

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: P590495

Luminaire Tested: FSR-24-2-LD4-3HI-50-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590495  
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-LD4-3HI-50-UNV-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

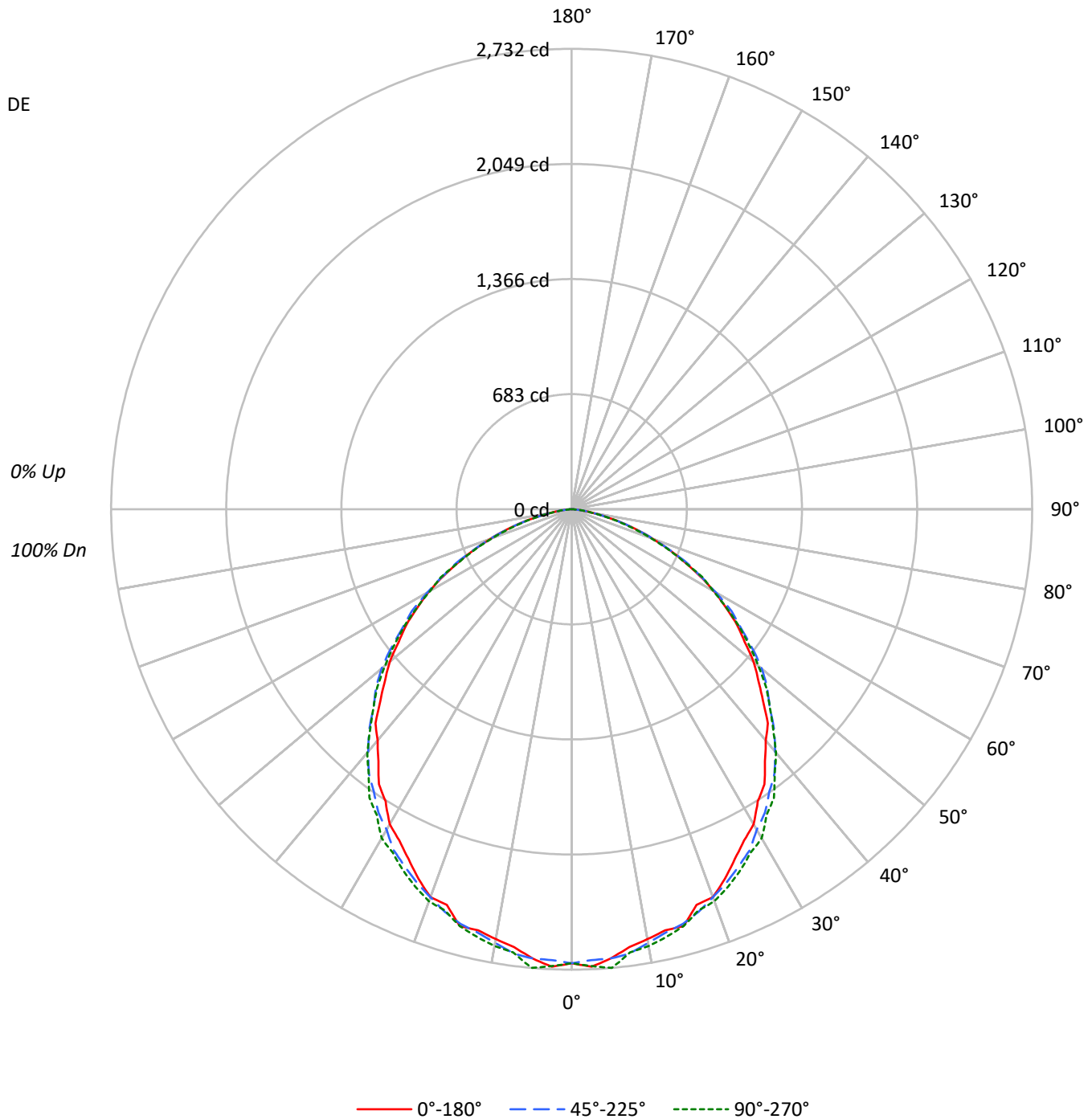
Lumens per Lamp: N/A  
Luminaire Lumens: 6789.0 lumens  
Efficiency: N/A  
Efficacy: 104.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	7249	7249	7249
5°	7225	7227	7380
10°	7078	7140	7190
15°	7134	7095	7135
20°	7014	7014	7088
25°	6798	6947	7023
30°	6705	6823	7004
35°	6547	6718	6869
40°	6292	6595	6624
45°	6102	6319	6328
50°	5901	6168	6050
55°	5623	5732	5691
60°	5258	5310	5215
65°	4688	4808	4655
70°	4023	4036	3924
75°	3186	3178	3056
80°	2134	2075	1994
85°	1161	1149	1074

