

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: P562645

Luminaire Tested: FSR-24-4-LD4-2HI-50-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562645  
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-LD4-2HI-50-UNV-82-86-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

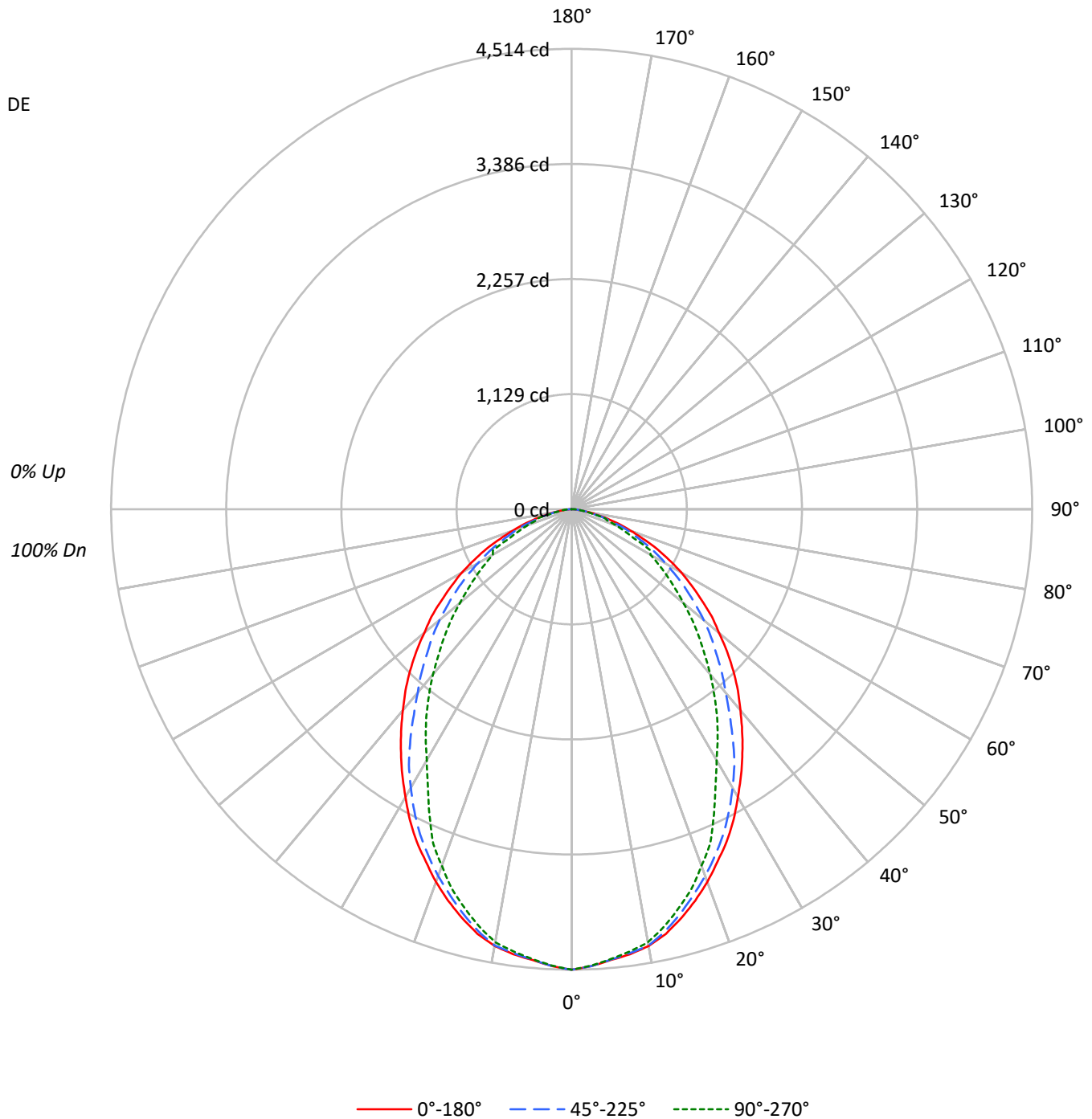
Lumens per Lamp: N/A  
Luminaire Lumens: 8862.0 lumens  
Efficiency: N/A  
Efficacy: 102.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6074	6074	6074
5°	5991	5984	5977
10°	5939	5932	5889
15°	5779	5721	5641
20°	5567	5477	5328
25°	5338	5222	4896
30°	5059	4897	4411
35°	4792	4526	4080
40°	4519	4125	3712
45°	4260	3813	3356
50°	3944	3539	2993
55°	3648	3207	2681
60°	3342	2865	2401
65°	2941	2509	2127
70°	2423	2197	1806
75°	1926	1682	1763
80°	1294	1213	1132
85°	806	966	1129

