

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: P563621

Luminaire Tested: FSR-24-4-LD4-3STD-50-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563621  
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-50-UNV-93-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

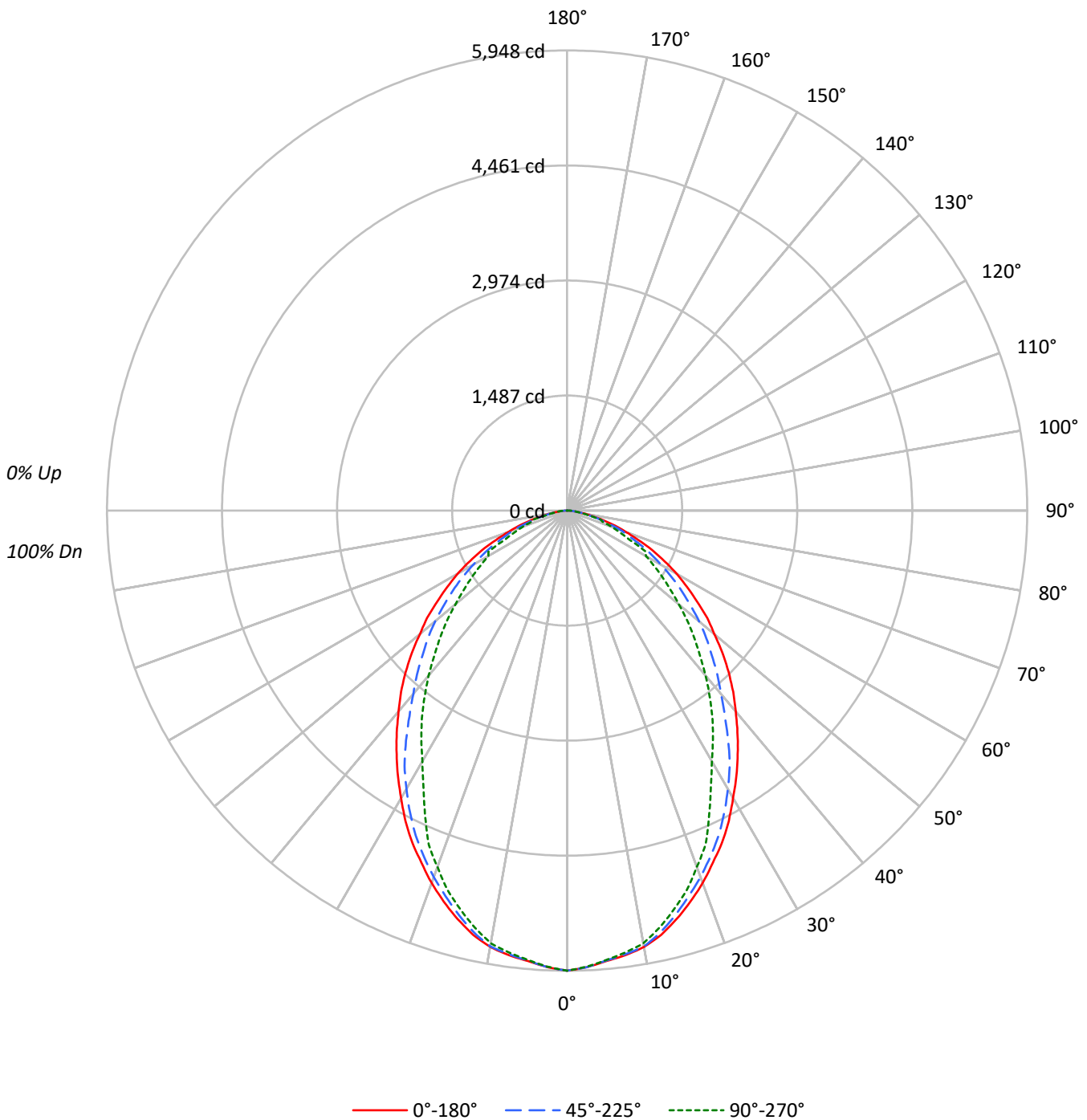
Lumens per Lamp: N/A  
Luminaire Lumens: 11676.0 lumens  
Efficiency: N/A  
Efficacy: 116.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8002	8002	8002
5°	7894	7884	7875
10°	7825	7816	7759
15°	7614	7538	7432
20°	7335	7216	7020
25°	7033	6880	6451
30°	6666	6452	5811
35°	6313	5963	5376
40°	5954	5435	4891
45°	5613	5024	4422
50°	5196	4663	3944
55°	4807	4226	3532
60°	4404	3775	3164
65°	3875	3306	2802
70°	3192	2894	2380
75°	2538	2216	2323
80°	1705	1598	1492
85°	1062	1274	1487

