

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: P590269

Luminaire Tested: FSR-24-2-LD4-2LO-40-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590269  
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-LD4-2LO-40-UNV-81-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

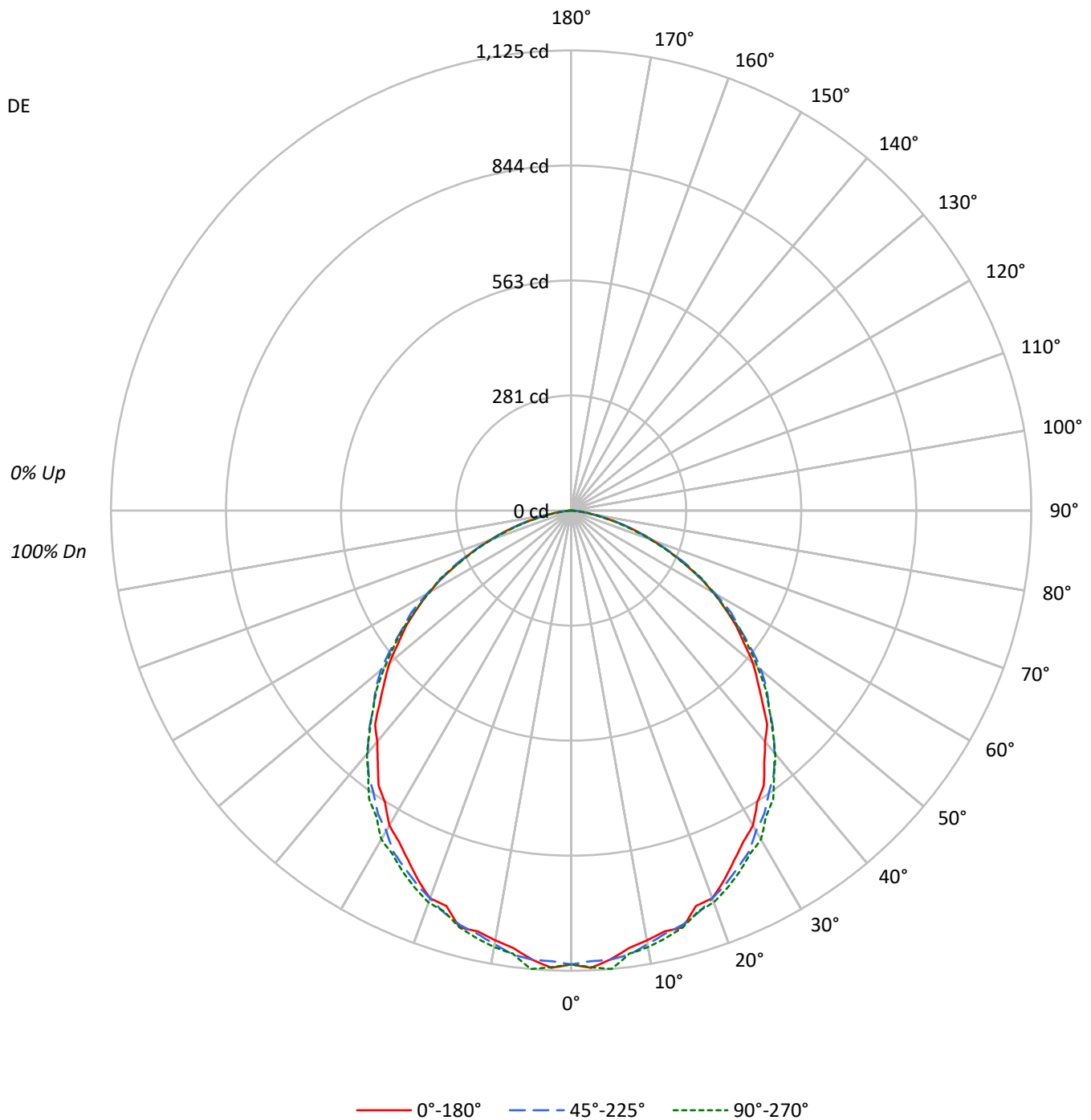
Lumens per Lamp: N/A  
Luminaire Lumens: 2796.0 lumens  
Efficiency: N/A  
Efficacy: 119.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2985	2985	2985
5°	2975	2977	3039
10°	2915	2941	2961
15°	2938	2922	2939
20°	2889	2889	2919
25°	2800	2861	2893
30°	2761	2810	2884
35°	2696	2767	2829
40°	2591	2716	2728
45°	2513	2602	2606
50°	2430	2540	2492
55°	2316	2361	2344
60°	2166	2187	2148
65°	1931	1980	1917
70°	1657	1662	1616
75°	1312	1309	1258
80°	879	854	821
85°	479	472	442

