

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: P564069

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564069  
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-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**

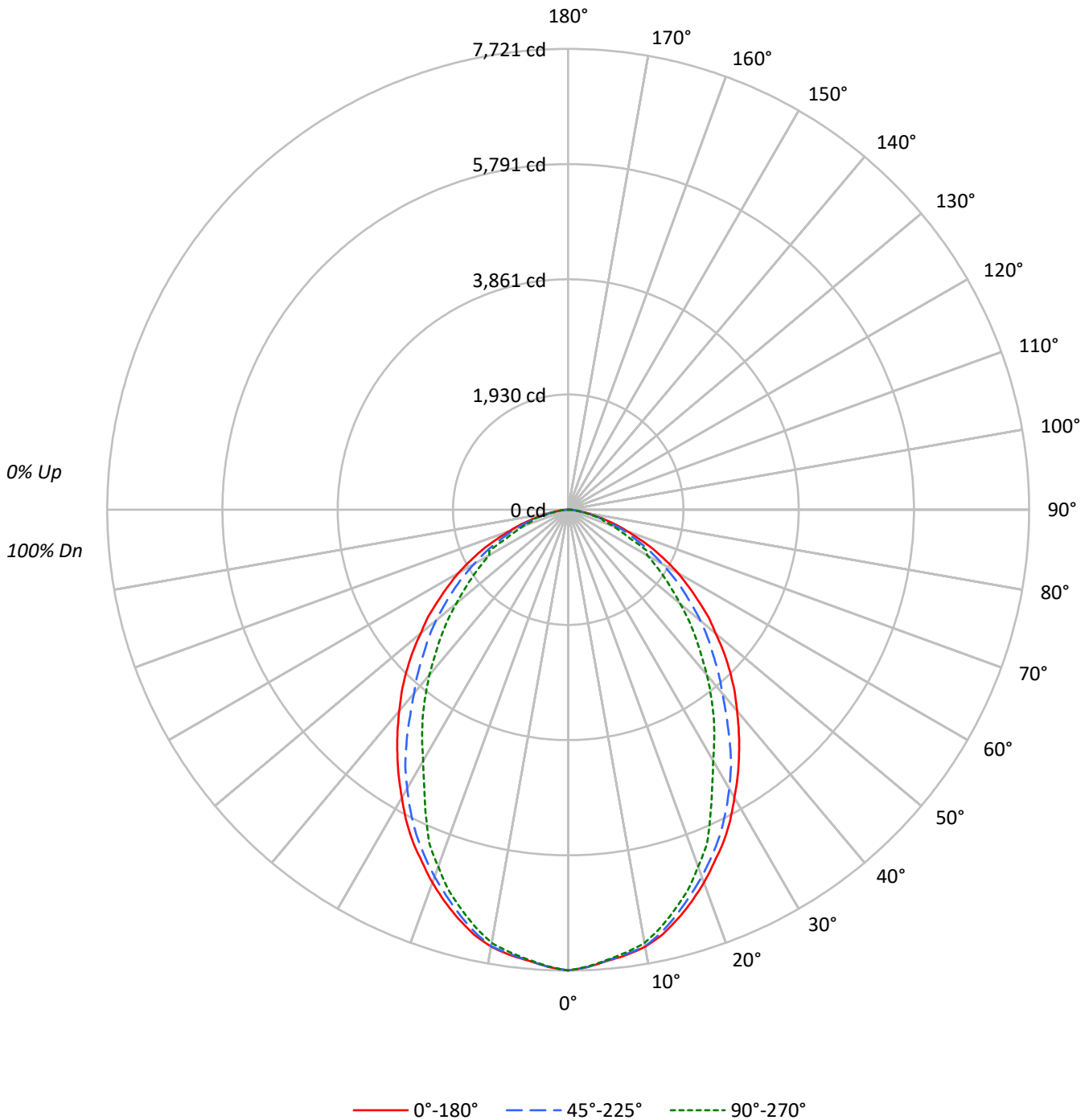
Lumens per Lamp: N/A  
Luminaire Lumens: 15157.0 lumens  
Efficiency: N/A  
Efficacy: 113.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	10388	10388	10388
5°	10247	10235	10223
10°	10158	10146	10073
15°	9884	9785	9648
20°	9521	9368	9112
25°	9130	8931	8375
30°	8653	8376	7544
35°	8195	7741	6979
40°	7729	7055	6349
45°	7286	6522	5741
50°	6745	6053	5119
55°	6240	5486	4585
60°	5716	4900	4107
65°	5030	4291	3637
70°	4143	3757	3090
75°	3294	2877	3016
80°	2213	2075	1936
85°	1379	1653	1930

