

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: P563175

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563175  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

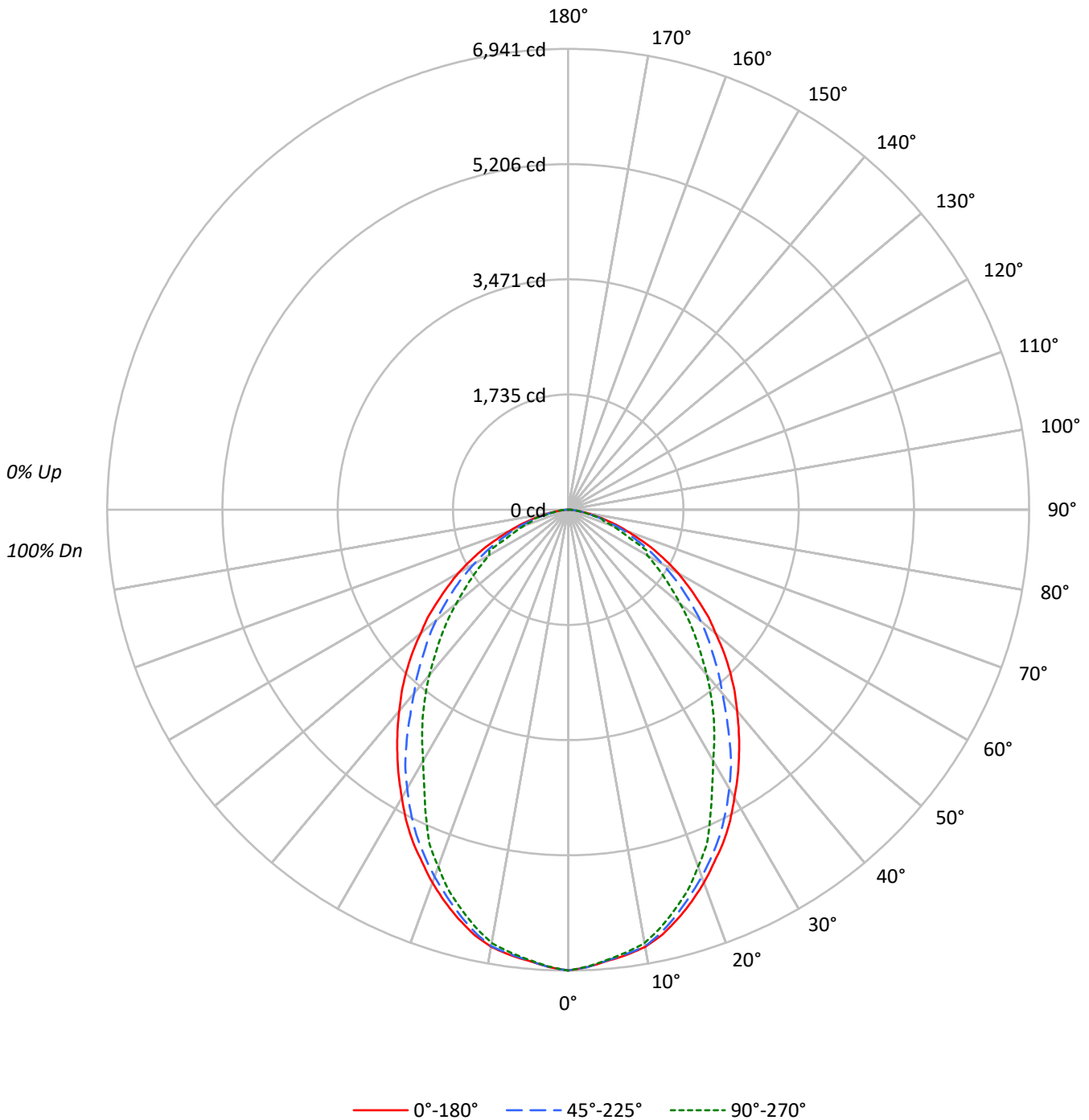
Lumens per Lamp: N/A  
Luminaire Lumens: 13626.0 lumens  
Efficiency: N/A  
Efficacy: 105.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	9339	9339	9339
5°	9212	9201	9190
10°	9132	9121	9055
15°	8886	8796	8674
20°	8560	8422	8192
25°	8208	8029	7529
30°	7779	7530	6782
35°	7368	6959	6274
40°	6948	6342	5708
45°	6550	5863	5161
50°	6063	5442	4602
55°	5609	4932	4122
60°	5139	4405	3692
65°	4522	3857	3270
70°	3725	3378	2778
75°	2962	2586	2712
80°	1990	1865	1741
85°	1238	1487	1734

