

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: P561412

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561412  
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-LD4-2HI-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

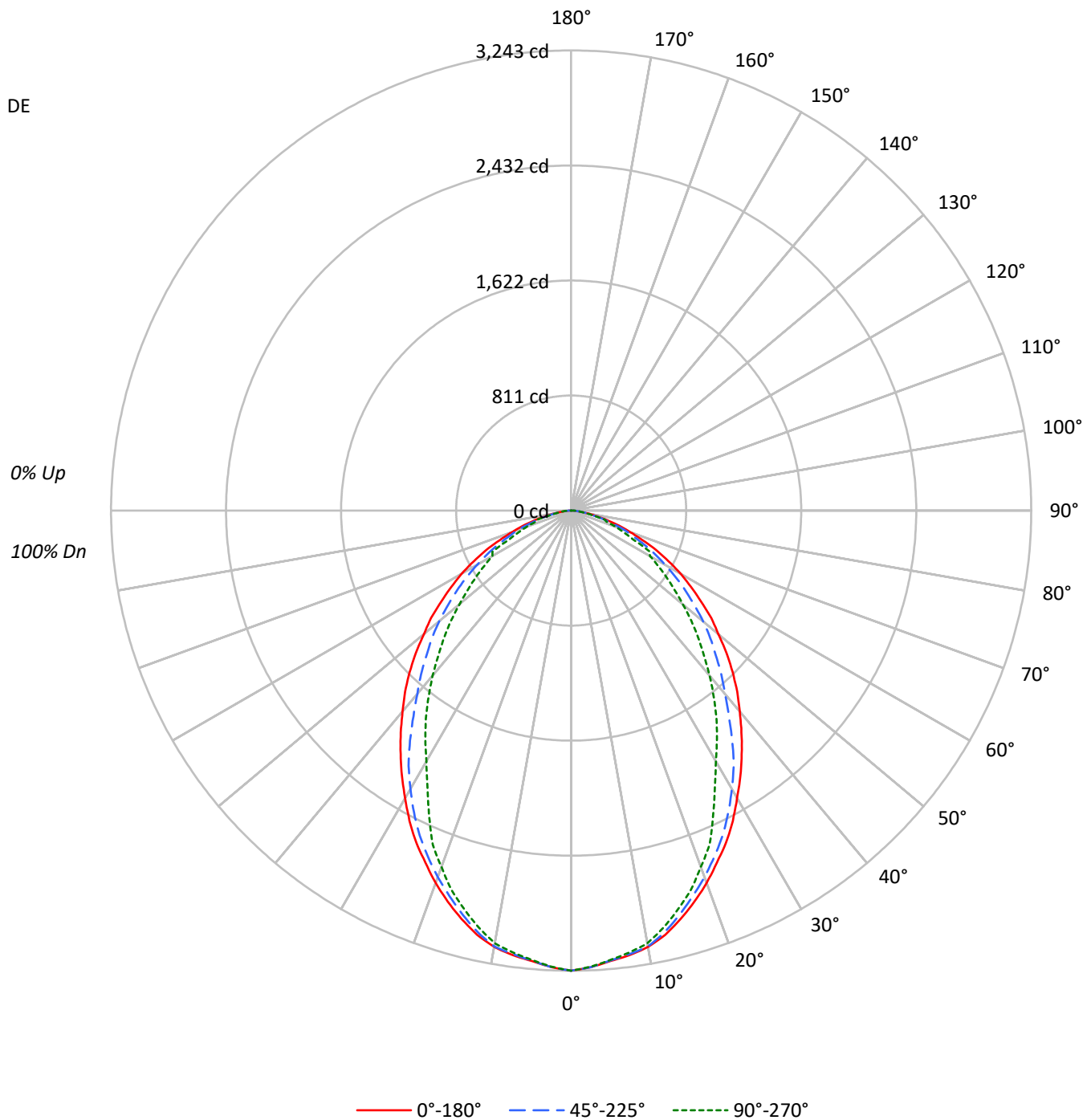
Lumens per Lamp: N/A  
Luminaire Lumens: 6366.0 lumens  
Efficiency: N/A  
Efficacy: 73.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	8726	8726	8726
5°	8608	8598	8587
10°	8533	8523	8461
15°	8303	8219	8104
20°	7998	7869	7654
25°	7669	7502	7035
30°	7269	7036	6337
35°	6884	6502	5862
40°	6492	5926	5334
45°	6121	5479	4822
50°	5665	5085	4300
55°	5241	4608	3852
60°	4802	4116	3450
65°	4225	3605	3056
70°	3481	3156	2596
75°	2768	2416	2534
80°	1860	1743	1627
85°	1158	1389	1621

