

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-20-22L850-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-20-22L850-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ ASYMMETRIC Lens  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

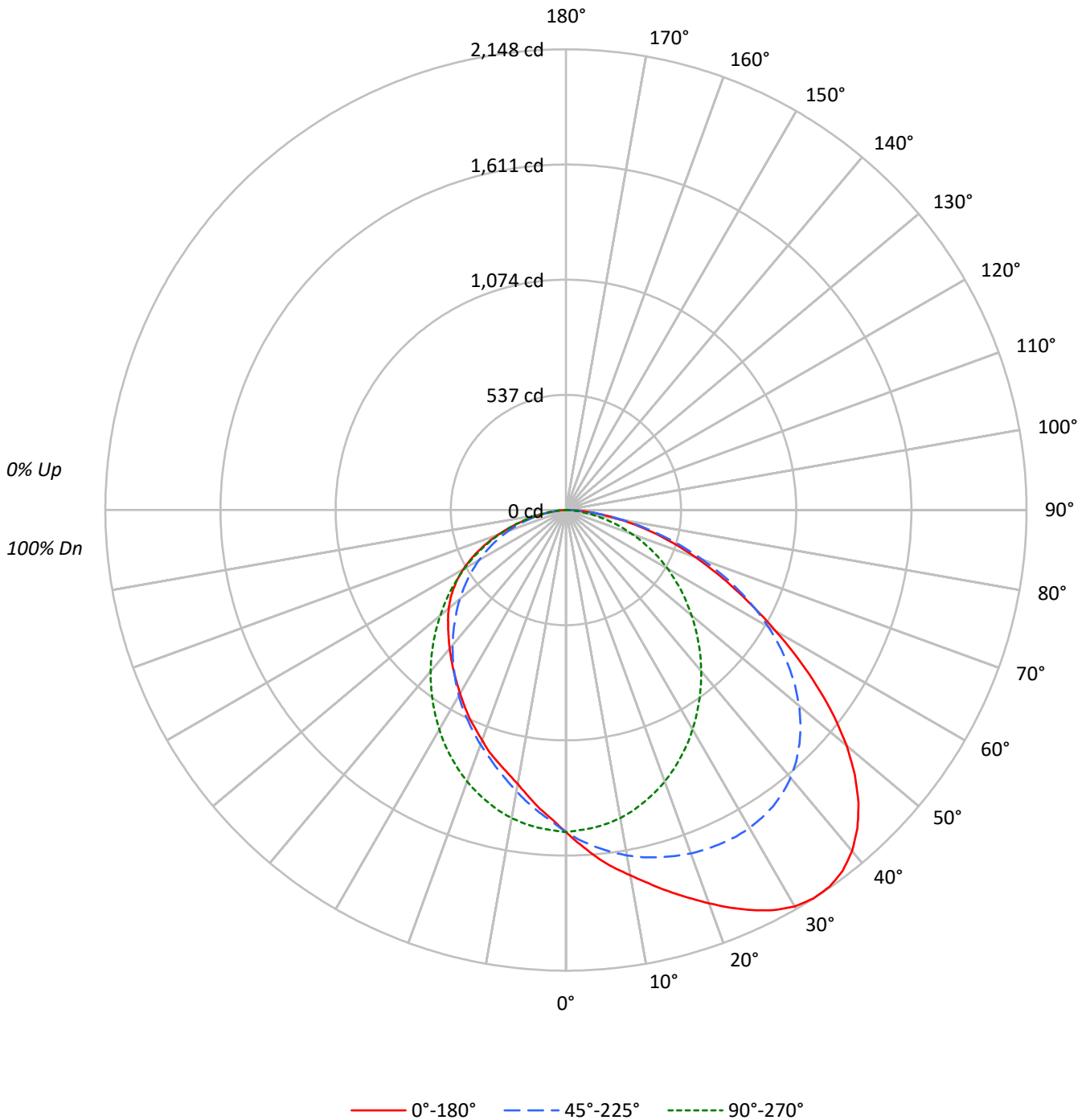
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4651.8 lumens  
Efficiency: N/A  
Efficacy: 96.9 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<sub>in</sub>): 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-20-22L850-UNV-ASY

### Luminous Intensity Polar Plot





TEST NUMBER: P  
 CATALOG NUMBER: 4APN-20-22L850-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°	14458	14458	14458
5°	15689	14371	13506
10°	16902	14259	12672
15°	18334	14052	12151
20°	19990	13805	11700
25°	21868	13481	11337
30°	23722	13128	10972
35°	25196	12739	10737
40°	26089	12335	10597
45°	26272	11909	10572
50°	25582	11455	10688
55°	23954	11044	10754
60°	21775	10542	10650
65°	19744	9971	10237
70°	18071	9244	9399
75°	16393	8314	8083
80°	14337	6947	6226
85°	12073	5048	4639



