

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: P561284

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561284  
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-LD4-1STD-50-UNV-81-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

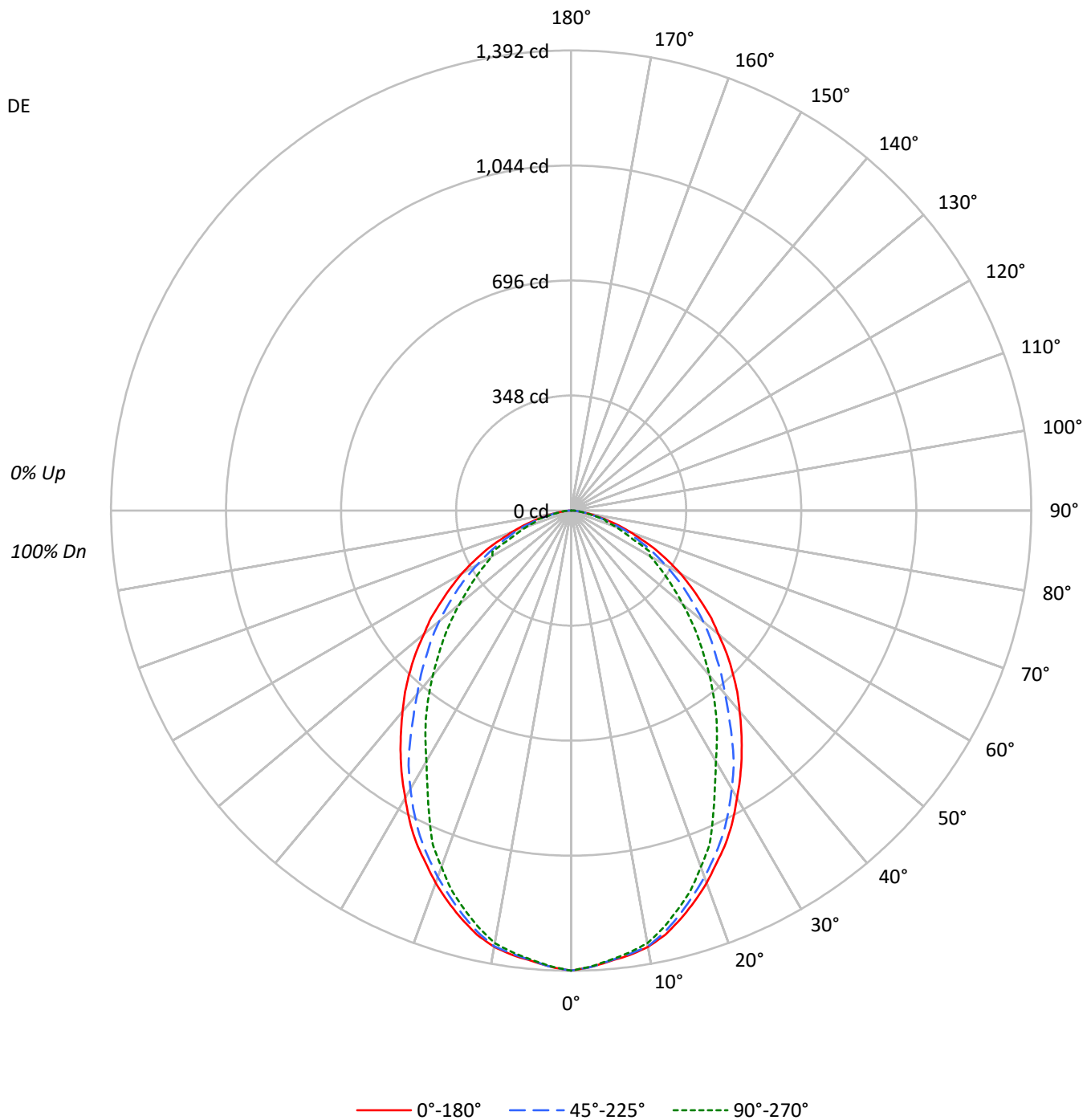
Lumens per Lamp: N/A  
Luminaire Lumens: 2732.0 lumens  
Efficiency: N/A  
Efficacy: 82.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3745	3745	3745
5°	3694	3690	3685
10°	3662	3658	3631
15°	3563	3528	3478
20°	3432	3377	3285
25°	3291	3220	3019
30°	3119	3019	2719
35°	2954	2791	2516
40°	2786	2543	2289
45°	2627	2351	2069
50°	2431	2182	1845
55°	2249	1978	1653
60°	2061	1766	1481
65°	1813	1547	1311
70°	1493	1354	1114
75°	1187	1037	1088
80°	798	748	697
85°	497	596	695