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7286 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	718.7	4.7
10°-20°	1972.4	13.0
20°-30°	2730.7	18.0
30°-40°	2911.7	19.2
40°-50°	2656.3	17.5
50°-60°	2081.0	13.7
60°-70°	1356.3	8.9
70°-80°	600.9	4.0
80°-90°	129.0	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°	5421.8	35.8
0°-40°	8333.5	55.0
0°-60°	13070.8	86.2
0°-90°	15157.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15157.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7721	7721	7721	7721	7721	
5°	7587	7578	7578	7569	7569	720
15°	7096	7096	7025	6953	6926	1995
25°	6150	6114	6016	5802	5641	2823
35°	4990	4954	4713	4356	4249	3119
45°	3829	3749	3428	3142	3017	2950
55°	2660	2580	2338	2062	1955	2386
65°	1580	1491	1348	1375	1142	1557
75°	634	589	553	527	580	679
85°	89	98	107	116	125	124
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7720.8	7720.8	7720.8	7720.8	7720.8
2.5°	7667.2	7667.2	7667.2	7658.3	7658.3
5°	7586.9	7578.0	7578.0	7569.0	7569.0
7.5°	7524.4	7515.5	7506.6	7497.6	7479.8
10°	7435.1	7435.1	7426.2	7381.6	7372.7
12.5°	7292.3	7283.4	7247.7	7185.2	7167.4
15°	7096.0	7096.0	7024.6	6953.2	6926.4
17.5°	6881.8	6872.8	6783.6	6712.2	6676.5
20°	6649.7	6631.8	6542.6	6426.5	6364.1
22.5°	6390.8	6390.8	6283.7	6132.0	6069.5
25°	6149.8	6114.1	6016.0	5801.7	5641.1
27.5°	5873.1	5819.6	5712.5	5409.0	5221.6
30°	5569.7	5542.9	5391.2	4998.4	4855.6
32.5°	5284.0	5239.4	5078.8	4668.2	4552.1
35°	4989.5	4953.8	4712.8	4355.8	4248.7
37.5°	4694.9	4650.3	4346.8	4061.2	3927.3
40°	4400.4	4346.8	4016.6	3757.7	3614.9
42.5°	4123.7	4052.3	3731.0	3454.3	3293.6
45°	3829.1	3748.8	3427.5	3141.9	3016.9
47.5°	3534.6	3463.2	3168.6	2874.1	2731.3
50°	3222.2	3159.7	2891.9	2597.4	2445.7
52.5°	2963.3	2865.2	2606.3	2311.8	2186.8
55°	2659.9	2579.5	2338.5	2061.8	1954.7
57.5°	2383.2	2302.8	2079.7	1820.9	1731.6
60°	2124.3	2008.3	1820.9	1597.7	1526.3
62.5°	1838.7	1749.4	1588.8	1401.3	1490.6
65°	1579.9	1490.6	1347.8	1374.6	1142.5
67.5°	1294.2	1249.6	1124.6	999.7	964.0
70°	1053.2	999.7	955.1	821.2	785.5
72.5°	839.0	785.5	723.0	651.6	624.8
75°	633.7	589.1	553.4	526.6	580.2
77.5°	437.4	419.5	392.7	366.0	357.0
80°	285.6	276.7	267.8	258.8	249.9
82.5°	169.6	169.6	169.6	169.6	169.6
85°	89.3	98.2	107.1	116.0	125.0
87.5°	53.6	53.6	62.5	71.4	80.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)