

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: P563674

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-82-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563674  
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-LD4-4HI-35-UNV-82-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

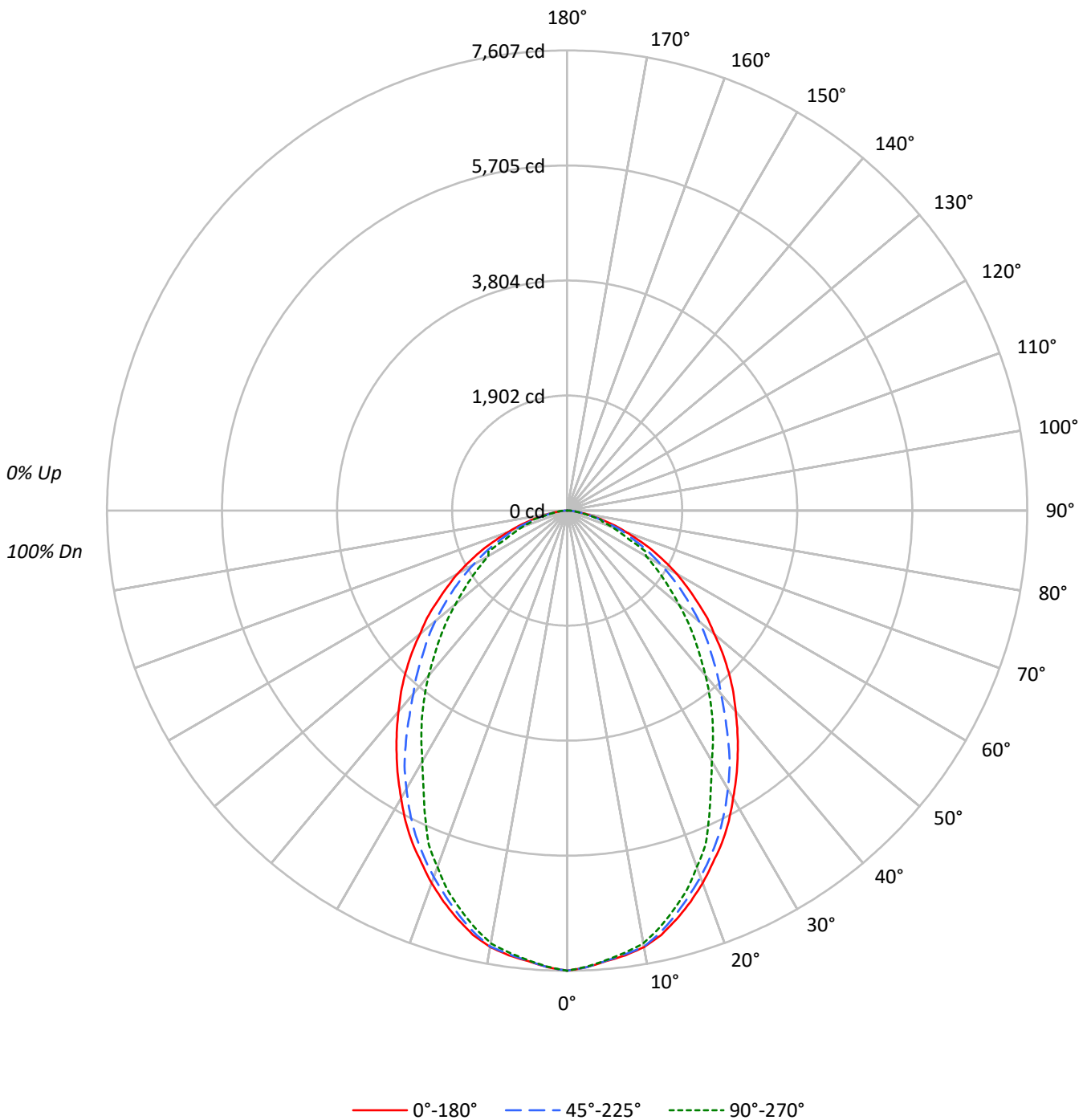
Lumens per Lamp: N/A  
Luminaire Lumens: 14934.0 lumens  
Efficiency: N/A  
Efficacy: 86.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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												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°	10235	10235	10235
5°	10096	10084	10073
10°	10009	9997	9925
15°	9739	9641	9506
20°	9381	9230	8978
25°	8996	8800	8251
30°	8526	8253	7433
35°	8075	7627	6876
40°	7615	6951	6256
45°	7179	6426	5656
50°	6646	5964	5044
55°	6148	5405	4518
60°	5632	4828	4047
65°	4956	4228	3584
70°	4082	3702	3044
75°	3246	2835	2972
80°	2180	2044	1908
85°	1357	1629	1900

