

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: P563244

Luminaire Tested: FSR-24-4-LD4-3HI-50-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563244  
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-50-UNV-93-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

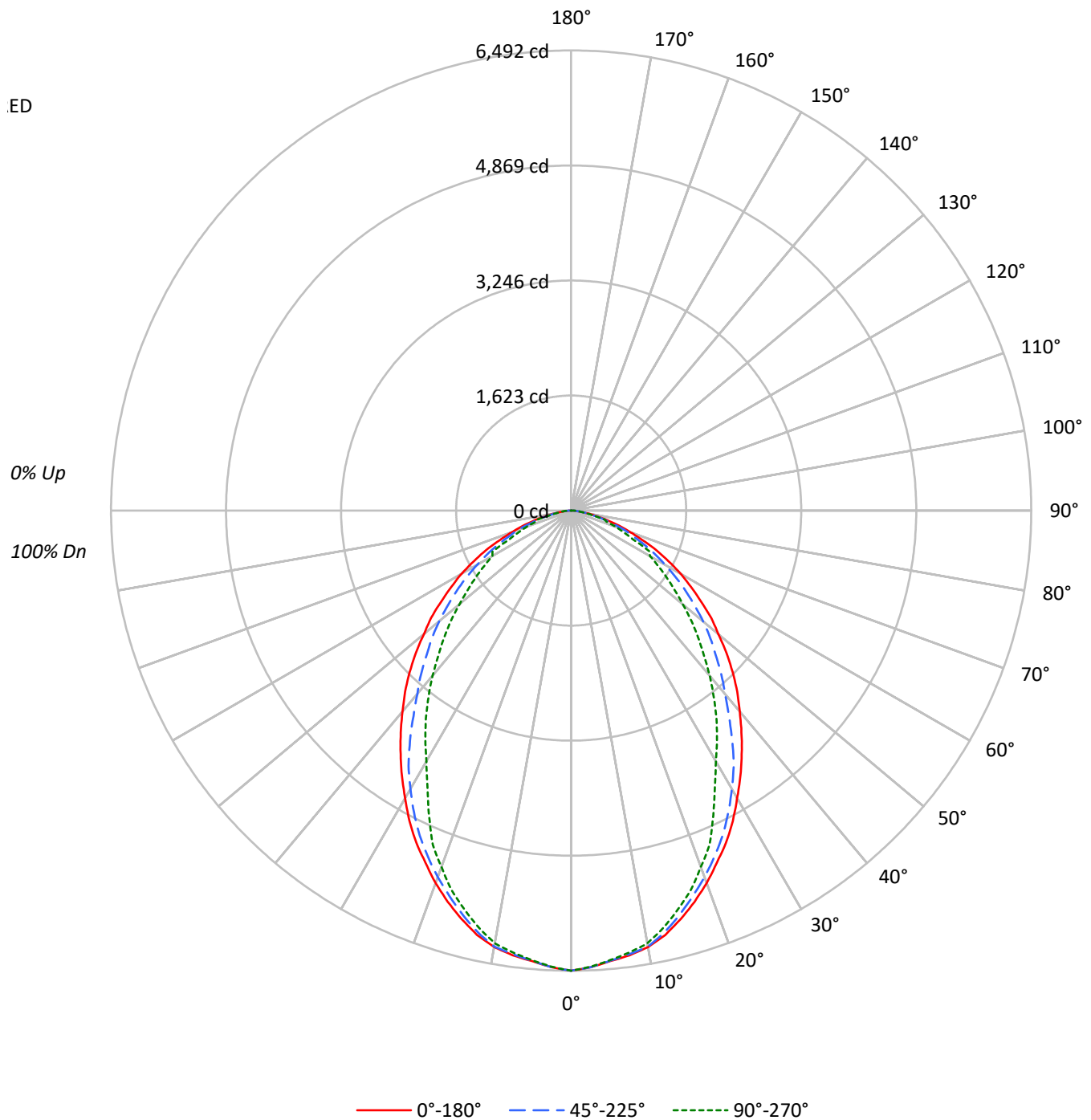
Lumens per Lamp: N/A  
Luminaire Lumens: 12745.0 lumens  
Efficiency: N/A  
Efficacy: 98.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8735	8735	8735
5°	8616	8606	8596
10°	8542	8532	8470
15°	8311	8228	8113
20°	8006	7877	7662
25°	7677	7510	7042
30°	7276	7043	6343
35°	6891	6509	5868
40°	6499	5932	5339
45°	6127	5484	4827
50°	5671	5090	4305
55°	5247	4613	3856
60°	4807	4120	3454
65°	4229	3608	3059
70°	3484	3159	2598
75°	2770	2419	2536
80°	1861	1745	1628
85°	1159	1391	1623

