

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-20-22L840-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-20-22L840-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ ASYMMETRIC Lens  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

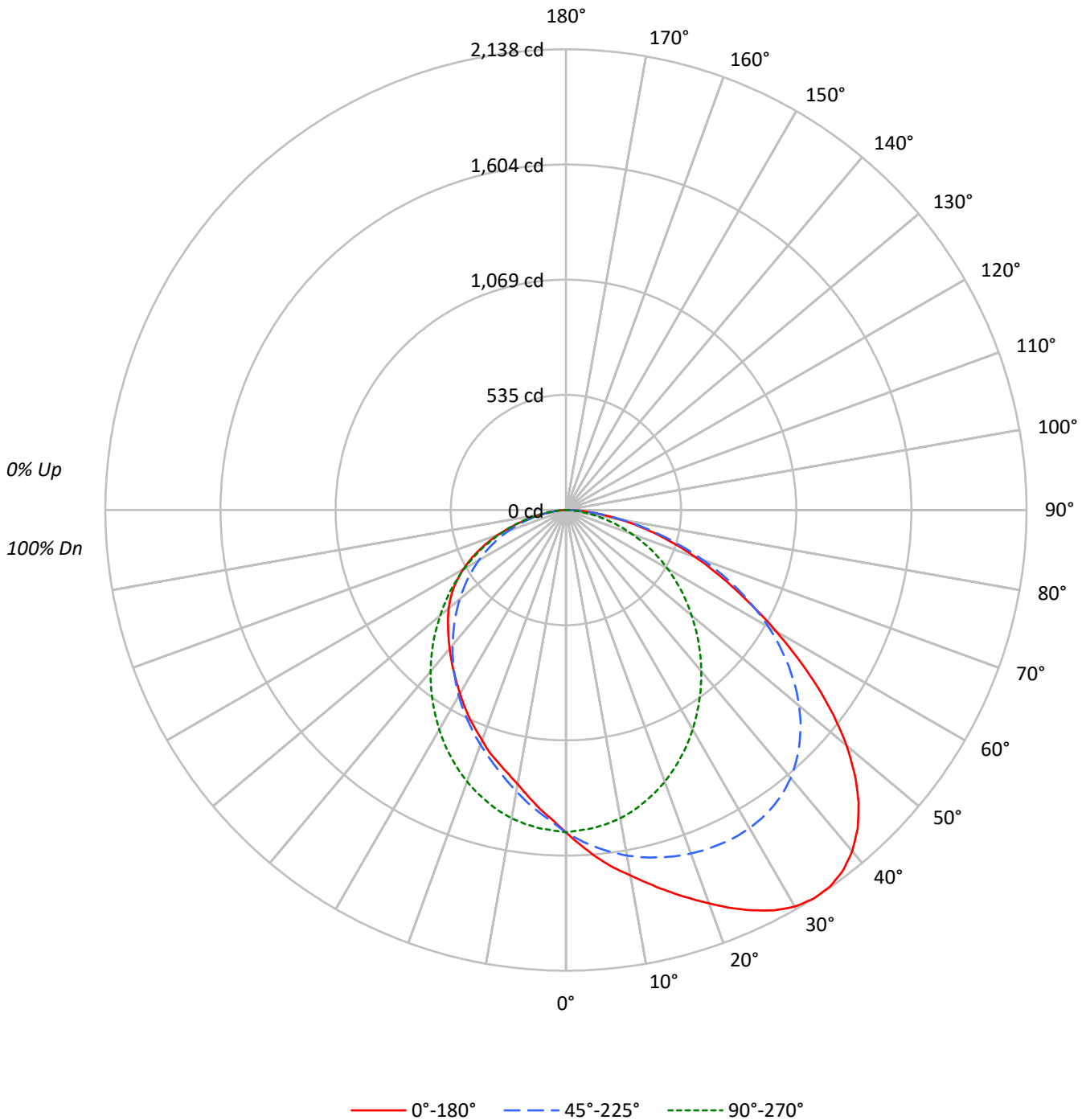
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4632.4 lumens  
Efficiency: N/A  
Efficacy: 96.5 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 (Ain): 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°	14399	14399	14399
5°	15624	14311	13450
10°	16832	14199	12620
15°	18257	13994	12100
20°	19907	13748	11651
25°	21776	13425	11290
30°	23623	13072	10927
35°	25091	12686	10693
40°	25980	12284	10553
45°	26163	11859	10529
50°	25475	11407	10643
55°	23854	10999	10710
60°	21683	10498	10605
65°	19659	9928	10194
70°	17995	9205	9362
75°	16326	8276	8049
80°	14282	6919	6204
85°	12018	5026	4617



