

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: P564098

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564098  
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-LD4-4STD-40-UNV-81-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

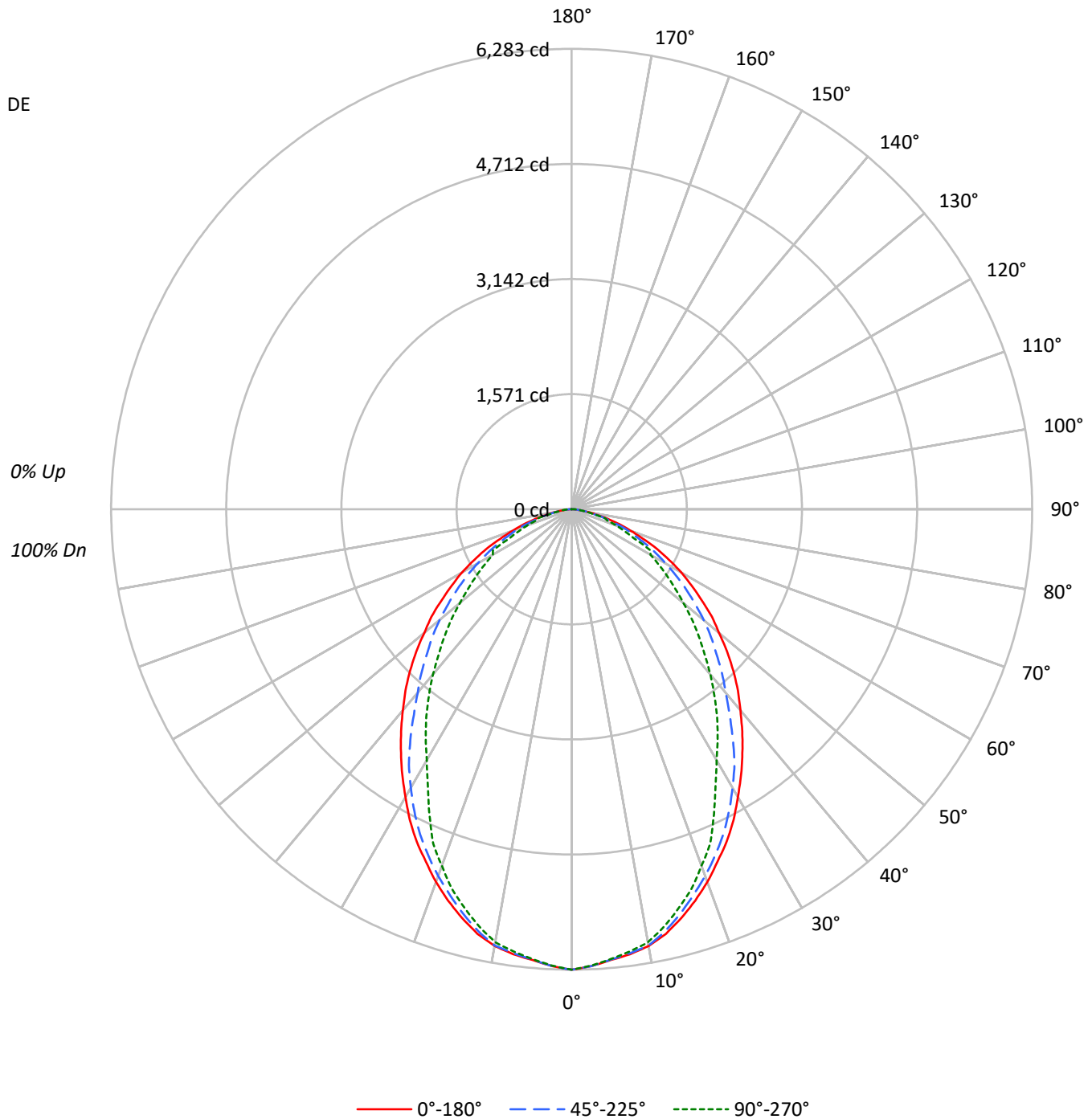
Lumens per Lamp: N/A  
Luminaire Lumens: 12335.0 lumens  
Efficiency: N/A  
Efficacy: 92.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8454	8454	8454
5°	8339	8329	8320
10°	8267	8257	8197
15°	8044	7963	7852
20°	7749	7624	7416
25°	7430	7268	6815
30°	7042	6816	6139
35°	6670	6300	5679
40°	6290	5741	5167
45°	5930	5308	4672
50°	5489	4926	4166
55°	5078	4464	3732
60°	4652	3987	3342
65°	4093	3492	2960
70°	3372	3057	2515
75°	2681	2341	2455
80°	1801	1688	1576
85°	1121	1346	1570