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5613 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	553.6	4.7
10°-20°	1519.4	13.0
20°-30°	2103.5	18.0
30°-40°	2243.0	19.2
40°-50°	2046.2	17.5
50°-60°	1603.1	13.7
60°-70°	1044.8	8.9
70°-80°	462.9	4.0
80°-90°	99.4	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°	4176.6	35.8
0°-40°	6419.6	55.0
0°-60°	10068.9	86.2
0°-90°	11676.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11676.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5948	5948	5948	5948	5948	
5°	5844	5838	5838	5831	5831	555
15°	5466	5466	5411	5356	5336	1537
25°	4738	4710	4634	4469	4346	2175
35°	3844	3816	3630	3355	3273	2403
45°	2950	2888	2640	2420	2324	2272
55°	2049	1987	1802	1588	1506	1838
65°	1217	1148	1038	1059	880	1199
75°	488	454	426	406	447	523
85°	69	76	82	89	96	95
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5947.6	5947.6	5947.6	5947.6	5947.6
2.5°	5906.3	5906.3	5906.3	5899.5	5899.5
5°	5844.5	5837.6	5837.6	5830.7	5830.7
7.5°	5796.3	5789.5	5782.6	5775.7	5762.0
10°	5727.6	5727.6	5720.7	5686.3	5679.4
12.5°	5617.6	5610.7	5583.2	5535.0	5521.3
15°	5466.3	5466.3	5411.3	5356.3	5335.6
17.5°	5301.3	5294.4	5225.6	5170.6	5143.1
20°	5122.5	5108.7	5040.0	4950.6	4902.5
22.5°	4923.1	4923.1	4840.6	4723.7	4675.6
25°	4737.5	4709.9	4634.3	4469.3	4345.5
27.5°	4524.3	4483.0	4400.5	4166.8	4022.4
30°	4290.5	4269.9	4153.0	3850.5	3740.5
32.5°	4070.5	4036.1	3912.4	3596.1	3506.7
35°	3843.6	3816.1	3630.4	3355.4	3272.9
37.5°	3616.7	3582.3	3348.5	3128.5	3025.4
40°	3389.8	3348.5	3094.1	2894.7	2784.7
42.5°	3176.6	3121.6	2874.1	2660.9	2537.2
45°	2949.7	2887.9	2640.3	2420.3	2324.0
47.5°	2722.8	2667.8	2440.9	2214.0	2104.0
50°	2482.2	2434.0	2227.8	2000.9	1884.0
52.5°	2282.8	2207.1	2007.7	1780.8	1684.6
55°	2049.0	1987.1	1801.5	1588.3	1505.8
57.5°	1835.8	1774.0	1602.1	1402.7	1333.9
60°	1636.4	1547.1	1402.7	1230.8	1175.8
62.5°	1416.4	1347.7	1223.9	1079.5	1148.3
65°	1217.0	1148.3	1038.3	1058.9	880.1
67.5°	997.0	962.6	866.4	770.1	742.6
70°	811.3	770.1	735.7	632.6	605.1
72.5°	646.3	605.1	556.9	501.9	481.3
75°	488.2	453.8	426.3	405.7	446.9
77.5°	336.9	323.2	302.5	281.9	275.0
80°	220.0	213.2	206.3	199.4	192.5
82.5°	130.6	130.6	130.6	130.6	130.6
85°	68.8	75.6	82.5	89.4	96.3
87.5°	41.3	41.3	48.1	55.0	61.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)