

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P

Luminaire Tested: **4APN-20L840-X-UNV-ASY**

Issue Date: 06/06/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 06/06/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-20L840-X-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/  
ASYMMETRIC Lens  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

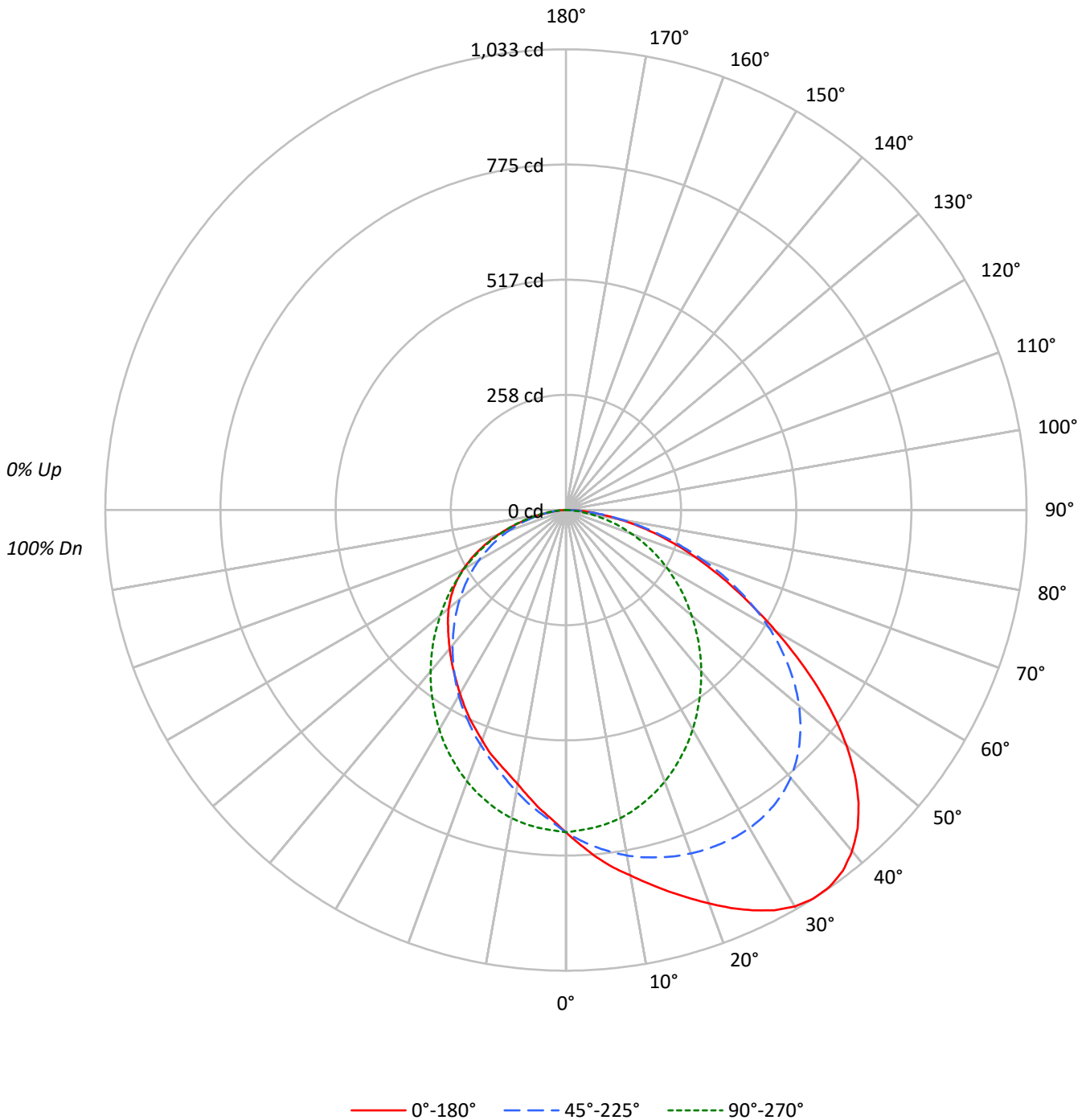
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2237.8 lumens  
Efficiency: N/A  
Efficacy: 94.0 lumens/watt  
Spacing Criteria (0/90/45): 1.53 / 1.18 / 1.46  
Luminous Opening: Rectangular (W 0.29' x L: 3.83' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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: 25 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	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84
2	99	90	83	78	96	88	82	77	85	80	75	82	77	73	79	75	72	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	62	56	52	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	43
6	69	56	47	40	68	55	46	40	53	46	40	51	45	39	50	44	39	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	33
8	60	46	37	32	58	45	37	31	44	37	31	43	36	31	42	35	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	23

