

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: P563297

Luminaire Tested: FSR-24-4-LD4-3LO-35-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563297  
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-35-UNV-93-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

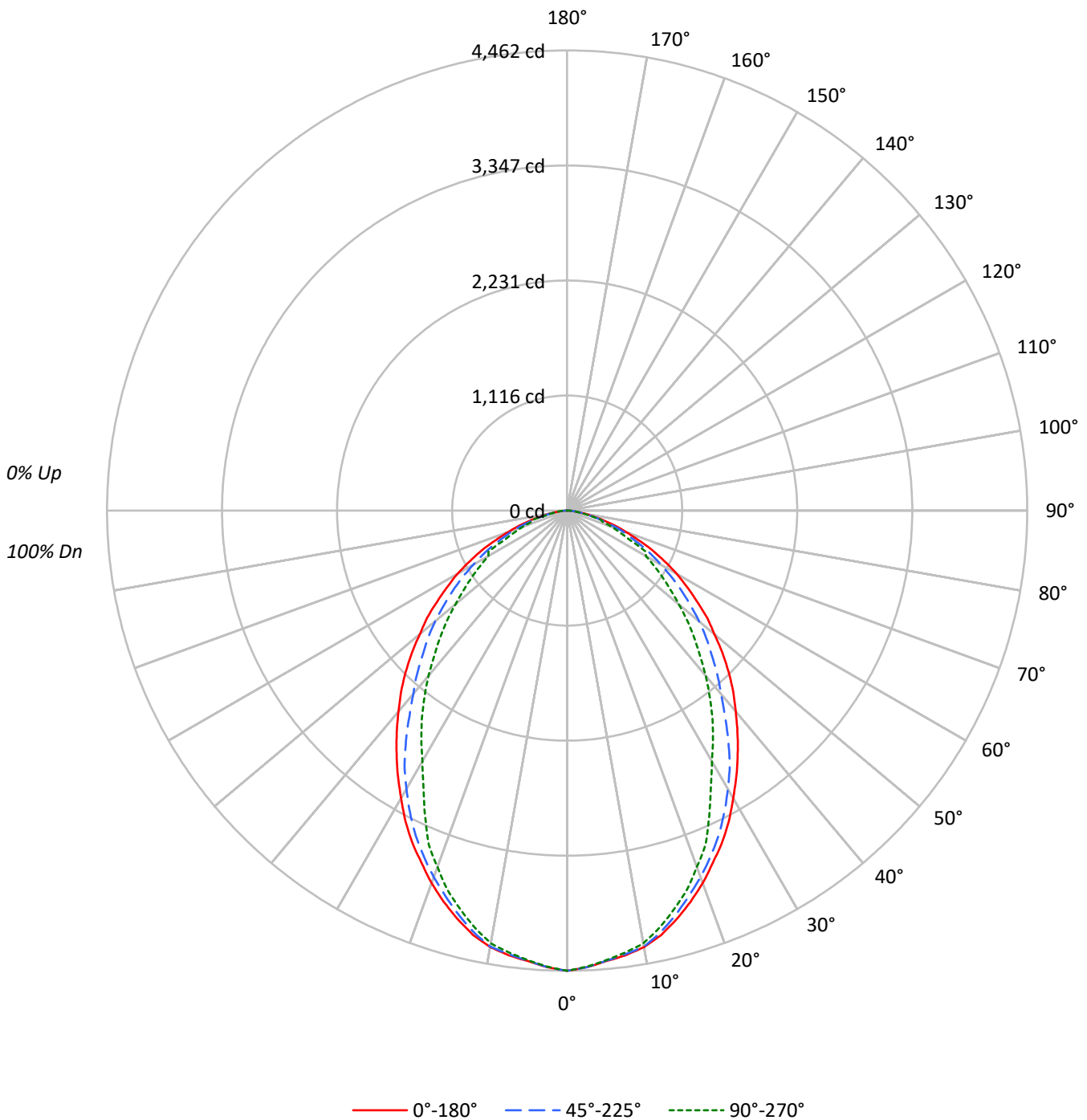
Lumens per Lamp: N/A  
Luminaire Lumens: 8760.0 lumens  
Efficiency: N/A  
Efficacy: 124.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P563297

CATALOG NUMBER: FSR-24-4-LD4-3LO-35-UNV-93-84-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P563297

