

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: P563284

Luminaire Tested: FSR-24-4-LD4-3LO-35-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563284  
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-24-4-LD4-3LO-35-UNV-82-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

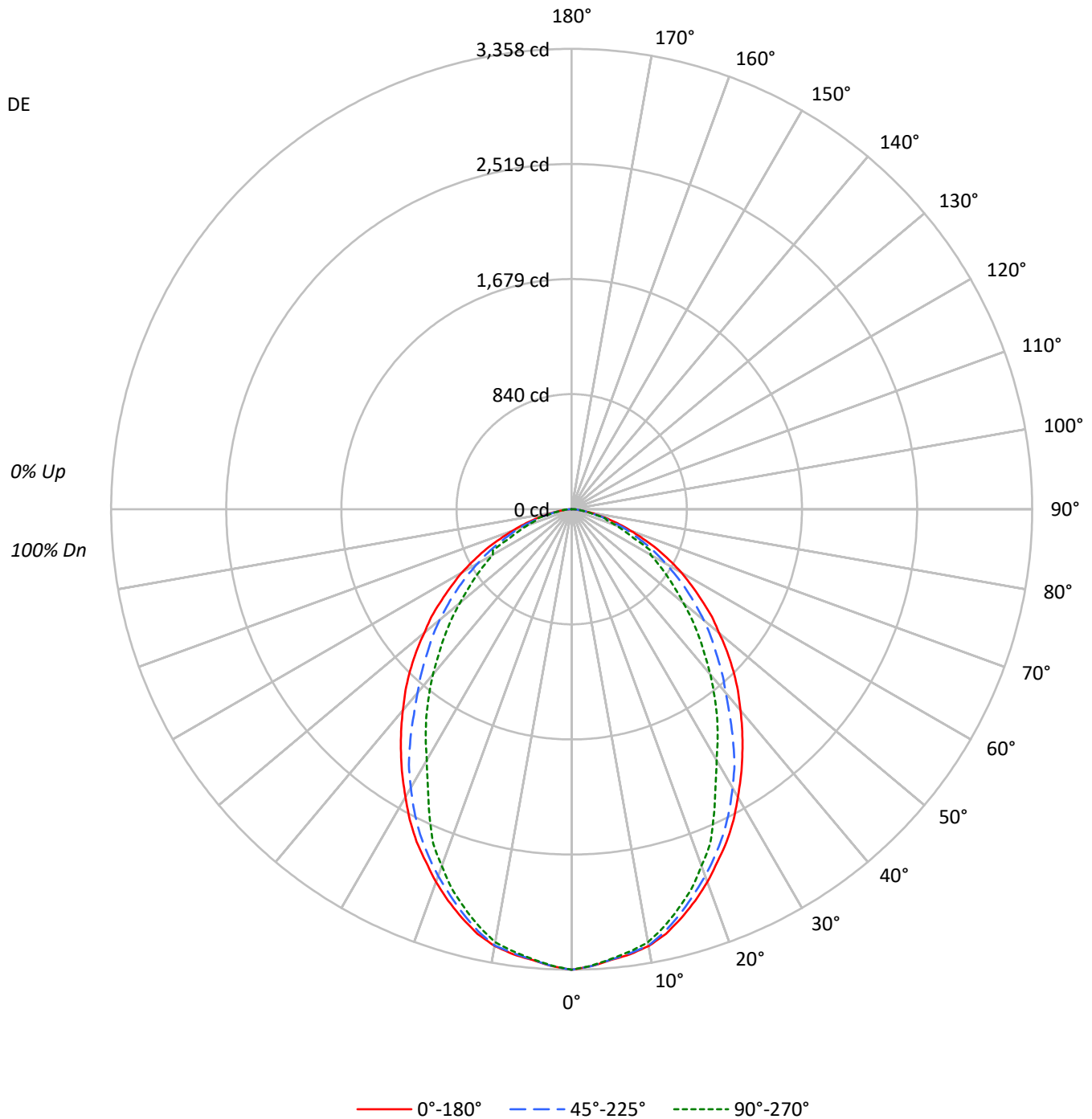
Lumens per Lamp: N/A  
Luminaire Lumens: 6593.0 lumens  
Efficiency: N/A  
Efficacy: 93.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4519	4519	4519
5°	4457	4452	4447
10°	4419	4413	4382
15°	4299	4256	4197
20°	4142	4075	3964
25°	3971	3885	3643
30°	3764	3643	3281
35°	3565	3367	3036
40°	3362	3069	2762
45°	3169	2837	2497
50°	2934	2633	2227
55°	2714	2386	1995
60°	2486	2131	1787
65°	2188	1867	1582
70°	1802	1634	1344
75°	1433	1251	1312
80°	962	903	842
85°	599	719	840

