

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: P590703

Luminaire Tested: FSR-24-2-LD4-3STD-50-UNV-93-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590703  
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-LD4-3STD-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**

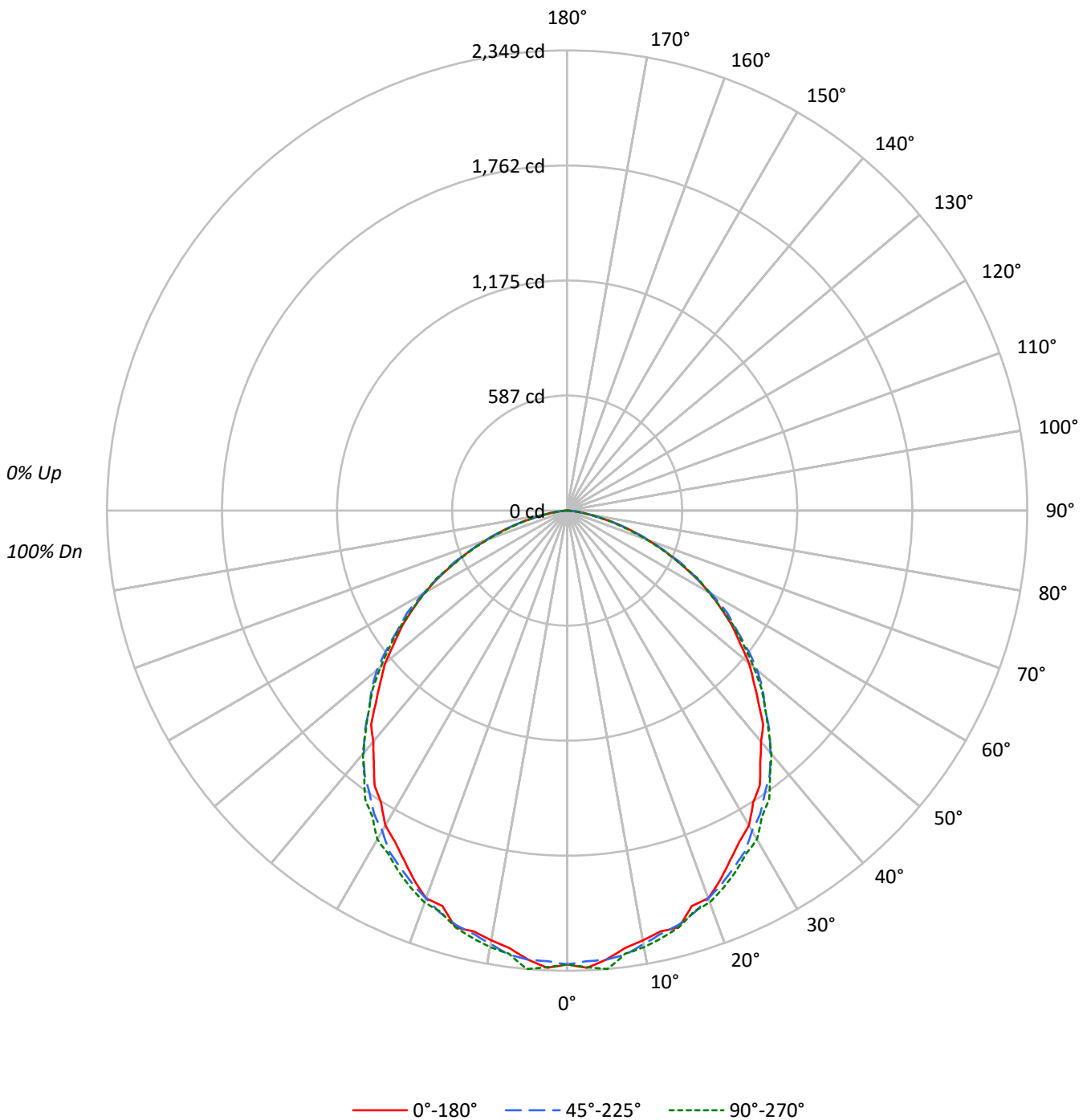
Lumens per Lamp: N/A  
Luminaire Lumens: 5838.0 lumens  
Efficiency: N/A  
Efficacy: 116.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6233	6233	6233
5°	6213	6215	6346
10°	6087	6140	6183
15°	6135	6102	6136
20°	6031	6031	6095
25°	5846	5974	6039
30°	5766	5867	6023
35°	5630	5777	5907
40°	5411	5671	5696
45°	5247	5434	5442
50°	5075	5304	5202
55°	4835	4929	4894
60°	4521	4567	4484
65°	4032	4134	4003
70°	3459	3471	3375
75°	2740	2733	2627
80°	1835	1784	1715
85°	997	988	923