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

	0°	90°	180°
0°	6956	6956	6956
5°	7548	6914	6497
10°	8132	6860	6096
15°	8820	6760	5846
20°	9617	6641	5629
25°	10520	6485	5454
30°	11412	6315	5278
35°	12121	6128	5165
40°	12550	5933	5097
45°	12639	5729	5087
50°	12307	5510	5142
55°	11523	5312	5173
60°	10475	5072	5124
65°	9497	4795	4925
70°	8692	4447	4521
75°	7886	3999	3887
80°	6897	3343	2994
85°	5810	2430	2231



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.6	3.1
10°-20°	199.6	8.9
20°-30°	312.6	14.0
30°-40°	391.9	17.5
40°-50°	417.3	18.6
50°-60°	376.7	16.8
60°-70°	278.8	12.5
70°-80°	153.0	6.8
80°-90°	39.3	1.8
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°	580.8	26.0
0°-40°	972.7	43.5
0°-60°	1766.7	78.9
0°-90°	2237.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2237.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	722	722	722	722	722	
5°	781	758	715	681	672	76
15°	885	806	678	599	586	252
25°	990	825	610	521	513	458
35°	1031	811	521	438	440	643
45°	928	741	421	352	374	712
55°	686	610	316	268	308	612
65°	417	429	210	181	216	416
75°	212	225	108	93	104	225
85°	53	52	22	20	20	62
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	722.5	722.5	722.5	722.5	722.5	722.5	722.5	722.5	722.5	722.5	722.5
2.5°	751.6	750.1	748.3	747.7	745.0	741.5	738.2	738.2	734.4	725.1	718.6
5°	781.0	778.6	774.1	770.6	764.9	758.1	751.3	747.1	737.9	724.0	715.4
7.5°	808.0	805.0	799.4	792.6	783.4	773.3	762.0	753.1	739.1	720.4	709.4
10°	831.8	829.1	822.3	813.9	800.9	786.6	770.0	756.6	737.6	714.5	701.7
12.5°	857.9	855.2	845.7	834.4	816.6	797.6	775.6	757.2	733.8	705.8	691.3
15°	884.9	881.3	870.7	855.5	831.8	806.2	779.2	755.4	727.5	695.5	678.2
17.5°	911.6	908.1	894.7	875.4	845.7	813.9	780.7	751.3	718.6	682.7	664.0
20°	938.7	935.1	918.2	893.8	857.9	819.6	780.4	745.0	707.9	668.1	648.2
22.5°	965.7	961.5	941.0	911.3	868.0	823.4	777.1	736.4	694.6	651.5	630.1
25°	990.3	986.2	963.6	928.6	878.7	825.2	771.5	724.6	679.7	633.1	610.5
27.5°	1011.7	1006.7	983.2	944.6	887.9	825.8	764.0	711.2	662.5	613.2	590.3
30°	1026.6	1022.1	997.2	955.9	893.2	823.7	754.5	695.5	642.6	591.8	568.1
32.5°	1033.1	1029.2	1004.6	961.2	894.1	818.4	743.0	677.9	621.8	569.3	545.2
35°	1031.3	1027.4	1004.0	960.3	891.4	810.7	728.4	658.0	599.5	545.8	521.4
37.5°	1020.0	1015.6	994.2	952.3	883.7	799.4	711.8	636.4	575.5	521.7	497.1
40°	998.6	994.2	975.8	937.2	870.7	784.2	692.8	613.2	550.8	496.5	472.1
42.5°	968.1	963.3	948.8	913.4	851.9	764.3	671.1	588.6	524.7	472.1	446.6
45°	928.3	923.5	913.7	883.7	827.6	740.9	646.5	561.8	497.4	444.5	420.8
47.5°	879.0	874.8	870.1	846.9	797.6	713.9	618.8	533.3	468.9	418.7	394.3
50°	821.7	817.5	819.0	803.2	762.9	682.7	588.6	503.3	439.5	389.9	367.9
52.5°	756.6	753.4	760.5	753.7	722.5	647.9	556.2	472.4	409.5	362.6	341.5
55°	686.5	683.0	696.6	698.7	677.3	609.6	519.4	440.4	379.2	335.8	316.5
57.5°	614.4	611.4	628.9	638.7	628.0	568.4	482.2	407.4	348.0	307.9	288.6
60°	544.0	541.6	560.0	576.1	574.9	524.7	443.6	371.8	316.8	279.7	263.4
62.5°	477.8	475.1	493.5	512.5	519.4	478.1	405.3	336.7	285.7	251.5	237.0
