

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: P563905

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563905  
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-LD4-4LO-40-UNV-81-84-EDD  
Description: 2X4 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: -

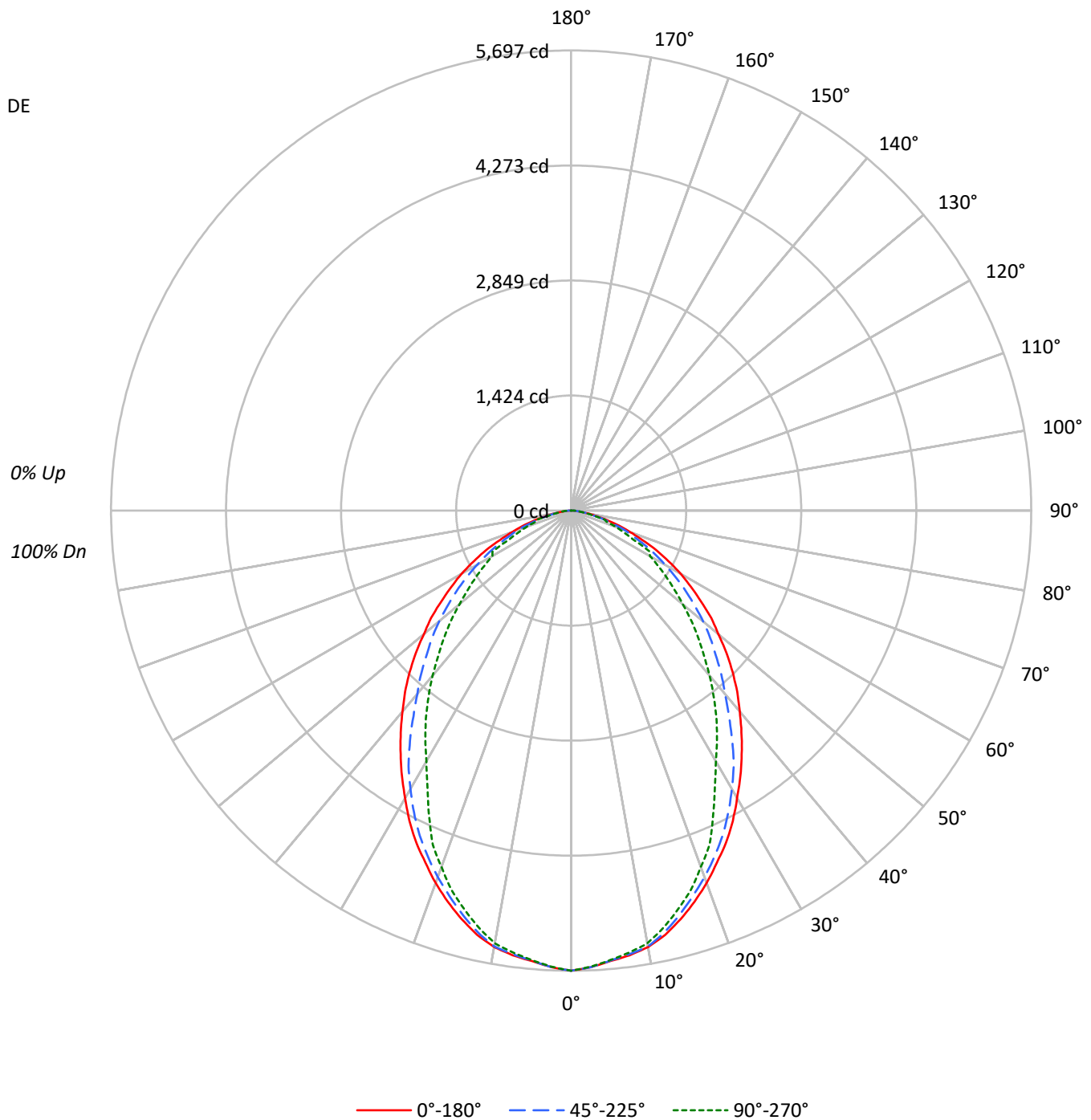
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11184.0 lumens  
Efficiency: N/A  
Efficacy: 119.5 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): 93.6  
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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7665	7665	7665
5°	7561	7552	7543
10°	7495	7486	7433
15°	7294	7220	7119
20°	7025	6912	6724
25°	6737	6590	6179
30°	6385	6180	5566
35°	6047	5712	5149
40°	5703	5205	4685
45°	5376	4812	4236
50°	4977	4467	3777
55°	4604	4048	3384
60°	4218	3616	3031
65°	3711	3166	2684
70°	3057	2772	2280
75°	2431	2123	2226
80°	1633	1531	1429
85°	1017	1220	1423