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6121 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	301.9	4.7
10°-20°	828.4	13.0
20°-30°	1146.9	18.0
30°-40°	1222.9	19.2
40°-50°	1115.7	17.5
50°-60°	874.0	13.7
60°-70°	569.7	8.9
70°-80°	252.4	4.0
80°-90°	54.2	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°	2277.2	35.8
0°-40°	3500.1	55.0
0°-60°	5489.8	86.2
0°-90°	6366.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6366.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3243	3243	3243	3243	3243	
5°	3186	3183	3183	3179	3179	302
15°	2980	2980	2950	2920	2909	838
25°	2583	2568	2527	2437	2369	1186
35°	2096	2081	1979	1829	1784	1310
45°	1608	1574	1440	1320	1267	1239
55°	1117	1083	982	866	821	1002
65°	664	626	566	577	480	654
75°	266	247	232	221	244	285
85°	38	41	45	49	52	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3242.8	3242.8	3242.8	3242.8	3242.8
2.5°	3220.3	3220.3	3220.3	3216.5	3216.5
5°	3186.5	3182.8	3182.8	3179.0	3179.0
7.5°	3160.3	3156.5	3152.8	3149.0	3141.5
10°	3122.8	3122.8	3119.0	3100.3	3096.6
12.5°	3062.8	3059.1	3044.1	3017.8	3010.3
15°	2980.3	2980.3	2950.3	2920.4	2909.1
17.5°	2890.4	2886.6	2849.1	2819.1	2804.1
20°	2792.9	2785.4	2747.9	2699.2	2672.9
22.5°	2684.2	2684.2	2639.2	2575.5	2549.2
25°	2583.0	2568.0	2526.7	2436.8	2369.3
27.5°	2466.7	2444.3	2399.3	2271.8	2193.1
30°	2339.3	2328.0	2264.3	2099.4	2039.4
32.5°	2219.3	2200.6	2133.1	1960.6	1911.9
35°	2095.6	2080.6	1979.4	1829.4	1784.5
37.5°	1971.9	1953.2	1825.7	1705.7	1649.5
40°	1848.2	1825.7	1687.0	1578.3	1518.3
42.5°	1732.0	1702.0	1567.0	1450.8	1383.3
45°	1608.3	1574.5	1439.6	1319.6	1267.1
47.5°	1484.5	1454.6	1330.8	1207.1	1147.1
50°	1353.3	1327.1	1214.6	1090.9	1027.2
52.5°	1244.6	1203.4	1094.7	971.0	918.5
55°	1117.2	1083.4	982.2	866.0	821.0
57.5°	1000.9	967.2	873.5	764.8	727.3
60°	892.2	843.5	764.8	671.0	641.1
62.5°	772.3	734.8	667.3	588.6	626.1
65°	663.5	626.1	566.1	577.3	479.9
67.5°	543.6	524.8	472.4	419.9	404.9
70°	442.4	419.9	401.1	344.9	329.9
72.5°	352.4	329.9	303.7	273.7	262.4
75°	266.2	247.4	232.4	221.2	243.7
77.5°	183.7	176.2	164.9	153.7	150.0
80°	120.0	116.2	112.5	108.7	105.0
82.5°	71.2	71.2	71.2	71.2	71.2
85°	37.5	41.2	45.0	48.7	52.5
87.5°	22.5	22.5	26.2	30.0	33.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)