

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: P590686

Luminaire Tested: FSR-24-2-LD4-3STD-50-UNV-81-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590686  
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-81-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

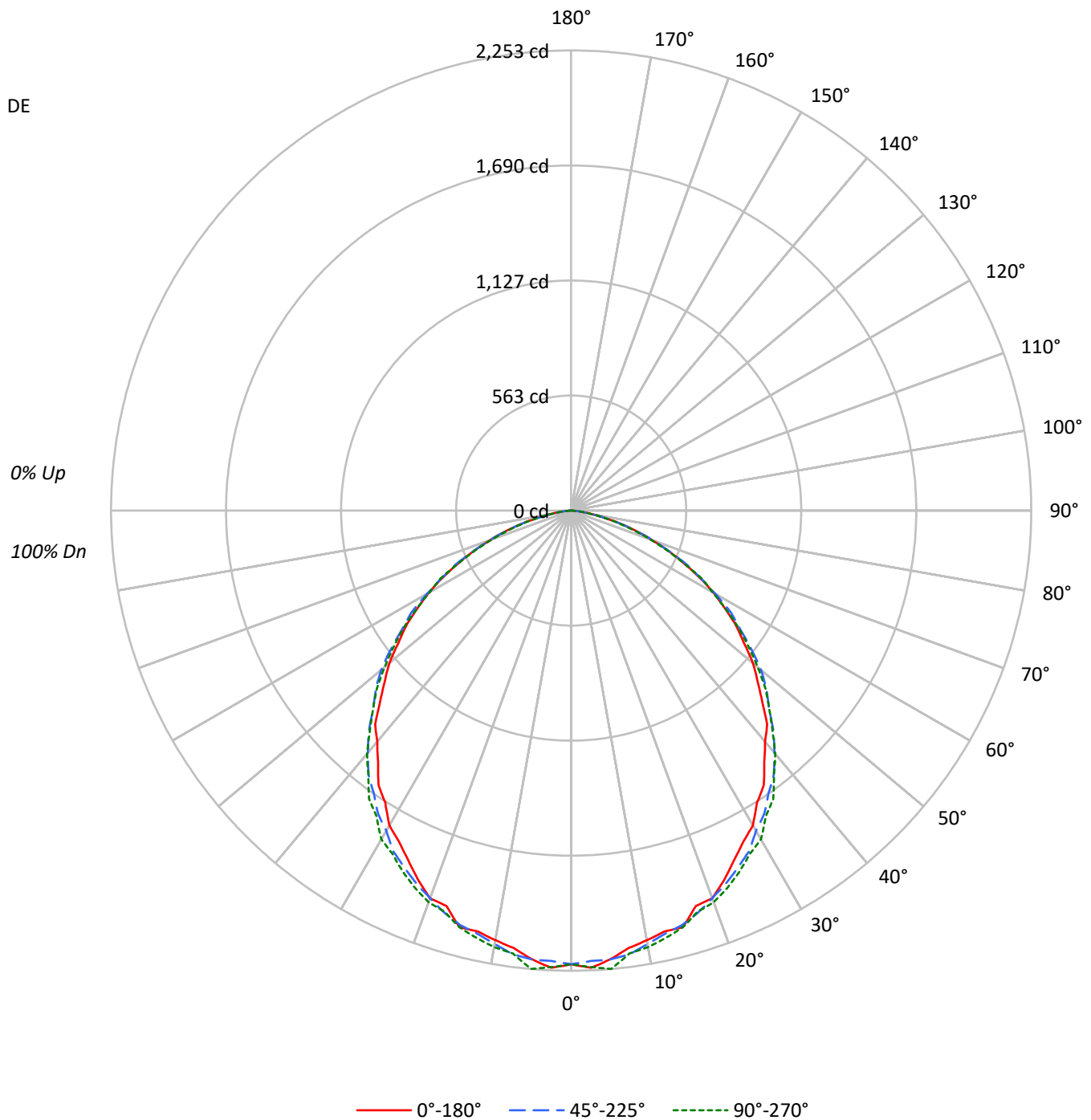
Lumens per Lamp: N/A  
Luminaire Lumens: 5598.0 lumens  
Efficiency: N/A  
Efficacy: 112.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

