

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: P563501

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563501  
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-35-UNV-93-96-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

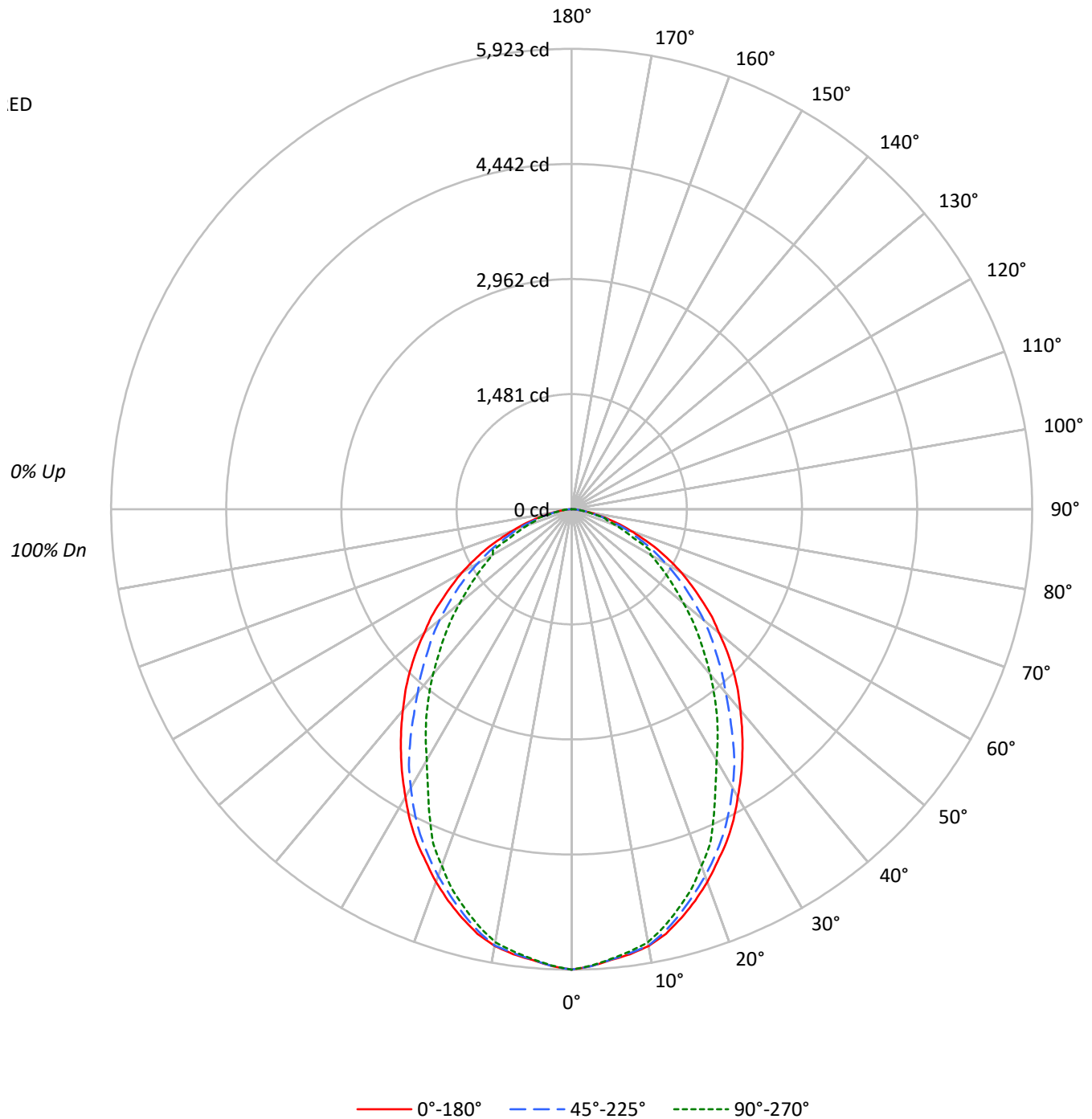
Lumens per Lamp: N/A  
Luminaire Lumens: 11628.0 lumens  
Efficiency: N/A  
Efficacy: 116.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7969	7969	7969
5°	7861	7852	7843
10°	7793	7784	7728
15°	7583	7507	7402
20°	7304	7187	6991
25°	7004	6852	6425
30°	6639	6426	5787
35°	6287	5939	5354
40°	5929	5412	4871
45°	5590	5003	4404
50°	5174	4644	3927
55°	4787	4209	3518
60°	4385	3759	3151
65°	3859	3292	2791
70°	3179	2882	2371
75°	2528	2207	2314
80°	1698	1592	1485
85°	1057	1269	1480

