

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-24L830-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-24L830-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

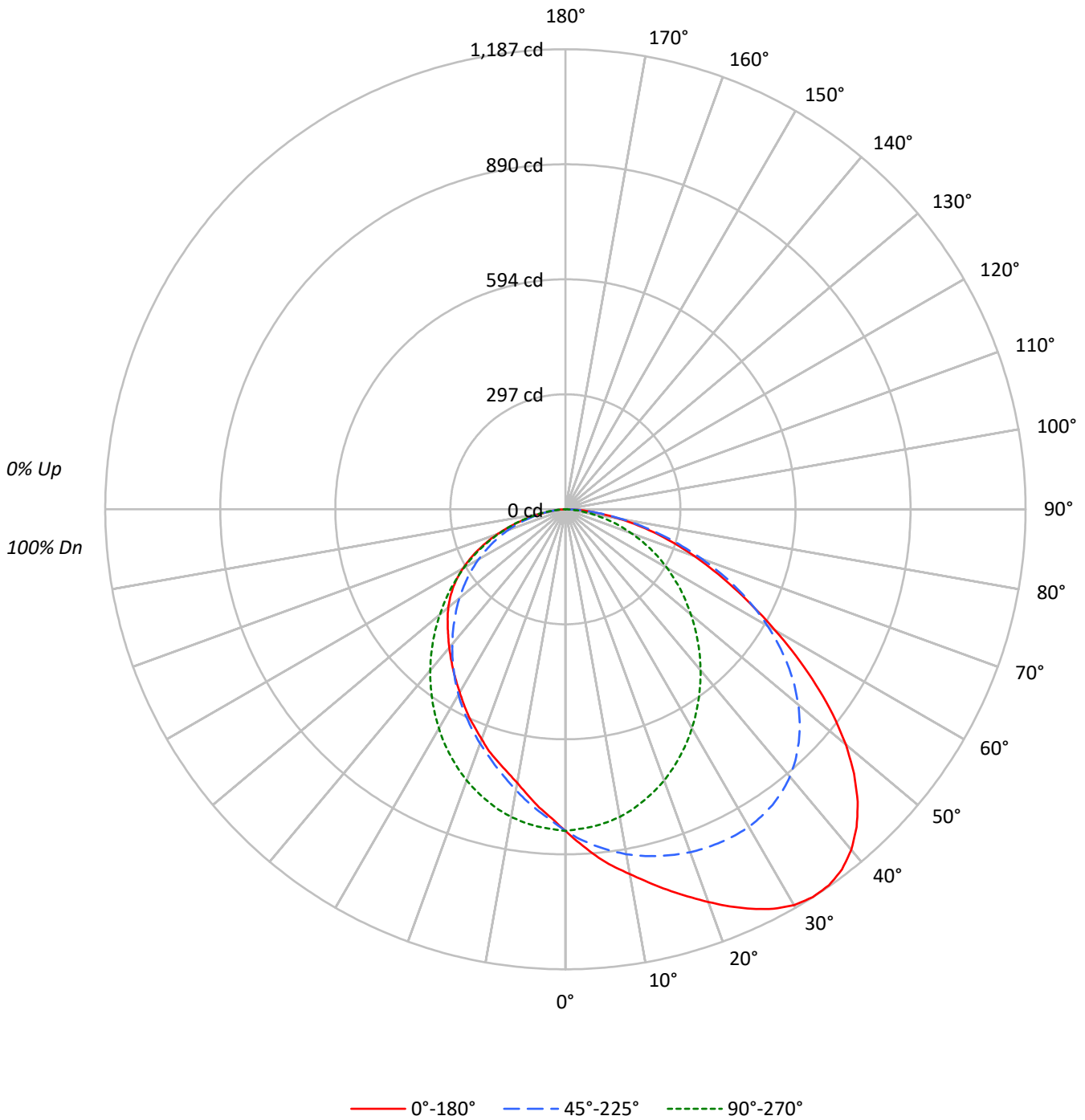
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2570.7 lumens
Efficiency: N/A
Efficacy: 92.1 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): 27.9
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

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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	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°	7990	7990	7990
5°	8670	7942	7464
10°	9341	7880	7002
15°	10131	7765	6715
20°	11047	7630	6466
25°	12084	7450	6265
30°	13109	7255	6063
35°	13924	7040	5934
40°	14418	6817	5857
45°	14518	6582	5842
50°	14137	6329	5906
55°	13238	6103	5943
60°	12032	5826	5884
65°	10909	5511	5656
70°	9987	5109	5193
75°	9061	4594	4467
80°	7923	3837	3443
85°	6672	2784	2563



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.8	3.1
10°-20°	229.2	8.9
20°-30°	359.1	14.0
30°-40°	450.2	17.5
40°-50°	479.3	18.6
50°-60°	432.7	16.8
60°-70°	320.3	12.5
70°-80°	175.8	6.8
80°-90°	45.1	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°	667.2	26.0
0°-40°	1117.4	43.5
0°-60°	2029.5	78.9
0°-90°	2570.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2570.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	830	830	830	830	830	
5°	897	871	822	782	772	87
15°	1016	926	779	688	674	290
25°	1138	948	701	598	590	526
35°	1185	931	599	503	505	739
45°	1066	851	483	405	429	818
55°	789	700	364	308	354	703
65°	479	493	242	208	248	478
75°	244	258	124	107	120	259
85°	60	59	25	24	23	71
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°	829.9	829.9	829.9	829.9	829.9	829.9	829.9	829.9	829.9	829.9	829.9
2.5°	863.4	861.7	859.6	858.9	855.9	851.8	848.0	848.0	843.6	833.0	825.5
5°	897.1	894.4	889.3	885.2	878.7	870.9	863.0	858.3	847.7	831.6	821.8
7.5°	928.2	924.8	918.3	910.4	899.9	888.3	875.3	865.1	849.0	827.6	814.9
10°	955.5	952.4	944.6	935.0	920.0	903.6	884.5	869.2	847.3	820.7	806.1
12.5°	985.5	982.4	971.5	958.5	938.1	916.2	891.0	869.9	842.9	810.8	794.1
15°	1016.5	1012.4	1000.2	982.8	955.5	926.1	895.1	867.8	835.7	798.9	779.1
