

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: P589870

Luminaire Tested: FSR-24-2-LD4-1HI-35-UNV-93-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589870  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-1HI-35-UNV-93-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

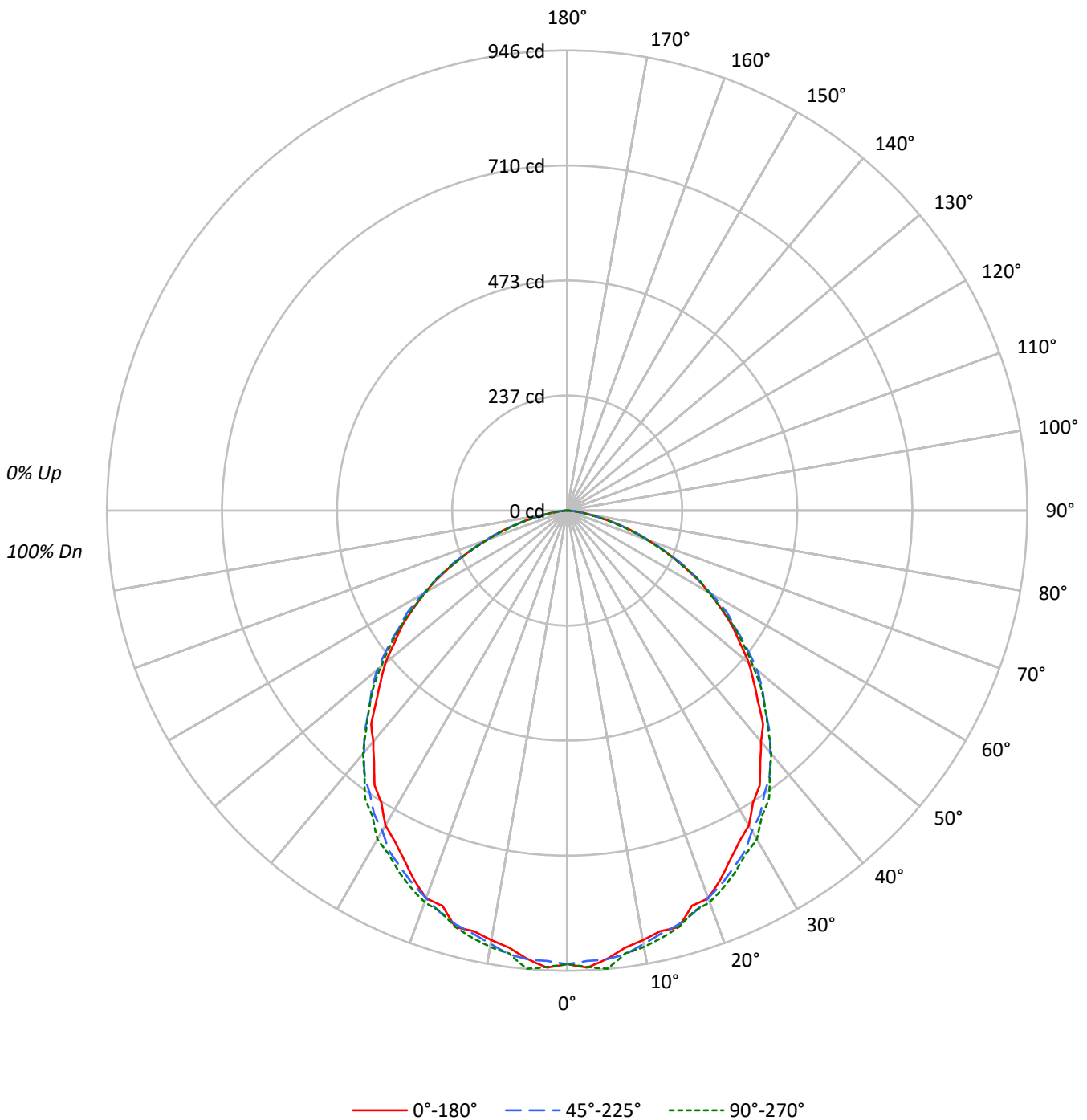
Lumens per Lamp: N/A  
Luminaire Lumens: 2350.0 lumens  
Efficiency: N/A  
Efficacy: 108.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	2509	2509	2509
5°	2501	2502	2555
10°	2450	2472	2489
15°	2469	2456	2470
20°	2428	2428	2454
25°	2353	2405	2431
30°	2321	2362	2424
35°	2266	2326	2378
40°	2178	2283	2293
45°	2112	2187	2191
50°	2043	2135	2094
55°	1947	1984	1970
60°	1820	1838	1805
65°	1623	1664	1612
70°	1393	1397	1358
75°	1103	1100	1057
80°	739	719	690
85°	401	398	371

