

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: P563298

Luminaire Tested: FSR-24-4-LD4-3LO-35-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563298  
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-93-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

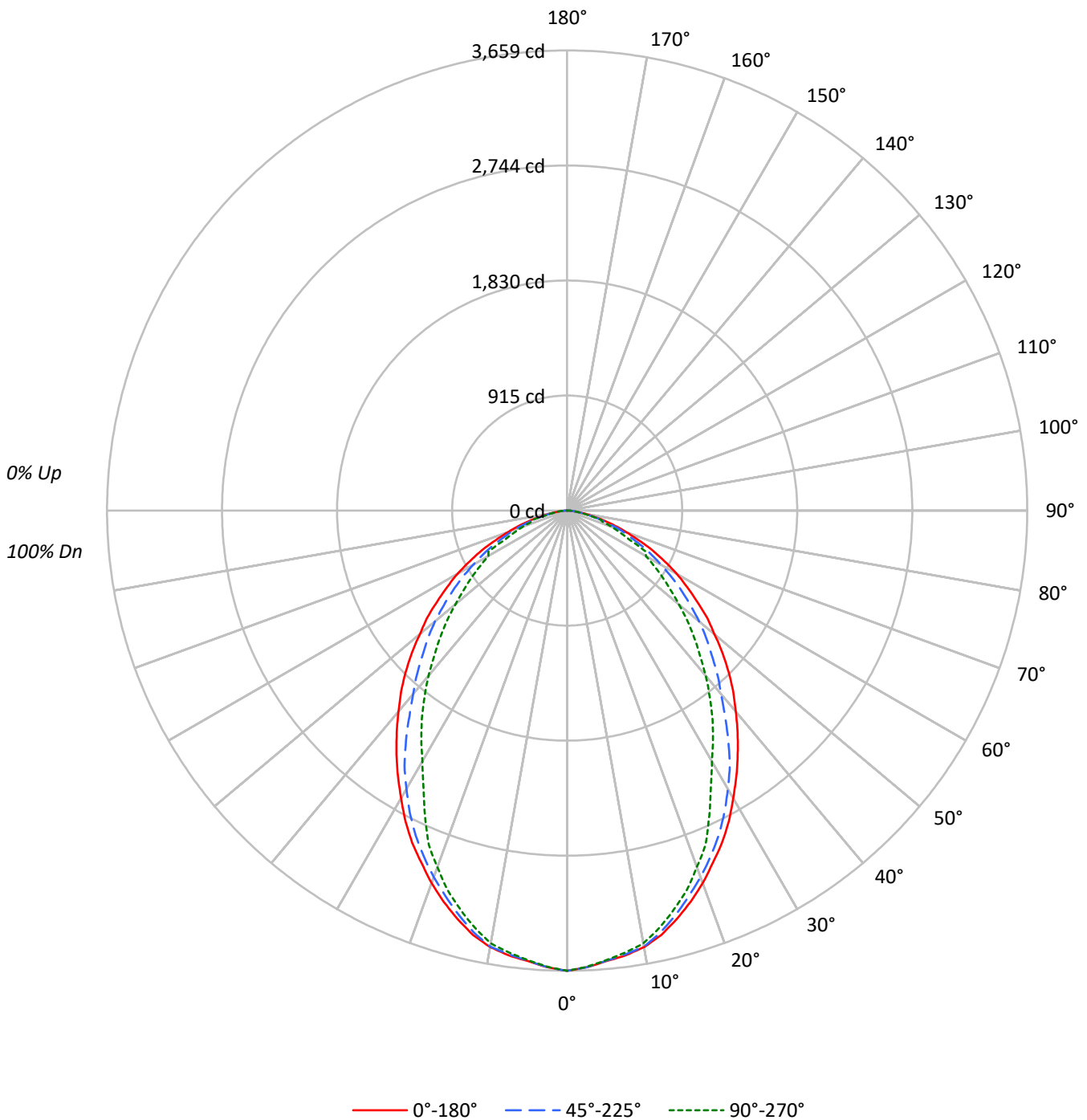
Lumens per Lamp: N/A  
Luminaire Lumens: 7184.0 lumens  
Efficiency: N/A  
Efficacy: 102.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																												
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°	4924	4924	4924
5°	4857	4851	4845
10°	4815	4809	4774
15°	4685	4638	4573
20°	4513	4440	4319
25°	4327	4233	3969
30°	4101	3970	3576
35°	3884	3669	3308
40°	3663	3344	3009
45°	3453	3091	2721
50°	3197	2869	2426
55°	2957	2600	2173
60°	2710	2322	1947
65°	2384	2034	1724
70°	1964	1781	1465
75°	1562	1364	1430
80°	1049	983	918
85°	653	784	914

