

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: P590732

Luminaire Tested: FSR-24-2-LD4-4HI-35-UNV-82-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590732  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4HI-35-UNV-82-97-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

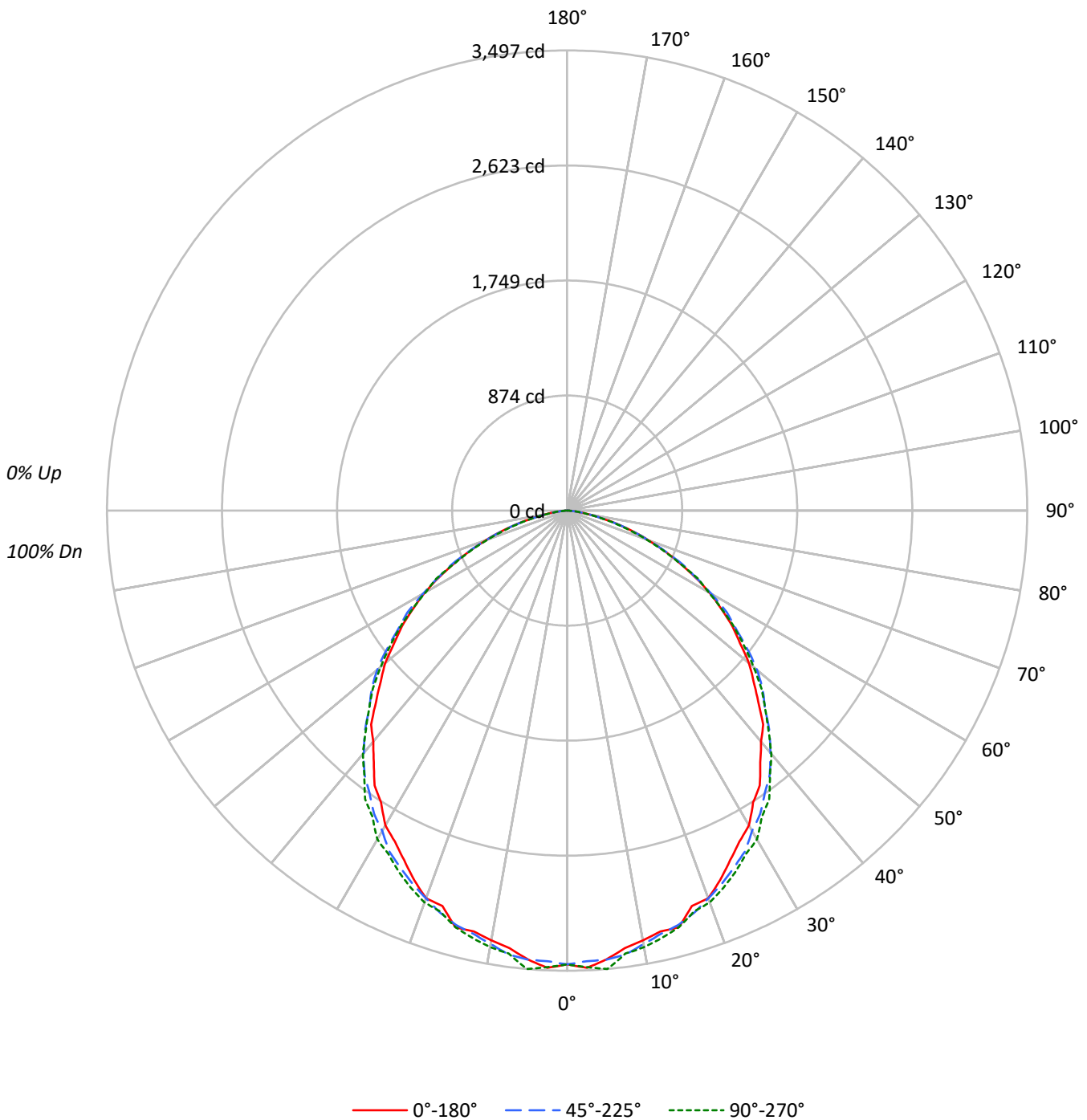
Lumens per Lamp: N/A  
Luminaire Lumens: 8691.0 lumens  
Efficiency: N/A  
Efficacy: 100.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	45°	90°
0°	9280	9280	9280
5°	9249	9252	9447
10°	9061	9140	9205
15°	9133	9083	9134
20°	8979	8979	9074
25°	8703	8893	8991
30°	8583	8734	8966
35°	8381	8600	8793
40°	8055	8443	8480
45°	7811	8089	8101
50°	7555	7896	7745
55°	7198	7338	7286
60°	6731	6798	6676
65°	6002	6155	5959
70°	5150	5167	5024
75°	4079	4069	3911
80°	2732	2656	2552
85°	1485	1470	1374

