

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-20-22L935-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-20-22L935-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

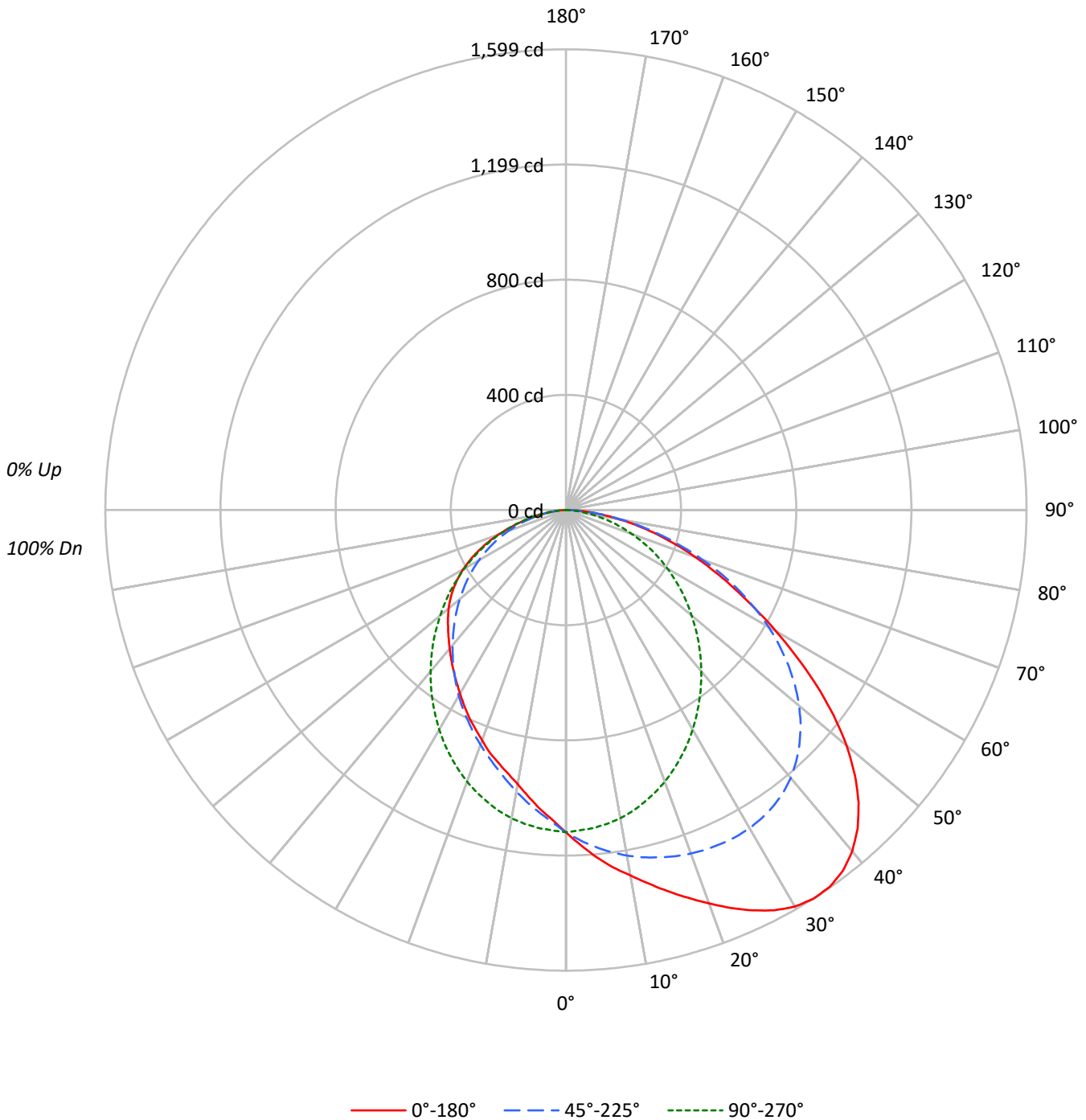
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3464.6 lumens
Efficiency: N/A
Efficacy: 72.2 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

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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°	10768	10768	10768
5°	11685	10703	10058
10°	12588	10620	9438
15°	13655	10465	9050
20°	14888	10282	8714
25°	16287	10040	8444
30°	17668	9777	8172
35°	18766	9488	7997
40°	19431	9187	7892
45°	19566	8869	7874
50°	19053	8531	7961
55°	17841	8226	8010
60°	16216	7852	7931
65°	14705	7426	7625
70°	13458	6885	7001
75°	12212	6190	6019
80°	10678	5173	4640
85°	8992	3756	3457



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.2	3.1
10°-20°	309.0	8.9
20°-30°	484.0	14.0
30°-40°	606.8	17.5
40°-50°	646.0	18.6
50°-60°	583.2	16.8
60°-70°	431.7	12.5
70°-80°	236.9	6.8
80°-90°	60.8	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°	899.2	26.0
0°-40°	1506.0	43.5
0°-60°	2735.2	78.9
0°-90°	3464.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3464.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1118	1118	1118	1118	1118	
5°	1209	1174	1108	1054	1041	118
15°	1370	1248	1050	927	908	391
25°	1533	1278	945	806	795	710
35°	1597	1255	807	678	680	996
45°	1437	1147	651	546	578	1102
55°	1063	944	490	415	477	948
65°	646	665	326	281	335	644
75°	328	348	166	144	162	349
85°	81	80	34	32	31	96
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°	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5
2.5°	1163.6	1161.3	1158.5	1157.6	1153.5	1148.0	1142.9	1142.9	1136.9	1122.7	1112.6
5°	1209.1	1205.4	1198.5	1193.0	1184.3	1173.7	1163.1	1156.7	1142.4	1120.8	1107.5
7.5°	1250.9	1246.3	1237.6	1227.0	1212.8	1197.2	1179.7	1165.9	1144.3	1115.3	1098.3
10°	1287.7	1283.6	1273.0	1260.1	1239.9	1217.8	1192.1	1171.4	1142.0	1106.1	1086.4
12.5°	1328.2	1324.0	1309.3	1291.9	1264.3	1234.9	1200.8	1172.3	1136.0	1092.8	1070.3
15°	1370.0	1364.5	1347.9	1324.5	1287.7	1248.2	1206.3	1169.6	1126.4	1076.7	1050.0
17.5°	1411.4	1405.9	1385.2	1355.3	1309.3	1260.1	1208.6	1163.1	1112.6	1056.9	1028.0
