

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-20L830-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-20L830-X-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/  
ASYMMETRIC Lens  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

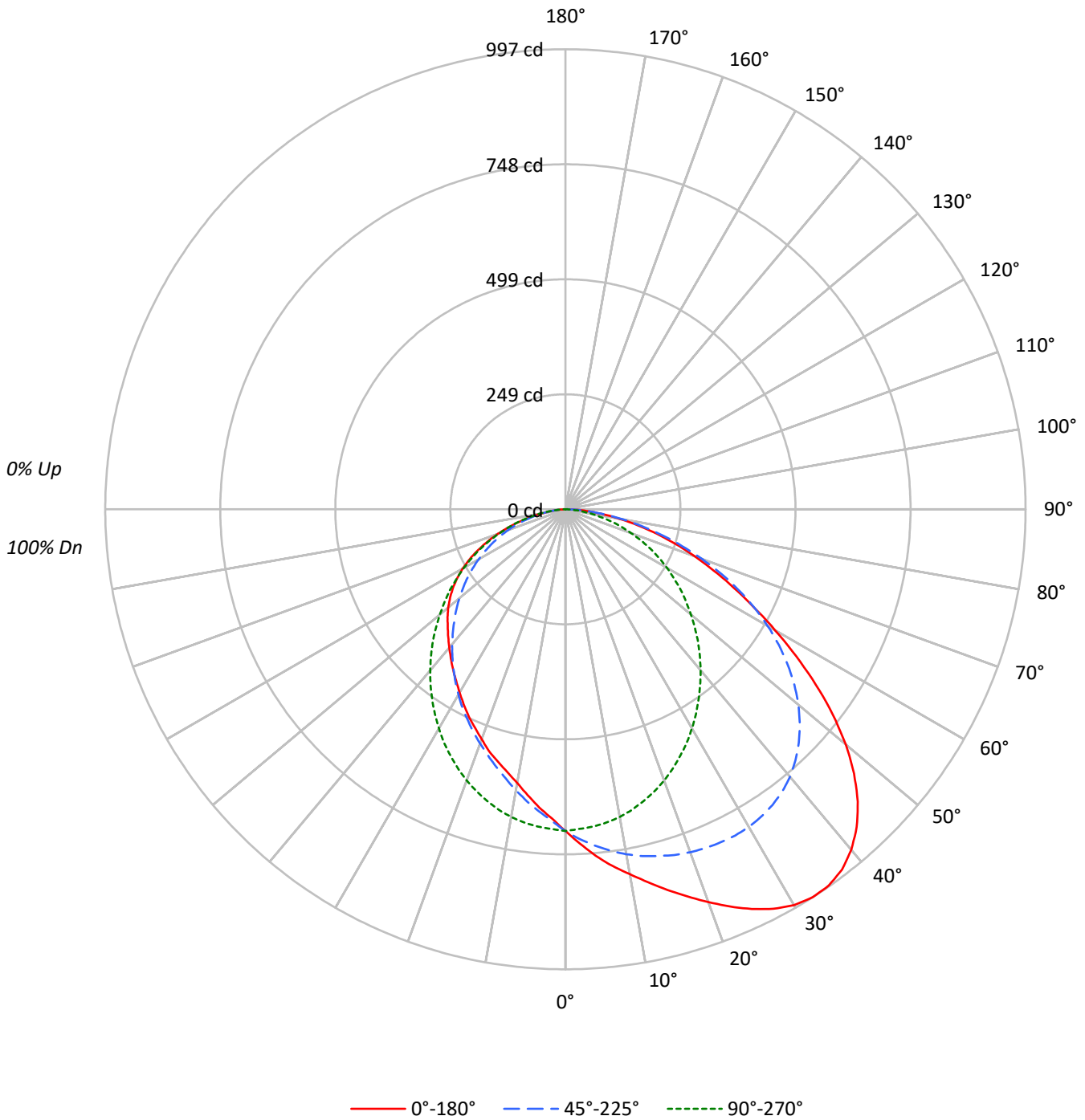
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2159.5 lumens  
Efficiency: N/A  
Efficacy: 90.7 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	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	100	100
1	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84	84	84	84
2	99	90	83	78	96	88	82	77	85	80	75	82	77	73	79	75	72	69	69	69	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	61	69	64	60	58	58	58	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	62	56	52	49	49	49	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	43	43	43	43
6	69	56	47	40	68	55	46	40	53	46	40	51	45	39	50	44	39	37	37	37	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	33	33	33	33
8	60	46	37	32	58	45	37	31	44	37	31	43	36	31	42	35	31	29	29	29	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	26	26	26	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	23	23	23	23

