

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: P562532

Luminaire Tested: FSR-24-4-LD4-2HI-35-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562532  
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-LD4-2HI-35-UNV-93-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

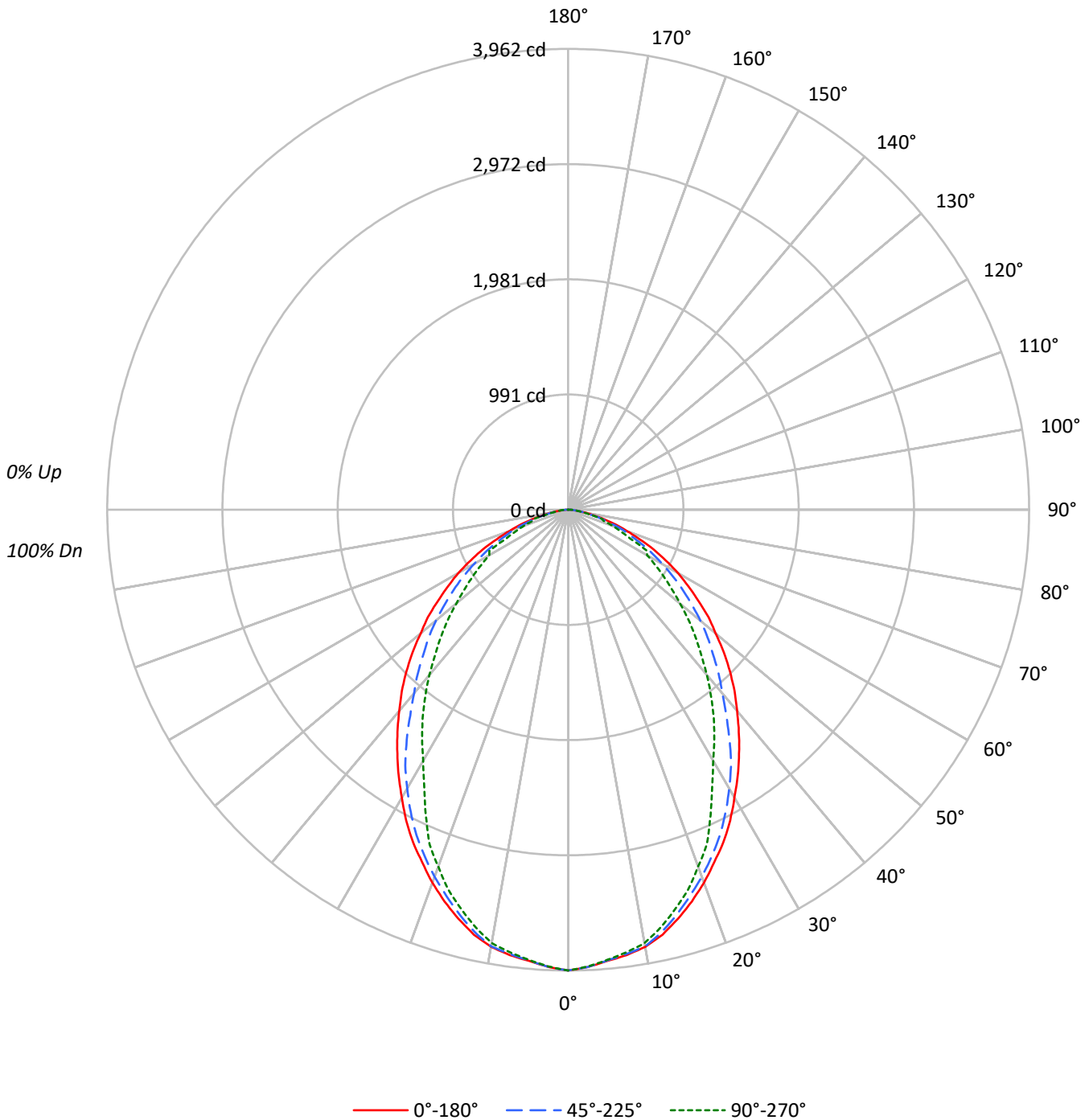
Lumens per Lamp: N/A  
Luminaire Lumens: 7778.0 lumens  
Efficiency: N/A  
Efficacy: 90.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5331	5331	5331
5°	5258	5252	5246
10°	5213	5207	5169
15°	5072	5021	4951
20°	4886	4807	4676
25°	4685	4583	4298
30°	4440	4298	3871
35°	4206	3972	3581
40°	3966	3620	3258
45°	3739	3347	2946
50°	3461	3106	2627
55°	3202	2815	2353
60°	2933	2514	2108
65°	2581	2202	1867
70°	2126	1928	1586
75°	1691	1476	1548
80°	1136	1065	994
85°	707	849	990