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5376 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	530.3	4.7
10°-20°	1455.4	13.0
20°-30°	2014.9	18.0
30°-40°	2148.5	19.2
40°-50°	1960.0	17.5
50°-60°	1535.5	13.7
60°-70°	1000.8	8.9
70°-80°	443.4	4.0
80°-90°	95.2	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°	4000.6	35.8
0°-40°	6149.1	55.0
0°-60°	9644.6	86.2
0°-90°	11184.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11184.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5697	5697	5697	5697	5697	
5°	5598	5592	5592	5585	5585	531
15°	5236	5236	5183	5131	5111	1472
25°	4538	4512	4439	4281	4162	2083
35°	3682	3655	3478	3214	3135	2302
45°	2825	2766	2529	2318	2226	2176
55°	1963	1903	1726	1521	1442	1760
65°	1166	1100	994	1014	843	1149
75°	468	435	408	389	428	501
85°	66	72	79	86	92	91
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5697.0	5697.0	5697.0	5697.0	5697.0
2.5°	5657.5	5657.5	5657.5	5650.9	5650.9
5°	5598.2	5591.6	5591.6	5585.0	5585.0
7.5°	5552.1	5545.5	5538.9	5532.3	5519.2
10°	5486.2	5486.2	5479.6	5446.7	5440.1
12.5°	5380.8	5374.3	5347.9	5301.8	5288.6
15°	5236.0	5236.0	5183.3	5130.6	5110.8
17.5°	5077.9	5071.3	5005.4	4952.8	4926.4
20°	4906.6	4893.5	4827.6	4742.0	4695.9
22.5°	4715.7	4715.7	4636.6	4524.7	4478.6
25°	4537.8	4511.5	4439.0	4281.0	4162.4
27.5°	4333.7	4294.1	4215.1	3991.2	3852.9
30°	4109.7	4090.0	3978.0	3688.2	3582.8
32.5°	3899.0	3866.0	3747.5	3444.5	3358.9
35°	3681.6	3655.3	3477.5	3214.0	3135.0
37.5°	3464.3	3431.4	3207.4	2996.7	2897.9
40°	3246.9	3207.4	2963.7	2772.7	2667.4
42.5°	3042.8	2990.1	2753.0	2548.8	2430.3
45°	2825.4	2766.2	2529.1	2318.3	2226.1
47.5°	2608.1	2555.4	2338.1	2120.7	2015.3
50°	2377.6	2331.5	2133.9	1916.6	1804.6
52.5°	2186.6	2114.1	1923.1	1705.8	1613.6
55°	1962.7	1903.4	1725.6	1521.4	1442.4
57.5°	1758.5	1699.2	1534.6	1343.6	1277.7
60°	1567.5	1481.9	1343.6	1178.9	1126.2
62.5°	1356.7	1290.9	1172.3	1034.0	1099.9
65°	1165.7	1099.9	994.5	1014.3	843.0
67.5°	955.0	922.1	829.8	737.6	711.3
70°	777.2	737.6	704.7	605.9	579.6
72.5°	619.1	579.6	533.5	480.8	461.0
75°	467.6	434.7	408.3	388.6	428.1
77.5°	322.7	309.5	289.8	270.0	263.4
80°	210.8	204.2	197.6	191.0	184.4
82.5°	125.1	125.1	125.1	125.1	125.1
85°	65.9	72.4	79.0	85.6	92.2
87.5°	39.5	39.5	46.1	52.7	59.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)