

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-20-22L930-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-20-22L930-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

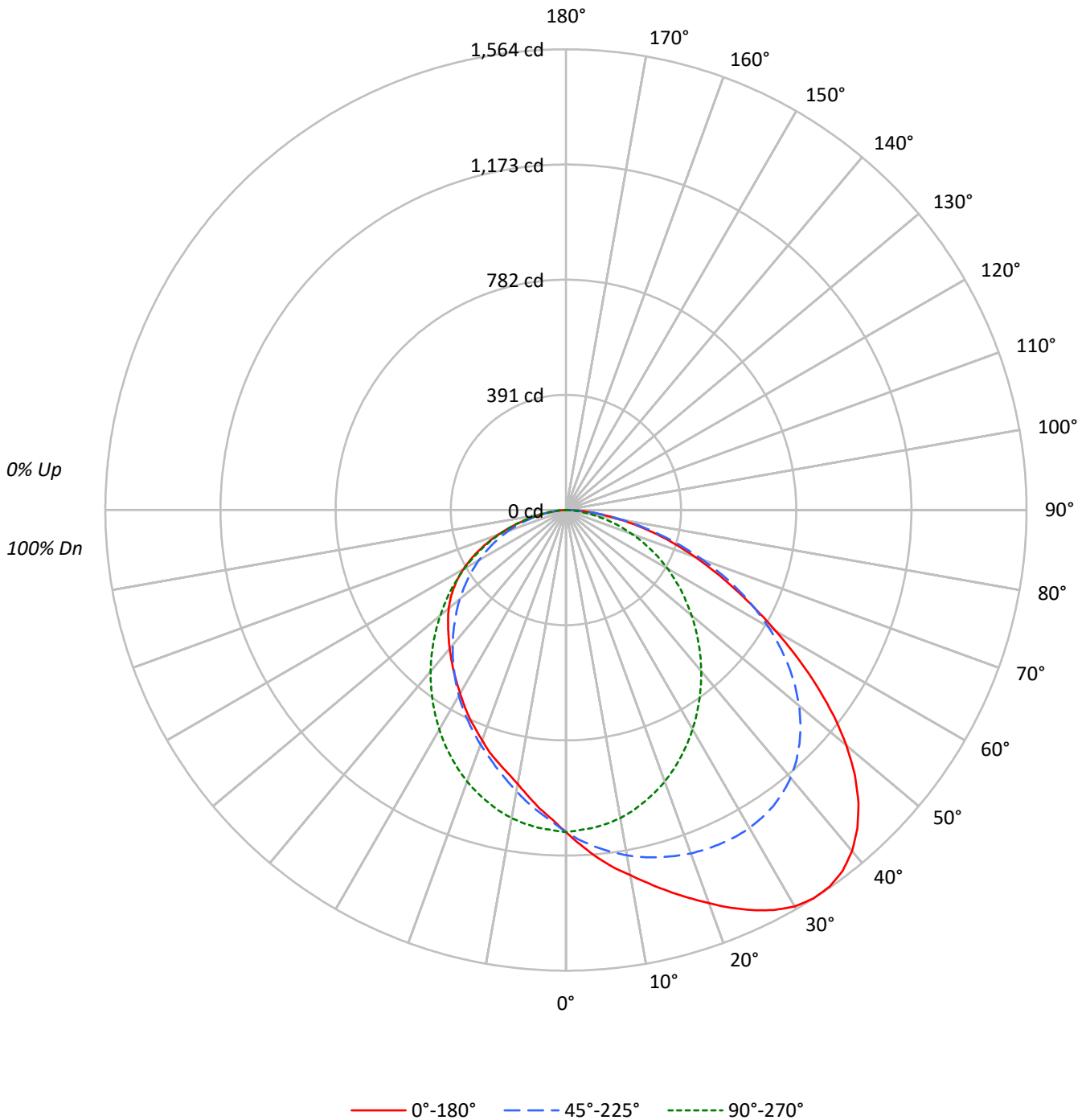
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3386.7 lumens
Efficiency: N/A
Efficacy: 70.6 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): 48
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-20-22L930-UNV-ASY

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°	10527	10527	10527
5°	11422	10462	9833
10°	12306	10382	9226
15°	13348	10230	8847
20°	14554	10052	8518
25°	15921	9815	8254
30°	17271	9557	7988
35°	18344	9275	7817
40°	18995	8981	7715
45°	19128	8670	7698
50°	18625	8339	7781
55°	17439	8042	7830
60°	15852	7675	7754
65°	14374	7258	7454
70°	13157	6730	6843
75°	11937	6052	5885
80°	10440	5056	4535
85°	8782	3678	3380