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2243 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.7	3.7
10°-20°	248.6	10.6
20°-30°	372.4	15.8
30°-40°	441.4	18.8
40°-50°	442.2	18.8
50°-60°	375.4	16.0
60°-70°	253.1	10.8
70°-80°	111.2	4.7
80°-90°	18.1	0.8
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°	708.7	30.2
0°-40°	1150.1	48.9
0°-60°	1967.7	83.7
0°-90°	2350.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2350.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	932	932	932	932	932	
5°	926	924	926	923	946	87
15°	886	876	882	886	887	247
25°	792	797	810	820	819	366
35°	690	692	708	724	724	428
45°	555	565	575	590	576	429
55°	415	412	423	420	420	369
65°	255	252	261	251	253	253
75°	106	104	106	98	102	114
85°	13	13	13	12	12	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	932.4	932.4	932.4	932.4	932.4
2.5°	940.5	933.4	926.8	934.5	939.2
5°	925.8	923.6	926.2	923.4	945.7
7.5°	906.8	915.1	919.9	916.9	918.2
10°	896.7	893.8	904.5	912.0	910.9
12.5°	885.8	890.2	890.8	898.8	899.6
15°	886.4	876.2	881.6	886.2	886.6
17.5°	852.0	863.1	866.8	877.3	864.3
20°	847.8	839.7	847.8	858.5	856.8
22.5°	821.9	812.9	830.2	839.7	839.1
25°	792.5	796.9	809.9	820.5	818.8
27.5°	766.8	771.8	790.4	804.9	795.5
30°	746.9	744.4	760.0	773.0	780.2
32.5°	711.4	720.5	738.8	751.7	744.9
35°	689.8	691.9	707.9	724.3	723.8
37.5°	652.2	661.7	684.2	688.8	684.5
40°	620.0	629.5	649.9	654.8	652.8
42.5°	596.3	598.0	615.4	621.1	612.1
45°	555.0	565.4	574.7	589.5	575.6
47.5°	519.8	524.7	544.9	548.9	541.5
50°	487.9	489.6	510.0	505.0	500.2
52.5°	447.9	455.0	466.4	465.4	459.8
55°	414.9	412.1	422.9	420.0	419.9
57.5°	375.3	380.1	389.0	384.4	377.1
60°	338.2	338.3	341.5	336.4	335.4
62.5°	296.9	298.3	299.0	292.7	303.0
65°	254.9	251.5	261.4	251.4	253.1
67.5°	216.2	217.9	216.9	210.7	213.1
70°	177.0	179.1	177.6	170.5	172.6
72.5°	141.1	138.4	140.1	131.2	135.3
75°	106.1	103.9	105.8	98.4	101.7
77.5°	72.2	73.9	72.7	68.7	71.0
80°	47.7	46.4	46.4	44.1	44.5
82.5°	27.8	26.5	26.1	25.4	26.5
85°	13.0	12.6	12.9	12.5	12.0
87.5°	4.7	4.8	4.8	4.6	4.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)