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5930 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	584.9	4.7
10°-20°	1605.2	13.0
20°-30°	2222.3	18.0
30°-40°	2369.6	19.2
40°-50°	2161.7	17.5
50°-60°	1693.6	13.7
60°-70°	1103.8	8.9
70°-80°	489.0	4.0
80°-90°	105.0	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°	4412.3	35.8
0°-40°	6781.9	55.0
0°-60°	10637.2	86.2
0°-90°	12335.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12335.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6283	6283	6283	6283	6283	
5°	6174	6167	6167	6160	6160	586
15°	5775	5775	5717	5659	5637	1623
25°	5005	4976	4896	4722	4591	2298
35°	4060	4032	3835	3545	3458	2539
45°	3116	3051	2789	2557	2455	2400
55°	2165	2099	1903	1678	1591	1942
65°	1286	1213	1097	1119	930	1267
75°	516	479	450	429	472	553
85°	73	80	87	94	102	101
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6283.3	6283.3	6283.3	6283.3	6283.3
2.5°	6239.7	6239.7	6239.7	6232.4	6232.4
5°	6174.3	6167.1	6167.1	6159.8	6159.8
7.5°	6123.5	6116.2	6109.0	6101.7	6087.2
10°	6050.8	6050.8	6043.6	6007.3	6000.0
12.5°	5934.6	5927.4	5898.3	5847.4	5832.9
15°	5774.8	5774.8	5716.7	5658.6	5636.8
17.5°	5600.5	5593.2	5520.6	5462.5	5433.4
20°	5411.6	5397.1	5324.4	5230.0	5179.2
22.5°	5201.0	5201.0	5113.8	4990.3	4939.5
25°	5004.8	4975.8	4895.9	4721.5	4590.8
27.5°	4779.7	4736.1	4648.9	4401.9	4249.4
30°	4532.7	4510.9	4387.4	4067.8	3951.6
32.5°	4300.2	4263.9	4133.2	3799.0	3704.6
35°	4060.5	4031.5	3835.3	3544.8	3457.6
37.5°	3820.8	3784.5	3537.5	3305.1	3196.1
40°	3581.1	3537.5	3268.8	3058.1	2941.9
42.5°	3355.9	3297.8	3036.3	2811.1	2680.4
45°	3116.2	3050.8	2789.3	2556.9	2455.2
47.5°	2876.5	2818.4	2578.7	2339.0	2222.8
50°	2622.3	2571.4	2353.5	2113.8	1990.3
52.5°	2411.6	2331.7	2121.1	1881.4	1779.7
55°	2164.6	2099.3	1903.1	1678.0	1590.8
57.5°	1939.5	1874.1	1692.5	1481.8	1409.2
60°	1728.8	1634.4	1481.8	1300.2	1242.1
62.5°	1496.4	1423.7	1293.0	1140.4	1213.1
65°	1285.7	1213.1	1096.9	1118.6	929.8
67.5°	1053.3	1016.9	915.3	813.6	784.5
70°	857.1	813.6	777.2	668.3	639.2
72.5°	682.8	639.2	588.4	530.3	508.5
75°	515.7	479.4	450.4	428.6	472.2
77.5°	355.9	341.4	319.6	297.8	290.6
80°	232.4	225.2	217.9	210.7	203.4
82.5°	138.0	138.0	138.0	138.0	138.0
85°	72.6	79.9	87.2	94.4	101.7
87.5°	43.6	43.6	50.8	58.1	65.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)