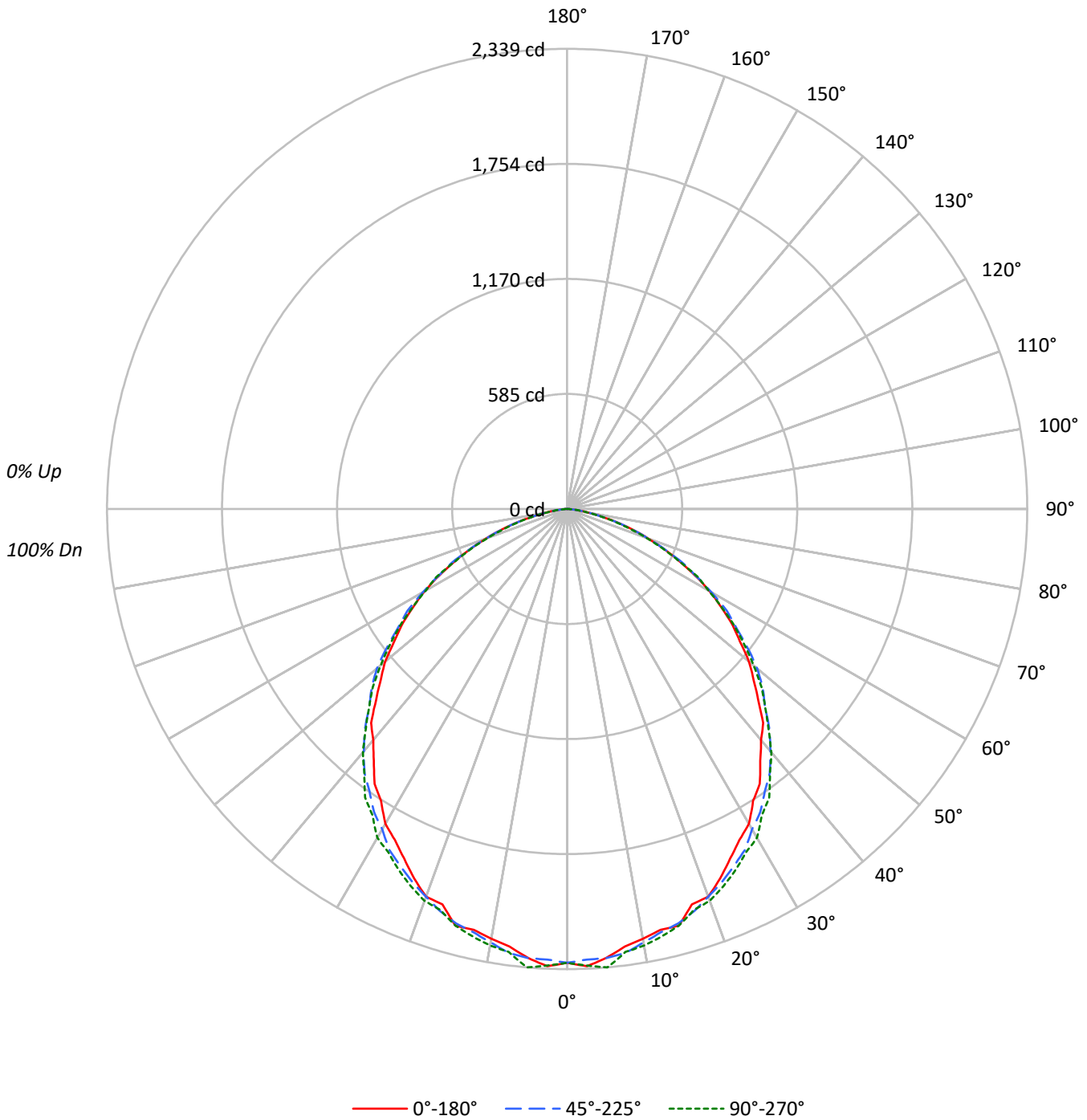
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5813.0 lumens  
Efficiency: N/A  
Efficacy: 124.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' 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																		
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86									86																			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73									73																			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62									62																			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53									53																			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46									46																			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41									41																			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36									36																			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32									32																			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29									29																			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26									26																			

