

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: P563486

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-82-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563486  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-3STD-35-UNV-82-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

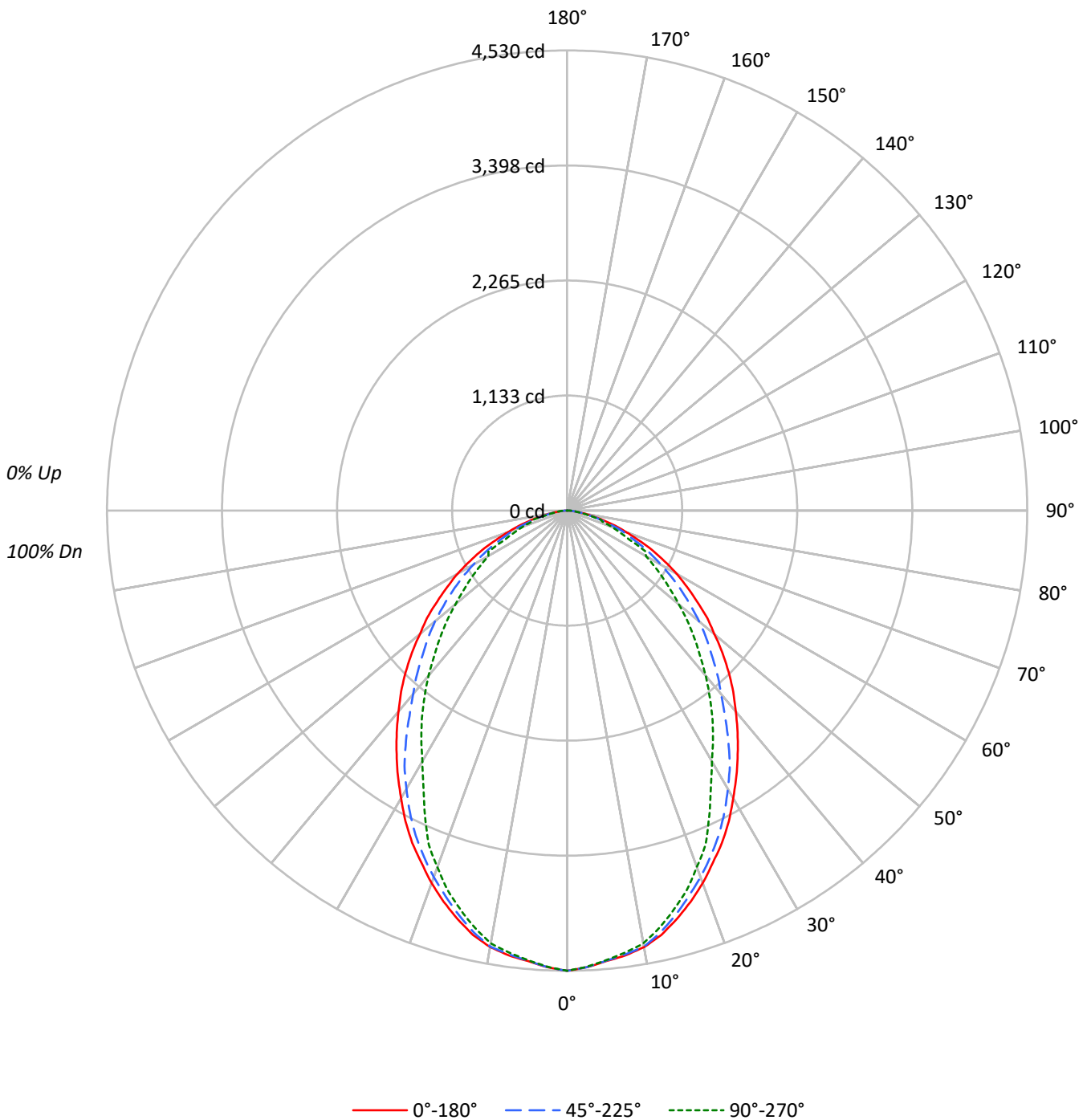
Lumens per Lamp: N/A  
Luminaire Lumens: 8894.0 lumens  
Efficiency: N/A  
Efficacy: 89.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	6096	6096	6096
5°	6013	6006	5999
10°	5961	5954	5911
15°	5800	5742	5661
20°	5587	5497	5347
25°	5357	5241	4914
30°	5078	4915	4427
35°	4809	4542	4095
40°	4535	4140	3726
45°	4275	3827	3369
50°	3958	3552	3004
55°	3661	3219	2691
60°	3354	2875	2410
65°	2951	2518	2134
70°	2431	2205	1813
75°	1933	1688	1770
80°	1299	1217	1137
85°	809	971	1132

