

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: P563301

Luminaire Tested: FSR-24-4-LD4-3LO-35-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563301  
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-LD4-3LO-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

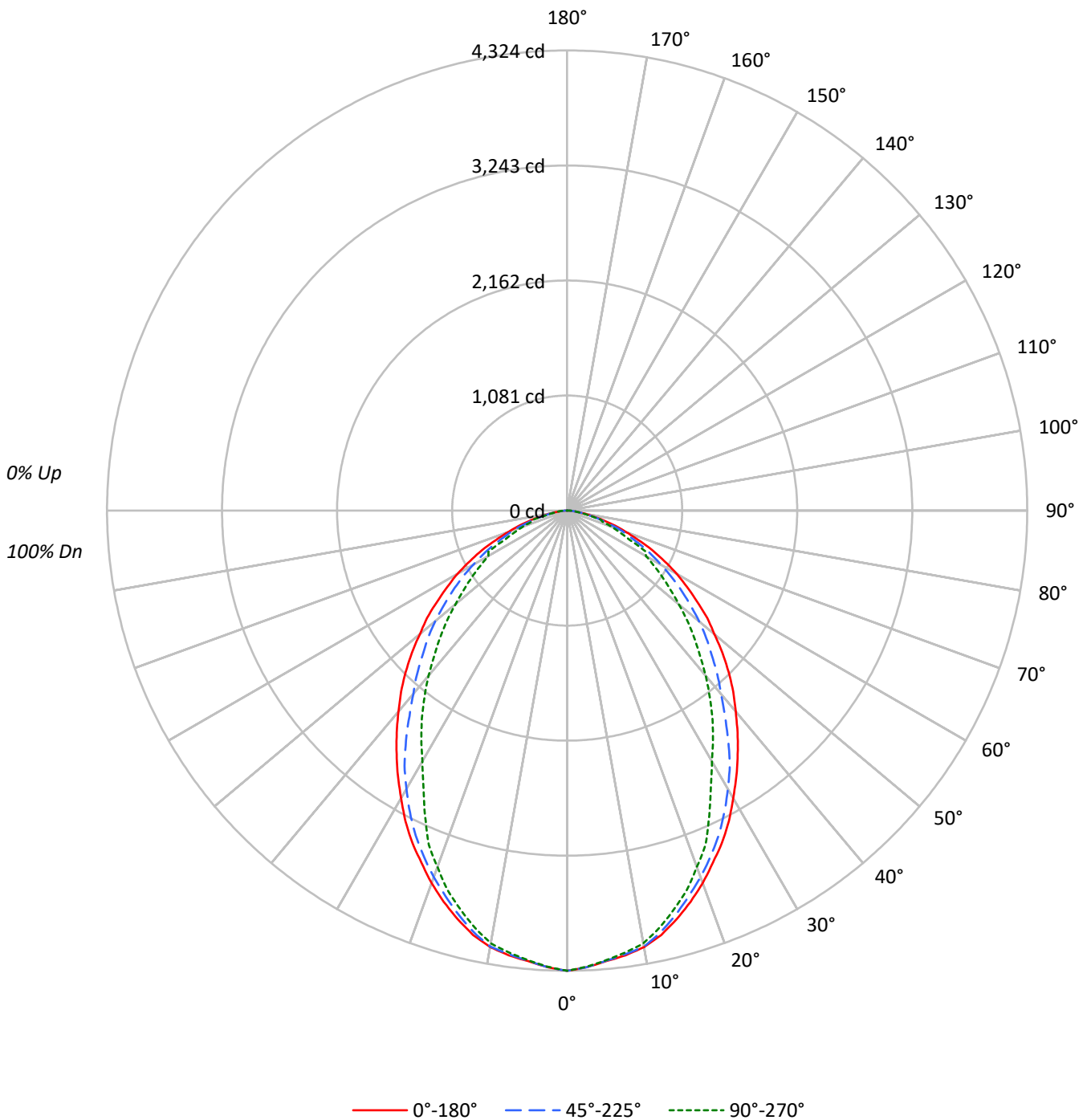
Lumens per Lamp: N/A  
Luminaire Lumens: 8489.0 lumens  
Efficiency: N/A  
Efficacy: 120.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5818	5818	5818
5°	5739	5732	5726
10°	5689	5682	5642
15°	5536	5480	5404
20°	5333	5247	5104
25°	5113	5002	4690
30°	4846	4691	4225
35°	4590	4335	3909
40°	4329	3951	3556
45°	4081	3653	3215
50°	3778	3390	2867
55°	3495	3073	2568
60°	3202	2744	2300
65°	2817	2403	2037
70°	2321	2104	1731
75°	1845	1611	1689
80°	1240	1162	1085
85°	772	926	1081