17.5°	1047.2	1043.1	1027.8	1005.6	971.5	935.0	896.8	863.0	825.5	784.2	762.7
20°	1078.3	1074.2	1054.7	1026.8	985.5	941.5	896.5	855.9	813.2	767.5	744.7
22.5°	1109.3	1104.5	1081.0	1046.9	997.1	945.9	892.7	846.0	797.9	748.4	723.9
25°	1137.6	1132.9	1106.9	1066.7	1009.4	948.0	886.2	832.3	780.8	727.3	701.3
27.5°	1162.2	1156.4	1129.4	1085.1	1019.9	948.6	877.7	817.0	761.0	704.4	678.1
30°	1179.2	1174.1	1145.5	1098.1	1026.1	946.3	866.8	798.9	738.2	679.8	652.6
32.5°	1186.7	1182.3	1154.0	1104.2	1027.1	940.1	853.5	778.8	714.3	653.9	626.3
35°	1184.7	1180.3	1153.3	1103.2	1024.0	931.3	836.8	755.9	688.7	627.0	599.0
37.5°	1171.7	1166.6	1142.1	1094.0	1015.2	918.3	817.7	731.0	661.1	599.3	571.0
40°	1147.2	1142.1	1120.9	1076.6	1000.2	900.9	795.8	704.4	632.8	570.3	542.4
42.5°	1112.0	1106.6	1089.9	1049.3	978.7	878.0	770.9	676.1	602.8	542.4	513.0
45°	1066.3	1060.9	1049.6	1015.2	950.7	851.1	742.6	645.4	571.4	510.7	483.4
47.5°	1009.7	1004.9	999.5	972.9	916.2	820.0	710.9	612.6	538.6	481.0	453.0
50°	943.9	939.1	940.8	922.7	876.3	784.2	676.1	578.2	504.9	447.9	422.6
52.5°	869.2	865.4	873.6	865.8	829.9	744.3	638.9	542.7	470.4	416.5	392.3
55°	788.7	784.6	800.3	802.7	778.1	700.3	596.6	505.9	435.6	385.8	363.6
57.5°	705.8	702.4	722.5	733.7	721.5	652.9	554.0	468.0	399.8	353.7	331.6
60°	624.9	622.2	643.3	661.8	660.4	602.8	509.6	427.1	364.0	321.3	302.6
62.5°	548.9	545.8	566.9	588.8	596.6	549.2	465.6	386.8	328.2	288.9	272.2
65°	478.9	475.9	493.9	516.5	530.8	493.3	418.2	345.2	292.0	256.2	241.9
67.5°	414.8	414.8	426.1	446.9	464.3	435.9	369.8	305.6	254.8	225.8	211.5
70°	354.8	354.4	362.6	377.3	397.4	374.5	320.7	264.0	219.7	194.1	181.5
72.5°	297.8	300.2	303.3	314.5	335.7	315.9	271.9	223.1	185.2	162.7	152.1
75°	243.6	243.2	247.7	257.5	272.9	258.2	223.1	183.2	151.1	132.7	123.5
77.5°	191.7	191.4	195.1	200.9	213.9	202.3	176.0	146.3	117.7	102.3	95.9
80°	142.9	142.9	146.3	149.4	159.0	149.8	131.3	109.5	86.3	74.4	69.2
82.5°	99.3	101.3	99.9	104.0	109.5	101.7	90.1	75.0	57.3	49.1	45.7
85°	60.4	62.1	60.4	63.8	66.2	59.4	53.6	44.7	33.1	27.6	25.2
87.5°	31.0	30.7	30.4	32.1	32.7	28.7	25.2	21.5	14.7	11.3	9.6
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°	829.9	829.9	829.9	829.9	829.9	829.9	829.9	829.9	829.9	829.9
2.5°	821.1	823.1	820.0	808.8	804.4	799.6	797.5	795.5	799.2	798.2