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6550 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	646.1	4.7
10°-20°	1773.2	13.0
20°-30°	2454.8	18.0
30°-40°	2617.6	19.2
40°-50°	2388.0	17.5
50°-60°	1870.8	13.7
60°-70°	1219.3	8.9
70°-80°	540.2	4.0
80°-90°	116.0	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°	4874.1	35.8
0°-40°	7491.7	55.0
0°-60°	11750.5	86.2
0°-90°	13626.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13626.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6941	6941	6941	6941	6941	
5°	6820	6812	6812	6804	6804	647
15°	6379	6379	6315	6251	6227	1793
25°	5529	5497	5408	5216	5071	2538
35°	4486	4453	4237	3916	3820	2804
45°	3442	3370	3081	2824	2712	2652
55°	2391	2319	2102	1854	1757	2145
65°	1420	1340	1212	1236	1027	1400
75°	570	530	498	473	522	611
85°	80	88	96	104	112	111
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6940.9	6940.9	6940.9	6940.9	6940.9
2.5°	6892.8	6892.8	6892.8	6884.7	6884.7
5°	6820.5	6812.5	6812.5	6804.5	6804.5
7.5°	6764.4	6756.3	6748.3	6740.3	6724.2
10°	6684.1	6684.1	6676.1	6636.0	6628.0
12.5°	6555.7	6547.7	6515.6	6459.5	6443.4
15°	6379.2	6379.2	6315.0	6250.8	6226.8
17.5°	6186.6	6178.6	6098.4	6034.2	6002.1
20°	5978.0	5962.0	5881.7	5777.4	5721.2
22.5°	5745.3	5745.3	5649.0	5512.6	5456.4
25°	5528.6	5496.6	5408.3	5215.7	5071.3
27.5°	5279.9	5231.8	5135.5	4862.6	4694.1
30°	5007.1	4983.0	4846.6	4493.5	4365.1
32.5°	4750.3	4710.2	4565.7	4196.6	4092.3
35°	4485.5	4453.4	4236.8	3915.8	3819.5
37.5°	4220.7	4180.6	3907.8	3651.0	3530.6
40°	3955.9	3907.8	3610.9	3378.2	3249.8
42.5°	3707.2	3643.0	3354.1	3105.4	2960.9
45°	3442.4	3370.1	3081.3	2824.5	2712.2
47.5°	3177.6	3113.4	2848.6	2583.8	2455.4
50°	2896.7	2840.6	2599.8	2335.0	2198.6
52.5°	2664.0	2575.8	2343.1	2078.3	1965.9
55°	2391.2	2319.0	2102.3	1853.6	1757.3
57.5°	2142.5	2070.2	1869.6	1636.9	1556.7
60°	1909.8	1805.4	1636.9	1436.3	1372.1
62.5°	1653.0	1572.7	1428.3	1259.8	1340.0
65°	1420.3	1340.0	1211.6	1235.7	1027.1
67.5°	1163.5	1123.4	1011.0	898.7	866.6
70°	946.9	898.7	858.6	738.2	706.1
72.5°	754.3	706.1	650.0	585.8	561.7
75°	569.7	529.6	497.5	473.4	521.6
77.5°	393.2	377.1	353.1	329.0	321.0
80°	256.8	248.7	240.7	232.7	224.7
82.5°	152.5	152.5	152.5	152.5	152.5
85°	80.2	88.3	96.3	104.3	112.3
87.5°	48.1	48.1	56.2	64.2	72.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)