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4081 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	402.5	4.7
10°-20°	1104.7	13.0
20°-30°	1529.4	18.0
30°-40°	1630.8	19.2
40°-50°	1487.7	17.5
50°-60°	1165.5	13.7
60°-70°	759.6	8.9
70°-80°	336.5	4.0
80°-90°	72.3	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°	3036.6	35.8
0°-40°	4667.3	55.0
0°-60°	7320.6	86.2
0°-90°	8489.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8489.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4324	4324	4324	4324	4324	
5°	4249	4244	4244	4239	4239	403
15°	3974	3974	3934	3894	3879	1117
25°	3444	3424	3369	3249	3159	1581
35°	2794	2774	2640	2440	2380	1747
45°	2145	2100	1920	1760	1690	1652
55°	1490	1445	1310	1155	1095	1336
65°	885	835	755	770	640	872
75°	355	330	310	295	325	380
85°	50	55	60	65	70	69
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4324.2	4324.2	4324.2	4324.2	4324.2
2.5°	4294.2	4294.2	4294.2	4289.2	4289.2
5°	4249.2	4244.2	4244.2	4239.2	4239.2
7.5°	4214.2	4209.2	4204.2	4199.2	4189.2
10°	4164.2	4164.2	4159.2	4134.2	4129.2
12.5°	4084.2	4079.2	4059.2	4024.2	4014.2
15°	3974.2	3974.2	3934.3	3894.3	3879.3
17.5°	3854.3	3849.3	3799.3	3759.3	3739.3
20°	3724.3	3714.3	3664.3	3599.3	3564.3
22.5°	3579.3	3579.3	3519.3	3434.4	3399.4
25°	3444.3	3424.4	3369.4	3249.4	3159.4
27.5°	3289.4	3259.4	3199.4	3029.4	2924.4
30°	3119.4	3104.4	3019.4	2799.5	2719.5
32.5°	2959.4	2934.4	2844.5	2614.5	2549.5
35°	2794.5	2774.5	2639.5	2439.5	2379.6
37.5°	2629.5	2604.5	2434.5	2274.6	2199.6
40°	2464.5	2434.5	2249.6	2104.6	2024.6
42.5°	2309.6	2269.6	2089.6	1934.6	1844.7
45°	2144.6	2099.6	1919.6	1759.7	1689.7
47.5°	1979.6	1939.6	1774.7	1609.7	1529.7
50°	1804.7	1769.7	1619.7	1454.7	1369.7
52.5°	1659.7	1604.7	1459.7	1294.8	1224.8
55°	1489.7	1444.7	1309.8	1154.8	1094.8
57.5°	1334.7	1289.8	1164.8	1019.8	969.8
60°	1189.8	1124.8	1019.8	894.8	854.8
62.5°	1029.8	979.8	889.8	784.9	834.8
65°	884.8	834.8	754.9	769.9	639.9
67.5°	724.9	699.9	629.9	559.9	539.9
70°	589.9	559.9	534.9	459.9	439.9
72.5°	469.9	439.9	404.9	364.9	349.9
75°	354.9	329.9	309.9	294.9	324.9
77.5°	245.0	235.0	220.0	205.0	200.0
80°	160.0	155.0	150.0	145.0	140.0
82.5°	95.0	95.0	95.0	95.0	95.0
85°	50.0	55.0	60.0	65.0	70.0
87.5°	30.0	30.0	35.0	40.0	45.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)