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7179 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	708.1	4.7
10°-20°	1943.4	13.0
20°-30°	2690.5	18.0
30°-40°	2868.9	19.2
40°-50°	2617.2	17.5
50°-60°	2050.4	13.7
60°-70°	1336.3	8.9
70°-80°	592.1	4.0
80°-90°	127.1	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°	5342.0	35.8
0°-40°	8210.9	55.0
0°-60°	12878.5	86.2
0°-90°	14934.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14934.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7607	7607	7607	7607	7607	
5°	7475	7466	7466	7458	7458	710
15°	6992	6992	6921	6851	6824	1966
25°	6059	6024	5927	5716	5558	2782
35°	4916	4881	4644	4292	4186	3073
45°	3773	3694	3377	3096	2972	2906
55°	2621	2542	2304	2032	1926	2351
65°	1557	1469	1328	1354	1126	1534
75°	624	580	545	519	572	669
85°	88	97	106	114	123	122
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7607.2	7607.2	7607.2	7607.2	7607.2
2.5°	7554.4	7554.4	7554.4	7545.6	7545.6
5°	7475.3	7466.5	7466.5	7457.7	7457.7
7.5°	7413.7	7404.9	7396.1	7387.3	7369.7
10°	7325.8	7325.8	7317.0	7273.0	7264.2
12.5°	7185.0	7176.3	7141.1	7079.5	7061.9
15°	6991.6	6991.6	6921.2	6850.9	6824.5
17.5°	6780.5	6771.7	6683.8	6613.4	6578.2
20°	6551.8	6534.3	6446.3	6332.0	6270.4
22.5°	6296.8	6296.8	6191.3	6041.8	5980.2
25°	6059.4	6024.2	5927.4	5716.4	5558.1
27.5°	5786.7	5734.0	5628.4	5329.4	5144.7
30°	5487.7	5461.3	5311.8	4924.9	4784.2
32.5°	5206.3	5162.3	5004.0	4599.5	4485.2
35°	4916.1	4880.9	4643.5	4291.7	4186.1
37.5°	4625.9	4581.9	4282.9	4001.5	3869.5
40°	4335.7	4282.9	3957.5	3702.5	3561.7
42.5°	4063.0	3992.7	3676.1	3403.4	3245.1
45°	3772.8	3693.7	3377.1	3095.6	2972.5
47.5°	3482.6	3412.2	3122.0	2831.8	2691.1
50°	3174.8	3113.2	2849.4	2559.2	2409.7
52.5°	2919.8	2823.0	2568.0	2277.8	2154.6
55°	2620.7	2541.6	2304.1	2031.5	1926.0
57.5°	2348.1	2269.0	2049.1	1794.1	1706.1
60°	2093.1	1978.7	1794.1	1574.2	1503.8
62.5°	1811.7	1723.7	1565.4	1380.7	1468.7
65°	1556.6	1468.7	1328.0	1354.3	1125.7
67.5°	1275.2	1231.2	1108.1	985.0	949.8
70°	1037.7	985.0	941.0	809.1	773.9
72.5°	826.7	773.9	712.3	642.0	615.6
75°	624.4	580.4	545.3	518.9	571.6
77.5°	430.9	413.3	387.0	360.6	351.8
80°	281.4	272.6	263.8	255.0	246.2
82.5°	167.1	167.1	167.1	167.1	167.1
85°	87.9	96.7	105.5	114.3	123.1
87.5°	52.8	52.8	61.6	70.4	79.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)