

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: P563398

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-81-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563398  
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-LD4-3LO-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

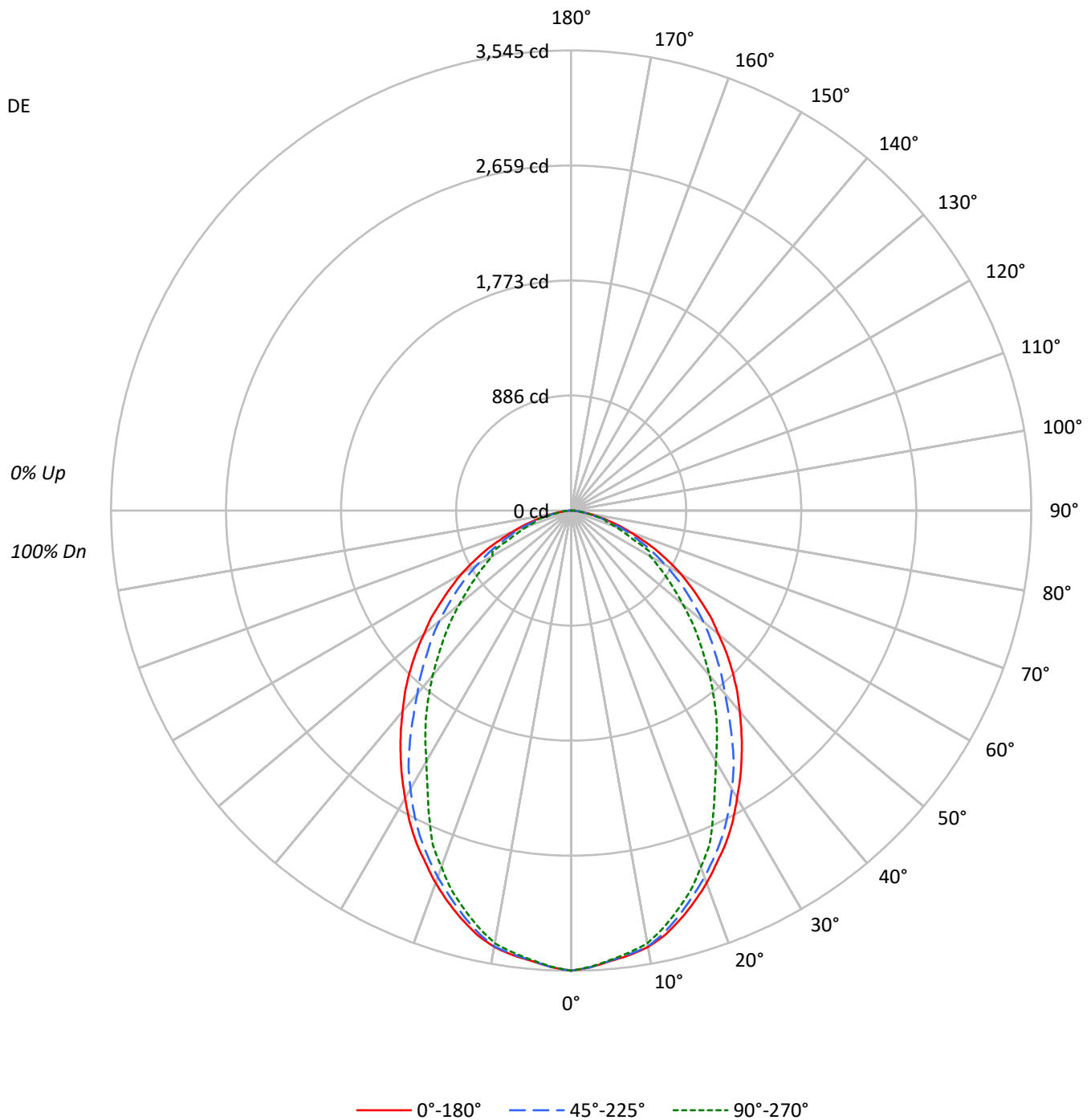
Lumens per Lamp: N/A  
Luminaire Lumens: 6959.0 lumens  
Efficiency: N/A  
Efficacy: 99.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4769	4769	4769
5°	4705	4699	4694
10°	4664	4658	4625
15°	4538	4493	4430
20°	4372	4301	4184
25°	4192	4101	3845
30°	3973	3846	3464
35°	3763	3554	3204
40°	3548	3239	2915
45°	3345	2994	2636
50°	3097	2779	2350
55°	2865	2519	2105
60°	2625	2250	1886
65°	2309	1970	1670
70°	1902	1725	1419
75°	1513	1321	1385
80°	1016	952	889
85°	633	760	886