65°	416.9	414.2	430.0	449.6	462.1	429.4	364.1	300.5	254.2	223.0	210.5
67.5°	361.1	361.1	370.9	389.0	404.1	379.5	321.9	266.1	221.8	196.6	184.1
70°	308.8	308.5	315.7	328.4	345.9	326.1	279.1	229.8	191.2	169.0	158.0
72.5°	259.2	261.3	264.0	273.8	292.2	275.0	236.7	194.2	161.2	141.6	132.4
75°	212.0	211.7	215.6	224.2	237.6	224.8	194.2	159.5	131.5	115.5	107.5
77.5°	166.9	166.6	169.9	174.9	186.2	176.1	153.2	127.4	102.4	89.1	83.4
80°	124.4	124.4	127.4	130.1	138.4	130.4	114.3	95.3	75.1	64.7	60.3
82.5°	86.4	88.2	87.0	90.6	95.3	88.5	78.4	65.3	49.9	42.8	39.8
85°	52.6	54.0	52.6	55.5	57.6	51.7	46.6	38.9	28.8	24.1	22.0
87.5°	27.0	26.7	26.4	27.9	28.5	24.9	22.0	18.7	12.8	9.8	8.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	722.5	722.5	722.5	722.5	722.5	722.5	722.5	722.5	722.5	722.5
2.5°	714.8	716.5	713.9	704.1	700.2	696.0	694.3	692.5	695.8	694.9
5°	708.8	706.7	699.9	687.4	680.9	674.1	670.8	668.7	673.2	672.3
7.5°	700.8	694.9	684.8	669.6	661.3	652.1	647.6	645.0	647.9	647.3
10°	690.7	680.9	668.4	650.3	640.5	630.4	625.4	621.5	623.9	623.6
12.5°	677.9	665.2	650.0	629.5	619.4	609.0	604.6	601.9	604.9	604.0
15°	663.7	648.2	630.7	609.9	598.9	589.4	586.2	584.1	586.5	586.5
17.5°	647.9	629.8	610.5	589.4	579.1	571.6	568.4	566.9	568.1	569.8
20°	630.4	610.2	589.4	569.0	560.0	552.3	549.4	547.9	550.5	549.4
22.5°	611.1	589.7	568.1	548.8	540.7	533.0	530.1	529.2	532.1	530.9
25°	590.6	567.5	546.1	528.6	520.6	514.0	511.3	510.5	511.9	513.4
27.5°	571.3	545.2	524.1	508.4	501.2	495.0	492.6	491.2	492.3	494.1
30°	547.9	522.6	501.8	487.3	480.5	474.5	472.7	471.6	473.3	474.8
32.5°	525.9	500.4	479.6	465.3	459.4	453.7	453.4	452.8	454.9	456.7
35°	502.1	477.2	457.0	443.6	438.0	433.2	434.1	435.0	437.4	439.5
37.5°	478.1	453.7	434.4	422.3	416.9	413.1	415.7	416.9	420.2	422.3
40°	453.7	429.4	411.6	400.6	395.2	393.5	397.3	400.0	403.9	405.6
42.5°	428.8	406.2	388.4	378.3	373.9	373.9	378.9	383.1	387.5	389.3
45°	403.9	381.9	365.0	355.7	352.5	354.9	360.8	366.1	371.8	373.6
47.5°	378.6	357.2	341.8	333.5	331.7	335.3	342.7	349.8	356.3	358.7
50°	353.4	334.1	318.6	310.9	310.9	315.4	324.9	333.8	340.9	343.3
52.5°	328.1	309.7	294.0	288.3	289.5	295.8	306.7	316.0	324.0	326.3
55°	302.6	284.5	270.8	266.1	268.1	275.9	287.1	297.8	305.6	308.2
57.5°	277.4	260.1	247.7	243.8	246.8	255.4	268.4	277.6	285.7	288.0
60°	251.8	234.3	224.5	221.5	225.4	234.3	247.7	256.3	263.7	266.1
62.5°	226.6	210.2	201.6	199.0	203.4	212.9	226.0	233.7	239.3	241.7
65°	201.0	186.5	178.5	176.7	181.4	190.6	203.1	209.6	213.8	216.2
67.5°	175.8	163.3	155.9	154.4	159.5	167.8	179.4	182.9	186.8	189.2
70°	150.9	139.6	133.3	132.4	136.9	144.9	154.7	156.5	158.6	160.6
72.5°	126.2	117.3	111.1	110.8	114.9	121.5	129.5	129.8	130.4	132.4
75°	102.4	94.4	89.7	90.6	92.9	98.3	104.5	102.7	103.0	104.5
77.5°	79.6	73.0	69.8	70.4	72.2	76.0	80.2	78.1	76.9	78.4
80°	57.3	51.7	50.5	50.8	52.0	54.6	57.0	55.2	52.9	54.0
82.5°	37.7	34.1	33.6	33.9	34.7	36.2	36.8	34.1	33.6	34.4
85°	20.8	19.3	19.3	20.2	20.5	20.8	20.8	19.3	19.6	20.2
87.5°	8.3	8.3	9.2	10.1	9.5	8.3	7.1	4.8	4.8	5.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)