

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: P563658

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563658  
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-35-UNV-81-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

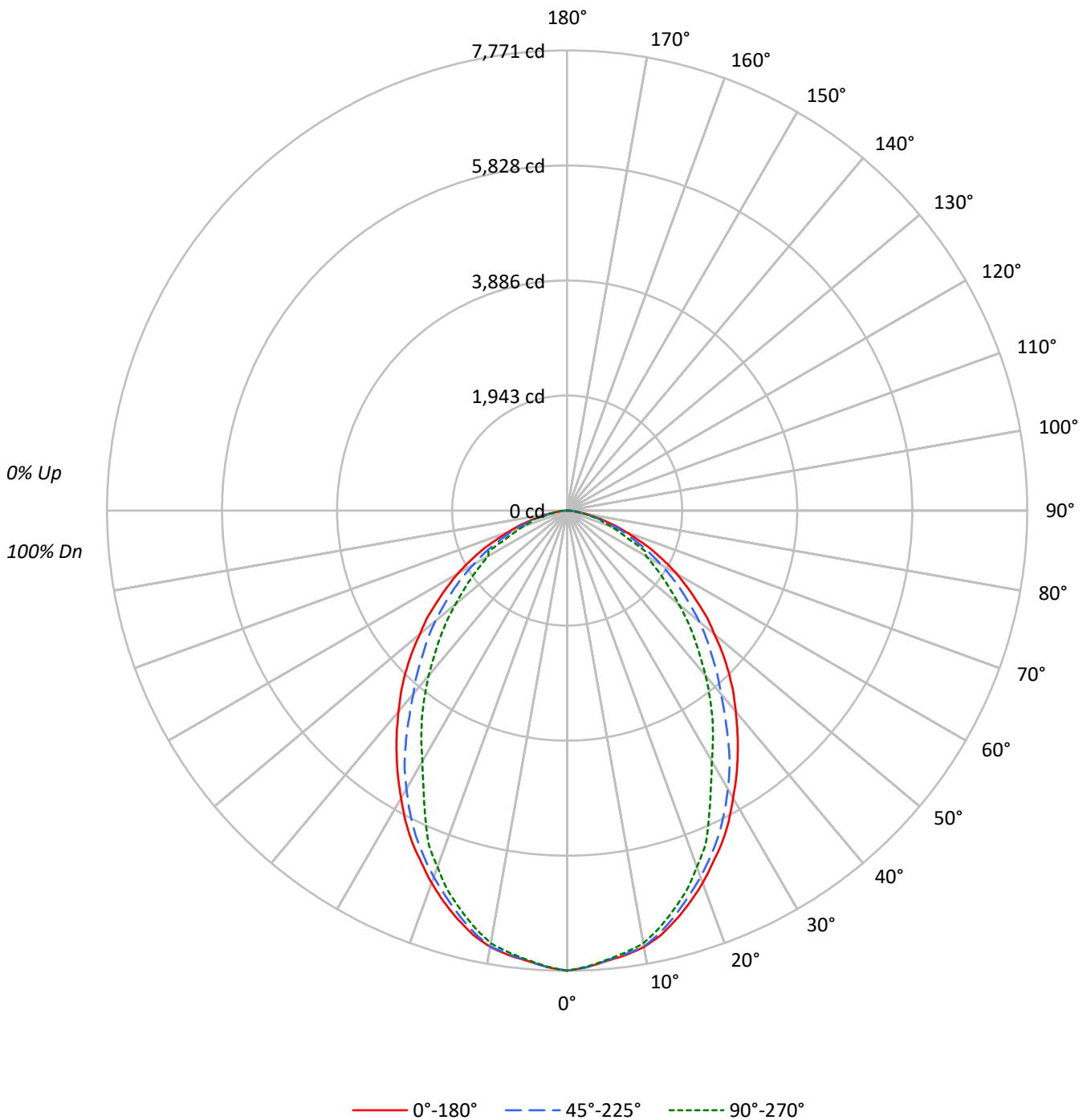
Lumens per Lamp: N/A  
Luminaire Lumens: 15255.0 lumens  
Efficiency: N/A  
Efficacy: 88.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77					75				
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67					65				
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58					56				
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52					50				
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46					44				
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42					40				
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38					36				
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32					30				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10455	10455	10455
5°	10313	10301	10289
10°	10224	10212	10138
15°	9948	9848	9711
20°	9583	9429	9171
25°	9189	8989	8429
30°	8709	8430	7593
35°	8249	7791	7024
40°	7779	7100	6390
45°	7333	6564	5778
50°	6788	6092	5152
55°	6280	5521	4615
60°	5754	4931	4134
65°	5062	4319	3661
70°	4170	3781	3110
75°	3316	2896	3035
80°	2228	2088	1949
85°	1386	1664	1942

