

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-32L830-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-32L830-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

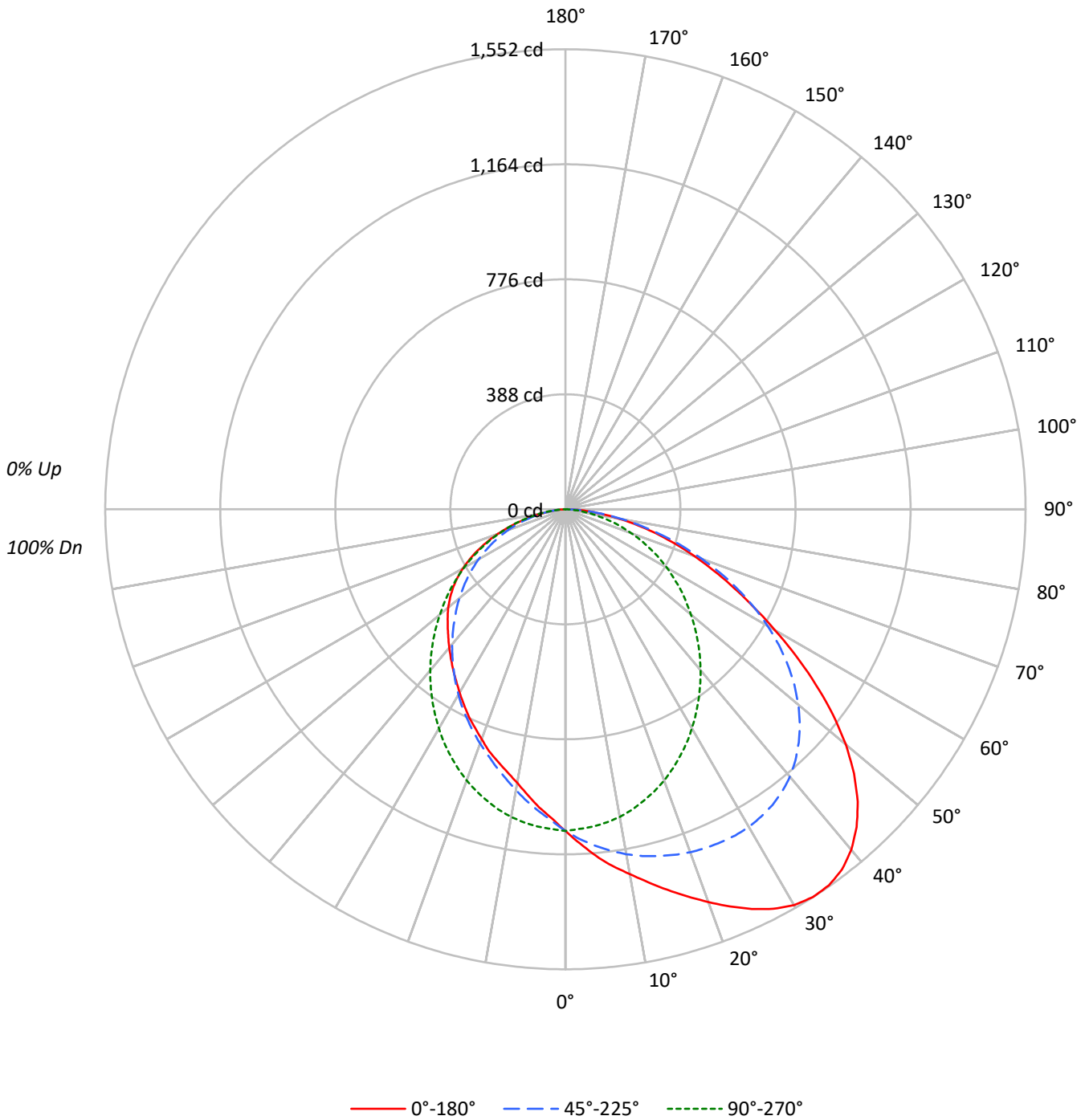
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3361.2 lumens
Efficiency: N/A
Efficacy: 92.3 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): 36.4
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-32L830-X-UNV-ASY

Luminous Intensity Polar Plot





TEST NUMBER: P
 CATALOG NUMBER: 4APN-32L830-X-UNV-ASY

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°	10448	10448	10448
5°	11336	10384	9759
10°	12213	10304	9157
15°	13248	10153	8780
20°	14445	9976	8453
25°	15801	9741	8192
30°	17141	9485	7928
35°	18205	9205	7758
40°	18851	8913	7657
45°	18984	8605	7639
50°	18484	8277	7722
55°	17308	7981	7771
60°	15733	7617	7694
65°	14265	7203	7397
70°	13058	6680	6792
75°	11847	6007	5840
80°	10362	5017	4502
85°	8715	3645	3347



