

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: P561488

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-82-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561488  
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-50-UNV-82-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

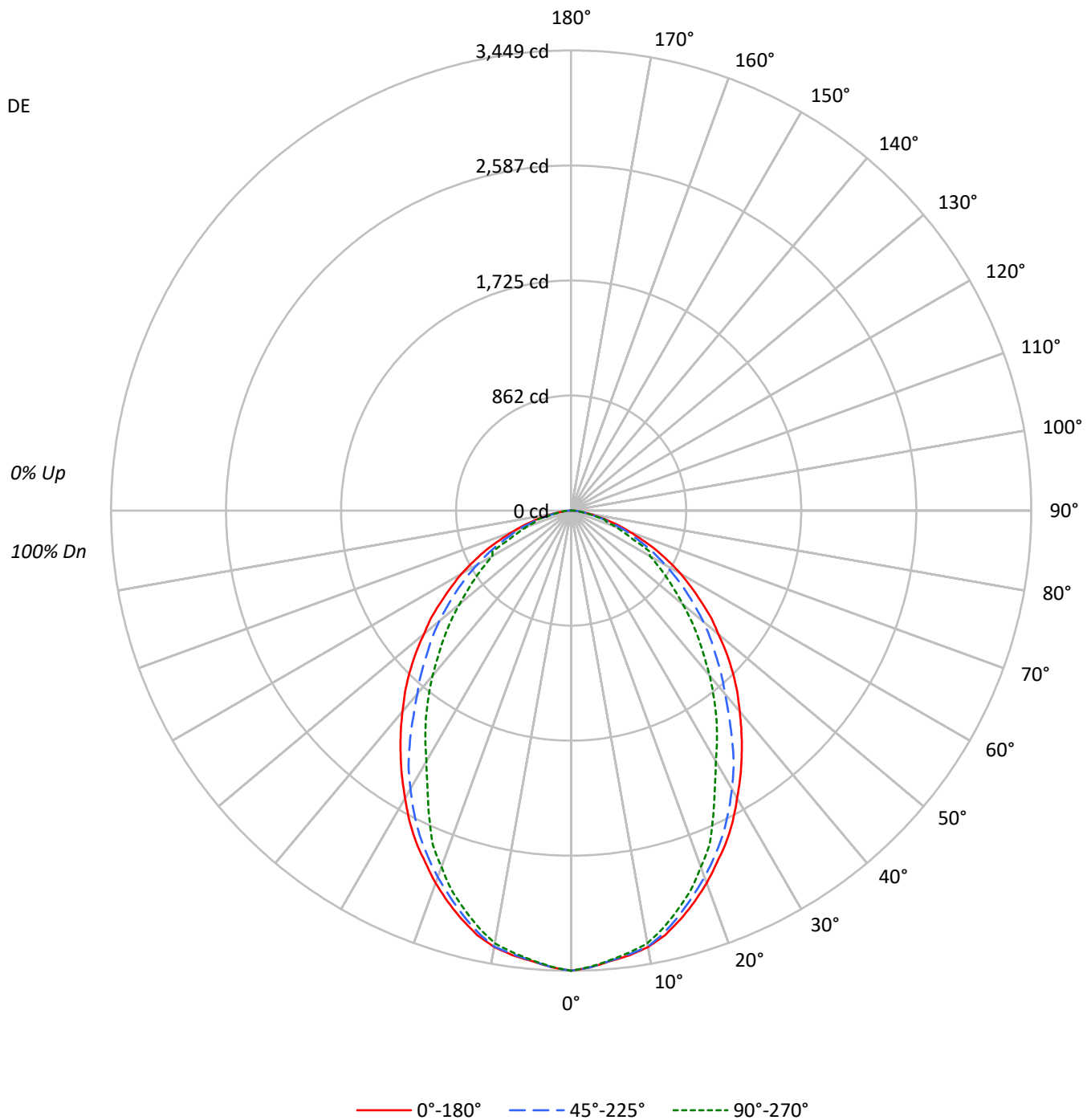
Lumens per Lamp: N/A  
Luminaire Lumens: 6771.0 lumens  
Efficiency: N/A  
Efficacy: 78.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9281	9281	9281
5°	9155	9145	9134
10°	9076	9065	9000
15°	8831	8742	8620
20°	8507	8370	8141
25°	8157	7980	7482
30°	7731	7484	6740
35°	7322	6916	6235
40°	6906	6303	5673
45°	6510	5827	5129
50°	6026	5408	4574
55°	5575	4901	4097
60°	5107	4378	3669
65°	4494	3834	3250
70°	3702	3356	2761
75°	2943	2570	2695
80°	1977	1853	1729
85°	1232	1476	1723

