

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: P563910

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-81-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563910  
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-LD4-4LO-40-UNV-81-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

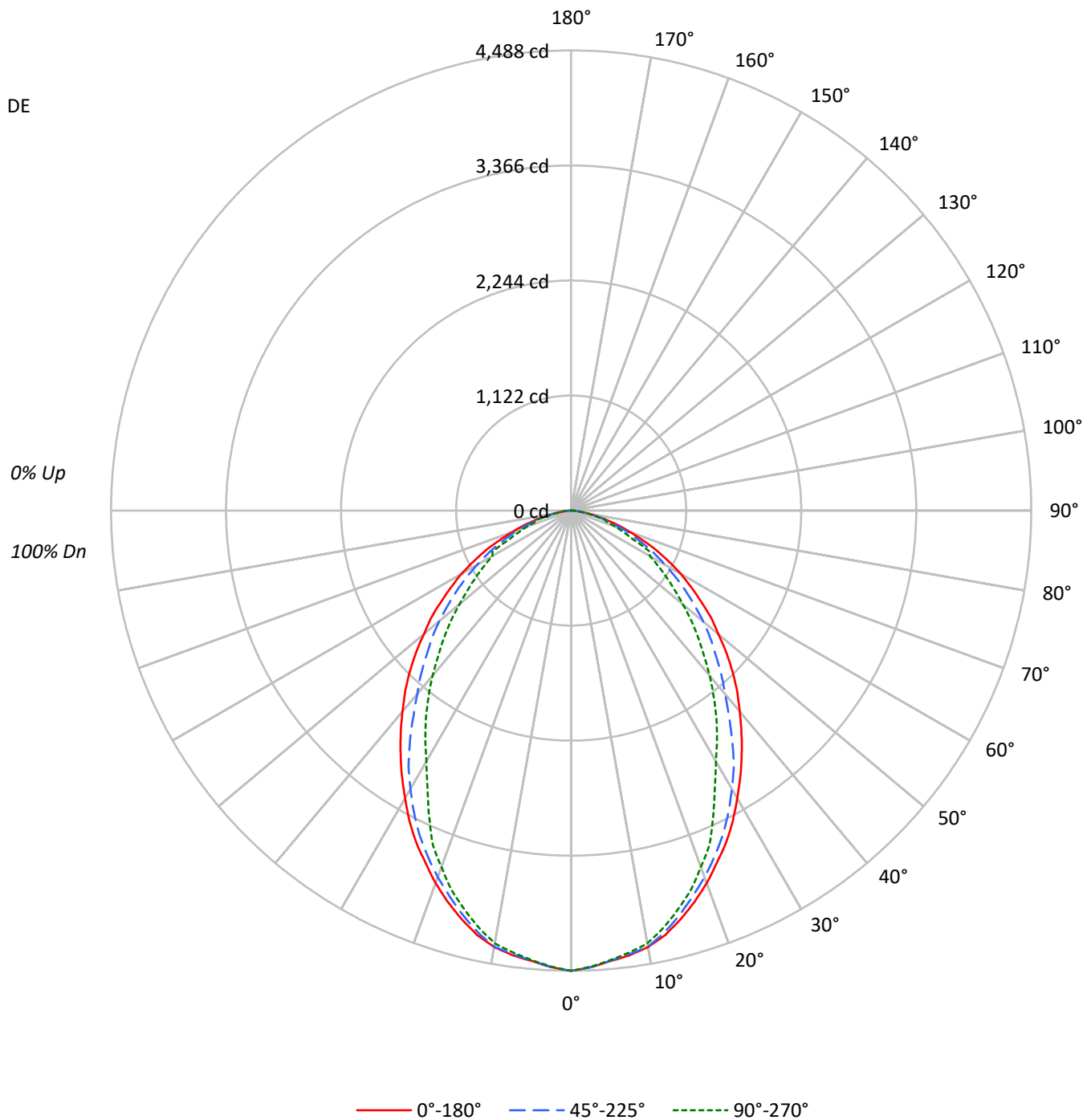
Lumens per Lamp: N/A  
Luminaire Lumens: 8811.0 lumens  
Efficiency: N/A  
Efficacy: 94.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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													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°	6039	6039	6039
5°	5957	5950	5943
10°	5905	5898	5855
15°	5746	5688	5609
20°	5535	5446	5297
25°	5307	5192	4868
30°	5030	4869	4385
35°	4764	4500	4057
40°	4493	4101	3691
45°	4235	3791	3337
50°	3921	3519	2976
55°	3627	3189	2666
60°	3323	2848	2388
65°	2924	2494	2115
70°	2409	2184	1796
75°	1915	1672	1753
80°	1286	1206	1126
85°	801	962	1121

