

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: P562601

Luminaire Tested: FSR-24-4-LD4-2HI-40-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562601  
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-LD4-2HI-40-UNV-93-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

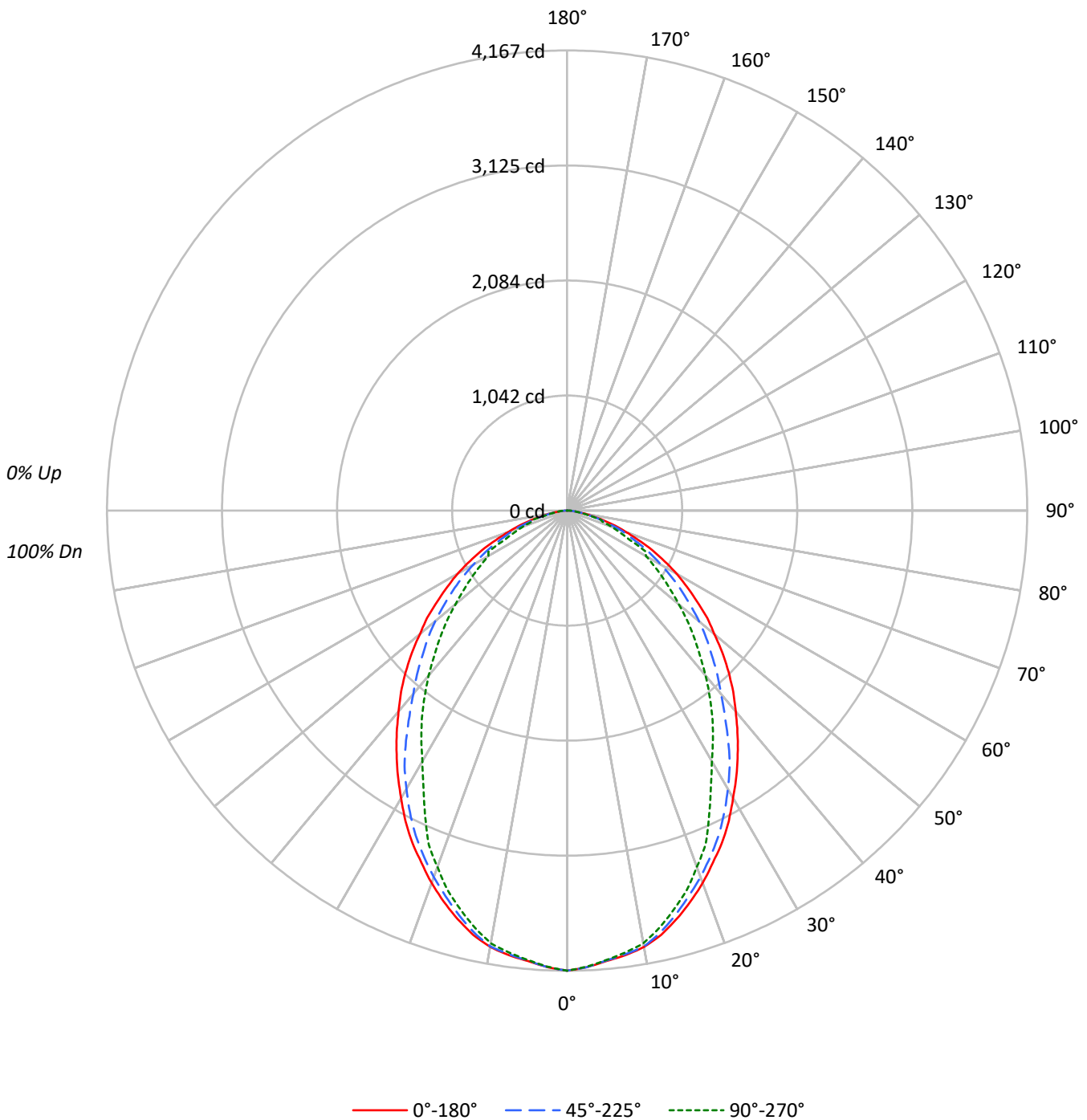
Lumens per Lamp: N/A  
Luminaire Lumens: 8180.0 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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													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°	5530	5524	5517
10°	5482	5476	5436
15°	5334	5281	5207
20°	5138	5056	4918
25°	4927	4820	4520
30°	4670	4520	4071
35°	4423	4178	3766
40°	4171	3807	3427
45°	3932	3520	3098
50°	3640	3267	2763
55°	3367	2961	2475
60°	3085	2644	2217
65°	2714	2316	1963
70°	2236	2028	1668
75°	1778	1553	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°	387.9	4.7
10°-20°	1064.5	13.0
20°-30°	1473.7	18.0
30°-40°	1571.4	19.2
40°-50°	1433.6	17.5
50°-60°	1123.1	13.7
60°-70°	732.0	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°	2926.0	35.8
0°-40°	4497.4	55.0
0°-60°	7054.1	86.2
0°-90°	8180.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8180.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4167	4167	4167	4167	4167	
5°	4094	4090	4090	4085	4085	389
15°	3830	3830	3791	3752	3738	1077
25°	3319	3300	3247	3131	3044	1524
35°	2693	2674	2543	2351	2293	1683
45°	2066	2023	1850	1696	1628	1592
55°	1436	1392	1262	1113	1055	1288
65°	853	804	727	742	617	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°	4166.8	4166.8	4166.8	4166.8	4166.8
2.5°	4137.9	4137.9	4137.9	4133.1	4133.1
5°	4094.5	4089.7	4089.7	4084.9	4084.9
7.5°	4060.8	4056.0	4051.2	4046.4	4036.7
10°	4012.6	4012.6	4007.8	3983.7	3978.9
12.5°	3935.6	3930.7	3911.5	3877.8	3868.1
15°	3829.6	3829.6	3791.0	3752.5	3738.1
17.5°	3714.0	3709.2	3661.0	3622.5	3603.2
20°	3588.7	3579.1	3530.9	3468.3	3434.6
22.5°	3449.0	3449.0	3391.2	3309.3	3275.6
25°	3319.0	3299.7	3246.7	3131.1	3044.4
27.5°	3169.6	3140.7	3082.9	2919.2	2818.0
30°	3005.9	2991.4	2909.5	2697.6	2620.5
32.5°	2851.7	2827.6	2740.9	2519.3	2456.7
35°	2692.8	2673.5	2543.4	2350.7	2292.9
37.5°	2533.8	2509.7	2345.9	2191.8	2119.5
40°	2374.8	2345.9	2167.7	2028.0	1950.9
42.5°	2225.5	2187.0	2013.5	1864.2	1777.5
45°	2066.5	2023.2	1849.8	1695.6	1628.2
47.5°	1907.6	1869.0	1710.1	1551.1	1474.0
50°	1739.0	1705.2	1560.7	1401.8	1319.9
52.5°	1599.3	1546.3	1406.6	1247.6	1180.2
55°	1435.5	1392.1	1262.1	1112.7	1054.9
57.5°	1286.2	1242.8	1122.4	982.7	934.5
60°	1146.5	1083.8	982.7	862.3	823.7
62.5°	992.3	944.1	857.4	756.3	804.5
65°	852.6	804.5	727.4	741.8	616.6
67.5°	698.5	674.4	607.0	539.5	520.2
70°	568.4	539.5	515.4	443.2	423.9
72.5°	452.8	423.9	390.2	351.6	337.2
75°	342.0	317.9	298.7	284.2	313.1
77.5°	236.0	226.4	212.0	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	43.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)