5°	814.2	811.9	804.0	789.7	782.2	774.3	770.6	768.2	773.3	772.3
7.5°	805.0	798.2	786.6	769.2	759.7	749.1	744.0	740.9	744.3	743.6
10°	793.4	782.2	767.9	747.0	735.8	724.2	718.4	714.0	716.7	716.3
12.5°	778.8	764.1	746.7	723.2	711.6	699.6	694.5	691.4	694.9	693.8
15°	762.4	744.7	724.5	700.7	688.0	677.1	673.4	671.0	673.7	673.7
17.5°	744.3	723.5	701.3	677.1	665.2	656.7	652.9	651.2	652.6	654.6
20°	724.2	701.0	677.1	653.6	643.3	634.5	631.1	629.4	632.4	631.1
22.5°	702.0	677.5	652.6	630.4	621.2	612.3	608.9	607.9	611.3	609.9
25°	678.5	651.9	627.3	607.2	598.0	590.5	587.4	586.4	588.1	589.8
27.5°	656.3	626.3	602.1	584.0	575.8	568.6	565.9	564.2	565.6	567.6
30°	629.4	600.4	576.5	559.8	551.9	545.1	543.1	541.7	543.7	545.4
32.5°	604.1	574.8	550.9	534.5	527.7	521.2	520.9	520.2	522.6	524.6
35°	576.8	548.2	525.0	509.6	503.1	497.7	498.7	499.7	502.5	504.9
37.5°	549.2	521.2	499.1	485.1	478.9	474.5	477.6	478.9	482.7	485.1
40°	521.2	493.3	472.8	460.2	454.0	452.0	456.4	459.5	463.9	466.0
42.5°	492.6	466.6	446.2	434.6	429.5	429.5	435.3	440.0	445.2	447.2
45°	463.9	438.7	419.2	408.7	404.9	407.6	414.5	420.6	427.1	429.1
47.5°	434.9	410.4	392.6	383.1	381.0	385.1	393.6	401.8	409.3	412.1
50°	405.9	383.8	366.0	357.2	357.2	362.3	373.2	383.4	391.6	394.3
52.5°	376.9	355.8	337.7	331.2	332.6	339.8	352.4	362.9	372.2	374.9
55°	347.6	326.8	311.1	305.6	308.0	316.9	329.9	342.1	351.0	354.1
57.5°	318.6	298.8	284.5	280.1	283.5	293.4	308.4	318.9	328.2	330.9
60°	289.3	269.1	257.9	254.5	258.9	269.1	284.5	294.4	302.9	305.6
62.5°	260.3	241.5	231.6	228.5	233.7	244.6	259.6	268.5	274.9	277.7
65°	230.9	214.2	205.0	203.0	208.4	219.0	233.3	240.8	245.6	248.3
67.5°	201.9	187.6	179.1	177.4	183.2	192.7	206.0	210.1	214.6	217.3
70°	173.3	160.3	153.2	152.1	157.3	166.5	177.7	179.8	182.2	184.5
72.5°	145.0	134.7	127.6	127.2	132.0	139.5	148.7	149.1	149.8	152.1
75°	117.7	108.5	103.0	104.0	106.8	112.9	120.1	118.0	118.4	120.1
77.5°	91.4	83.9	80.2	80.8	82.9	87.3	92.1	89.7	88.3	90.1
80°	65.8	59.4	58.0	58.3	59.7	62.8	65.5	63.4	60.7	62.1
82.5°	43.3	39.2	38.5	38.9	39.9	41.6	42.3	39.2	38.5	39.6
85°	23.9	22.2	22.2	23.2	23.5	23.9	23.9	22.2	22.5	23.2
87.5°	9.6	9.6	10.6	11.6	10.9	9.6	8.2	5.5	5.5	6.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)