20°	1453.2	1447.7	1421.5	1383.8	1328.2	1268.9	1208.2	1153.5	1096.0	1034.4	1003.6
22.5°	1495.1	1488.6	1456.9	1410.9	1343.8	1274.8	1203.1	1140.1	1075.3	1008.7	975.6
25°	1533.2	1526.8	1491.8	1437.6	1360.4	1277.6	1194.4	1121.8	1052.3	980.2	945.2
27.5°	1566.3	1558.5	1522.2	1462.4	1374.6	1278.5	1182.9	1101.1	1025.7	949.4	914.0
30°	1589.3	1582.4	1543.8	1479.9	1382.9	1275.3	1168.2	1076.7	994.9	916.3	879.5
32.5°	1599.4	1593.4	1555.3	1488.2	1384.3	1267.0	1150.3	1049.6	962.7	881.3	844.1
35°	1596.7	1590.7	1554.4	1486.8	1380.1	1255.1	1127.7	1018.8	928.2	845.0	807.3
37.5°	1579.2	1572.3	1539.2	1474.4	1368.2	1237.6	1102.0	985.2	891.0	807.8	769.6
40°	1546.1	1539.2	1510.7	1450.9	1347.9	1214.2	1072.6	949.4	852.8	768.7	731.0
42.5°	1498.7	1491.4	1468.9	1414.1	1319.0	1183.4	1039.0	911.2	812.4	731.0	691.4
45°	1437.1	1429.8	1414.6	1368.2	1281.3	1147.0	1000.8	869.8	770.1	688.2	651.4
47.5°	1360.8	1354.4	1347.0	1311.2	1234.9	1105.2	958.1	825.7	725.9	648.2	610.5
50°	1272.1	1265.7	1268.0	1243.6	1181.1	1056.9	911.2	779.3	680.4	603.6	569.6
52.5°	1171.4	1166.4	1177.4	1166.8	1118.5	1003.1	861.1	731.4	634.0	561.3	528.7
55°	1062.9	1057.4	1078.5	1081.8	1048.7	943.8	804.1	681.8	587.1	520.0	490.1
57.5°	951.2	946.6	973.7	988.9	972.3	879.9	746.6	630.8	538.8	476.7	446.9
60°	842.2	838.6	867.1	891.9	890.0	812.4	686.8	575.6	490.5	433.1	407.8
62.5°	739.7	735.6	764.1	793.5	804.1	740.2	627.5	521.3	442.3	389.4	366.9
65°	645.5	641.3	665.7	696.0	715.3	664.8	563.6	465.3	393.5	345.3	326.0
67.5°	559.0	559.0	574.2	602.3	625.7	587.5	498.4	411.9	343.4	304.3	285.0
70°	478.1	477.7	488.7	508.5	535.6	504.8	432.2	355.8	296.1	261.6	244.6
72.5°	401.3	404.6	408.7	423.9	452.4	425.7	366.4	300.7	249.6	219.3	205.0
75°	328.3	327.8	333.8	347.1	367.8	348.0	300.7	246.9	203.7	178.8	166.4
77.5°	258.4	257.9	263.0	270.8	288.3	272.6	237.2	197.2	158.6	137.9	129.2
80°	192.6	192.6	197.2	201.4	214.2	201.8	177.0	147.6	116.3	100.2	93.3
82.5°	133.8	136.5	134.7	140.2	147.6	137.0	121.4	101.1	77.2	66.2	61.6
85°	81.4	83.7	81.4	86.0	89.2	80.0	72.2	60.2	44.6	37.2	34.0
87.5°	41.8	41.4	40.9	43.2	44.1	38.6	34.0	29.0	19.8	15.2	12.9
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°	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5	1118.5
2.5°	1106.6	1109.3	1105.2	1090.0	1084.1	1077.6	1074.9	1072.1	1077.2	1075.8
