

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: P563589

Luminaire Tested: FSR-24-4-LD4-3STD-50-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563589  
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-LD4-3STD-50-UNV-81-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

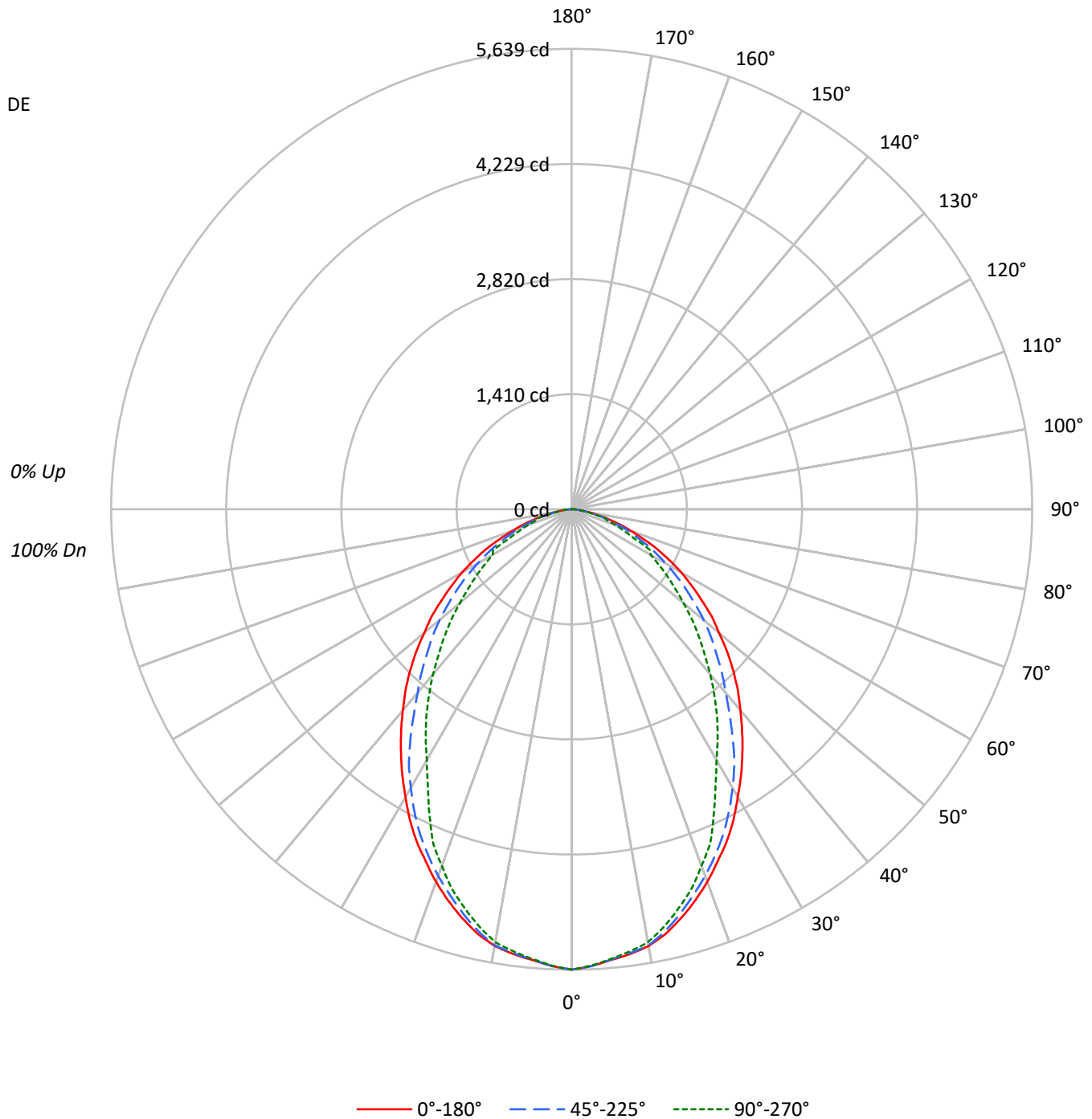
Lumens per Lamp: N/A  
Luminaire Lumens: 11070.0 lumens  
Efficiency: N/A  
Efficacy: 110.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7587	7587	7587
5°	7484	7475	7466
10°	7419	7410	7357
15°	7219	7146	7047
20°	6954	6842	6655
25°	6668	6523	6116
30°	6320	6117	5510
35°	5986	5654	5097
40°	5645	5152	4637
45°	5321	4763	4193
50°	4926	4421	3739
55°	4557	4007	3349
60°	4175	3579	3000
65°	3674	3134	2656
70°	3026	2744	2257
75°	2406	2101	2203
80°	1616	1516	1414
85°	1007	1207	1409