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4235 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	417.8	4.7
10°-20°	1146.6	13.0
20°-30°	1587.4	18.0
30°-40°	1692.6	19.2
40°-50°	1544.2	17.5
50°-60°	1209.7	13.7
60°-70°	788.4	8.9
70°-80°	349.3	4.0
80°-90°	75.0	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°	3151.8	35.8
0°-40°	4844.4	55.0
0°-60°	7598.3	86.2
0°-90°	8811.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8811.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4488	4488	4488	4488	4488	
5°	4410	4405	4405	4400	4400	419
15°	4125	4125	4084	4042	4026	1160
25°	3575	3554	3497	3373	3279	1641
35°	2900	2880	2740	2532	2470	1813
45°	2226	2179	1992	1826	1754	1715
55°	1546	1500	1359	1199	1136	1387
65°	918	866	784	799	664	905
75°	368	342	322	306	337	395
85°	52	57	62	68	73	72
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4488.2	4488.2	4488.2	4488.2	4488.2
2.5°	4457.1	4457.1	4457.1	4451.9	4451.9
5°	4410.4	4405.2	4405.2	4400.0	4400.0
7.5°	4374.1	4368.9	4363.7	4358.5	4348.1
10°	4322.2	4322.2	4317.0	4291.0	4285.8
12.5°	4239.1	4234.0	4213.2	4176.9	4166.5
15°	4125.0	4125.0	4083.5	4042.0	4026.4
17.5°	4000.5	3995.3	3943.4	3901.9	3881.1
20°	3865.6	3855.2	3803.3	3735.8	3699.5
22.5°	3715.1	3715.1	3652.8	3564.6	3528.3
25°	3575.0	3554.2	3497.2	3372.6	3279.2
27.5°	3414.1	3383.0	3320.8	3144.3	3035.4
30°	3237.7	3222.2	3134.0	2905.7	2822.6
32.5°	3071.7	3045.8	2952.4	2713.7	2646.2
35°	2900.5	2879.7	2739.6	2532.1	2469.8
37.5°	2729.2	2703.3	2526.9	2360.8	2283.0
40°	2558.0	2526.9	2334.9	2184.4	2101.4
42.5°	2397.2	2355.7	2168.9	2008.0	1914.6
45°	2225.9	2179.2	1992.5	1826.4	1753.8
47.5°	2054.7	2013.2	1842.0	1670.8	1587.7
50°	1873.1	1836.8	1681.1	1509.9	1421.7
52.5°	1722.6	1665.6	1515.1	1343.9	1271.2
55°	1546.2	1499.5	1359.4	1198.6	1136.3
57.5°	1385.4	1338.7	1209.0	1058.5	1006.6
60°	1234.9	1167.5	1058.5	928.8	887.3
62.5°	1068.9	1017.0	923.6	814.6	866.5
65°	918.4	866.5	783.5	799.1	664.2
67.5°	752.4	726.4	653.8	581.1	560.4
70°	612.3	581.1	555.2	477.4	456.6
72.5°	487.7	456.6	420.3	378.8	363.2
75°	368.4	342.5	321.7	306.1	337.3
77.5°	254.2	243.9	228.3	212.7	207.5
80°	166.0	160.8	155.7	150.5	145.3
82.5°	98.6	98.6	98.6	98.6	98.6
85°	51.9	57.1	62.3	67.5	72.6
87.5°	31.1	31.1	36.3	41.5	46.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)