

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-X-22L830-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-X-22L830-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light w/
ASYMMETRIC Lens
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

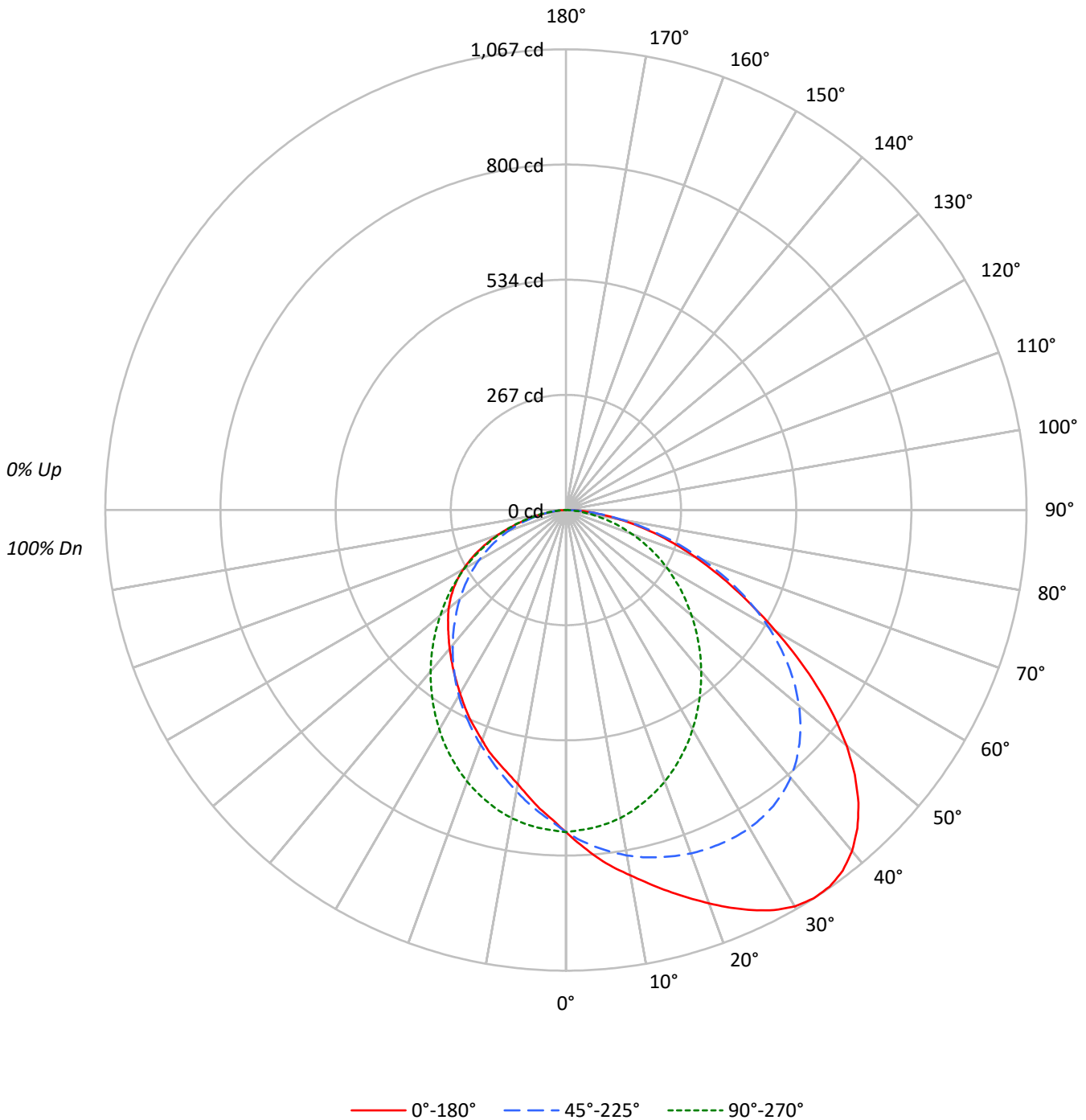
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2310.8 lumens
Efficiency: N/A
Efficacy: 96.3 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): 24
Input Voltage (V): 120
Input Current (A_{in}): 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

TEST NUMBER: P
CATALOG NUMBER: 4APN-X-22L830-UNV-ASY

Luminous Intensity Polar Plot





TEST NUMBER: P
 CATALOG NUMBER: 4APN-X-22L830-UNV-ASY

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	86	86	86	84
2	99	90	83	78	96	88	82	77	85	80	75	82	77	73	79	75	72	72	72	72	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	61	69	64	60	60	60	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	62	56	52	52	52	52	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	45	45	45	43
6	69	56	47	40	68	55	46	40	53	46	40	51	45	39	50	44	39	39	39	39	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	35	35	35	33
8	60	46	37	32	58	45	37	31	44	37	31	43	36	31	42	35	31	31	31	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	28	28	28	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	25	25	25	23