TEST NUMBER: P
 CATALOG NUMBER: 4APN-32L830-X-UNV-ASY

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.1	3.1
10°-20°	299.7	8.9
20°-30°	469.6	14.0
30°-40°	588.7	17.5
40°-50°	626.7	18.6
50°-60°	565.8	16.8
60°-70°	418.8	12.5
70°-80°	229.8	6.8
80°-90°	59.0	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°	872.4	26.0
0°-40°	1461.1	43.5
0°-60°	2653.6	78.9
0°-90°	3361.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3361.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1085	1085	1085	1085	1085	
5°	1173	1139	1074	1023	1010	114
15°	1329	1211	1019	900	881	379
25°	1488	1240	917	782	771	688
35°	1549	1218	783	658	660	966
45°	1394	1113	632	529	561	1069
55°	1031	916	476	403	463	920
65°	626	645	316	272	325	625
75°	318	338	162	140	157	339
85°	79	78	33	31	30	93
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-32L830-X-UNV-ASY

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2
2.5°	1128.9	1126.7	1124.0	1123.1	1119.1	1113.7	1108.8	1108.8	1103.0	1089.2	1079.4
5°	1173.0	1169.5	1162.8	1157.4	1149.0	1138.7	1128.4	1122.2	1108.4	1087.4	1074.5
7.5°	1213.6	1209.2	1200.7	1190.4	1176.6	1161.4	1144.5	1131.1	1110.2	1082.1	1065.6
10°	1249.3	1245.3	1235.0	1222.6	1202.9	1181.5	1156.5	1136.5	1107.9	1073.1	1054.0
12.5°	1288.6	1284.5	1270.3	1253.3	1226.6	1198.0	1165.0	1137.4	1102.1	1060.2	1038.3
15°	1329.2	1323.8	1307.7	1285.0	1249.3	1211.0	1170.4	1134.7	1092.8	1044.6	1018.7
17.5°	1369.3	1363.9	1343.9	1314.9	1270.3	1222.6	1172.6	1128.4	1079.4	1025.4	997.3
20°	1409.9	1404.5	1379.1	1342.5	1288.6	1231.0	1172.2	1119.1	1063.3	1003.6	973.7
22.5°	1450.5	1444.2	1413.5	1368.8	1303.7	1236.8	1167.2	1106.1	1043.3	978.6	946.5
25°	1487.5	1481.2	1447.3	1394.7	1319.8	1239.5	1158.8	1088.3	1020.9	950.9	917.0
27.5°	1519.6	1512.0	1476.8	1418.8	1333.6	1240.4	1147.6	1068.2	995.1	921.0	886.7
30°	1541.9	1535.2	1497.7	1435.8	1341.6	1237.3	1133.3	1044.6	965.2	888.9	853.2
32.5°	1551.7	1545.9	1508.9	1443.8	1343.0	1229.2	1116.0	1018.3	934.0	855.0	818.9
35°	1549.0	1543.2	1508.0	1442.4	1339.0	1217.6	1094.1	988.4	900.5	819.8	783.2
37.5°	1532.1	1525.4	1493.3	1430.4	1327.4	1200.7	1069.1	955.8	864.4	783.7	746.6
40°	1500.0	1493.3	1465.6	1407.7	1307.7	1177.9	1040.6	921.0	827.4	745.8	709.2
42.5°	1454.0	1446.9	1425.0	1372.0	1279.6	1148.1	1008.0	884.0	788.1	709.2	670.8
45°	1394.3	1387.1	1372.4	1327.4	1243.1	1112.8	971.0	843.9	747.1	667.7	632.0
47.5°	1320.2	1314.0	1306.9	1272.1	1198.0	1072.2	929.5	801.1	704.3	628.9	592.3
50°	1234.1	1227.9	1230.1	1206.5	1145.8	1025.4	884.0	756.0	660.1	585.6	552.6
52.5°	1136.5	1131.6	1142.3	1132.0	1085.2	973.2	835.4	709.6	615.1	544.6	512.9
55°	1031.2	1025.9	1046.4	1049.5	1017.4	915.7	780.1	661.5	569.6	504.5	475.5
57.5°	922.8	918.4	944.7	959.4	943.3	853.7	724.3	611.9	522.7	462.5	433.5
60°	817.1	813.5	841.2	865.3	863.5	788.1	666.4	558.4	475.9	420.2	395.6
62.5°	717.7	713.6	741.3	769.8	780.1	718.1	608.8	505.8	429.1	377.8	355.9
65°	626.2	622.2	645.8	675.3	694.0	645.0	546.8	451.4	381.8	335.0	316.2
67.5°	542.4	542.4	557.1	584.3	607.0	570.0	483.5	399.6	333.2	295.3	276.5
70°	463.9	463.4	474.1	493.3	519.6	489.7	419.3	345.2	287.2	253.8	237.3
72.5°	389.4	392.5	396.5	411.2	438.9	413.0	355.5	291.7	242.2	212.8	198.9
75°	318.5	318.0	323.8	336.7	356.8	337.6	291.7	239.5	197.6	173.5	161.5
77.5°	250.7	250.2	255.1	262.7	279.7	264.5	230.1	191.3	153.9	133.8	125.3
80°	186.9	186.9	191.3	195.4	207.8	195.8	171.7	143.2	112.8	97.2	90.5
82.5°	129.8	132.5	130.7	136.0	143.2	132.9	117.8	98.1	74.9	64.2	59.8
85°	78.9	81.2	78.9	83.4	86.5	77.6	70.0	58.4	43.3	36.1	33.0
87.5°	40.6	40.1	39.7	41.9	42.8	37.5	33.0	28.1	19.2	14.7	12.5
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-32L830-X-UNV-ASY

