

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: P560946

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-80-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560946  
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-12-4-LD4-1LO-35-UNV-80-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

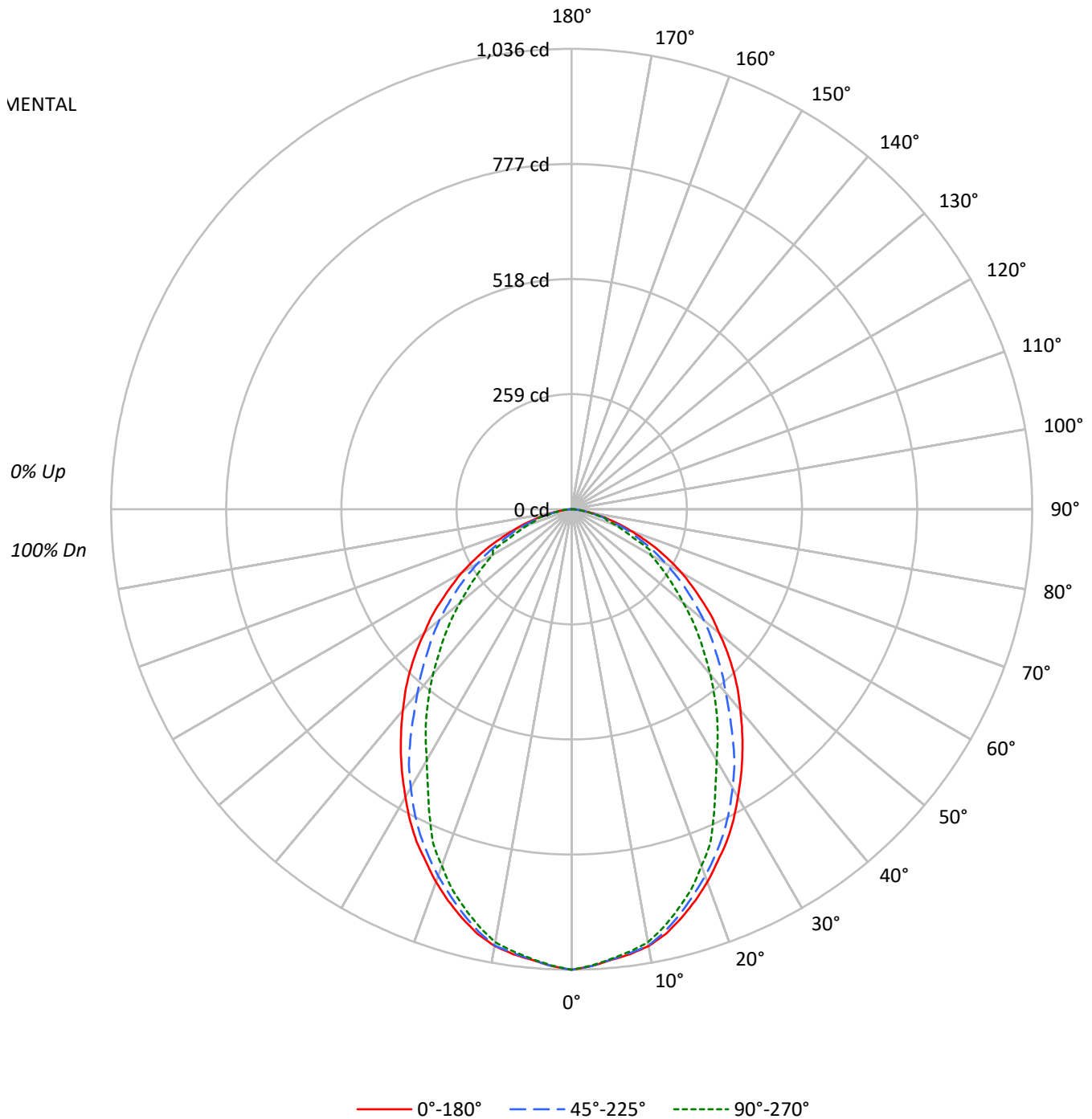
Lumens per Lamp: N/A  
Luminaire Lumens: 2034.0 lumens  
Efficiency: N/A  
Efficacy: 86.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2788	2788	2788
5°	2750	2747	2744
10°	2726	2723	2704
15°	2653	2626	2589
20°	2556	2514	2446
25°	2450	2397	2248
30°	2322	2248	2025
35°	2200	2077	1873
40°	2074	1893	1704
45°	1956	1751	1541
50°	1810	1625	1374
55°	1674	1472	1231
60°	1534	1315	1102
65°	1350	1152	976
70°	1112	1009	829
75°	884	773	810
80°	594	556	519
85°	371	445	519

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1956 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	96.4	4.7
10°-20°	264.7	13.0
20°-30°	366.4	18.0
30°-40°	390.7	19.2
40°-50°	356.5	17.5
50°-60°	279.3	13.7
60°-70°	182.0	8.9
70°-80°	80.6	4.0
80°-90°	17.3	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°	727.6	35.8
0°-40°	1118.3	55.0
0°-60°	1754.0	86.2
0°-90°	2034.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2034.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1036	1036	1036	1036	1036	
5°	1018	1017	1017	1016	1016	97
15°	952	952	943	933	930	268
25°	825	820	807	779	757	379
35°	670	665	632	584	570	419
45°	514	503	460	422	405	396
55°	357	346	314	277	262	320
65°	212	200	181	184	153	209
75°	85	79	74	71	78	91
85°	12	13	14	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1036.1	1036.1	1036.1	1036.1	1036.1
2.5°	1028.9	1028.9	1028.9	1027.7	1027.7
5°	1018.1	1016.9	1016.9	1015.7	1015.7
7.5°	1009.7	1008.5	1007.3	1006.1	1003.8
10°	997.8	997.8	996.6	990.6	989.4
12.5°	978.6	977.4	972.6	964.2	961.8
15°	952.2	952.2	942.7	933.1	929.5
17.5°	923.5	922.3	910.3	900.7	896.0
20°	892.4	890.0	878.0	862.4	854.0
22.5°	857.6	857.6	843.2	822.9	814.5
25°	825.3	820.5	807.3	778.6	757.0
27.5°	788.1	781.0	766.6	725.9	700.7
30°	747.4	743.8	723.5	670.8	651.6
32.5°	709.1	703.1	681.5	626.4	610.9
35°	669.6	664.8	632.4	584.5	570.2
37.5°	630.0	624.1	583.3	545.0	527.0
40°	590.5	583.3	539.0	504.3	485.1
42.5°	553.4	543.8	500.7	463.5	442.0
45°	513.9	503.1	460.0	421.6	404.9
47.5°	474.3	464.7	425.2	385.7	366.5
50°	432.4	424.0	388.1	348.6	328.2
52.5°	397.7	384.5	349.8	310.2	293.5
55°	356.9	346.2	313.8	276.7	262.3
57.5°	319.8	309.0	279.1	244.4	232.4
60°	285.1	269.5	244.4	214.4	204.8
62.5°	246.7	234.8	213.2	188.1	200.0
65°	212.0	200.0	180.9	184.5	153.3
67.5°	173.7	167.7	150.9	134.2	129.4
70°	141.3	134.2	128.2	110.2	105.4
72.5°	112.6	105.4	97.0	87.4	83.8
75°	85.0	79.1	74.3	70.7	77.9
77.5°	58.7	56.3	52.7	49.1	47.9
80°	38.3	37.1	35.9	34.7	33.5
82.5°	22.8	22.8	22.8	22.8	22.8
85°	12.0	13.2	14.4	15.6	16.8
87.5°	7.2	7.2	8.4	9.6	10.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)