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4275 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	421.7	4.7
10°-20°	1157.4	13.0
20°-30°	1602.3	18.0
30°-40°	1708.6	19.2
40°-50°	1558.7	17.5
50°-60°	1221.1	13.7
60°-70°	795.9	8.9
70°-80°	352.6	4.0
80°-90°	75.7	0.9
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°	3181.5	35.8
0°-40°	4890.0	55.0
0°-60°	7669.8	86.2
0°-90°	8894.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8894.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4530	4530	4530	4530	4530	
5°	4452	4447	4447	4441	4441	423
15°	4164	4164	4122	4080	4064	1171
25°	3609	3588	3530	3404	3310	1657
35°	2928	2907	2765	2556	2493	1830
45°	2247	2200	2011	1844	1770	1731
55°	1561	1514	1372	1210	1147	1400
65°	927	875	791	807	670	914
75°	372	346	325	309	340	399
85°	52	58	63	68	73	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4530.5	4530.5	4530.5	4530.5	4530.5
2.5°	4499.1	4499.1	4499.1	4493.8	4493.8
5°	4451.9	4446.7	4446.7	4441.4	4441.4
7.5°	4415.3	4410.0	4404.8	4399.5	4389.1
10°	4362.9	4362.9	4357.6	4331.5	4326.2
12.5°	4279.1	4273.8	4252.9	4216.2	4205.8
15°	4163.9	4163.9	4122.0	4080.1	4064.3
17.5°	4038.2	4032.9	3980.5	3938.6	3917.7
20°	3902.0	3891.5	3839.1	3771.0	3734.4
22.5°	3750.1	3750.1	3687.2	3598.2	3561.5
25°	3608.7	3587.7	3530.1	3404.4	3310.1
27.5°	3446.3	3414.9	3352.0	3174.0	3064.0
30°	3268.2	3252.5	3163.5	2933.0	2849.2
32.5°	3100.6	3074.4	2980.2	2739.2	2671.2
35°	2927.8	2906.8	2765.4	2555.9	2493.1
37.5°	2755.0	2728.8	2550.7	2383.1	2304.5
40°	2582.1	2550.7	2356.9	2205.0	2121.2
42.5°	2419.8	2377.8	2189.3	2026.9	1932.7
45°	2246.9	2199.8	2011.2	1843.6	1770.3
47.5°	2074.1	2032.2	1859.3	1686.5	1602.7
50°	1890.8	1854.1	1697.0	1524.1	1435.1
52.5°	1738.9	1681.3	1529.4	1356.5	1283.2
55°	1560.8	1513.7	1372.2	1209.9	1147.0
57.5°	1398.4	1351.3	1220.4	1068.5	1016.1
60°	1246.5	1178.4	1068.5	937.5	895.6
62.5°	1078.9	1026.6	932.3	822.3	874.7
65°	927.0	874.7	790.9	806.6	670.4
67.5°	759.4	733.3	659.9	586.6	565.7
70°	618.0	586.6	560.4	481.9	460.9
72.5°	492.3	460.9	424.2	382.3	366.6
75°	371.9	345.7	324.7	309.0	340.4
77.5°	256.6	246.2	230.5	214.7	209.5
80°	167.6	162.4	157.1	151.9	146.7
82.5°	99.5	99.5	99.5	99.5	99.5
85°	52.4	57.6	62.9	68.1	73.3
87.5°	31.4	31.4	36.7	41.9	47.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)