

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: P561030

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-81-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561030  
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-40-UNV-81-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

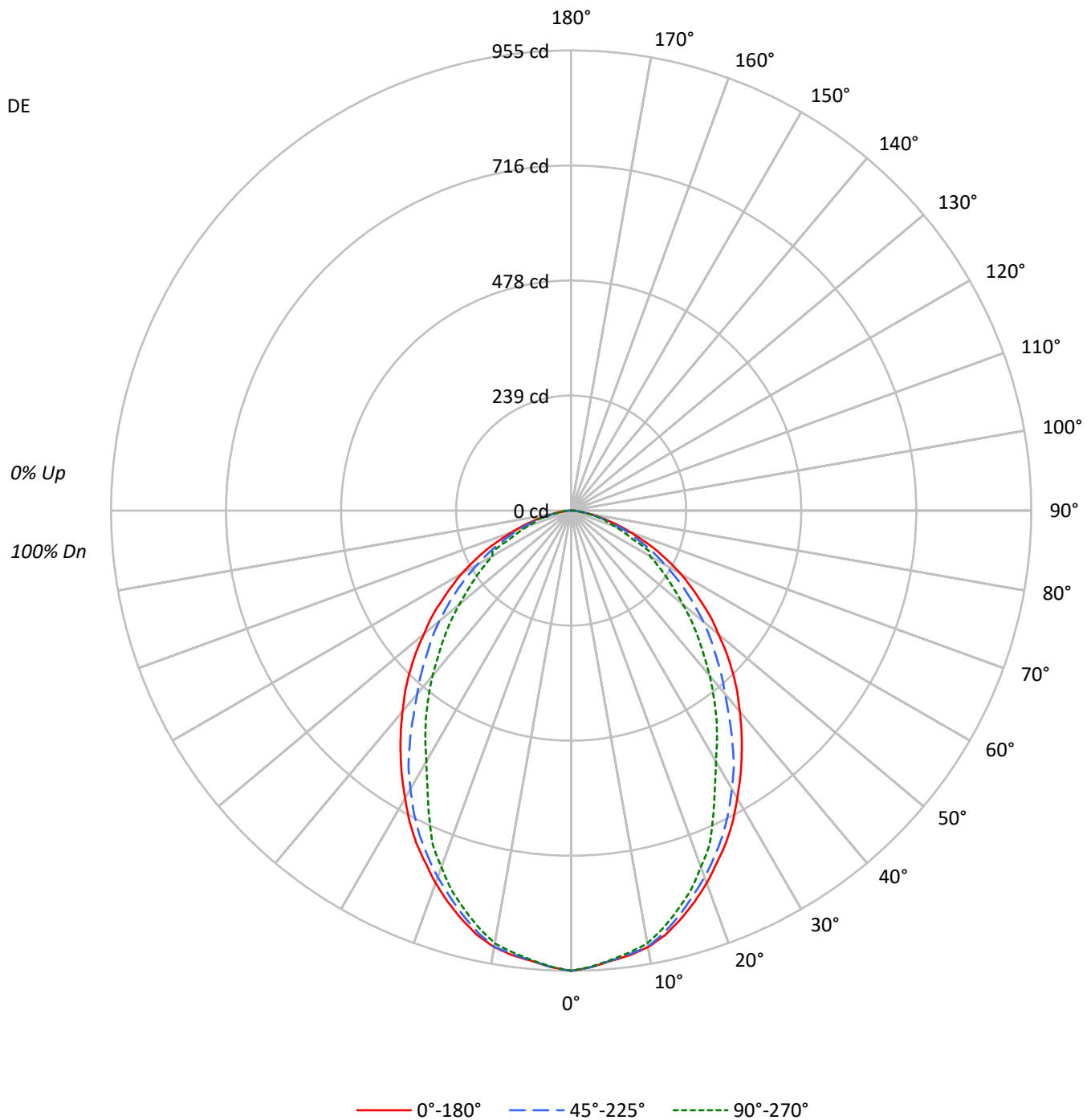
Lumens per Lamp: N/A  
Luminaire Lumens: 1875.0 lumens  
Efficiency: N/A  
Efficacy: 80.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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				
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°	2570	2570	2570
5°	2535	2532	2529
10°	2513	2510	2492
15°	2445	2421	2387
20°	2356	2318	2255
25°	2259	2210	2072
30°	2141	2072	1867
35°	2028	1915	1727
40°	1912	1746	1571
45°	1803	1614	1420
50°	1669	1497	1266
55°	1544	1357	1134
60°	1414	1212	1016
65°	1244	1061	900
70°	1025	929	765
75°	815	712	747
80°	547	513	479
85°	340	408	479

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1803 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	88.9	4.7
10°-20°	244.0	13.0
20°-30°	337.8	18.0
30°-40°	360.2	19.2
40°-50°	328.6	17.5
50°-60°	257.4	13.7
60°-70°	167.8	8.9
70°-80°	74.3	4.0
80°-90°	16.0	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°	670.7	35.8
0°-40°	1030.9	55.0
0°-60°	1616.9	86.2
0°-90°	1875.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1875.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	955	955	955	955	955	
5°	938	937	937	936	936	89
15°	878	878	869	860	857	247
25°	761	756	744	718	698	349
35°	617	613	583	539	526	386
45°	474	464	424	389	373	365
55°	329	319	289	255	242	295
65°	195	184	167	170	141	193
75°	78	73	68	65	72	84
85°	11	12	13	14	16	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	955.1	955.1	955.1	955.1	955.1
2.5°	948.5	948.5	948.5	947.4	947.4
5°	938.5	937.4	937.4	936.3	936.3
7.5°	930.8	929.7	928.6	927.5	925.3
10°	919.8	919.8	918.7	913.1	912.0
12.5°	902.1	901.0	896.6	888.9	886.6
15°	877.8	877.8	869.0	860.1	856.8
17.5°	851.3	850.2	839.2	830.3	825.9
20°	822.6	820.4	809.4	795.0	787.3
22.5°	790.6	790.6	777.3	758.6	750.8
25°	760.8	756.4	744.2	717.7	697.8
27.5°	726.5	719.9	706.7	669.1	645.9
30°	689.0	685.7	666.9	618.3	600.7
32.5°	653.7	648.1	628.3	577.5	563.1
35°	617.2	612.8	583.0	538.8	525.6
37.5°	580.8	575.3	537.7	502.4	485.8
40°	544.4	537.7	496.9	464.9	447.2
42.5°	510.1	501.3	461.5	427.3	407.4
45°	473.7	463.7	424.0	388.7	373.2
47.5°	437.2	428.4	392.0	355.5	337.9
50°	398.6	390.9	357.7	321.3	302.5
52.5°	366.6	354.4	322.4	286.0	270.5
55°	329.0	319.1	289.3	255.1	241.8
57.5°	294.8	284.9	257.3	225.2	214.2
60°	262.8	248.4	225.2	197.6	188.8
62.5°	227.5	216.4	196.5	173.4	184.4
65°	195.4	184.4	166.7	170.0	141.3
67.5°	160.1	154.6	139.1	123.7	119.2
70°	130.3	123.7	118.1	101.6	97.2
72.5°	103.8	97.2	89.4	80.6	77.3
75°	78.4	72.9	68.5	65.1	71.8
77.5°	54.1	51.9	48.6	45.3	44.2
80°	35.3	34.2	33.1	32.0	30.9
82.5°	21.0	21.0	21.0	21.0	21.0
85°	11.0	12.1	13.2	14.4	15.5
87.5°	6.6	6.6	7.7	8.8	9.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)