

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: P563111

Luminaire Tested: FSR-24-4-LD4-3HI-35-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563111  
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-LD4-3HI-35-UNV-93-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

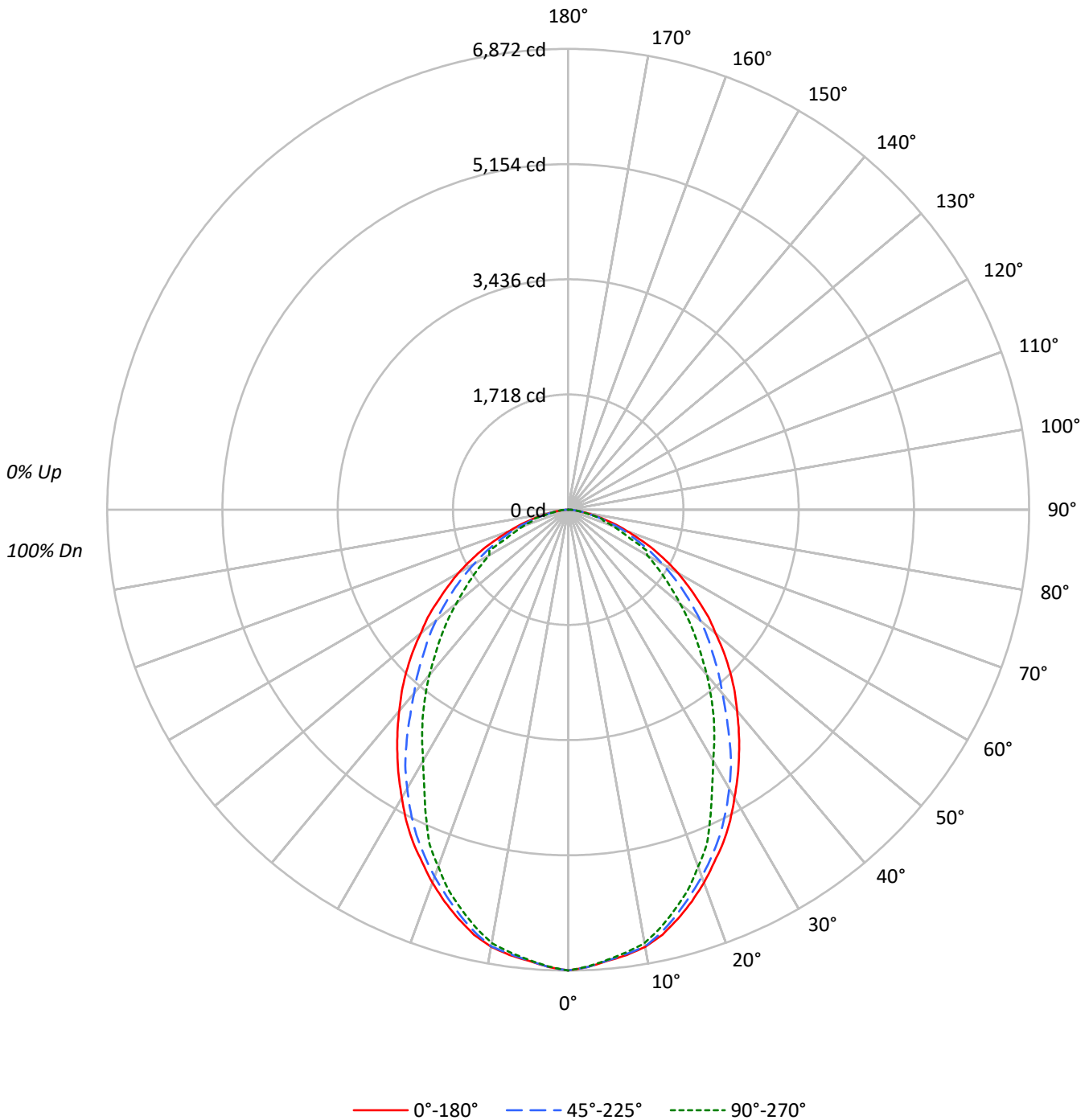
Lumens per Lamp: N/A  
Luminaire Lumens: 13491.0 lumens  
Efficiency: N/A  
Efficacy: 104.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9246	9246	9246
5°	9121	9110	9099
10°	9042	9031	8966
15°	8798	8709	8588
20°	8475	8338	8111
25°	8126	7949	7454
30°	7702	7455	6715
35°	7295	6890	6212
40°	6879	6279	5651
45°	6485	5805	5110
50°	6003	5388	4556
55°	5554	4883	4081
60°	5088	4361	3656
65°	4477	3819	3238
70°	3688	3344	2750
75°	2933	2561	2685
80°	1970	1846	1724
85°	1226	1471	1717

