

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: P590899

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-93-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590899  
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-93-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

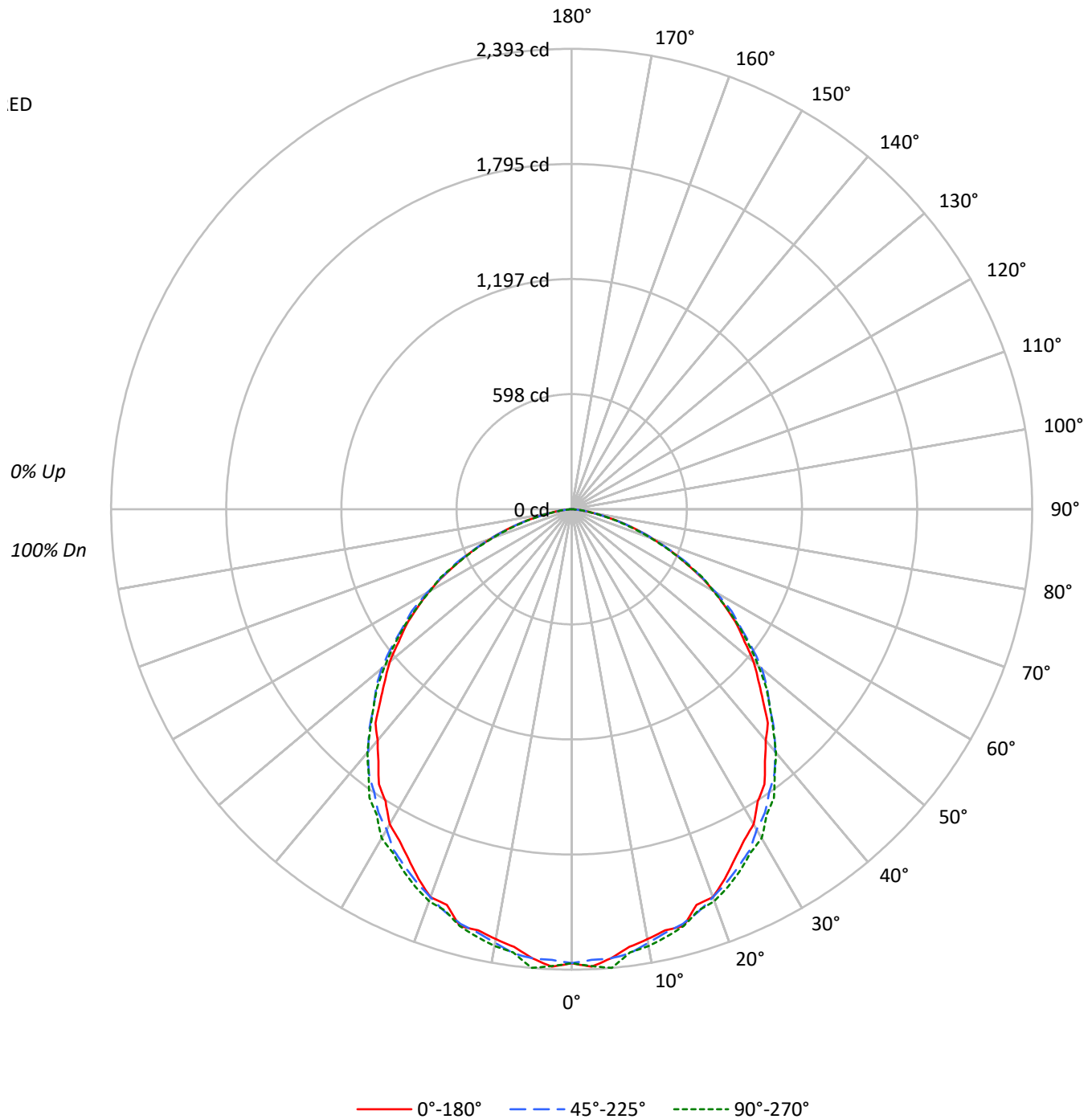
Lumens per Lamp: N/A  
Luminaire Lumens: 5946.0 lumens  
Efficiency: N/A  
Efficacy: 127.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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					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	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°	6349	6349	6349
5°	6328	6330	6463
10°	6199	6254	6298
15°	6249	6215	6249
20°	6143	6143	6208
25°	5954	6084	6151
30°	5872	5975	6134
35°	5734	5884	6016
40°	5511	5776	5802
45°	5344	5534	5543
50°	5169	5402	5299
55°	4925	5020	4985
60°	4605	4651	4567
65°	4106	4211	4077
70°	3523	3535	3437
75°	2791	2784	2676
80°	1869	1818	1746
85°	1016	1007	942