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

	0°	45°	90°
0°	6207	6207	6207
5°	6186	6189	6319
10°	6061	6114	6157
15°	6109	6076	6109
20°	6005	6005	6069
25°	5821	5948	6013
30°	5741	5842	5997
35°	5606	5753	5882
40°	5388	5647	5672
45°	5225	5410	5418
50°	5053	5281	5180
55°	4814	4908	4873
60°	4502	4547	4465
65°	4014	4117	3986
70°	3445	3456	3360
75°	2728	2722	2616
80°	1827	1777	1708
85°	994	985	920

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5550 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	217.0	3.7
10°-20°	614.9	10.6
20°-30°	921.2	15.8
30°-40°	1091.8	18.8
40°-50°	1093.9	18.8
50°-60°	928.5	16.0
60°-70°	626.0	10.8
70°-80°	275.1	4.7
80°-90°	44.7	0.8
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°	1753.1	30.2
0°-40°	2844.9	48.9
0°-60°	4867.3	83.7
0°-90°	5813.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5813.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2306	2306	2306	2306	2306	
5°	2290	2285	2291	2284	2339	216
15°	2193	2167	2181	2192	2193	611
25°	1960	1971	2003	2030	2025	906
35°	1706	1711	1751	1792	1790	1059
45°	1373	1398	1422	1458	1424	1062
55°	1026	1019	1046	1039	1039	913
65°	630	622	646	622	626	627
75°	262	257	262	243	252	281
85°	32	31	32	31	30	47
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2306.5	2306.5	2306.5	2306.5	2306.5
2.5°	2326.4	2308.8	2292.5	2311.5	2323.1
5°	2290.1	2284.7	2291.0	2284.1	2339.2
7.5°	2243.0	2263.6	2275.5	2268.0	2271.3
10°	2218.0	2210.9	2237.4	2255.8	2253.1
12.5°	2191.2	2201.9	2203.4	2223.4	2225.2
15°	2192.7	2167.4	2180.8	2192.1	2193.0
17.5°	2107.5	2134.9	2144.2	2170.1	2137.9
20°	2097.1	2077.1	2097.1	2123.6	2119.4
22.5°	2033.1	2010.7	2053.6	2077.1	2075.7
25°	1960.4	1971.1	2003.3	2029.5	2025.3
27.5°	1896.7	1909.2	1955.0	1991.1	1967.9
30°	1847.5	1841.3	1880.0	1912.2	1930.0
32.5°	1759.7	1782.3	1827.6	1859.5	1842.5
35°	1706.4	1711.4	1751.1	1791.6	1790.4
37.5°	1613.2	1636.7	1692.4	1703.7	1693.3
40°	1533.7	1557.2	1607.5	1619.7	1614.7
42.5°	1475.0	1479.2	1522.3	1536.3	1514.0
45°	1372.9	1398.5	1421.7	1458.3	1423.8
47.5°	1285.9	1297.8	1347.8	1357.7	1339.5
50°	1207.0	1211.1	1261.5	1249.3	1237.4
52.5°	1107.8	1125.4	1153.7	1151.3	1137.3
55°	1026.2	1019.4	1046.2	1039.0	1038.7
57.5°	928.2	940.2	962.2	950.9	932.7
60°	836.5	836.8	844.9	832.0	829.7
62.5°	734.4	737.9	739.7	723.9	749.6
65°	630.4	622.1	646.5	621.8	626.0
67.5°	534.8	539.0	536.6	521.1	527.1
70°	437.8	443.1	439.3	421.7	427.0
72.5°	349.0	342.5	346.6	324.6	334.7
75°	262.4	257.0	261.8	243.3	251.6
77.5°	178.7	182.8	179.9	170.0	175.7
80°	117.9	114.7	114.7	109.0	110.2
82.5°	68.8	65.5	64.6	62.8	65.5
85°	32.2	31.3	31.9	31.0	29.8
87.5°	11.6	11.9	11.9	11.3	10.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)