

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: P563992

Luminaire Tested: FSR-24-4-LD4-4LO-50-UNV-82-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563992  
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-LD4-4LO-50-UNV-82-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

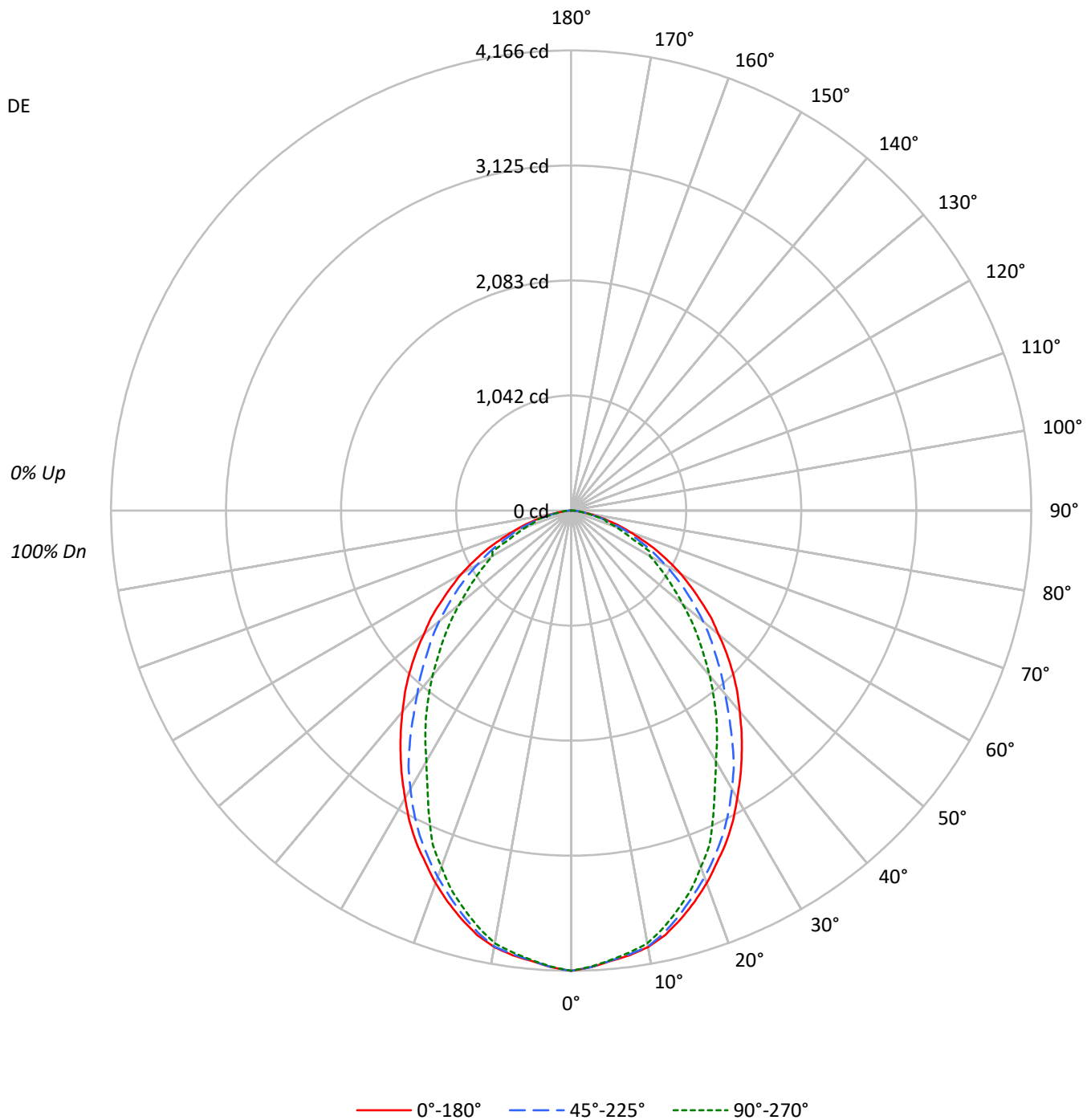
Lumens per Lamp: N/A  
Luminaire Lumens: 8179.0 lumens  
Efficiency: N/A  
Efficacy: 87.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	5606	5606	5606
5°	5529	5523	5517
10°	5482	5475	5435
15°	5334	5280	5206
20°	5138	5055	4917
25°	4927	4819	4519
30°	4669	4520	4071
35°	4422	4177	3766
40°	4171	3807	3426
45°	3932	3519	3098
50°	3640	3266	2762
55°	3367	2960	2474
60°	3085	2644	2216
65°	2714	2316	1963
70°	2236	2028	1668
75°	1778	1552	1628
80°	1194	1120	1045
85°	744	892	1041