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2627 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.5	4.7
10°-20°	355.5	13.0
20°-30°	492.2	18.0
30°-40°	524.8	19.2
40°-50°	478.8	17.5
50°-60°	375.1	13.7
60°-70°	244.5	8.9
70°-80°	108.3	4.0
80°-90°	23.3	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°	977.3	35.8
0°-40°	1502.1	55.0
0°-60°	2356.0	86.2
0°-90°	2732.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2732.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1392	1392	1392	1392	1392	
5°	1368	1366	1366	1364	1364	130
15°	1279	1279	1266	1253	1248	360
25°	1108	1102	1084	1046	1017	509
35°	899	893	850	785	766	562
45°	690	676	618	566	544	532
55°	479	465	422	372	352	430
65°	285	269	243	248	206	281
75°	114	106	100	95	105	122
85°	16	18	19	21	22	22
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1391.6	1391.6	1391.6	1391.6	1391.6
2.5°	1382.0	1382.0	1382.0	1380.4	1380.4
5°	1367.5	1365.9	1365.9	1364.3	1364.3
7.5°	1356.2	1354.6	1353.0	1351.4	1348.2
10°	1340.2	1340.2	1338.6	1330.5	1328.9
12.5°	1314.4	1312.8	1306.4	1295.1	1291.9
15°	1279.0	1279.0	1266.2	1253.3	1248.5
17.5°	1240.4	1238.8	1222.7	1209.8	1203.4
20°	1198.6	1195.4	1179.3	1158.4	1147.1
22.5°	1151.9	1151.9	1132.6	1105.3	1094.0
25°	1108.5	1102.1	1084.4	1045.7	1016.8
27.5°	1058.6	1049.0	1029.7	975.0	941.2
30°	1003.9	999.1	971.7	900.9	875.2
32.5°	952.4	944.4	915.4	841.4	820.5
35°	899.3	892.9	849.5	785.1	765.8
37.5°	846.2	838.2	783.5	732.0	707.9
40°	793.2	783.5	724.0	677.3	651.6
42.5°	743.3	730.4	672.5	622.6	593.7
45°	690.2	675.7	617.8	566.3	543.8
47.5°	637.1	624.2	571.1	518.0	492.3
50°	580.8	569.5	521.3	468.2	440.8
52.5°	534.1	516.4	469.8	416.7	394.2
55°	479.4	465.0	421.5	371.6	352.3
57.5°	429.6	415.1	374.9	328.2	312.1
60°	382.9	362.0	328.2	288.0	275.1
62.5°	331.4	315.3	286.4	252.6	268.7
65°	284.8	268.7	242.9	247.8	205.9
67.5°	233.3	225.2	202.7	180.2	173.8
70°	189.8	180.2	172.1	148.0	141.6
72.5°	151.2	141.6	130.3	117.4	112.6
75°	114.2	106.2	99.7	94.9	104.6
77.5°	78.8	75.6	70.8	66.0	64.4
80°	51.5	49.9	48.3	46.7	45.0
82.5°	30.6	30.6	30.6	30.6	30.6
85°	16.1	17.7	19.3	20.9	22.5
87.5°	9.7	9.7	11.3	12.9	14.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)