TEST NUMBER: P
 CATALOG NUMBER: 4APN-20-22L930-UNV-ASY

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.8	3.1
10°-20°	302.0	8.9
20°-30°	473.1	14.0
30°-40°	593.2	17.5
40°-50°	631.5	18.6
50°-60°	570.1	16.8
60°-70°	422.0	12.5
70°-80°	231.5	6.8
80°-90°	59.4	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°	879.0	26.0
0°-40°	1472.2	43.5
0°-60°	2673.7	78.9
0°-90°	3386.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3386.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1093	1093	1093	1093	1093	
5°	1182	1147	1083	1030	1018	115
15°	1339	1220	1026	906	888	382
25°	1499	1249	924	788	777	694
35°	1561	1227	789	663	665	973
45°	1405	1121	637	533	565	1077
55°	1039	923	479	406	466	927
65°	631	650	319	275	327	630
75°	321	340	163	141	158	341
85°	80	78	33	31	31	94
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°	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4
2.5°	1137.5	1135.2	1132.5	1131.6	1127.6	1122.2	1117.2	1117.2	1111.4	1097.5	1087.6
5°	1181.9	1178.3	1171.6	1166.2	1157.7	1147.3	1137.0	1130.7	1116.8	1095.7	1082.6
7.5°	1222.8	1218.3	1209.8	1199.5	1185.5	1170.3	1153.2	1139.7	1118.6	1090.3	1073.6
10°	1258.8	1254.7	1244.4	1231.8	1212.1	1190.5	1165.3	1145.1	1116.3	1081.3	1062.0
12.5°	1298.3	1294.3	1279.9	1262.8	1235.9	1207.1	1173.9	1146.0	1110.5	1068.2	1046.2
15°	1339.2	1333.8	1317.7	1294.7	1258.8	1220.1	1179.2	1143.3	1101.1	1052.5	1026.4
17.5°	1379.7	1374.3	1354.1	1324.9	1279.9	1231.8	1181.5	1137.0	1087.6	1033.2	1004.9
20°	1420.6	1415.2	1389.6	1352.7	1298.3	1240.4	1181.0	1127.6	1071.4	1011.2	981.1
22.5°	1461.5	1455.2	1424.2	1379.2	1313.6	1246.2	1176.1	1114.5	1051.2	986.0	953.6
25°	1498.8	1492.5	1458.3	1405.3	1329.8	1248.9	1167.6	1096.6	1028.7	958.1	924.0
27.5°	1531.1	1523.5	1488.0	1429.6	1343.7	1249.8	1156.3	1076.3	1002.6	928.0	893.4
30°	1553.6	1546.9	1509.1	1446.6	1351.8	1246.7	1141.9	1052.5	972.5	895.7	859.7
32.5°	1563.5	1557.6	1520.3	1454.7	1353.2	1238.6	1124.4	1026.0	941.1	861.5	825.1
35°	1560.8	1555.0	1519.4	1453.4	1349.1	1226.9	1102.4	995.9	907.4	826.0	789.2
37.5°	1543.7	1537.0	1504.6	1441.3	1337.4	1209.8	1077.2	963.1	871.0	789.6	752.3
40°	1511.4	1504.6	1476.8	1418.3	1317.7	1186.9	1048.5	928.0	833.7	751.4	714.6
42.5°	1465.1	1457.9	1435.9	1382.4	1289.4	1156.8	1015.7	890.7	794.1	714.6	675.9
45°	1404.9	1397.7	1382.8	1337.4	1252.5	1121.3	978.4	850.3	752.8	672.8	636.8
47.5°	1330.2	1324.0	1316.8	1281.7	1207.1	1080.4	936.6	807.1	709.6	633.7	596.8
50°	1243.5	1237.2	1239.5	1215.6	1154.5	1033.2	890.7	761.7	665.1	590.1	556.8
52.5°	1145.1	1140.1	1150.9	1140.6	1093.4	980.6	841.7	715.0	619.7	548.7	516.8
55°	1039.0	1033.6	1054.3	1057.5	1025.1	922.6	786.0	666.5	573.9	508.3	479.1
57.5°	929.8	925.3	951.8	966.7	950.5	860.2	729.8	616.6	526.7	466.0	436.8
60°	823.3	819.7	847.6	871.9	870.1	794.1	671.4	562.7	479.5	423.3	398.6
62.5°	723.1	719.1	746.9	775.7	786.0	723.5	613.4	509.6	432.3	380.6	358.6
65°	631.0	626.9	650.7	680.4	699.3	649.8	551.0	454.8	384.7	337.5	318.6
67.5°	546.5	546.5	561.3	588.7	611.6	574.3	487.2	402.7	335.7	297.5	278.6