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3932 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	387.8	4.7
10°-20°	1064.3	13.0
20°-30°	1473.5	18.0
30°-40°	1571.2	19.2
40°-50°	1433.4	17.5
50°-60°	1122.9	13.7
60°-70°	731.9	8.9
70°-80°	324.3	4.0
80°-90°	69.6	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°	2925.7	35.8
0°-40°	4496.9	55.0
0°-60°	7053.2	86.2
0°-90°	8179.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8179.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4166	4166	4166	4166	4166	
5°	4094	4089	4089	4084	4084	389
15°	3829	3829	3791	3752	3738	1076
25°	3319	3299	3246	3131	3044	1524
35°	2692	2673	2543	2350	2293	1683
45°	2066	2023	1850	1695	1628	1592
55°	1435	1392	1262	1113	1055	1287
65°	852	804	727	742	616	840
75°	342	318	299	284	313	367
85°	48	53	58	63	67	67
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4166.3	4166.3	4166.3	4166.3	4166.3
2.5°	4137.4	4137.4	4137.4	4132.6	4132.6
5°	4094.0	4089.2	4089.2	4084.4	4084.4
7.5°	4060.3	4055.5	4050.7	4045.9	4036.2
10°	4012.1	4012.1	4007.3	3983.2	3978.4
12.5°	3935.1	3930.3	3911.0	3877.3	3867.7
15°	3829.1	3829.1	3790.6	3752.1	3737.6
17.5°	3713.5	3708.7	3660.5	3622.0	3602.7
20°	3588.3	3578.7	3530.5	3467.9	3434.2
22.5°	3448.6	3448.6	3390.8	3308.9	3275.2
25°	3318.6	3299.3	3246.3	3130.7	3044.0
27.5°	3169.3	3140.4	3082.6	2918.8	2817.7
30°	3005.5	2991.0	2909.2	2697.2	2620.2
32.5°	2851.4	2827.3	2740.6	2519.0	2456.4
35°	2692.4	2673.2	2543.1	2350.5	2292.7
37.5°	2533.5	2509.4	2345.6	2191.5	2119.3
40°	2374.5	2345.6	2167.4	2027.7	1950.7
42.5°	2225.2	2186.7	2013.3	1864.0	1777.3
45°	2066.3	2022.9	1849.5	1695.4	1628.0
47.5°	1907.3	1868.8	1709.9	1550.9	1473.8
50°	1738.8	1705.0	1560.5	1401.6	1319.7
52.5°	1599.1	1546.1	1406.4	1247.5	1180.0
55°	1435.3	1392.0	1261.9	1112.6	1054.8
57.5°	1286.0	1242.7	1122.2	982.6	934.4
60°	1146.3	1083.7	982.6	862.2	823.6
62.5°	992.2	944.0	857.3	756.2	804.4
65°	852.5	804.4	727.3	741.7	616.5
67.5°	698.4	674.3	606.9	539.4	520.2
70°	568.3	539.4	515.4	443.1	423.9
72.5°	452.8	423.9	390.1	351.6	337.2
75°	342.0	317.9	298.6	284.2	313.1
77.5°	236.0	226.4	211.9	197.5	192.7
80°	154.1	149.3	144.5	139.7	134.9
82.5°	91.5	91.5	91.5	91.5	91.5
85°	48.2	53.0	57.8	62.6	67.4
87.5°	28.9	28.9	33.7	38.5	43.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)