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6127 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	604.3	4.7
10°-20°	1658.5	13.0
20°-30°	2296.1	18.0
30°-40°	2448.3	19.2
40°-50°	2233.6	17.5
50°-60°	1749.8	13.7
60°-70°	1140.5	8.9
70°-80°	505.3	4.0
80°-90°	108.5	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°	4559.0	35.8
0°-40°	7007.3	55.0
0°-60°	10990.8	86.2
0°-90°	12745.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12745.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6492	6492	6492	6492	6492	
5°	6380	6372	6372	6364	6364	606
15°	5967	5967	5907	5847	5824	1677
25°	5171	5141	5059	4878	4743	2374
35°	4196	4166	3963	3663	3572	2623
45°	3220	3152	2882	2642	2537	2480
55°	2237	2169	1966	1734	1644	2006
65°	1328	1253	1133	1156	961	1309
75°	533	495	465	443	488	571
85°	75	83	90	98	105	104
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6492.1	6492.1	6492.1	6492.1	6492.1
2.5°	6447.1	6447.1	6447.1	6439.6	6439.6
5°	6379.6	6372.0	6372.0	6364.5	6364.5
7.5°	6327.0	6319.5	6312.0	6304.5	6289.5
10°	6252.0	6252.0	6244.5	6206.9	6199.4
12.5°	6131.9	6124.4	6094.3	6041.8	6026.8
15°	5966.8	5966.8	5906.7	5846.7	5824.2
17.5°	5786.6	5779.1	5704.1	5644.0	5614.0
20°	5591.5	5576.5	5501.4	5403.9	5351.3
22.5°	5373.8	5373.8	5283.8	5156.2	5103.6
25°	5171.2	5141.2	5058.6	4878.5	4743.4
27.5°	4938.5	4893.5	4803.4	4548.2	4390.6
30°	4683.3	4660.8	4533.2	4203.0	4082.9
32.5°	4443.2	4405.6	4270.5	3925.3	3827.7
35°	4195.5	4165.5	3962.8	3662.6	3572.5
37.5°	3947.8	3910.3	3655.1	3414.9	3302.4
40°	3700.1	3655.1	3377.4	3159.8	3039.7
42.5°	3467.5	3407.4	3137.2	2904.6	2769.5
45°	3219.8	3152.2	2882.1	2641.9	2536.8
47.5°	2972.1	2912.1	2664.4	2416.7	2296.6
50°	2709.4	2656.9	2431.7	2184.1	2056.5
52.5°	2491.8	2409.2	2191.6	1943.9	1838.8
55°	2236.6	2169.0	1966.4	1733.7	1643.7
57.5°	2003.9	1936.4	1748.7	1531.1	1456.0
60°	1786.3	1688.7	1531.1	1343.5	1283.4
62.5°	1546.1	1471.0	1336.0	1178.3	1253.4
65°	1328.4	1253.4	1133.3	1155.8	960.7
67.5°	1088.3	1050.7	945.7	840.6	810.6
70°	885.6	840.6	803.1	690.5	660.5
72.5°	705.5	660.5	607.9	547.9	525.4
75°	532.9	495.4	465.3	442.8	487.8
77.5°	367.8	352.8	330.2	307.7	300.2
80°	240.2	232.7	225.2	217.7	210.1
82.5°	142.6	142.6	142.6	142.6	142.6
85°	75.1	82.6	90.1	97.6	105.1
87.5°	45.0	45.0	52.5	60.0	67.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)