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5574 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	217.9	3.7
10°-20°	617.5	10.6
20°-30°	925.2	15.8
30°-40°	1096.5	18.8
40°-50°	1098.6	18.8
50°-60°	932.5	16.0
60°-70°	628.7	10.8
70°-80°	276.2	4.7
80°-90°	44.9	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°	1760.6	30.2
0°-40°	2857.1	48.9
0°-60°	4888.2	83.7
0°-90°	5838.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5838.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2316	2316	2316	2316	2316	
5°	2300	2294	2301	2294	2349	217
15°	2202	2177	2190	2202	2202	614
25°	1969	1980	2012	2038	2034	910
35°	1714	1719	1759	1799	1798	1064
45°	1379	1404	1428	1465	1430	1067
55°	1031	1024	1051	1044	1043	917
65°	633	625	649	624	629	630
75°	264	258	263	244	253	282
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°	2316.4	2316.4	2316.4	2316.4	2316.4
2.5°	2336.4	2318.8	2302.3	2321.5	2333.1
5°	2299.9	2294.5	2300.8	2293.9	2349.3
7.5°	2252.7	2273.3	2285.3	2277.8	2281.1
10°	2227.5	2220.4	2247.0	2265.5	2262.8
12.5°	2200.6	2211.4	2212.9	2232.9	2234.7
15°	2202.1	2176.7	2190.2	2201.5	2202.4
17.5°	2116.6	2144.1	2153.4	2179.4	2147.1
20°	2106.1	2086.1	2106.1	2132.7	2128.5
22.5°	2041.8	2019.4	2062.5	2086.1	2084.6
25°	1968.8	1979.6	2011.9	2038.2	2034.0
27.5°	1904.8	1917.4	1963.5	1999.6	1976.3
30°	1855.5	1849.2	1888.1	1920.4	1938.3
32.5°	1767.3	1790.0	1835.5	1867.5	1850.4
35°	1713.7	1718.8	1758.6	1799.3	1798.1
37.5°	1620.1	1643.7	1699.7	1711.0	1700.6
40°	1540.3	1563.9	1614.4	1626.7	1621.6
42.5°	1481.3	1485.5	1528.9	1543.0	1520.5
45°	1378.8	1404.5	1427.8	1464.6	1429.9
47.5°	1291.4	1303.4	1353.6	1363.5	1345.3
50°	1212.2	1216.4	1266.9	1254.6	1242.7
52.5°	1112.6	1130.2	1158.6	1156.2	1142.2
55°	1030.6	1023.7	1050.7	1043.5	1043.2
57.5°	932.2	944.2	966.3	955.0	936.7
60°	840.1	840.4	848.5	835.6	833.2
62.5°	737.5	741.1	742.9	727.1	752.8
65°	633.2	624.8	649.3	624.5	628.7
67.5°	537.1	541.3	538.9	523.4	529.4
70°	439.6	445.0	441.1	423.5	428.9
72.5°	350.5	343.9	348.1	326.0	336.2
75°	263.5	258.1	262.9	244.3	252.7
77.5°	179.4	183.6	180.6	170.8	176.5
80°	118.4	115.1	115.1	109.5	110.7
82.5°	69.1	65.8	64.9	63.1	65.8
85°	32.3	31.4	32.0	31.1	29.9
87.5°	11.7	12.0	12.0	11.4	10.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)