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5590 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	551.4	4.7
10°-20°	1513.2	13.0
20°-30°	2094.9	18.0
30°-40°	2233.8	19.2
40°-50°	2037.8	17.5
50°-60°	1596.5	13.7
60°-70°	1040.5	8.9
70°-80°	461.0	4.0
80°-90°	99.0	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°	4159.4	35.8
0°-40°	6393.2	55.0
0°-60°	10027.5	86.2
0°-90°	11628.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11628.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5923	5923	5923	5923	5923	
5°	5820	5814	5814	5807	5807	552
15°	5444	5444	5389	5334	5314	1530
25°	4718	4691	4615	4451	4328	2166
35°	3828	3800	3616	3342	3259	2393
45°	2938	2876	2630	2410	2314	2263
55°	2041	1979	1794	1582	1500	1830
65°	1212	1144	1034	1054	876	1194
75°	486	452	424	404	445	521
85°	68	75	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°	5923.1	5923.1	5923.1	5923.1	5923.1
2.5°	5882.1	5882.1	5882.1	5875.2	5875.2
5°	5820.4	5813.6	5813.6	5806.7	5806.7
7.5°	5772.5	5765.7	5758.8	5752.0	5738.3
10°	5704.0	5704.0	5697.2	5662.9	5656.1
12.5°	5594.5	5587.6	5560.2	5512.3	5498.6
15°	5443.8	5443.8	5389.0	5334.3	5313.7
17.5°	5279.5	5272.6	5204.2	5149.4	5122.0
20°	5101.4	5087.7	5019.3	4930.3	4882.3
22.5°	4902.9	4902.9	4820.7	4704.3	4656.3
25°	4718.0	4690.6	4615.3	4450.9	4327.7
27.5°	4505.7	4464.6	4382.4	4149.6	4005.8
30°	4272.9	4252.3	4135.9	3834.6	3725.1
32.5°	4053.8	4019.5	3896.3	3581.3	3492.3
35°	3827.8	3800.4	3615.5	3341.6	3259.4
37.5°	3601.8	3567.6	3334.8	3115.6	3012.9
40°	3375.9	3334.8	3081.4	2882.8	2773.3
42.5°	3163.6	3108.8	2862.3	2650.0	2526.8
45°	2937.6	2876.0	2629.5	2410.3	2314.5
47.5°	2711.6	2656.9	2430.9	2204.9	2095.4
50°	2472.0	2424.0	2218.6	1992.6	1876.2
52.5°	2273.4	2198.1	1999.5	1773.5	1677.7
55°	2040.6	1978.9	1794.1	1581.8	1499.6
57.5°	1828.3	1766.7	1595.5	1396.9	1328.4
60°	1629.7	1540.7	1396.9	1225.7	1170.9
62.5°	1410.6	1342.1	1218.9	1075.1	1143.5
65°	1212.0	1143.5	1034.0	1054.5	876.5
67.5°	992.9	958.7	862.8	766.9	739.5
70°	808.0	766.9	732.7	630.0	602.6
72.5°	643.7	602.6	554.7	499.9	479.3
75°	486.2	451.9	424.5	404.0	445.1
77.5°	335.5	321.8	301.3	280.8	273.9
80°	219.1	212.3	205.4	198.6	191.7
82.5°	130.1	130.1	130.1	130.1	130.1
85°	68.5	75.3	82.2	89.0	95.9
87.5°	41.1	41.1	47.9	54.8	61.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)