5°	1097.4	1094.2	1083.6	1064.3	1054.2	1043.6	1038.5	1035.3	1042.2	1040.8
7.5°	1085.0	1075.8	1060.2	1036.7	1023.8	1009.6	1002.7	998.5	1003.1	1002.2
10°	1069.3	1054.2	1034.9	1006.8	991.7	976.0	968.2	962.2	965.9	965.4
12.5°	1049.6	1029.8	1006.4	974.6	959.0	942.9	936.0	931.9	936.5	935.1
15°	1027.5	1003.6	976.5	944.3	927.3	912.6	907.5	904.3	908.0	908.0
17.5°	1003.1	975.1	945.2	912.6	896.5	885.0	879.9	877.6	879.5	882.2
20°	976.0	944.8	912.6	880.9	867.1	855.1	850.5	848.2	852.4	850.5
22.5°	946.1	913.0	879.5	849.6	837.2	825.2	820.6	819.3	823.8	822.0
25°	914.4	878.6	845.5	818.3	805.9	795.8	791.7	790.3	792.6	794.9
27.5°	884.5	844.1	811.4	787.1	776.0	766.4	762.7	760.4	762.2	765.0
30°	848.2	809.1	777.0	754.4	743.9	734.7	731.9	730.1	732.8	735.1
32.5°	814.2	774.7	742.5	720.4	711.2	702.5	702.0	701.1	704.3	707.1
35°	777.4	738.8	707.5	686.8	678.1	670.8	672.1	673.5	677.2	680.4
37.5°	740.2	702.5	672.6	653.7	645.5	639.5	643.6	645.5	650.5	653.7
40°	702.5	664.8	637.2	620.2	611.9	609.2	615.1	619.3	625.2	628.0
42.5°	663.9	628.9	601.3	585.7	578.8	578.8	586.6	593.1	600.0	602.7
45°	625.2	591.2	565.0	550.8	545.7	549.4	558.6	566.9	575.6	578.3
47.5°	586.2	553.1	529.2	516.3	513.5	519.0	530.5	541.6	551.7	555.4
50°	547.1	517.2	493.3	481.3	481.3	488.2	503.0	516.7	527.8	531.5
52.5°	508.0	479.5	455.1	446.4	448.2	457.9	474.9	489.2	501.6	505.3
55°	468.5	440.4	419.3	411.9	415.1	427.1	444.6	461.1	473.1	477.2
57.5°	429.4	402.7	383.4	377.4	382.0	395.4	415.6	429.9	442.3	445.9
60°	389.9	362.7	347.6	343.0	348.9	362.7	383.4	396.8	408.2	411.9
62.5°	350.8	325.5	312.2	308.0	314.9	329.6	349.9	361.8	370.5	374.2
65°	311.2	288.7	276.3	273.5	280.9	295.2	314.5	324.6	331.0	334.7
67.5°	272.2	252.9	241.4	239.1	246.9	259.8	277.7	283.2	289.2	292.9
70°	233.5	216.1	206.4	205.0	211.9	224.4	239.5	242.3	245.5	248.7
72.5°	195.4	181.6	171.9	171.5	177.9	188.0	200.4	200.9	201.8	205.0
75°	158.6	146.2	138.8	140.2	143.9	152.2	161.8	159.1	159.5	161.8
77.5°	123.2	113.1	108.0	109.0	111.7	117.7	124.1	120.9	119.1	121.4
80°	88.7	80.0	78.2	78.6	80.5	84.6	88.3	85.5	81.8	83.7
82.5°	58.4	52.9	52.0	52.4	53.8	56.1	57.0	52.9	52.0	53.3
85°	32.2	29.9	29.9	31.3	31.7	32.2	32.2	29.9	30.3	31.3
87.5°	12.9	12.9	14.3	15.6	14.7	12.9	11.0	7.4	7.4	8.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)