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3169 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	312.6	4.7
10°-20°	858.0	13.0
20°-30°	1187.8	18.0
30°-40°	1266.5	19.2
40°-50°	1155.4	17.5
50°-60°	905.2	13.7
60°-70°	590.0	8.9
70°-80°	261.4	4.0
80°-90°	56.1	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°	2358.4	35.8
0°-40°	3624.9	55.0
0°-60°	5685.5	86.2
0°-90°	6593.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6593.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3358	3358	3358	3358	3358	
5°	3300	3296	3296	3292	3292	313
15°	3087	3087	3056	3024	3013	868
25°	2675	2660	2617	2524	2454	1228
35°	2170	2155	2050	1895	1848	1357
45°	1666	1631	1491	1367	1312	1283
55°	1157	1122	1017	897	850	1038
65°	687	648	586	598	497	677
75°	276	256	241	229	252	295
85°	39	43	47	50	54	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3358.4	3358.4	3358.4	3358.4	3358.4
2.5°	3335.1	3335.1	3335.1	3331.2	3331.2
5°	3300.1	3296.3	3296.3	3292.4	3292.4
7.5°	3273.0	3269.1	3265.2	3261.3	3253.6
10°	3234.1	3234.1	3230.3	3210.9	3207.0
12.5°	3172.0	3168.1	3152.6	3125.4	3117.7
15°	3086.6	3086.6	3055.5	3024.5	3012.8
17.5°	2993.4	2989.5	2950.7	2919.7	2904.1
20°	2892.5	2884.7	2845.9	2795.4	2768.2
22.5°	2779.9	2779.9	2733.3	2667.3	2640.1
25°	2675.1	2659.5	2616.8	2523.6	2453.8
27.5°	2554.7	2531.4	2484.8	2352.8	2271.3
30°	2422.7	2411.0	2345.0	2174.2	2112.1
32.5°	2298.5	2279.0	2209.2	2030.6	1980.1
35°	2170.3	2154.8	2050.0	1894.7	1848.1
37.5°	2042.2	2022.8	1890.8	1766.5	1708.3
40°	1914.1	1890.8	1747.1	1634.5	1572.4
42.5°	1793.7	1762.7	1622.9	1502.5	1432.7
45°	1665.6	1630.7	1490.9	1366.6	1312.3
47.5°	1537.5	1506.4	1378.3	1250.2	1188.1
50°	1401.6	1374.4	1257.9	1129.8	1063.8
52.5°	1289.0	1246.3	1133.7	1005.6	951.2
55°	1157.0	1122.1	1017.2	896.9	850.3
57.5°	1036.6	1001.7	904.6	792.0	753.2
60°	924.0	873.6	792.0	695.0	663.9
62.5°	799.8	761.0	691.1	609.6	648.4
65°	687.2	648.4	586.3	597.9	497.0
67.5°	563.0	543.6	489.2	434.8	419.3
70°	458.1	434.8	415.4	357.2	341.7
72.5°	365.0	341.7	314.5	283.4	271.8
75°	275.7	256.2	240.7	229.1	252.4
77.5°	190.2	182.5	170.8	159.2	155.3
80°	124.2	120.4	116.5	112.6	108.7
82.5°	73.8	73.8	73.8	73.8	73.8
85°	38.8	42.7	46.6	50.5	54.4
87.5°	23.3	23.3	27.2	31.1	34.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)