

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: P563714

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563714  
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-LD4-4HI-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**

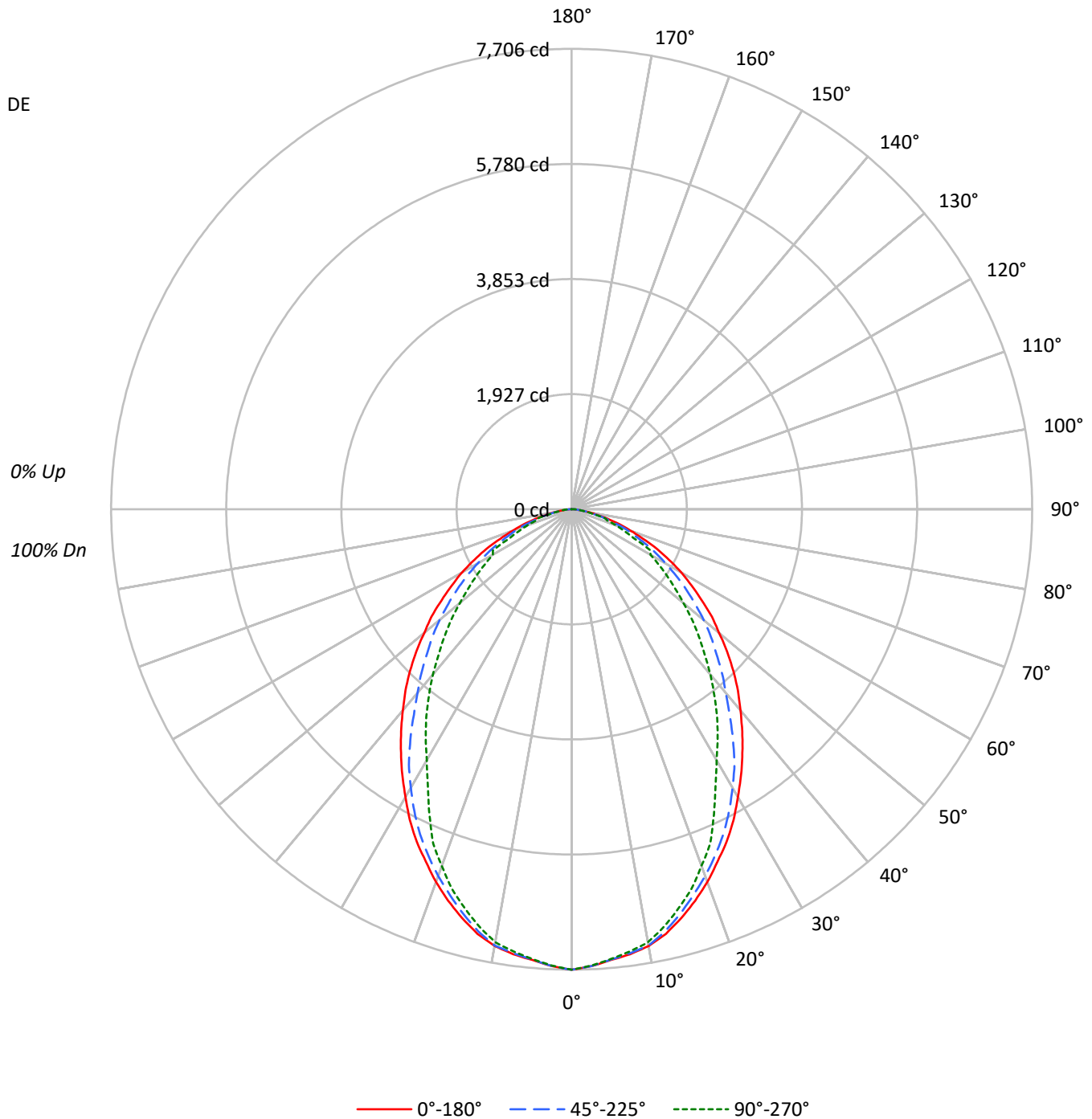
Lumens per Lamp: N/A  
Luminaire Lumens: 15129.0 lumens  
Efficiency: N/A  
Efficacy: 87.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	10369	10369	10369
5°	10228	10216	10204
10°	10139	10127	10054
15°	9866	9767	9630
20°	9504	9351	9095
25°	9113	8915	8359
30°	8637	8360	7530
35°	8180	7727	6966
40°	7715	7042	6338
45°	7273	6510	5730
50°	6732	6042	5110
55°	6228	5476	4577
60°	5706	4891	4100
65°	5020	4283	3631
70°	4136	3750	3084
75°	3289	2872	3010
80°	2209	2071	1933
85°	1376	1650	1925