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7333 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	723.3	4.7
10°-20°	1985.2	13.0
20°-30°	2748.3	18.0
30°-40°	2930.5	19.2
40°-50°	2673.5	17.5
50°-60°	2094.5	13.7
60°-70°	1365.1	8.9
70°-80°	604.8	4.0
80°-90°	129.9	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°	5456.8	35.8
0°-40°	8387.4	55.0
0°-60°	13155.3	86.2
0°-90°	15255.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15255.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7771	7771	7771	7771	7771	
5°	7636	7627	7627	7618	7618	725
15°	7142	7142	7070	6998	6971	2008
25°	6190	6154	6055	5839	5678	2842
35°	5022	4986	4743	4384	4276	3140
45°	3854	3773	3450	3162	3036	2969
55°	2677	2596	2354	2075	1967	2401
65°	1590	1500	1356	1384	1150	1567
75°	638	593	557	530	584	684
85°	90	99	108	117	126	125
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7770.7	7770.7	7770.7	7770.7	7770.7
2.5°	7716.8	7716.8	7716.8	7707.8	7707.8
5°	7635.9	7627.0	7627.0	7618.0	7618.0
7.5°	7573.1	7564.1	7555.1	7546.1	7528.1
10°	7483.2	7483.2	7474.2	7429.3	7420.3
12.5°	7339.5	7330.5	7294.6	7231.7	7213.7
15°	7141.9	7141.9	7070.0	6998.1	6971.2
17.5°	6926.2	6917.3	6827.4	6755.6	6719.6
20°	6692.7	6674.7	6584.9	6468.1	6405.2
22.5°	6432.2	6432.2	6324.4	6171.6	6108.8
25°	6189.6	6153.7	6054.9	5839.2	5677.5
27.5°	5911.1	5857.2	5749.4	5444.0	5255.3
30°	5605.7	5578.7	5426.0	5030.7	4887.0
32.5°	5318.2	5273.3	5111.6	4698.3	4581.6
35°	5021.8	4985.8	4743.3	4383.9	4276.1
37.5°	4725.3	4680.4	4374.9	4087.5	3952.7
40°	4428.8	4374.9	4042.6	3782.0	3638.3
42.5°	4150.4	4078.5	3755.1	3476.6	3314.9
45°	3853.9	3773.1	3449.6	3162.2	3036.4
47.5°	3557.5	3485.6	3189.1	2892.7	2748.9
50°	3243.0	3180.1	2910.6	2614.2	2461.5
52.5°	2982.5	2883.7	2623.2	2326.7	2200.9
55°	2677.1	2596.2	2353.7	2075.2	1967.4
57.5°	2398.6	2317.7	2093.1	1832.6	1742.8
60°	2138.1	2021.3	1832.6	1608.0	1536.2
62.5°	1850.6	1760.8	1599.1	1410.4	1500.2
65°	1590.1	1500.2	1356.5	1383.5	1149.9
67.5°	1302.6	1257.7	1131.9	1006.1	970.2
70°	1060.0	1006.1	961.2	826.5	790.5
72.5°	844.4	790.5	727.7	655.8	628.8
75°	637.8	592.9	557.0	530.0	583.9
77.5°	440.2	422.2	395.3	368.3	359.3
80°	287.5	278.5	269.5	260.5	251.5
82.5°	170.7	170.7	170.7	170.7	170.7
85°	89.8	98.8	107.8	116.8	125.8
87.5°	53.9	53.9	62.9	71.9	80.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)