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2	1085.2
2.5°	1073.6	1076.3	1072.2	1057.5	1051.7	1045.5	1042.8	1040.1	1045.0	1043.7
5°	1064.7	1061.5	1051.3	1032.5	1022.7	1012.5	1007.6	1004.4	1011.1	1009.8
7.5°	1052.6	1043.7	1028.5	1005.8	993.3	979.5	972.8	968.8	973.2	972.3
10°	1037.5	1022.7	1004.0	976.8	962.1	946.9	939.3	933.5	937.1	936.7
12.5°	1018.3	999.1	976.3	945.6	930.4	914.8	908.1	904.1	908.6	907.2
15°	996.9	973.7	947.4	916.1	899.6	885.4	880.5	877.3	880.9	880.9
17.5°	973.2	946.0	917.0	885.4	869.7	858.6	853.7	851.5	853.2	855.9
20°	946.9	916.6	885.4	854.6	841.2	829.6	825.1	822.9	826.9	825.1
22.5°	917.9	885.8	853.2	824.3	812.2	800.6	796.2	794.8	799.3	797.5
25°	887.1	852.4	820.2	793.9	781.9	772.1	768.1	766.7	768.9	771.2
27.5°	858.2	818.9	787.2	763.6	752.9	743.5	740.0	737.7	739.5	742.2
30°	822.9	785.0	753.8	731.9	721.7	712.7	710.1	708.3	711.0	713.2
32.5°	789.9	751.6	720.3	698.9	690.0	681.5	681.1	680.2	683.3	686.0
35°	754.2	716.8	686.4	666.4	657.9	650.7	652.1	653.4	657.0	660.1
37.5°	718.1	681.5	652.5	634.2	626.2	620.4	624.4	626.2	631.1	634.2
40°	681.5	645.0	618.2	601.7	593.7	591.0	596.8	600.8	606.6	609.3
42.5°	644.1	610.2	583.4	568.2	561.5	561.5	569.1	575.4	582.1	584.7
45°	606.6	573.6	548.2	534.3	529.4	533.0	541.9	549.9	558.4	561.1
47.5°	568.7	536.6	513.4	500.9	498.2	503.6	514.7	525.4	535.2	538.8
50°	530.8	501.8	478.6	467.0	467.0	473.7	488.0	501.3	512.0	515.6
52.5°	492.9	465.2	441.6	433.1	434.9	444.2	460.7	474.6	486.6	490.2
55°	454.5	427.3	406.8	399.6	402.8	414.4	431.3	447.4	459.0	463.0
57.5°	416.6	390.7	372.0	366.2	370.6	383.6	403.2	417.0	429.1	432.6
60°	378.2	351.9	337.2	332.7	338.5	351.9	372.0	384.9	396.1	399.6
62.5°	340.3	315.8	302.9	298.8	305.5	319.8	339.4	351.0	359.5	363.1
65°	302.0	280.1	268.1	265.4	272.5	286.3	305.1	314.9	321.1	324.7
67.5°	264.0	245.3	234.2	231.9	239.5	252.0	269.4	274.8	280.5	284.1
70°	226.6	209.6	200.3	198.9	205.6	217.7	232.4	235.1	238.2	241.3
72.5°	189.6	176.2	166.8	166.4	172.6	182.4	194.5	194.9	195.8	198.9
75°	153.9	141.8	134.7	136.0	139.6	147.6	157.0	154.3	154.8	157.0
77.5°	119.5	109.7	104.8	105.7	108.4	114.2	120.4	117.3	115.5	117.8
80°	86.1	77.6	75.8	76.3	78.1	82.1	85.6	83.0	79.4	81.2
82.5°	56.6	51.3	50.4	50.8	52.2	54.4	55.3	51.3	50.4	51.7
85°	31.2	29.0	29.0	30.3	30.8	31.2	31.2	29.0	29.4	30.3
87.5°	12.5	12.5	13.8	15.2	14.3	12.5	10.7	7.1	7.1	8.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)