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2669 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.4	3.7
10°-20°	295.8	10.6
20°-30°	443.1	15.8
30°-40°	525.2	18.8
40°-50°	526.1	18.8
50°-60°	446.6	16.0
60°-70°	301.1	10.8
70°-80°	132.3	4.7
80°-90°	21.5	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°	843.2	30.2
0°-40°	1368.4	48.9
0°-60°	2341.1	83.7
0°-90°	2796.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2796.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1109	1109	1109	1109	1109	
5°	1102	1099	1102	1099	1125	104
15°	1055	1042	1049	1054	1055	294
25°	943	948	964	976	974	436
35°	821	823	842	862	861	510
45°	660	673	684	701	685	511
55°	494	490	503	500	500	439
65°	303	299	311	299	301	302
75°	126	124	126	117	121	135
85°	16	15	15	15	14	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1109.4	1109.4	1109.4	1109.4	1109.4
2.5°	1119.0	1110.5	1102.6	1111.8	1117.4
5°	1101.5	1098.9	1101.9	1098.6	1125.1
7.5°	1078.9	1088.8	1094.5	1090.9	1092.5
10°	1066.8	1063.4	1076.2	1085.0	1083.7
12.5°	1053.9	1059.1	1059.8	1069.4	1070.3
15°	1054.7	1042.5	1048.9	1054.4	1054.8
17.5°	1013.7	1026.9	1031.3	1043.8	1028.3
20°	1008.7	999.1	1008.7	1021.4	1019.4
22.5°	977.9	967.1	987.8	999.1	998.4
25°	942.9	948.1	963.6	976.2	974.2
27.5°	912.3	918.3	940.4	957.7	946.5
30°	888.7	885.6	904.3	919.7	928.3
32.5°	846.4	857.3	879.1	894.4	886.2
35°	820.8	823.2	842.2	861.7	861.1
37.5°	775.9	787.2	814.0	819.5	814.5
40°	737.7	749.0	773.2	779.1	776.6
42.5°	709.5	711.5	732.2	739.0	728.2
45°	660.3	672.6	683.8	701.4	684.8
47.5°	618.5	624.2	648.3	653.0	644.3
50°	580.5	582.6	606.8	600.9	595.2
52.5°	532.8	541.3	554.9	553.8	547.0
55°	493.6	490.3	503.2	499.8	499.6
57.5°	446.5	452.2	462.8	457.4	448.6
60°	402.4	402.5	406.4	400.2	399.1
62.5°	353.2	354.9	355.8	348.2	360.5
65°	303.2	299.2	311.0	299.1	301.1
67.5°	257.3	259.3	258.1	250.7	253.5
70°	210.6	213.1	211.3	202.8	205.4
72.5°	167.9	164.7	166.7	156.1	161.0
75°	126.2	123.6	125.9	117.0	121.0
77.5°	85.9	87.9	86.5	81.8	84.5
80°	56.7	55.1	55.1	52.4	53.0
82.5°	33.1	31.5	31.1	30.2	31.5
85°	15.5	15.0	15.3	14.9	14.3
87.5°	5.6	5.7	5.7	5.4	5.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)