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 8297 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	324.4	3.7
10°-20°	919.3	10.6
20°-30°	1377.3	15.8
30°-40°	1632.4	18.8
40°-50°	1635.4	18.8
50°-60°	1388.2	16.0
60°-70°	935.9	10.8
70°-80°	411.2	4.7
80°-90°	66.8	0.8
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°	2621.0	30.2
0°-40°	4253.4	48.9
0°-60°	7277.0	83.7
0°-90°	8691.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8691.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3448	3448	3448	3448	3448	
5°	3424	3416	3425	3415	3497	323
15°	3278	3240	3260	3277	3279	913
25°	2931	2947	2995	3034	3028	1355
35°	2551	2559	2618	2679	2677	1584
45°	2052	2091	2126	2180	2129	1588
55°	1534	1524	1564	1553	1553	1365
65°	943	930	967	930	936	937
75°	392	384	391	364	376	420
85°	48	47	48	46	44	70
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3448.4	3448.4	3448.4	3448.4	3448.4
2.5°	3478.2	3451.9	3427.4	3455.9	3473.3
5°	3423.9	3415.9	3425.2	3415.0	3497.3
7.5°	3353.5	3384.3	3402.1	3390.9	3395.8
10°	3316.1	3305.4	3345.1	3372.7	3368.7
12.5°	3276.1	3292.1	3294.3	3324.1	3326.8
15°	3278.3	3240.4	3260.5	3277.4	3278.7
17.5°	3151.0	3191.9	3205.7	3244.5	3196.4
20°	3135.4	3105.5	3135.4	3175.0	3168.8
22.5°	3039.6	3006.2	3070.4	3105.5	3103.3
25°	2931.0	2947.0	2995.1	3034.3	3028.1
27.5°	2835.7	2854.4	2923.0	2976.9	2942.1
30°	2762.3	2752.9	2810.8	2858.9	2885.6
32.5°	2630.9	2664.8	2732.4	2780.1	2754.7
35°	2551.2	2558.8	2618.0	2678.6	2676.8
37.5°	2411.9	2447.0	2530.3	2547.2	2531.6
40°	2293.0	2328.2	2403.4	2421.7	2414.1
42.5°	2205.3	2211.5	2276.1	2297.0	2263.6
45°	2052.5	2090.8	2125.6	2180.3	2128.7
47.5°	1922.5	1940.3	2015.1	2029.8	2002.7
50°	1804.6	1810.8	1886.0	1867.8	1850.0
52.5°	1656.3	1682.6	1724.9	1721.3	1700.4
55°	1534.3	1524.1	1564.1	1553.4	1553.0
57.5°	1387.8	1405.6	1438.6	1421.6	1394.5
60°	1250.7	1251.1	1263.1	1244.0	1240.4
62.5°	1098.0	1103.3	1106.0	1082.4	1120.7
65°	942.6	930.1	966.6	929.7	935.9
67.5°	799.6	805.9	802.3	779.2	788.1
70°	654.5	662.5	656.7	630.5	638.5
72.5°	521.8	512.0	518.3	485.3	500.4
75°	392.3	384.2	391.4	363.8	376.2
77.5°	267.1	273.4	268.9	254.2	262.7
80°	176.3	171.4	171.4	163.0	164.7
82.5°	102.9	98.0	96.6	93.9	98.0
85°	48.1	46.8	47.6	46.3	44.5
87.5°	17.4	17.8	17.8	16.9	16.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)