

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: P564106

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564106  
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-LD4-4STD-40-UNV-81-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

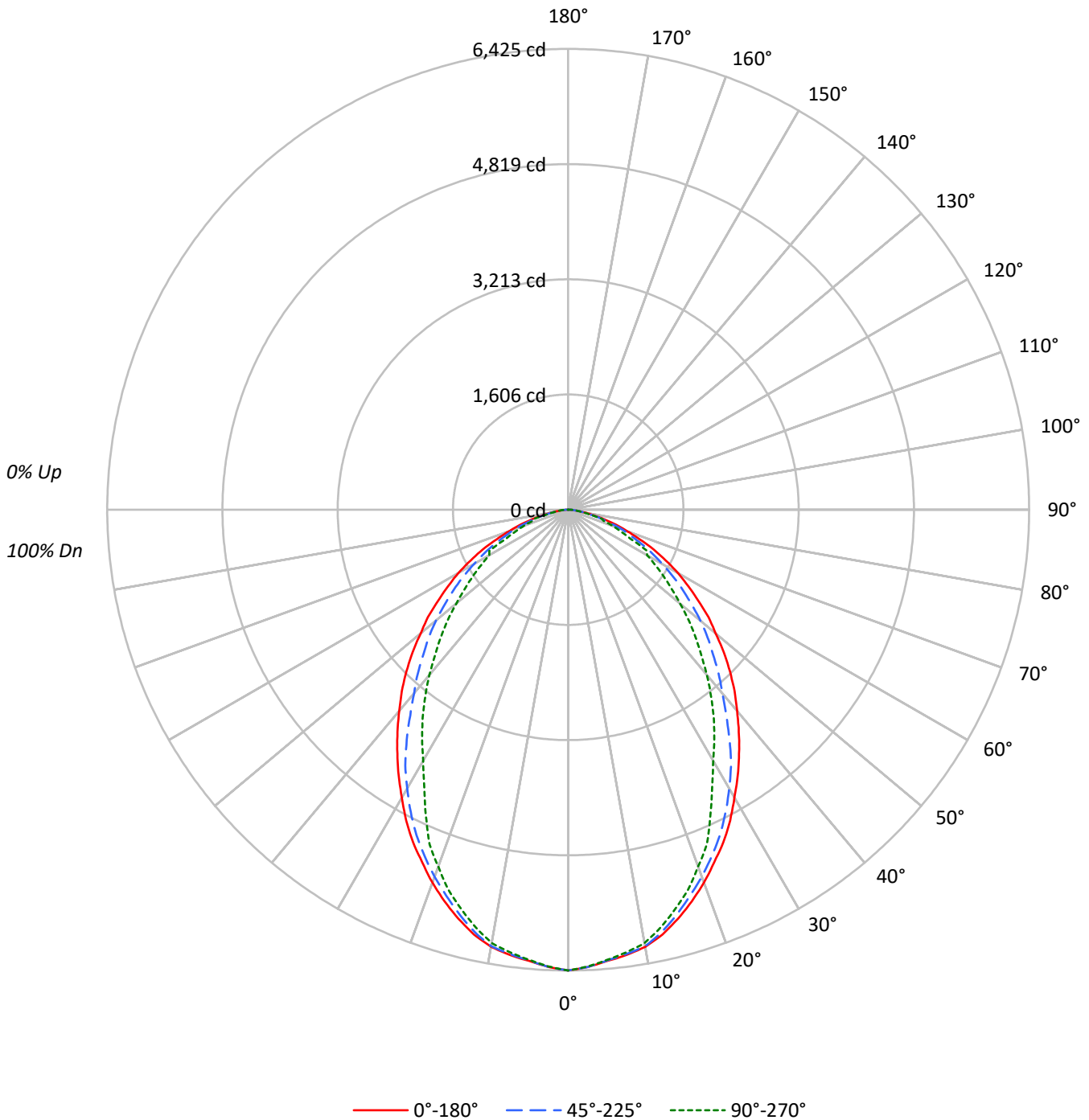
Lumens per Lamp: N/A  
Luminaire Lumens: 12613.0 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8645	8645	8645
5°	8527	8517	8507
10°	8453	8443	8382
15°	8225	8143	8029
20°	7923	7796	7583
25°	7598	7432	6969
30°	7201	6970	6278
35°	6820	6442	5807
40°	6432	5871	5284
45°	6063	5427	4777
50°	5613	5037	4260
55°	5192	4565	3816
60°	4757	4077	3418
65°	4186	3571	3027
70°	3448	3127	2571
75°	2742	2394	2510
80°	1842	1726	1612
85°	1147	1376	1606