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7182	7182	7182
5°	7793	7139	6709
10°	8396	7084	6295
15°	9108	6980	6036
20°	9931	6858	5812
25°	10863	6696	5632
30°	11784	6521	5451
35°	12516	6328	5333
40°	12960	6127	5265
45°	13050	5916	5251
50°	12708	5690	5310
55°	11899	5487	5343
60°	10817	5237	5289
65°	9807	4952	5085
70°	8977	4591	4670
75°	8142	4129	4014
80°	7124	3448	3094
85°	5998	2507	2309



TEST NUMBER: P
 CATALOG NUMBER: 4APN-X-22L830-UNV-ASY

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.9	3.1
10°-20°	206.1	8.9
20°-30°	322.8	14.0
30°-40°	404.7	17.5
40°-50°	430.9	18.6
50°-60°	389.0	16.8
60°-70°	287.9	12.5
70°-80°	158.0	6.8
80°-90°	40.6	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°	599.8	26.0
0°-40°	1004.5	43.5
0°-60°	1824.3	78.9
0°-90°	2310.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2310.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	746	746	746	746	746	
5°	806	783	739	703	694	79
15°	914	832	700	618	606	261
25°	1023	852	630	538	530	473
35°	1065	837	538	452	454	664
45°	958	765	434	364	386	735
55°	709	630	327	277	318	632
65°	430	443	217	187	223	430
75°	219	232	111	96	108	233
85°	54	53	23	21	21	64
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-X-22L830-UNV-ASY

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	746.0	746.0	746.0	746.0	746.0	746.0	746.0	746.0	746.0	746.0	746.0
2.5°	776.1	774.6	772.7	772.1	769.3	765.7	762.3	762.3	758.3	748.8	742.1
5°	806.4	804.0	799.4	795.7	789.9	782.8	775.8	771.5	762.0	747.6	738.7
7.5°	834.3	831.3	825.5	818.4	808.9	798.5	786.8	777.6	763.2	743.9	732.5
10°	858.9	856.1	849.1	840.5	827.0	812.3	795.1	781.3	761.7	737.8	724.6
12.5°	885.9	883.1	873.3	861.6	843.2	823.6	800.9	781.9	757.7	728.9	713.8
15°	913.8	910.1	899.0	883.4	858.9	832.5	804.6	780.1	751.2	718.1	700.3
17.5°	941.4	937.7	923.9	904.0	873.3	840.5	806.1	775.8	742.1	704.9	685.6
20°	969.3	965.6	948.1	923.0	885.9	846.3	805.8	769.3	731.0	689.9	669.4
22.5°	997.2	992.9	971.7	941.1	896.3	850.3	802.5	760.4	717.2	672.8	650.7
25°	1022.6	1018.3	995.0	958.8	907.3	852.1	796.6	748.2	701.9	653.7	630.4
27.5°	1044.7	1039.5	1015.3	975.4	916.8	852.7	789.0	734.4	684.1	633.2	609.6
30°	1060.0	1055.4	1029.7	987.0	922.4	850.6	779.2	718.1	663.6	611.1	586.6
32.5°	1066.8	1062.8	1037.3	992.6	923.3	845.1	767.2	700.0	642.1	587.8	563.0
35°	1064.9	1060.9	1036.7	991.6	920.5	837.1	752.2	679.5	619.1	563.6	538.4
37.5°	1053.3	1048.7	1026.6	983.4	912.5	825.5	735.0	657.1	594.3	538.8	513.3
40°	1031.2	1026.6	1007.6	967.7	899.0	809.8	715.4	633.2	568.8	512.7	487.5
42.5°	999.6	994.7	979.7	943.2	879.7	789.3	693.0	607.7	541.8	487.5	461.2
45°	958.5	953.6	943.5	912.5	854.6	765.0	667.5	580.1	513.6	459.0	434.5
47.5°	907.6	903.3	898.4	874.5	823.6	737.1	639.0	550.7	484.2	432.4	407.2
50°	848.5	844.2	845.7	829.4	787.7	704.9	607.7	519.7	453.8	402.6	379.9
52.5°	781.3	777.9	785.3	778.2	746.0	669.1	574.3	487.9	422.8	374.4	352.6
55°	708.9	705.3	719.4	721.5	699.4	629.5	536.3	454.7	391.6	346.8	326.9
57.5°	634.4	631.4	649.4	659.6	648.5	586.9	498.0	420.7	359.4	318.0	298.0
60°	561.8	559.3	578.3	594.9	593.6	541.8	458.1	383.9	327.2	288.8	272.0
62.5°	493.4	490.6	509.6	529.2	536.3	493.7	418.6	347.7	295.0	259.7	244.7
65°	430.5	427.8	444.0	464.2	477.1	443.4	375.9	310.3	262.5	230.3	217.4
67.5°	372.9	372.9	383.0	401.7	417.3	391.9	332.4	274.7	229.1	203.0	190.1
70°	318.9	318.6	326.0	339.1	357.2	336.7	288.2	237.3	197.5	174.5	163.1
72.5°	267.7	269.8	272.6	282.7	301.7	283.9	244.4	200.5	166.5	146.3	136.8
75°	218.9	218.6	222.6	231.5	245.3	232.1	200.5	164.7	135.8	119.3	111.0
77.5°	172.3	172.0	175.4	180.6	192.3	181.8	158.2	131.5	105.8	92.0	86.2
80°	128.5	128.5	131.5	134.3	142.9	134.6	118.1	98.4	77.6	66.8	62.2
82.5°	89.2	91.1	89.8	93.5	98.4	91.4	81.0	67.5	51.5	44.2	41.1
85°	54.3	55.8	54.3	57.3	59.5	53.4	48.1	40.2	29.7	24.8	22.7
87.5°	27.9	27.6	27.3	28.8	29.4	25.8	22.7	19.3	13.2	10.1	8.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P
 CATALOG NUMBER: 4APN-X-22L830-UNV-ASY