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

	0°	90°	180°
0°	6712	6712	6712
5°	7284	6671	6270
10°	7847	6619	5883
15°	8512	6523	5641
20°	9280	6409	5431
25°	10152	6259	5263
30°	11012	6094	5094
35°	11696	5914	4984
40°	12111	5726	4919
45°	12196	5529	4908
50°	11876	5319	4962
55°	11120	5128	4993
60°	10109	4895	4945
65°	9164	4629	4752
70°	8388	4293	4363
75°	7611	3857	3753
80°	6659	3227	2894
85°	5600	2342	2154



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.2	3.1
10°-20°	192.6	8.9
20°-30°	301.7	14.0
30°-40°	378.2	17.5
40°-50°	402.7	18.6
50°-60°	363.5	16.8
60°-70°	269.1	12.5
70°-80°	147.6	6.8
80°-90°	37.9	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°	560.5	26.0
0°-40°	938.7	43.5
0°-60°	1704.9	78.9
0°-90°	2159.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2159.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	697	697	697	697	697	
5°	754	732	690	657	649	73
15°	854	778	654	578	566	244
25°	956	796	589	502	496	442
35°	995	782	503	423	424	621
45°	896	715	406	340	360	687
55°	662	588	306	259	298	591
65°	402	414	203	175	209	401
75°	205	217	104	90	101	217
85°	51	50	21	20	20	60
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°	697.2	697.2	697.2	697.2	697.2	697.2	697.2	697.2	697.2	697.2	697.2
2.5°	725.3	723.9	722.1	721.6	719.0	715.5	712.4	712.4	708.7	699.8	693.5
5°	753.7	751.4	747.1	743.6	738.2	731.6	725.0	721.0	712.1	698.6	690.3
7.5°	779.7	776.9	771.4	764.8	756.0	746.2	735.3	726.7	713.3	695.2	684.6
10°	802.7	800.1	793.5	785.5	772.9	759.1	743.1	730.2	711.8	689.5	677.1
12.5°	827.9	825.3	816.1	805.2	788.0	769.7	748.5	730.7	708.1	681.2	667.1
15°	854.0	850.5	840.2	825.6	802.7	778.0	751.9	729.0	702.1	671.1	654.5
17.5°	879.7	876.3	863.4	844.8	816.1	785.5	753.4	725.0	693.5	658.8	640.8
20°	905.8	902.4	886.1	862.6	827.9	790.9	753.1	719.0	683.2	644.8	625.6
22.5°	931.9	927.9	908.1	879.5	837.6	794.6	749.9	710.7	670.3	628.7	608.1
25°	955.7	951.7	929.9	896.1	847.9	796.4	744.5	699.2	655.9	611.0	589.2
27.5°	976.3	971.4	948.8	911.6	856.8	796.9	737.3	686.3	639.3	591.8	569.7
30°	990.6	986.3	962.3	922.4	862.0	794.9	728.2	671.1	620.1	571.1	548.2
32.5°	997.0	993.2	969.4	927.6	862.8	789.8	717.0	654.2	600.1	549.3	526.1
35°	995.2	991.5	968.9	926.7	860.3	782.3	702.9	635.0	578.6	526.7	503.2
37.5°	984.3	980.0	959.4	919.0	852.8	771.4	686.9	614.1	555.4	503.5	479.7
40°	963.7	959.4	941.6	904.4	840.2	756.8	668.6	591.8	531.6	479.1	455.6
42.5°	934.2	929.6	915.6	881.5	822.1	737.6	647.6	568.0	506.4	455.6	431.0
45°	895.8	891.2	881.8	852.8	798.6	715.0	623.8	542.2	480.0	429.0	406.1
47.5°	848.2	844.2	839.6	817.3	769.7	688.9	597.2	514.7	452.5	404.1	380.6
50°	792.9	788.9	790.3	775.2	736.2	658.8	568.0	485.7	424.1	376.3	355.1
52.5°	730.2	727.0	733.9	727.3	697.2	625.3	536.7	455.9	395.2	349.9	329.5
55°	662.5	659.1	672.3	674.3	653.6	588.3	501.2	425.0	365.9	324.1	305.5
57.5°	592.9	590.0	606.9	616.4	606.1	548.5	465.4	393.2	335.9	297.2	278.5
60°	525.0	522.7	540.5	555.9	554.8	506.4	428.1	358.8	305.8	269.9	254.2
62.5°	461.1	458.5	476.3	494.6	501.2	461.4	391.2	325.0	275.7	242.7	228.7
