

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: P564172

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564172  
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-LD4-4STD-50-UNV-81-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

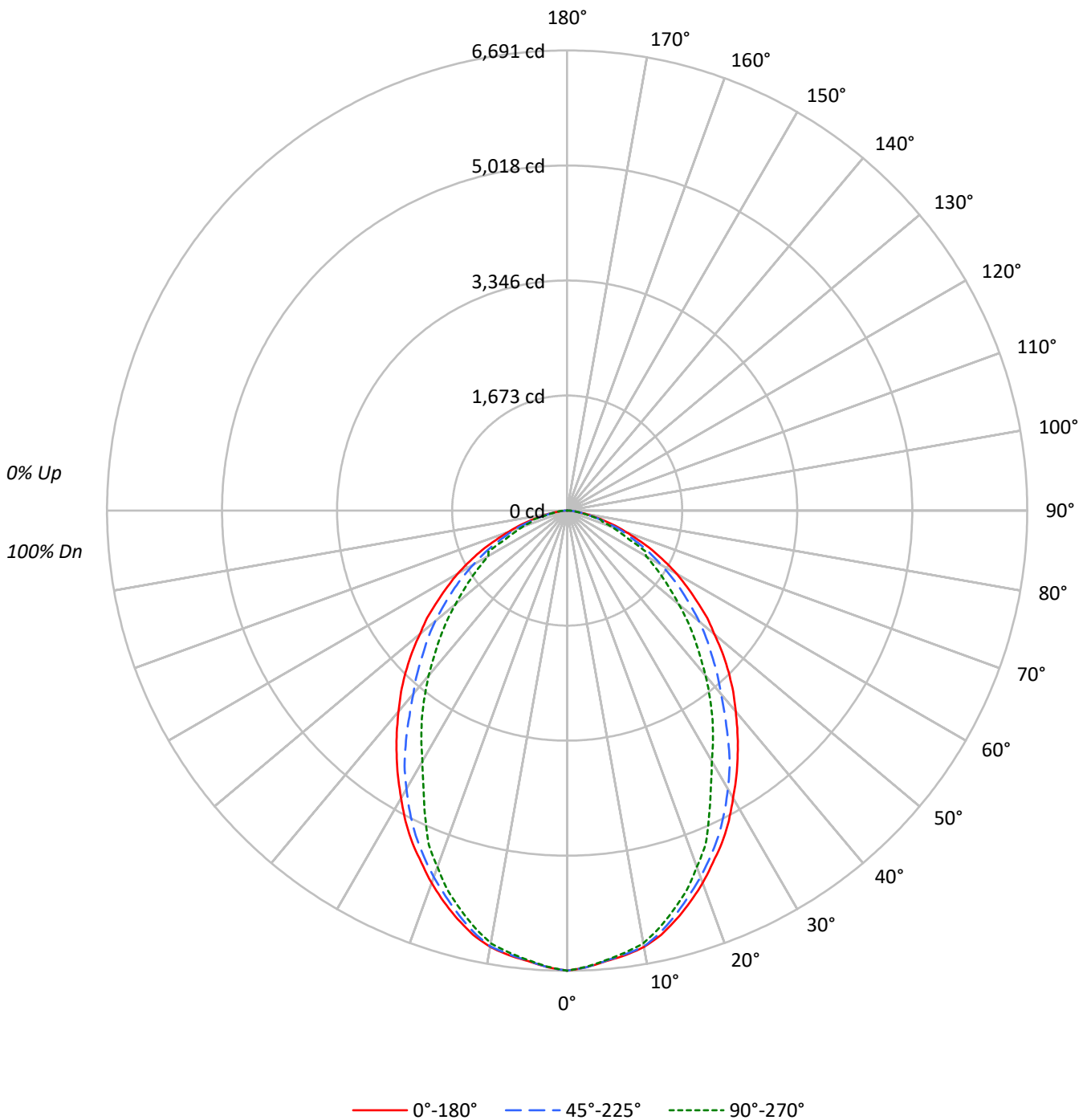
Lumens per Lamp: N/A  
Luminaire Lumens: 13135.0 lumens  
Efficiency: N/A  
Efficacy: 98.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	9002	9002	9002
5°	8880	8870	8859
10°	8803	8792	8729
15°	8566	8480	8361
20°	8251	8118	7897
25°	7912	7740	7257
30°	7499	7259	6538
35°	7102	6708	6048
40°	6698	6114	5502
45°	6314	5652	4975
50°	5845	5246	4436
55°	5407	4754	3974
60°	4954	4246	3559
65°	4359	3719	3152
70°	3591	3256	2678
75°	2855	2493	2614
80°	1918	1798	1678
85°	1195	1433	1672