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6510 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	321.1	4.7
10°-20°	881.1	13.0
20°-30°	1219.9	18.0
30°-40°	1300.7	19.2
40°-50°	1186.6	17.5
50°-60°	929.6	13.7
60°-70°	605.9	8.9
70°-80°	268.4	4.0
80°-90°	57.6	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°	2422.0	35.8
0°-40°	3722.8	55.0
0°-60°	5839.0	86.2
0°-90°	6771.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6771.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3449	3449	3449	3449	3449	
5°	3389	3385	3385	3381	3381	322
15°	3170	3170	3138	3106	3094	891
25°	2747	2731	2688	2592	2520	1261
35°	2229	2213	2105	1946	1898	1393
45°	1711	1675	1531	1404	1348	1318
55°	1188	1152	1045	921	873	1066
65°	706	666	602	614	510	696
75°	283	263	247	235	259	303
85°	40	44	48	52	56	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3449.1	3449.1	3449.1	3449.1	3449.1
2.5°	3425.1	3425.1	3425.1	3421.1	3421.1
5°	3389.2	3385.3	3385.3	3381.3	3381.3
7.5°	3361.3	3357.3	3353.4	3349.4	3341.4
10°	3321.5	3321.5	3317.5	3297.5	3293.6
12.5°	3257.7	3253.7	3237.7	3209.8	3201.8
15°	3169.9	3169.9	3138.0	3106.1	3094.2
17.5°	3074.2	3070.3	3030.4	2998.5	2982.5
20°	2970.6	2962.6	2922.7	2870.9	2843.0
22.5°	2854.9	2854.9	2807.1	2739.3	2711.4
25°	2747.3	2731.3	2687.5	2591.8	2520.0
27.5°	2623.7	2599.8	2551.9	2416.3	2332.6
30°	2488.1	2476.1	2408.4	2232.9	2169.1
32.5°	2360.5	2340.6	2268.8	2085.4	2033.5
35°	2228.9	2213.0	2105.3	1945.8	1898.0
37.5°	2097.3	2077.4	1941.8	1814.2	1754.4
40°	1965.8	1941.8	1794.3	1678.7	1614.9
42.5°	1842.2	1810.3	1666.7	1543.1	1471.3
45°	1710.6	1674.7	1531.1	1403.5	1347.7
47.5°	1579.0	1547.1	1415.5	1283.9	1220.1
50°	1439.4	1411.5	1291.9	1160.3	1092.5
52.5°	1323.8	1279.9	1164.3	1032.7	976.9
55°	1188.2	1152.3	1044.7	921.1	873.2
57.5°	1064.6	1028.7	929.1	813.4	773.5
60°	949.0	897.2	813.4	713.7	681.8
62.5°	821.4	781.5	709.7	626.0	665.9
65°	705.8	665.9	602.1	614.1	510.4
67.5°	578.2	558.2	502.4	446.6	430.6
70°	470.5	446.6	426.6	366.8	350.9
72.5°	374.8	350.9	323.0	291.1	279.1
75°	283.1	263.2	247.2	235.3	259.2
77.5°	195.4	187.4	175.4	163.5	159.5
80°	127.6	123.6	119.6	115.6	111.6
82.5°	75.8	75.8	75.8	75.8	75.8
85°	39.9	43.9	47.8	51.8	55.8
87.5°	23.9	23.9	27.9	31.9	35.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)