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7273 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	717.4	4.7
10°-20°	1968.8	13.0
20°-30°	2725.6	18.0
30°-40°	2906.3	19.2
40°-50°	2651.4	17.5
50°-60°	2077.2	13.7
60°-70°	1353.8	8.9
70°-80°	599.8	4.0
80°-90°	128.8	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°	5411.8	35.8
0°-40°	8318.1	55.0
0°-60°	13046.7	86.2
0°-90°	15129.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15129.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7706	7706	7706	7706	7706	
5°	7573	7564	7564	7555	7555	719
15°	7083	7083	7012	6940	6914	1991
25°	6138	6103	6005	5791	5631	2818
35°	4980	4945	4704	4348	4241	3114
45°	3822	3742	3421	3136	3011	2944
55°	2655	2575	2334	2058	1951	2381
65°	1577	1488	1345	1372	1140	1554
75°	633	588	552	526	579	678
85°	89	98	107	116	125	124
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7706.5	7706.5	7706.5	7706.5	7706.5
2.5°	7653.1	7653.1	7653.1	7644.1	7644.1
5°	7572.9	7564.0	7564.0	7555.1	7555.1
7.5°	7510.5	7501.6	7492.7	7483.8	7466.0
10°	7421.4	7421.4	7412.5	7368.0	7359.0
12.5°	7278.9	7270.0	7234.3	7172.0	7154.1
15°	7082.9	7082.9	7011.6	6940.3	6913.6
17.5°	6869.0	6860.1	6771.0	6699.8	6664.1
20°	6637.4	6619.6	6530.5	6414.7	6352.3
22.5°	6379.0	6379.0	6272.1	6120.7	6058.3
25°	6138.5	6102.8	6004.8	5791.0	5630.7
27.5°	5862.3	5808.8	5701.9	5399.0	5211.9
30°	5559.4	5532.7	5381.2	4989.2	4846.6
32.5°	5274.3	5229.7	5069.4	4659.5	4543.7
35°	4980.3	4944.6	4704.1	4347.7	4240.8
37.5°	4686.3	4641.7	4338.8	4053.7	3920.1
40°	4392.3	4338.8	4009.2	3750.8	3608.3
42.5°	4116.1	4044.8	3724.1	3447.9	3287.5
45°	3822.1	3741.9	3421.2	3136.1	3011.3
47.5°	3528.1	3456.8	3162.8	2868.8	2726.2
50°	3216.2	3153.9	2886.6	2592.6	2441.1
52.5°	2957.9	2859.9	2601.5	2307.5	2182.8
55°	2655.0	2574.8	2334.2	2058.0	1951.1
57.5°	2378.8	2298.6	2075.9	1817.5	1728.4
60°	2120.4	2004.6	1817.5	1594.8	1523.5
62.5°	1835.3	1746.2	1585.8	1398.8	1487.8
65°	1576.9	1487.8	1345.3	1372.0	1140.4
67.5°	1291.8	1247.3	1122.6	997.8	962.2
70°	1051.3	997.8	953.3	819.7	784.0
72.5°	837.5	784.0	721.7	650.4	623.6
75°	632.6	588.0	552.4	525.6	579.1
77.5°	436.6	418.7	392.0	365.3	356.4
80°	285.1	276.2	267.3	258.4	249.5
82.5°	169.3	169.3	169.3	169.3	169.3
85°	89.1	98.0	106.9	115.8	124.7
87.5°	53.5	53.5	62.4	71.3	80.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)