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3345 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	330.0	4.7
10°-20°	905.6	13.0
20°-30°	1253.7	18.0
30°-40°	1336.8	19.2
40°-50°	1219.6	17.5
50°-60°	955.4	13.7
60°-70°	622.7	8.9
70°-80°	275.9	4.0
80°-90°	59.2	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°	2489.3	35.8
0°-40°	3826.1	55.0
0°-60°	6001.2	86.2
0°-90°	6959.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6959.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3545	3545	3545	3545	3545	
5°	3483	3479	3479	3475	3475	331
15°	3258	3258	3225	3192	3180	916
25°	2824	2807	2762	2664	2590	1296
35°	2291	2274	2164	2000	1951	1432
45°	1758	1721	1574	1442	1385	1354
55°	1221	1184	1074	947	898	1095
65°	725	684	619	631	525	715
75°	291	270	254	242	266	312
85°	41	45	49	53	57	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3544.8	3544.8	3544.8	3544.8	3544.8
2.5°	3520.2	3520.2	3520.2	3516.1	3516.1
5°	3483.4	3479.3	3479.3	3475.2	3475.2
7.5°	3454.7	3450.6	3446.5	3442.4	3434.2
10°	3413.7	3413.7	3409.6	3389.1	3385.0
12.5°	3348.1	3344.0	3327.6	3298.9	3290.7
15°	3258.0	3258.0	3225.2	3192.4	3180.1
17.5°	3159.6	3155.5	3114.5	3081.7	3065.3
20°	3053.1	3044.9	3003.9	2950.6	2921.9
22.5°	2934.2	2934.2	2885.0	2815.4	2786.7
25°	2823.6	2807.2	2762.1	2663.7	2590.0
27.5°	2696.5	2671.9	2622.8	2483.4	2397.4
30°	2557.2	2544.9	2475.2	2294.9	2229.3
32.5°	2426.1	2405.6	2331.8	2143.3	2090.0
35°	2290.8	2274.4	2163.8	1999.9	1950.7
37.5°	2155.6	2135.1	1995.8	1864.6	1803.1
40°	2020.3	1995.8	1844.1	1725.3	1659.7
42.5°	1893.3	1860.5	1713.0	1585.9	1512.2
45°	1758.1	1721.2	1573.7	1442.5	1385.1
47.5°	1622.8	1590.0	1454.8	1319.6	1254.0
50°	1479.4	1450.7	1327.8	1192.5	1122.9
52.5°	1360.6	1315.5	1196.6	1061.4	1004.0
55°	1221.2	1184.3	1073.7	946.7	897.5
57.5°	1094.2	1057.3	954.8	836.0	795.0
60°	975.3	922.1	836.0	733.6	700.8
62.5°	844.2	803.2	729.5	643.4	684.4
65°	725.4	684.4	618.8	631.1	524.6
67.5°	594.2	573.7	516.4	459.0	442.6
70°	483.6	459.0	438.5	377.0	360.6
72.5°	385.2	360.6	331.9	299.2	286.9
75°	291.0	270.5	254.1	241.8	266.4
77.5°	200.8	192.6	180.3	168.0	163.9
80°	131.1	127.0	122.9	118.8	114.7
82.5°	77.9	77.9	77.9	77.9	77.9
85°	41.0	45.1	49.2	53.3	57.4
87.5°	24.6	24.6	28.7	32.8	36.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)