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5321 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	524.9	4.7
10°-20°	1440.6	13.0
20°-30°	1994.4	18.0
30°-40°	2126.6	19.2
40°-50°	1940.0	17.5
50°-60°	1519.9	13.7
60°-70°	990.6	8.9
70°-80°	438.9	4.0
80°-90°	94.2	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°	3959.8	35.8
0°-40°	6086.4	55.0
0°-60°	9546.3	86.2
0°-90°	11070.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11070.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5639	5639	5639	5639	5639	
5°	5541	5535	5535	5528	5528	526
15°	5183	5183	5130	5078	5059	1457
25°	4492	4466	4394	4237	4120	2062
35°	3644	3618	3442	3181	3103	2278
45°	2797	2738	2503	2295	2203	2154
55°	1943	1884	1708	1506	1428	1742
65°	1154	1089	984	1004	834	1137
75°	463	430	404	385	424	496
85°	65	72	78	85	91	90
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5638.9	5638.9	5638.9	5638.9	5638.9
2.5°	5599.8	5599.8	5599.8	5593.3	5593.3
5°	5541.1	5534.6	5534.6	5528.1	5528.1
7.5°	5495.5	5489.0	5482.5	5475.9	5462.9
10°	5430.3	5430.3	5423.8	5391.2	5384.7
12.5°	5326.0	5319.5	5293.4	5247.8	5234.7
15°	5182.6	5182.6	5130.4	5078.3	5058.7
17.5°	5026.1	5019.6	4954.4	4902.3	4876.2
20°	4856.6	4843.6	4778.4	4693.7	4648.0
22.5°	4667.6	4667.6	4589.4	4478.5	4432.9
25°	4491.6	4465.5	4393.8	4237.3	4120.0
27.5°	4289.5	4250.4	4172.1	3950.5	3813.6
30°	4067.8	4048.3	3937.5	3650.6	3546.3
32.5°	3859.2	3826.6	3709.3	3409.4	3324.7
35°	3644.1	3618.0	3442.0	3181.3	3103.0
37.5°	3429.0	3396.4	3174.7	2966.1	2868.3
40°	3213.9	3174.7	2933.5	2744.5	2640.2
42.5°	3011.8	2959.6	2724.9	2522.8	2405.5
45°	2796.6	2738.0	2503.3	2294.7	2203.4
47.5°	2581.5	2529.4	2314.2	2099.1	1994.8
50°	2353.3	2307.7	2112.1	1897.0	1786.2
52.5°	2164.3	2092.6	1903.5	1688.4	1597.1
55°	1942.7	1884.0	1708.0	1505.9	1427.7
57.5°	1740.6	1681.9	1518.9	1329.9	1264.7
60°	1551.5	1466.8	1329.9	1166.9	1114.7
62.5°	1342.9	1277.7	1160.4	1023.5	1088.7
65°	1153.9	1088.7	984.4	1003.9	834.4
67.5°	945.3	912.7	821.4	730.1	704.0
70°	769.2	730.1	697.5	599.7	573.7
72.5°	612.8	573.7	528.0	475.9	456.3
75°	462.8	430.3	404.2	384.6	423.7
77.5°	319.4	306.4	286.8	267.3	260.8
80°	208.6	202.1	195.6	189.1	182.5
82.5°	123.9	123.9	123.9	123.9	123.9
85°	65.2	71.7	78.2	84.7	91.3
87.5°	39.1	39.1	45.6	52.2	58.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)