TEST NUMBER: P  
 CATALOG NUMBER: 4APN-20-22L850-UNV-ASY

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	142.6	3.1
10°-20°	414.8	8.9
20°-30°	649.9	14.0
30°-40°	814.7	17.5
40°-50°	867.4	18.6
50°-60°	783.0	16.8
60°-70°	579.6	12.5
70°-80°	318.0	6.8
80°-90°	81.7	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°	1207.4	26.0
0°-40°	2022.1	43.5
0°-60°	3672.5	78.9
0°-90°	4651.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4651.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1502	1502	1502	1502	1502	
5°	1623	1576	1487	1415	1398	158
15°	1840	1676	1410	1245	1219	525
25°	2059	1715	1269	1082	1067	953
35°	2144	1685	1084	910	914	1337
45°	1930	1540	875	733	776	1479
55°	1427	1267	658	557	641	1273
65°	867	893	438	377	449	865
75°	441	467	224	193	217	468
85°	109	107	46	43	42	129
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-20-22L850-UNV-ASY

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8
2.5°	1562.3	1559.2	1555.5	1554.3	1548.8	1541.3	1534.6	1534.6	1526.5	1507.4	1493.8
5°	1623.4	1618.5	1609.2	1601.8	1590.1	1575.9	1561.7	1553.1	1533.9	1504.9	1487.0
7.5°	1679.6	1673.4	1661.7	1647.5	1628.4	1607.4	1583.9	1565.4	1536.4	1497.5	1474.7
10°	1729.0	1723.4	1709.2	1692.0	1664.8	1635.2	1600.6	1572.8	1533.3	1485.2	1458.6
12.5°	1783.3	1777.8	1758.0	1734.6	1697.5	1658.0	1612.3	1574.1	1525.3	1467.3	1437.0
15°	1839.5	1832.1	1809.9	1778.4	1729.0	1675.9	1619.7	1570.4	1512.3	1445.7	1409.9
17.5°	1895.0	1887.6	1859.9	1819.7	1758.0	1692.0	1622.8	1561.7	1493.8	1419.1	1380.2
20°	1951.2	1943.8	1908.6	1858.0	1783.3	1703.7	1622.2	1548.8	1471.6	1388.9	1347.5
22.5°	2007.4	1998.7	1956.2	1894.4	1804.3	1711.7	1615.4	1530.9	1443.8	1354.3	1309.9
25°	2058.6	2050.0	2003.1	1930.2	1826.5	1715.4	1603.7	1506.2	1413.0	1316.0	1269.1
27.5°	2103.1	2092.6	2043.8	1963.6	1845.7	1716.7	1588.3	1478.4	1377.1	1274.7	1227.2
30°	2133.9	2124.7	2072.8	1987.0	1856.8	1712.3	1568.5	1445.7	1335.8	1230.2	1180.9
32.5°	2147.5	2139.5	2088.3	1998.1	1858.6	1701.2	1544.4	1409.2	1292.6	1183.3	1133.3
35°	2143.8	2135.8	2087.0	1996.3	1853.1	1685.2	1514.2	1367.9	1246.3	1134.6	1083.9
37.5°	2120.4	2111.1	2066.7	1979.6	1837.0	1661.7	1479.6	1322.8	1196.3	1084.6	1033.3
40°	2075.9	2066.7	2028.4	1948.1	1809.9	1630.2	1440.1	1274.7	1145.1	1032.1	981.5
42.5°	2012.3	2002.5	1972.2	1898.8	1771.0	1588.9	1395.1	1223.4	1090.7	981.5	928.4
45°	1929.6	1919.7	1899.4	1837.0	1720.4	1540.1	1343.8	1167.9	1033.9	924.1	874.7
47.5°	1827.1	1818.5	1808.6	1760.5	1658.0	1483.9	1286.4	1108.6	974.7	870.4	819.7
50°	1708.0	1699.4	1702.5	1669.7	1585.8	1419.1	1223.4	1046.3	913.6	810.5	764.8
52.5°	1572.8	1566.0	1580.9	1566.7	1501.8	1346.9	1156.2	982.1	851.2	753.7	709.9
55°	1427.1	1419.7	1448.1	1452.5	1408.0	1267.3	1079.6	915.4	788.3	698.1	658.0
57.5°	1277.2	1271.0	1307.4	1327.8	1305.5	1181.5	1002.5	846.9	723.5	640.1	600.0
60°	1130.9	1125.9	1164.2	1197.5	1195.1	1090.7	922.2	772.8	658.6	581.5	547.5
62.5°	993.2	987.6	1025.9	1065.4	1079.6	993.8	842.6	700.0	593.8	522.8	492.6
65°	866.7	861.1	893.8	934.6	960.5	892.6	756.8	624.7	528.4	463.6	437.7
67.5°	750.6	750.6	771.0	808.6	840.1	788.9	669.1	553.1	461.1	408.6	382.7
70°	642.0	641.4	656.2	682.7	719.1	677.8	580.2	477.8	397.5	351.2	328.4
72.5°	538.9	543.2	548.8	569.1	607.4	571.6	492.0	403.7	335.2	294.4	275.3
75°	440.7	440.1	448.1	466.0	493.8	467.3	403.7	331.5	273.5	240.1	223.5
77.5°	346.9	346.3	353.1	363.6	387.0	366.0	318.5	264.8	213.0	185.2	173.5
80°	258.6	258.6	264.8	270.4	287.7	271.0	237.7	198.1	156.2	134.6	125.3
82.5°	179.6	183.3	180.9	188.3	198.1	183.9	163.0	135.8	103.7	88.9	82.7
85°	109.3	112.3	109.3	115.4	119.8	107.4	96.9	80.9	59.9	50.0	45.7
87.5°	56.2	55.6	54.9	58.0	59.3	51.9	45.7	38.9	26.5	20.4	17.3
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-20-22L850-UNV-ASY