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

	0°	45°	90°
0°	5977	5977	5977
5°	5957	5960	6085
10°	5837	5887	5929
15°	5883	5851	5884
20°	5783	5783	5845
25°	5605	5728	5791
30°	5528	5626	5775
35°	5398	5540	5664
40°	5188	5438	5462
45°	5031	5210	5218
50°	4866	5086	4989
55°	4637	4727	4693
60°	4336	4379	4300
65°	3866	3964	3838
70°	3317	3328	3235
75°	2627	2621	2519
80°	1760	1711	1644
85°	957	948	886

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5345 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.9	3.7
10°-20°	592.1	10.6
20°-30°	887.1	15.8
30°-40°	1051.4	18.8
40°-50°	1053.4	18.8
50°-60°	894.2	16.0
60°-70°	602.9	10.8
70°-80°	264.9	4.7
80°-90°	43.0	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°	1688.2	30.2
0°-40°	2739.7	48.9
0°-60°	4687.2	83.7
0°-90°	5598.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5598.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2205	2200	2206	2200	2253	208
15°	2112	2087	2100	2111	2112	588
25°	1888	1898	1929	1954	1950	873
35°	1643	1648	1686	1725	1724	1020
45°	1322	1347	1369	1404	1371	1023
55°	988	982	1008	1001	1000	879
65°	607	599	623	599	603	604
75°	253	248	252	234	242	271
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2221.1	2221.1	2221.1	2221.1	2221.1
2.5°	2240.4	2223.4	2207.7	2226.0	2237.2
5°	2205.4	2200.2	2206.2	2199.6	2252.7
7.5°	2160.1	2179.8	2191.3	2184.1	2187.3
10°	2136.0	2129.1	2154.6	2172.4	2169.8
12.5°	2110.2	2120.5	2121.9	2141.1	2142.9
15°	2111.6	2087.2	2100.1	2111.0	2111.9
17.5°	2029.6	2056.0	2064.8	2089.8	2058.8
20°	2019.5	2000.3	2019.5	2045.1	2041.0
22.5°	1957.9	1936.4	1977.7	2000.3	1998.9
25°	1887.9	1898.2	1929.2	1954.4	1950.4
27.5°	1826.5	1838.6	1882.7	1917.4	1895.1
30°	1779.2	1773.2	1810.5	1841.4	1858.6
32.5°	1694.6	1716.4	1760.0	1790.7	1774.3
35°	1643.3	1648.1	1686.3	1725.3	1724.1
37.5°	1553.5	1576.2	1629.8	1640.7	1630.7
40°	1476.9	1499.6	1548.1	1559.8	1554.9
42.5°	1420.4	1424.5	1466.0	1479.5	1458.0
45°	1322.1	1346.7	1369.1	1404.4	1371.1
47.5°	1238.3	1249.8	1298.0	1307.4	1290.0
50°	1162.3	1166.4	1214.8	1203.1	1191.6
52.5°	1066.8	1083.8	1111.0	1108.7	1095.2
55°	988.3	981.7	1007.5	1000.6	1000.3
57.5°	893.9	905.4	926.6	915.7	898.2
60°	805.6	805.9	813.6	801.3	799.0
62.5°	707.2	710.7	712.4	697.2	721.8
65°	607.1	599.1	622.6	598.8	602.8
67.5°	515.1	519.1	516.8	501.9	507.6
70°	421.6	426.7	423.0	406.1	411.2
72.5°	336.1	329.8	333.8	312.6	322.3
75°	252.7	247.5	252.1	234.3	242.3
77.5°	172.1	176.1	173.2	163.8	169.2
80°	113.6	110.4	110.4	105.0	106.1
82.5°	66.2	63.1	62.2	60.5	63.1
85°	31.0	30.1	30.7	29.8	28.7
87.5°	11.2	11.5	11.5	10.9	10.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)