65°	402.3	399.8	414.9	433.9	445.9	414.4	351.3	290.0	245.3	215.2	203.2
67.5°	348.5	348.5	357.9	375.4	390.0	366.2	310.6	256.8	214.1	189.7	177.7
70°	298.0	297.7	304.6	316.9	333.8	314.6	269.4	221.8	184.5	163.1	152.5
72.5°	250.2	252.2	254.8	264.2	282.0	265.4	228.4	187.4	155.6	136.7	127.8
75°	204.6	204.3	208.0	216.4	229.2	216.9	187.4	153.9	126.9	111.5	103.7
77.5°	161.0	160.8	163.9	168.8	179.7	169.9	147.9	122.9	98.9	86.0	80.5
80°	120.1	120.1	122.9	125.5	133.5	125.8	110.3	92.0	72.5	62.5	58.2
82.5°	83.4	85.1	84.0	87.4	92.0	85.4	75.7	63.0	48.1	41.3	38.4
85°	50.7	52.2	50.7	53.6	55.6	49.9	45.0	37.5	27.8	23.2	21.2
87.5°	26.1	25.8	25.5	26.9	27.5	24.1	21.2	18.1	12.3	9.5	8.0
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°	697.2	697.2	697.2	697.2	697.2	697.2	697.2	697.2	697.2	697.2
2.5°	689.8	691.5	688.9	679.4	675.7	671.7	670.0	668.3	671.4	670.6
5°	684.0	682.0	675.4	663.4	657.1	650.5	647.3	645.3	649.6	648.8
7.5°	676.3	670.6	660.8	646.2	638.2	629.3	625.0	622.4	625.3	624.7
10°	666.5	657.1	645.1	627.6	618.1	608.4	603.5	599.8	602.1	601.8
12.5°	654.2	641.9	627.3	607.5	597.8	587.7	583.4	580.9	583.7	582.9
15°	640.5	625.6	608.7	588.6	578.0	568.8	565.7	563.7	566.0	566.0
17.5°	625.3	607.8	589.2	568.8	558.8	551.6	548.5	547.0	548.2	549.9
20°	608.4	588.9	568.8	549.1	540.5	533.0	530.1	528.7	531.3	530.1
22.5°	589.7	569.1	548.2	529.6	521.8	514.4	511.5	510.7	513.5	512.4
25°	570.0	547.6	527.0	510.1	502.3	496.0	493.5	492.6	494.0	495.5
27.5°	551.3	526.1	505.8	490.6	483.7	477.7	475.4	474.0	475.1	476.8
30°	528.7	504.3	484.3	470.2	463.7	457.9	456.2	455.1	456.8	458.2
32.5°	507.5	482.9	462.8	449.0	443.3	437.9	437.6	437.0	439.0	440.7
35°	484.6	460.5	441.0	428.1	422.7	418.1	419.0	419.8	422.1	424.1
37.5°	461.4	437.9	419.2	407.5	402.3	398.6	401.2	402.3	405.5	407.5
40°	437.9	414.4	397.2	386.6	381.4	379.7	383.4	386.0	389.7	391.4
42.5°	413.8	392.0	374.8	365.1	360.8	360.8	365.7	369.7	374.0	375.7
45°	389.7	368.5	352.2	343.3	340.1	342.4	348.2	353.3	358.8	360.5
47.5°	365.4	344.7	329.8	321.8	320.1	323.5	330.7	337.6	343.9	346.2
50°	341.0	322.4	307.5	300.0	300.0	304.3	313.5	322.1	329.0	331.3
52.5°	316.7	298.9	283.7	278.3	279.4	285.4	296.0	304.9	312.6	314.9
55°	292.0	274.5	261.3	256.8	258.8	266.2	277.1	287.4	294.9	297.5
57.5°	267.6	251.0	239.0	235.3	238.1	246.4	259.1	267.9	275.7	278.0
60°	243.0	226.1	216.6	213.8	217.5	226.1	239.0	247.3	254.5	256.8
62.5°	218.6	202.9	194.6	192.0	196.3	205.5	218.1	225.5	231.0	233.3
65°	194.0	180.0	172.2	170.5	175.1	184.0	196.0	202.3	206.3	208.6
67.5°	169.6	157.6	150.4	149.0	153.9	161.9	173.1	176.5	180.2	182.5
70°	145.6	134.7	128.7	127.8	132.1	139.8	149.3	151.0	153.0	155.0
72.5°	121.8	113.2	107.2	106.9	110.9	117.2	124.9	125.2	125.8	127.8
75°	98.9	91.1	86.5	87.4	89.7	94.9	100.9	99.2	99.4	100.9
77.5°	76.8	70.5	67.3	67.9	69.6	73.4	77.4	75.4	74.2	75.7
80°	55.3	49.9	48.7	49.0	50.1	52.7	55.0	53.3	51.0	52.2
82.5°	36.4	33.0	32.4	32.7	33.5	35.0	35.5	33.0	32.4	33.2
85°	20.1	18.6	18.6	19.5	19.8	20.1	20.1	18.6	18.9	19.5
87.5°	8.0	8.0	8.9	9.7	9.2	8.0	6.9	4.6	4.6	5.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)