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5677 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.9	3.7
10°-20°	629.0	10.6
20°-30°	942.3	15.8
30°-40°	1116.8	18.8
40°-50°	1118.9	18.8
50°-60°	949.7	16.0
60°-70°	640.3	10.8
70°-80°	281.4	4.7
80°-90°	45.7	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°	1793.2	30.2
0°-40°	2910.0	48.9
0°-60°	4978.6	83.7
0°-90°	5946.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5946.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2359	2359	2359	2359	2359	
5°	2342	2337	2343	2336	2393	221
15°	2243	2217	2231	2242	2243	625
25°	2005	2016	2049	2076	2072	927
35°	1745	1751	1791	1832	1831	1084
45°	1404	1430	1454	1492	1456	1086
55°	1050	1043	1070	1063	1062	934
65°	645	636	661	636	640	641
75°	268	263	268	249	257	288
85°	33	32	33	32	30	48
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2359.2	2359.2	2359.2	2359.2	2359.2
2.5°	2379.6	2361.7	2344.9	2364.4	2376.3
5°	2342.5	2337.0	2343.4	2336.4	2392.7
7.5°	2294.3	2315.4	2327.5	2319.9	2323.3
10°	2268.8	2261.4	2288.6	2307.4	2304.7
12.5°	2241.3	2252.3	2253.8	2274.2	2276.1
15°	2242.9	2217.0	2230.7	2242.3	2243.2
17.5°	2155.7	2183.8	2193.2	2219.7	2186.8
20°	2145.1	2124.7	2145.1	2172.2	2167.9
22.5°	2079.6	2056.7	2100.6	2124.7	2123.1
25°	2005.3	2016.2	2049.1	2075.9	2071.7
27.5°	1940.1	1952.9	1999.8	2036.6	2012.9
30°	1889.8	1883.4	1923.0	1955.9	1974.2
32.5°	1800.0	1823.1	1869.4	1902.0	1884.6
35°	1745.4	1750.6	1791.1	1832.5	1831.3
37.5°	1650.1	1674.1	1731.1	1742.7	1732.0
40°	1568.8	1592.8	1644.3	1656.8	1651.6
42.5°	1508.7	1513.0	1557.2	1571.5	1548.6
45°	1404.3	1430.5	1454.2	1491.7	1456.4
47.5°	1315.3	1327.5	1378.7	1388.7	1370.1
50°	1234.6	1238.9	1290.3	1277.8	1265.7
52.5°	1133.2	1151.1	1180.1	1177.6	1163.3
55°	1049.7	1042.7	1070.1	1062.8	1062.5
57.5°	949.5	961.7	984.2	972.6	954.0
60°	855.7	856.0	864.2	851.1	848.6
62.5°	751.2	754.8	756.7	740.5	766.7
65°	644.9	636.3	661.3	636.0	640.3
67.5°	547.1	551.3	548.9	533.1	539.2
70°	447.8	453.3	449.3	431.3	436.8
72.5°	357.0	350.3	354.6	332.0	342.4
75°	268.4	262.9	267.8	248.9	257.4
77.5°	182.8	187.0	184.0	173.9	179.7
80°	120.6	117.3	117.3	111.5	112.7
82.5°	70.4	67.0	66.1	64.3	67.0
85°	32.9	32.0	32.6	31.7	30.5
87.5°	11.9	12.2	12.2	11.6	11.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)