CATALOG NUMBER: FSR-24-4-LD4-3LO-35-UNV-93-84-EDD

**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°	6004	6004	6004
5°	5922	5915	5908
10°	5871	5864	5822
15°	5713	5655	5576
20°	5503	5414	5266
25°	5277	5162	4840
30°	5001	4841	4360
35°	4737	4474	4033
40°	4467	4077	3670
45°	4211	3769	3318
50°	3898	3499	2959
55°	3606	3171	2650
60°	3304	2832	2374
65°	2907	2480	2102
70°	2395	2172	1786
75°	1904	1663	1743
80°	1279	1199	1119
85°	797	956	1115

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4211 cd/sqm



TEST NUMBER: P563297

CATALOG NUMBER: FSR-24-4-LD4-3LO-35-UNV-93-84-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	415.4	4.7
10°-20°	1140.0	13.0
20°-30°	1578.2	18.0
30°-40°	1682.8	19.2
40°-50°	1535.2	17.5
50°-60°	1202.7	13.7
60°-70°	783.9	8.9
70°-80°	347.3	4.0
80°-90°	74.6	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°	3133.5	35.8
0°-40°	4816.3	55.0
0°-60°	7554.3	86.2
0°-90°	8760.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8760.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4462	4462	4462	4462	4462	
5°	4385	4380	4380	4374	4374	416
15°	4101	4101	4060	4019	4003	1153
25°	3554	3534	3477	3353	3260	1632
35°	2884	2863	2724	2517	2456	1803
45°	2213	2167	1981	1816	1744	1705
55°	1537	1491	1352	1192	1130	1379
65°	913	862	779	794	660	900
75°	366	340	320	304	335	393
85°	52	57	62	67	72	72
90°	0	0	0	0	0	



TEST NUMBER: P563297

CATALOG NUMBER: FSR-24-4-LD4-3LO-35-UNV-93-84-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4462.2	4462.2	4462.2	4462.2	4462.2
2.5°	4431.3	4431.3	4431.3	4426.1	4426.1
5°	4384.8	4379.7	4379.7	4374.5	4374.5
7.5°	4348.7	4343.6	4338.4	4333.3	4322.9
10°	4297.2	4297.2	4292.0	4266.2	4261.0
12.5°	4214.6	4209.5	4188.8	4152.7	4142.4
15°	4101.1	4101.1	4059.9	4018.6	4003.1
17.5°	3977.3	3972.2	3920.6	3879.3	3858.7
20°	3843.2	3832.9	3781.3	3714.2	3678.1
22.5°	3693.6	3693.6	3631.7	3544.0	3507.9
25°	3554.3	3533.7	3476.9	3353.1	3260.3
27.5°	3394.4	3363.4	3301.5	3126.1	3017.8
30°	3219.0	3203.5	3115.8	2888.8	2806.3
32.5°	3053.9	3028.1	2935.3	2698.0	2630.9
35°	2883.7	2863.0	2723.8	2517.4	2455.5
37.5°	2713.4	2687.7	2512.3	2347.2	2269.8
40°	2543.2	2512.3	2321.4	2171.8	2089.3
42.5°	2383.3	2342.0	2156.3	1996.4	1903.5
45°	2213.1	2166.6	1980.9	1815.8	1743.6
47.5°	2042.8	2001.6	1831.3	1661.1	1578.5
50°	1862.3	1826.2	1671.4	1501.2	1413.5
52.5°	1712.7	1655.9	1506.3	1336.1	1263.9
55°	1537.3	1490.8	1351.6	1191.6	1129.7
57.5°	1377.4	1330.9	1202.0	1052.4	1000.8
60°	1227.8	1160.7	1052.4	923.4	882.1
62.5°	1062.7	1011.1	918.2	809.9	861.5
65°	913.1	861.5	779.0	794.4	660.3
67.5°	748.0	722.2	650.0	577.8	557.1
70°	608.7	577.8	552.0	474.6	454.0
72.5°	484.9	454.0	417.9	376.6	361.1
75°	366.3	340.5	319.8	304.4	335.3
77.5°	252.8	242.5	227.0	211.5	206.3
80°	165.1	159.9	154.8	149.6	144.4
82.5°	98.0	98.0	98.0	98.0	98.0
85°	51.6	56.7	61.9	67.1	72.2
87.5°	31.0	31.0	36.1	41.3	46.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)