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6482 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	253.4	3.7
10°-20°	718.1	10.6
20°-30°	1075.9	15.8
30°-40°	1275.2	18.8
40°-50°	1277.5	18.8
50°-60°	1084.4	16.0
60°-70°	731.1	10.8
70°-80°	321.3	4.7
80°-90°	52.2	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°	2047.4	30.2
0°-40°	3322.5	48.9
0°-60°	5684.4	83.7
0°-90°	6789.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6789.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2694	2694	2694	2694	2694	
5°	2675	2668	2676	2668	2732	252
15°	2561	2531	2547	2560	2561	713
25°	2290	2302	2340	2370	2365	1058
35°	1993	1999	2045	2092	2091	1237
45°	1603	1633	1660	1703	1663	1240
55°	1198	1190	1222	1214	1213	1066
65°	736	727	755	726	731	732
75°	306	300	306	284	294	328
85°	38	36	37	36	35	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2693.7	2693.7	2693.7	2693.7	2693.7
2.5°	2717.0	2696.5	2677.4	2699.6	2713.2
5°	2674.6	2668.3	2675.6	2667.6	2732.0
7.5°	2619.6	2643.6	2657.5	2648.8	2652.7
10°	2590.4	2582.1	2613.0	2634.6	2631.4
12.5°	2559.1	2571.6	2573.4	2596.7	2598.8
15°	2560.8	2531.3	2546.9	2560.1	2561.2
17.5°	2461.4	2493.4	2504.2	2534.4	2496.8
20°	2449.2	2425.9	2449.2	2480.2	2475.3
22.5°	2374.4	2348.3	2398.4	2425.9	2424.2
25°	2289.6	2302.1	2339.6	2370.3	2365.4
27.5°	2215.1	2229.7	2283.3	2325.4	2298.3
30°	2157.7	2150.4	2195.7	2233.2	2254.1
32.5°	2055.1	2081.6	2134.4	2171.7	2151.8
35°	1992.9	1998.8	2045.1	2092.4	2091.0
37.5°	1884.0	1911.5	1976.5	1989.8	1977.6
40°	1791.2	1818.6	1877.4	1891.7	1885.8
42.5°	1722.6	1727.5	1777.9	1794.3	1768.2
45°	1603.4	1633.3	1660.4	1703.2	1662.8
47.5°	1501.8	1515.7	1574.1	1585.6	1564.4
50°	1409.6	1414.5	1473.3	1459.0	1445.1
52.5°	1293.8	1314.3	1347.4	1344.6	1328.2
55°	1198.5	1190.5	1221.8	1213.5	1213.1
57.5°	1084.1	1098.0	1123.7	1110.5	1089.3
60°	977.0	977.3	986.7	971.8	969.0
62.5°	857.7	861.8	863.9	845.5	875.4
65°	736.3	726.6	755.1	726.2	731.1
67.5°	624.6	629.5	626.7	608.6	615.6
70°	511.3	517.5	513.0	492.5	498.7
72.5°	407.6	400.0	404.8	379.1	390.9
75°	306.4	300.2	305.7	284.2	293.9
77.5°	208.7	213.5	210.1	198.6	205.2
80°	137.7	133.9	133.9	127.3	128.7
82.5°	80.3	76.5	75.5	73.4	76.5
85°	37.6	36.5	37.2	36.2	34.8
87.5°	13.6	13.9	13.9	13.2	12.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)