70°	467.4	466.9	477.7	497.0	523.6	493.5	422.4	347.8	289.4	255.7	239.1
72.5°	392.3	395.5	399.5	414.4	442.2	416.2	358.2	293.9	244.0	214.4	200.4
75°	320.9	320.4	326.3	339.3	359.5	340.2	293.9	241.3	199.1	174.8	162.7
77.5°	252.6	252.1	257.1	264.7	281.8	266.5	231.9	192.8	155.0	134.8	126.3
80°	188.3	188.3	192.8	196.8	209.4	197.3	173.0	144.3	113.7	98.0	91.2
82.5°	130.8	133.5	131.7	137.1	144.3	133.9	118.6	98.9	75.5	64.7	60.2
85°	79.5	81.8	79.5	84.0	87.2	78.2	70.6	58.9	43.6	36.4	33.3
87.5°	40.9	40.4	40.0	42.2	43.1	37.8	33.3	28.3	19.3	14.8	12.6
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°	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4	1093.4
2.5°	1081.7	1084.4	1080.4	1065.5	1059.7	1053.4	1050.7	1048.0	1053.0	1051.6
5°	1072.7	1069.6	1059.3	1040.4	1030.5	1020.2	1015.2	1012.1	1018.8	1017.5
7.5°	1060.6	1051.6	1036.3	1013.4	1000.8	986.9	980.2	976.1	980.6	979.7
10°	1045.3	1030.5	1011.6	984.2	969.4	954.1	946.5	940.6	944.2	943.8
12.5°	1026.0	1006.7	983.8	952.7	937.5	921.7	915.0	911.0	915.4	914.1
15°	1004.4	981.1	954.5	923.1	906.5	892.1	887.1	884.0	887.6	887.6
17.5°	980.6	953.2	924.0	892.1	876.3	865.1	860.2	857.9	859.7	862.4
20°	954.1	923.5	892.1	861.1	847.6	835.9	831.4	829.2	833.2	831.4
22.5°	924.9	892.5	859.7	830.5	818.4	806.7	802.2	800.8	805.3	803.5
25°	893.9	858.8	826.5	799.9	787.8	777.9	773.9	772.5	774.8	777.0
27.5°	864.7	825.1	793.2	769.4	758.6	749.2	745.6	743.3	745.1	747.8
30°	829.2	791.0	759.5	737.5	727.1	718.2	715.5	713.7	716.4	718.6
32.5°	795.9	757.3	725.8	704.2	695.2	686.7	686.2	685.3	688.5	691.2
35°	759.9	722.2	691.6	671.4	662.9	655.7	657.0	658.4	662.0	665.1
37.5°	723.5	686.7	657.5	639.1	631.0	625.1	629.2	631.0	635.9	639.1
40°	686.7	649.8	622.9	606.3	598.2	595.5	601.3	605.4	611.2	613.9
42.5°	648.9	614.8	587.8	572.5	565.8	565.8	573.4	579.7	586.5	589.2
45°	611.2	577.9	552.3	538.4	533.4	537.0	546.0	554.1	562.7	565.4
47.5°	573.0	540.6	517.3	504.7	502.0	507.4	518.6	529.4	539.3	542.9
50°	534.8	505.6	482.2	470.5	470.5	477.3	491.7	505.1	515.9	519.5
52.5°	496.6	468.7	444.9	436.4	438.2	447.6	464.2	478.2	490.3	493.9
55°	457.9	430.5	409.9	402.7	405.8	417.5	434.6	450.8	462.4	466.5
57.5°	419.7	393.7	374.8	369.0	373.5	386.5	406.3	420.2	432.3	435.9
60°	381.1	354.6	339.8	335.3	341.1	354.6	374.8	387.8	399.1	402.7
62.5°	342.9	318.2	305.1	301.1	307.8	322.2	342.0	353.7	362.2	365.8
65°	304.2	282.2	270.1	267.4	274.6	288.5	307.4	317.3	323.6	327.2
67.5°	266.0	247.2	235.9	233.7	241.3	253.9	271.4	276.8	282.7	286.3
70°	228.3	211.2	201.8	200.4	207.2	219.3	234.1	236.8	240.0	243.1
72.5°	191.0	177.5	168.1	167.6	173.9	183.8	195.9	196.4	197.3	200.4
75°	155.0	142.9	135.7	137.1	140.7	148.8	158.2	155.5	155.9	158.2
77.5°	120.4	110.6	105.6	106.5	109.2	115.0	121.3	118.2	116.4	118.6
80°	86.7	78.2	76.4	76.8	78.6	82.7	86.3	83.6	80.0	81.8
82.5°	57.1	51.7	50.8	51.2	52.6	54.8	55.7	51.7	50.8	52.1
85°	31.5	29.2	29.2	30.6	31.0	31.5	31.5	29.2	29.7	30.6
87.5°	12.6	12.6	13.9	15.3	14.4	12.6	10.8	7.2	7.2	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)