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6314 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	622.8	4.7
10°-20°	1709.3	13.0
20°-30°	2366.4	18.0
30°-40°	2523.3	19.2
40°-50°	2301.9	17.5
50°-60°	1803.4	13.7
60°-70°	1175.4	8.9
70°-80°	520.7	4.0
80°-90°	111.8	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°	4698.5	35.8
0°-40°	7221.8	55.0
0°-60°	11327.1	86.2
0°-90°	13135.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13135.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6691	6691	6691	6691	6691	
5°	6575	6567	6567	6559	6559	624
15°	6149	6149	6088	6026	6002	1729
25°	5329	5298	5213	5028	4888	2447
35°	4324	4293	4084	3775	3682	2703
45°	3318	3249	2970	2723	2614	2556
55°	2305	2235	2027	1787	1694	2067
65°	1369	1292	1168	1191	990	1349
75°	549	510	480	456	503	589
85°	77	85	93	101	108	107
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6690.8	6690.8	6690.8	6690.8	6690.8
2.5°	6644.4	6644.4	6644.4	6636.6	6636.6
5°	6574.8	6567.0	6567.0	6559.3	6559.3
7.5°	6520.6	6512.9	6505.2	6497.4	6481.9
10°	6443.3	6443.3	6435.5	6396.9	6389.1
12.5°	6319.5	6311.8	6280.8	6226.7	6211.2
15°	6149.3	6149.3	6087.5	6025.6	6002.4
17.5°	5963.7	5956.0	5878.6	5816.7	5785.8
20°	5762.6	5747.1	5669.8	5569.2	5515.1
22.5°	5538.3	5538.3	5445.5	5314.0	5259.8
25°	5329.4	5298.5	5213.4	5027.8	4888.5
27.5°	5089.6	5043.2	4950.4	4687.4	4525.0
30°	4826.7	4803.4	4672.0	4331.6	4207.9
32.5°	4579.1	4540.5	4401.2	4045.4	3944.9
35°	4323.9	4292.9	4084.1	3774.7	3681.9
37.5°	4068.6	4029.9	3767.0	3519.4	3403.4
40°	3813.4	3767.0	3480.8	3256.4	3132.7
42.5°	3573.6	3511.7	3233.2	2993.5	2854.2
45°	3318.3	3248.7	2970.2	2722.7	2614.4
47.5°	3063.1	3001.2	2745.9	2490.7	2366.9
50°	2792.3	2738.2	2506.1	2250.9	2119.4
52.5°	2568.0	2482.9	2258.6	2003.4	1895.1
55°	2305.0	2235.4	2026.6	1786.8	1694.0
57.5°	2065.3	1995.6	1802.3	1577.9	1500.6
60°	1840.9	1740.4	1577.9	1384.6	1322.7
62.5°	1593.4	1516.1	1376.8	1214.4	1291.7
65°	1369.1	1291.7	1168.0	1191.2	990.1
67.5°	1121.6	1082.9	974.6	866.3	835.4
70°	912.7	866.3	827.6	711.6	680.7
72.5°	727.1	680.7	626.5	564.7	541.5
75°	549.2	510.5	479.6	456.4	502.8
77.5°	379.0	363.5	340.3	317.1	309.4
80°	247.5	239.8	232.1	224.3	216.6
82.5°	147.0	147.0	147.0	147.0	147.0
85°	77.4	85.1	92.8	100.6	108.3
87.5°	46.4	46.4	54.1	61.9	69.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)