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4260 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	420.2	4.7
10°-20°	1153.2	13.0
20°-30°	1596.6	18.0
30°-40°	1702.4	19.2
40°-50°	1553.1	17.5
50°-60°	1216.7	13.7
60°-70°	793.0	8.9
70°-80°	351.3	4.0
80°-90°	75.4	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°	3170.0	35.8
0°-40°	4872.4	55.0
0°-60°	7642.2	86.2
0°-90°	8862.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8862.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4514	4514	4514	4514	4514	
5°	4436	4431	4431	4426	4426	421
15°	4149	4149	4107	4065	4050	1166
25°	3596	3575	3517	3392	3298	1651
35°	2917	2896	2756	2547	2484	1824
45°	2239	2192	2004	1837	1764	1725
55°	1555	1508	1367	1206	1143	1395
65°	924	872	788	804	668	910
75°	370	344	324	308	339	397
85°	52	57	63	68	73	72
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4514.2	4514.2	4514.2	4514.2	4514.2
2.5°	4482.9	4482.9	4482.9	4477.7	4477.7
5°	4435.9	4430.7	4430.7	4425.5	4425.5
7.5°	4399.4	4394.2	4388.9	4383.7	4373.3
10°	4347.2	4347.2	4342.0	4315.9	4310.7
12.5°	4263.7	4258.5	4237.6	4201.1	4190.6
15°	4148.9	4148.9	4107.1	4065.4	4049.7
17.5°	4023.6	4018.4	3966.2	3924.5	3903.6
20°	3887.9	3877.5	3825.3	3757.5	3720.9
22.5°	3736.6	3736.6	3674.0	3585.3	3548.7
25°	3595.7	3574.8	3517.4	3392.2	3298.2
27.5°	3433.9	3402.6	3340.0	3162.5	3052.9
30°	3256.5	3240.8	3152.1	2922.5	2839.0
32.5°	3089.5	3063.4	2969.4	2729.4	2661.5
35°	2917.3	2896.4	2755.5	2546.7	2484.1
37.5°	2745.0	2718.9	2541.5	2374.5	2296.2
40°	2572.8	2541.5	2348.4	2197.1	2113.6
42.5°	2411.0	2369.3	2181.4	2019.6	1925.7
45°	2238.8	2191.9	2004.0	1837.0	1763.9
47.5°	2066.6	2024.9	1852.6	1680.4	1596.9
50°	1884.0	1847.4	1690.9	1518.6	1429.9
52.5°	1732.6	1675.2	1523.9	1351.6	1278.6
55°	1555.2	1508.2	1367.3	1205.5	1142.9
57.5°	1393.4	1346.4	1216.0	1064.6	1012.4
60°	1242.1	1174.2	1064.6	934.1	892.4
62.5°	1075.1	1022.9	928.9	819.3	871.5
65°	923.7	871.5	788.0	803.7	668.0
67.5°	756.7	730.6	657.6	584.5	563.6
70°	615.8	584.5	558.4	480.1	459.2
72.5°	490.6	459.2	422.7	381.0	365.3
75°	370.5	344.4	323.6	307.9	339.2
77.5°	255.7	245.3	229.6	214.0	208.7
80°	167.0	161.8	156.6	151.3	146.1
82.5°	99.2	99.2	99.2	99.2	99.2
85°	52.2	57.4	62.6	67.8	73.1
87.5°	31.3	31.3	36.5	41.7	47.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)