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	746.0	746.0	746.0	746.0	746.0	746.0	746.0	746.0	746.0	746.0
2.5°	738.1	739.9	737.1	727.0	723.0	718.7	716.9	715.1	718.4	717.5
5°	731.9	729.8	722.7	709.9	703.1	696.1	692.7	690.5	695.1	694.2
7.5°	723.7	717.5	707.1	691.5	682.9	673.4	668.8	666.0	669.1	668.5
10°	713.2	703.1	690.2	671.5	661.4	651.0	645.8	641.8	644.2	643.9
12.5°	700.0	686.9	671.2	650.1	639.6	628.9	624.3	621.5	624.6	623.7
15°	685.3	669.4	651.3	629.8	618.5	608.7	605.3	603.1	605.6	605.6
17.5°	669.1	650.4	630.4	608.7	597.9	590.3	586.9	585.4	586.6	588.4
20°	651.0	630.1	608.7	587.5	578.3	570.3	567.3	565.7	568.5	567.3
22.5°	631.0	609.0	586.6	566.7	558.4	550.4	547.3	546.4	549.5	548.3
25°	609.9	586.0	563.9	545.8	537.5	530.8	528.0	527.1	528.6	530.2
27.5°	590.0	563.0	541.2	525.0	517.6	511.2	508.7	507.2	508.4	510.2
30°	565.7	539.7	518.2	503.2	496.1	490.0	488.2	486.9	488.8	490.3
32.5°	543.0	516.7	495.2	480.5	474.4	468.5	468.2	467.6	469.8	471.6
35°	518.5	492.8	471.9	458.1	452.3	447.4	448.3	449.2	451.7	453.8
37.5°	493.7	468.5	448.6	436.0	430.5	426.5	429.3	430.5	433.9	436.0
40°	468.5	443.4	425.0	413.6	408.1	406.3	410.3	413.0	417.0	418.9
42.5°	442.8	419.5	401.1	390.6	386.1	386.1	391.3	395.6	400.2	402.0
45°	417.0	394.3	376.9	367.3	364.0	366.4	372.6	378.1	383.9	385.7
47.5°	391.0	368.9	352.9	344.3	342.5	346.2	353.9	361.2	368.0	370.4
50°	364.9	345.0	329.0	321.0	321.0	325.6	335.5	344.7	352.0	354.5
52.5°	338.8	319.8	303.6	297.7	299.0	305.4	316.8	326.3	334.5	337.0
55°	312.5	293.8	279.6	274.7	276.9	284.9	296.5	307.6	315.5	318.3
57.5°	286.4	268.6	255.7	251.7	254.8	263.7	277.2	286.7	295.0	297.4
60°	260.0	241.9	231.8	228.7	232.7	241.9	255.7	264.6	272.3	274.7
62.5°	234.0	217.1	208.2	205.4	210.0	219.9	233.3	241.3	247.1	249.6
65°	207.6	192.6	184.3	182.4	187.4	196.9	209.7	216.5	220.8	223.2
67.5°	181.5	168.6	161.0	159.4	164.7	173.2	185.2	188.9	192.9	195.3
70°	155.8	144.1	137.7	136.8	141.4	149.6	159.8	161.6	163.7	165.9
72.5°	130.3	121.1	114.7	114.4	118.7	125.4	133.7	134.0	134.6	136.8
75°	105.8	97.5	92.6	93.5	96.0	101.5	107.9	106.1	106.4	107.9
77.5°	82.2	75.4	72.1	72.7	74.5	78.5	82.8	80.6	79.4	81.0
80°	59.2	53.4	52.1	52.4	53.7	56.4	58.9	57.0	54.6	55.8
82.5°	38.9	35.3	34.6	35.0	35.9	37.4	38.0	35.3	34.6	35.6
85°	21.5	19.9	19.9	20.9	21.2	21.5	21.5	19.9	20.2	20.9
87.5°	8.6	8.6	9.5	10.4	9.8	8.6	7.4	4.9	4.9	5.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)