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6063 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	598.1	4.7
10°-20°	1641.4	13.0
20°-30°	2272.3	18.0
30°-40°	2423.0	19.2
40°-50°	2210.5	17.5
50°-60°	1731.7	13.7
60°-70°	1128.7	8.9
70°-80°	500.0	4.0
80°-90°	107.4	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°	4511.8	35.8
0°-40°	6934.8	55.0
0°-60°	10876.9	86.2
0°-90°	12613.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12613.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6425	6425	6425	6425	6425	
5°	6314	6306	6306	6299	6299	599
15°	5905	5905	5846	5786	5764	1660
25°	5118	5088	5006	4828	4694	2350
35°	4152	4122	3922	3625	3536	2596
45°	3186	3120	2852	2614	2510	2455
55°	2213	2147	1946	1716	1627	1985
65°	1315	1240	1122	1144	951	1296
75°	527	490	460	438	483	565
85°	74	82	89	97	104	103
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6424.9	6424.9	6424.9	6424.9	6424.9
2.5°	6380.3	6380.3	6380.3	6372.9	6372.9
5°	6313.5	6306.1	6306.1	6298.6	6298.6
7.5°	6261.5	6254.1	6246.6	6239.2	6224.3
10°	6187.2	6187.2	6179.8	6142.6	6135.2
12.5°	6068.4	6060.9	6031.2	5979.2	5964.4
15°	5905.0	5905.0	5845.5	5786.1	5763.8
17.5°	5726.7	5719.3	5645.0	5585.6	5555.9
20°	5533.6	5518.7	5444.4	5347.9	5295.9
22.5°	5318.2	5318.2	5229.0	5102.8	5050.8
25°	5117.6	5087.9	5006.2	4828.0	4694.3
27.5°	4887.4	4842.8	4753.7	4501.1	4345.2
30°	4634.8	4612.6	4486.3	4159.5	4040.6
32.5°	4397.2	4360.0	4226.3	3884.6	3788.1
35°	4152.0	4122.3	3921.8	3624.7	3535.5
37.5°	3906.9	3869.8	3617.3	3379.6	3268.2
40°	3661.8	3617.3	3342.4	3127.0	3008.2
42.5°	3431.6	3372.1	3104.7	2874.5	2740.8
45°	3186.5	3119.6	2852.2	2614.5	2510.5
47.5°	2941.3	2881.9	2636.8	2391.7	2272.9
50°	2681.4	2629.4	2406.5	2161.4	2035.2
52.5°	2466.0	2384.3	2168.9	1923.8	1819.8
55°	2213.4	2146.6	1946.0	1715.8	1626.6
57.5°	1983.2	1916.3	1730.6	1515.2	1441.0
60°	1767.8	1671.2	1515.2	1329.5	1270.1
62.5°	1530.1	1455.8	1322.1	1166.1	1240.4
65°	1314.7	1240.4	1121.6	1143.9	950.7
67.5°	1077.0	1039.9	935.9	831.9	802.2
70°	876.5	831.9	794.8	683.3	653.6
72.5°	698.2	653.6	601.6	542.2	519.9
75°	527.4	490.2	460.5	438.2	482.8
77.5°	364.0	349.1	326.8	304.5	297.1
80°	237.7	230.3	222.8	215.4	208.0
82.5°	141.1	141.1	141.1	141.1	141.1
85°	74.3	81.7	89.1	96.6	104.0
87.5°	44.6	44.6	52.0	59.4	66.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)