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3739 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	368.8	4.7
10°-20°	1012.2	13.0
20°-30°	1401.3	18.0
30°-40°	1494.2	19.2
40°-50°	1363.1	17.5
50°-60°	1067.9	13.7
60°-70°	696.0	8.9
70°-80°	308.4	4.0
80°-90°	66.2	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°	2782.3	35.8
0°-40°	4276.4	55.0
0°-60°	6707.4	86.2
0°-90°	7778.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7778.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3962	3962	3962	3962	3962	
5°	3893	3889	3889	3884	3884	370
15°	3641	3641	3605	3568	3554	1024
25°	3156	3138	3087	2977	2895	1449
35°	2560	2542	2418	2235	2180	1601
45°	1965	1924	1759	1612	1548	1514
55°	1365	1324	1200	1058	1003	1224
65°	811	765	692	705	586	799
75°	325	302	284	270	298	349
85°	46	50	55	60	64	64
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3962.0	3962.0	3962.0	3962.0	3962.0
2.5°	3934.5	3934.5	3934.5	3929.9	3929.9
5°	3893.3	3888.7	3888.7	3884.1	3884.1
7.5°	3861.2	3856.7	3852.1	3847.5	3838.3
10°	3815.4	3815.4	3810.9	3788.0	3783.4
12.5°	3742.2	3737.6	3719.3	3687.2	3678.0
15°	3641.4	3641.4	3604.7	3568.1	3554.4
17.5°	3531.5	3526.9	3481.1	3444.4	3426.1
20°	3412.4	3403.2	3357.4	3297.9	3265.8
22.5°	3279.5	3279.5	3224.6	3146.7	3114.6
25°	3155.9	3137.5	3087.2	2977.2	2894.8
27.5°	3013.9	2986.4	2931.4	2775.7	2679.5
30°	2858.1	2844.4	2766.5	2565.0	2491.7
32.5°	2711.6	2688.7	2606.2	2395.5	2336.0
35°	2560.4	2542.1	2418.4	2235.2	2180.3
37.5°	2409.3	2386.4	2230.6	2084.1	2015.4
40°	2258.1	2230.6	2061.2	1928.3	1855.0
42.5°	2116.1	2079.5	1914.6	1772.6	1690.2
45°	1965.0	1923.8	1758.9	1612.3	1548.2
47.5°	1813.8	1777.2	1626.0	1474.9	1401.6
50°	1653.5	1621.4	1484.0	1332.9	1255.0
52.5°	1520.7	1470.3	1337.5	1186.3	1122.2
55°	1364.9	1323.7	1200.1	1058.1	1003.1
57.5°	1223.0	1181.7	1067.2	934.4	888.6
60°	1090.1	1030.6	934.4	819.9	783.2
62.5°	943.6	897.8	815.3	719.1	764.9
65°	810.7	764.9	691.6	705.4	586.3
67.5°	664.2	641.3	577.1	513.0	494.7
70°	540.5	513.0	490.1	421.4	403.1
72.5°	430.6	403.1	371.0	334.4	320.6
75°	325.2	302.3	284.0	270.2	297.7
77.5°	224.4	215.3	201.5	187.8	183.2
80°	146.6	142.0	137.4	132.8	128.3
82.5°	87.0	87.0	87.0	87.0	87.0
85°	45.8	50.4	55.0	59.5	64.1
87.5°	27.5	27.5	32.1	36.6	41.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)