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6485 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	639.7	4.7
10°-20°	1755.6	13.0
20°-30°	2430.5	18.0
30°-40°	2591.7	19.2
40°-50°	2364.3	17.5
50°-60°	1852.3	13.7
60°-70°	1207.2	8.9
70°-80°	534.8	4.0
80°-90°	114.8	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°	4825.8	35.8
0°-40°	7417.5	55.0
0°-60°	11634.1	86.2
0°-90°	13491.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13491.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6872	6872	6872	6872	6872	
5°	6753	6745	6745	6737	6737	641
15°	6316	6316	6252	6189	6165	1776
25°	5474	5442	5355	5164	5021	2513
35°	4441	4409	4195	3877	3782	2776
45°	3408	3337	3051	2796	2685	2625
55°	2368	2296	2082	1835	1740	2123
65°	1406	1327	1200	1224	1017	1386
75°	564	524	493	469	516	605
85°	79	87	95	103	111	110
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6872.1	6872.1	6872.1	6872.1	6872.1
2.5°	6824.5	6824.5	6824.5	6816.5	6816.5
5°	6753.0	6745.0	6745.0	6737.1	6737.1
7.5°	6697.4	6689.4	6681.5	6673.5	6657.6
10°	6617.9	6617.9	6610.0	6570.2	6562.3
12.5°	6490.8	6482.8	6451.1	6395.5	6379.6
15°	6316.0	6316.0	6252.5	6188.9	6165.1
17.5°	6125.3	6117.4	6037.9	5974.4	5942.6
20°	5918.8	5902.9	5823.4	5720.2	5664.5
22.5°	5688.4	5688.4	5593.0	5458.0	5402.4
25°	5473.9	5442.1	5354.7	5164.0	5021.0
27.5°	5227.6	5179.9	5084.6	4814.5	4647.6
30°	4957.5	4933.6	4798.6	4449.0	4321.9
32.5°	4703.2	4663.5	4520.5	4155.1	4051.8
35°	4441.1	4409.3	4194.8	3877.0	3781.7
37.5°	4178.9	4139.2	3869.1	3614.8	3495.7
40°	3916.7	3869.1	3575.1	3344.7	3217.6
42.5°	3670.4	3606.9	3320.9	3074.6	2931.6
45°	3408.3	3336.8	3050.8	2796.5	2685.3
47.5°	3146.1	3082.5	2820.4	2558.2	2431.1
50°	2868.0	2812.4	2574.1	2311.9	2176.8
52.5°	2637.6	2550.2	2319.8	2057.7	1946.4
55°	2367.5	2296.0	2081.5	1835.2	1739.9
57.5°	2121.2	2049.7	1851.1	1620.7	1541.3
60°	1890.8	1787.5	1620.7	1422.1	1358.5
62.5°	1636.6	1557.2	1414.2	1247.3	1326.8
65°	1406.2	1326.8	1199.6	1223.5	1016.9
67.5°	1152.0	1112.3	1001.0	889.8	858.0
70°	937.5	889.8	850.1	730.9	699.1
72.5°	746.8	699.1	643.5	580.0	556.1
75°	564.1	524.3	492.6	468.7	516.4
77.5°	389.3	373.4	349.6	325.7	317.8
80°	254.2	246.3	238.3	230.4	222.5
82.5°	150.9	150.9	150.9	150.9	150.9
85°	79.4	87.4	95.3	103.3	111.2
87.5°	47.7	47.7	55.6	63.6	71.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)