**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8	1501.8
2.5°	1485.8	1489.5	1483.9	1463.6	1455.5	1446.9	1443.2	1439.5	1446.3	1444.4
5°	1473.4	1469.1	1454.9	1429.0	1415.4	1401.2	1394.4	1390.1	1399.4	1397.5
7.5°	1456.8	1444.4	1423.4	1392.0	1374.7	1355.5	1346.3	1340.7	1346.9	1345.7
10°	1435.8	1415.4	1389.5	1351.8	1331.5	1310.5	1300.0	1292.0	1296.9	1296.3
12.5°	1409.2	1382.7	1351.2	1308.6	1287.6	1266.0	1256.8	1251.2	1257.4	1255.5
15°	1379.6	1347.5	1311.1	1267.9	1245.1	1225.3	1218.5	1214.2	1219.1	1219.1
17.5°	1346.9	1309.2	1269.1	1225.3	1203.7	1188.3	1181.5	1178.4	1180.9	1184.6
20°	1310.5	1268.5	1225.3	1182.7	1164.2	1148.1	1142.0	1138.9	1144.4	1142.0
22.5°	1270.4	1225.9	1180.9	1140.7	1124.1	1108.0	1101.8	1100.0	1106.2	1103.7
25°	1227.8	1179.6	1135.2	1098.8	1082.1	1068.5	1063.0	1061.1	1064.2	1067.3
27.5°	1187.6	1133.3	1089.5	1056.8	1042.0	1029.0	1024.1	1021.0	1023.4	1027.2
30°	1138.9	1086.4	1043.2	1013.0	998.8	986.4	982.7	980.2	983.9	987.0
32.5°	1093.2	1040.1	996.9	967.3	954.9	943.2	942.6	941.4	945.7	949.4
35°	1043.8	992.0	950.0	922.2	910.5	900.6	902.5	904.3	909.3	913.6
37.5°	993.8	943.2	903.1	877.8	866.7	858.6	864.2	866.7	873.4	877.8
40°	943.2	892.6	855.5	832.7	821.6	817.9	825.9	831.5	839.5	843.2
42.5°	891.4	844.4	807.4	786.4	777.2	777.2	787.6	796.3	805.5	809.3
45°	839.5	793.8	758.6	739.5	732.7	737.6	750.0	761.1	772.8	776.5
47.5°	787.0	742.6	710.5	693.2	689.5	696.9	712.3	727.2	740.7	745.7
50°	734.6	694.4	662.3	646.3	646.3	655.6	675.3	693.8	708.6	713.6
52.5°	682.1	643.8	611.1	599.4	601.8	614.8	637.6	656.8	673.5	678.4
55°	629.0	591.4	563.0	553.1	557.4	573.5	596.9	619.1	635.2	640.7
57.5°	576.5	540.7	514.8	506.8	513.0	530.9	558.0	577.2	593.8	598.8
60°	523.5	487.0	466.7	460.5	468.5	487.0	514.8	532.7	548.1	553.1
62.5°	471.0	437.0	419.1	413.6	422.8	442.6	469.7	485.8	497.5	502.5
65°	417.9	387.7	371.0	367.3	377.2	396.3	422.2	435.8	444.4	449.4
67.5°	365.4	339.5	324.1	321.0	331.5	348.8	372.8	380.2	388.3	393.2
70°	313.6	290.1	277.2	275.3	284.6	301.2	321.6	325.3	329.6	333.9
72.5°	262.3	243.8	230.9	230.2	238.9	252.5	269.1	269.8	271.0	275.3
75°	213.0	196.3	186.4	188.3	193.2	204.3	217.3	213.6	214.2	217.3
77.5°	165.4	151.9	145.1	146.3	150.0	158.0	166.7	162.3	159.9	163.0
80°	119.1	107.4	104.9	105.6	108.0	113.6	118.5	114.8	109.9	112.3
82.5°	78.4	71.0	69.8	70.4	72.2	75.3	76.5	71.0	69.8	71.6
85°	43.2	40.1	40.1	42.0	42.6	43.2	43.2	40.1	40.7	42.0
87.5°	17.3	17.3	19.1	21.0	19.8	17.3	14.8	9.9	9.9	11.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)