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3453 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	340.6	4.7
10°-20°	934.9	13.0
20°-30°	1294.3	18.0
30°-40°	1380.1	19.2
40°-50°	1259.0	17.5
50°-60°	986.3	13.7
60°-70°	642.8	8.9
70°-80°	284.8	4.0
80°-90°	61.2	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°	2569.8	35.8
0°-40°	3949.8	55.0
0°-60°	6195.2	86.2
0°-90°	7184.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7184.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3659	3659	3659	3659	3659	
5°	3596	3592	3592	3588	3588	341
15°	3363	3363	3330	3296	3283	946
25°	2915	2898	2851	2750	2674	1338
35°	2365	2348	2234	2064	2014	1478
45°	1815	1777	1624	1489	1430	1398
55°	1261	1223	1108	977	926	1131
65°	749	706	639	652	542	738
75°	300	279	262	250	275	322
85°	42	46	51	55	59	59
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3659.4	3659.4	3659.4	3659.4	3659.4
2.5°	3634.1	3634.1	3634.1	3629.8	3629.8
5°	3596.0	3591.7	3591.7	3587.5	3587.5
7.5°	3566.4	3562.1	3557.9	3553.7	3545.2
10°	3524.1	3524.1	3519.8	3498.7	3494.4
12.5°	3456.4	3452.1	3435.2	3405.6	3397.1
15°	3363.3	3363.3	3329.5	3295.6	3282.9
17.5°	3261.8	3257.5	3215.2	3181.4	3164.5
20°	3151.8	3143.3	3101.0	3046.0	3016.4
22.5°	3029.1	3029.1	2978.3	2906.4	2876.8
25°	2914.9	2897.9	2851.4	2749.9	2673.7
27.5°	2783.7	2758.3	2707.6	2563.7	2474.9
30°	2639.9	2627.2	2555.3	2369.1	2301.4
32.5°	2504.5	2483.3	2407.2	2212.6	2157.6
35°	2364.9	2348.0	2233.7	2064.5	2013.7
37.5°	2225.3	2204.1	2060.3	1924.9	1861.4
40°	2085.7	2060.3	1903.8	1781.1	1713.4
42.5°	1954.5	1920.7	1768.4	1637.2	1561.1
45°	1814.9	1776.8	1624.5	1489.2	1429.9
47.5°	1675.3	1641.5	1501.8	1362.2	1294.6
50°	1527.2	1497.6	1370.7	1231.1	1159.2
52.5°	1404.5	1358.0	1235.3	1095.7	1036.5
55°	1260.7	1222.6	1108.4	977.3	926.5
57.5°	1129.6	1091.5	985.7	863.0	820.7
60°	1006.9	951.9	863.0	757.3	723.4
62.5°	871.5	829.2	753.0	664.2	706.5
65°	748.8	706.5	638.8	651.5	541.5
67.5°	613.4	592.3	533.1	473.8	456.9
70°	499.2	473.8	452.7	389.2	372.3
72.5°	397.7	372.3	342.7	308.8	296.1
75°	300.4	279.2	262.3	249.6	275.0
77.5°	207.3	198.8	186.1	173.5	169.2
80°	135.4	131.1	126.9	122.7	118.5
82.5°	80.4	80.4	80.4	80.4	80.4
85°	42.3	46.5	50.8	55.0	59.2
87.5°	25.4	25.4	29.6	33.8	38.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)