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	142.0	3.1
10°-20°	413.1	8.9
20°-30°	647.2	14.0
30°-40°	811.3	17.5
40°-50°	863.7	18.6
50°-60°	779.7	16.8
60°-70°	577.2	12.5
70°-80°	316.7	6.8
80°-90°	81.3	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°	1202.3	26.0
0°-40°	2013.7	43.5
0°-60°	3657.1	78.9
0°-90°	4632.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4632.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1496	1496	1496	1496	1496	
5°	1617	1569	1481	1410	1392	157
15°	1832	1669	1404	1240	1214	522
25°	2050	1708	1264	1078	1063	949
35°	2135	1678	1079	907	910	1331
45°	1922	1534	871	730	773	1473
55°	1421	1262	655	555	638	1267
65°	863	889	436	376	448	861
75°	439	465	222	192	216	467
85°	109	107	46	42	42	129
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°	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6
2.5°	1555.8	1552.7	1549.0	1547.8	1542.3	1534.9	1528.1	1528.1	1520.2	1501.1	1487.6
5°	1616.7	1611.7	1602.5	1595.1	1583.5	1569.3	1555.2	1546.6	1527.5	1498.6	1480.8
7.5°	1672.6	1666.5	1654.8	1640.6	1621.6	1600.7	1577.3	1558.9	1530.0	1491.3	1468.5
10°	1721.8	1716.2	1702.1	1684.9	1657.8	1628.3	1593.9	1566.3	1526.9	1479.0	1452.5
12.5°	1775.9	1770.3	1750.7	1727.3	1690.4	1651.1	1605.6	1567.5	1518.9	1461.1	1431.0
15°	1831.8	1824.4	1802.3	1771.0	1721.8	1668.9	1613.0	1563.8	1506.0	1439.6	1404.0
17.5°	1887.1	1879.8	1852.1	1812.1	1750.7	1684.9	1616.0	1555.2	1487.6	1413.2	1374.5
20°	1943.1	1935.7	1900.7	1850.2	1775.9	1696.6	1615.4	1542.3	1465.4	1383.1	1341.9
22.5°	1999.0	1990.4	1948.0	1886.5	1796.8	1704.6	1608.7	1524.5	1437.8	1348.7	1304.4
25°	2050.0	2041.4	1994.7	1922.2	1818.9	1708.3	1597.0	1499.9	1407.0	1310.5	1263.8
27.5°	2094.3	2083.8	2035.3	1955.4	1838.0	1709.5	1581.6	1472.2	1371.4	1269.4	1222.0
30°	2125.0	2115.8	2064.2	1978.7	1849.0	1705.2	1562.0	1439.6	1330.2	1225.1	1175.9
32.5°	2138.5	2130.6	2079.5	1989.8	1850.9	1694.1	1538.0	1403.4	1287.2	1178.4	1128.6
35°	2134.9	2126.9	2078.3	1987.9	1845.3	1678.1	1507.9	1362.2	1241.1	1129.8	1079.4
37.5°	2111.5	2102.3	2058.0	1971.3	1829.3	1654.8	1473.4	1317.3	1191.3	1080.0	1029.0
40°	2067.2	2058.0	2019.9	1940.0	1802.3	1623.4	1434.1	1269.4	1140.3	1027.8	977.4
42.5°	2003.9	1994.1	1964.0	1890.8	1763.6	1582.2	1389.2	1218.3	1086.2	977.4	924.5
45°	1921.6	1911.7	1891.4	1829.3	1713.2	1533.7	1338.2	1163.0	1029.6	920.2	871.0
47.5°	1819.5	1810.9	1801.1	1753.1	1651.1	1477.7	1281.0	1104.0	970.6	866.7	816.3
50°	1700.9	1692.3	1695.3	1662.8	1579.2	1413.2	1218.3	1041.9	909.8	807.1	761.6
52.5°	1566.3	1559.5	1574.2	1560.1	1495.6	1341.3	1151.3	978.0	847.7	750.5	706.9
55°	1421.2	1413.8	1442.1	1446.4	1402.1	1262.0	1075.1	911.6	785.0	695.2	655.3
57.5°	1271.8	1265.7	1301.9	1322.2	1300.1	1176.5	998.3	843.4	720.4	637.4	597.5
60°	1126.1	1121.2	1159.3	1192.5	1190.1	1086.2	918.4	769.6	655.9	579.0	545.2
62.5°	989.1	983.5	1021.6	1061.0	1075.1	989.7	839.1	697.1	591.3	520.7	490.5
65°	863.0	857.5	890.1	930.7	956.5	888.9	753.6	622.1	526.2	461.6	435.8
67.5°	747.5	747.5	767.8	805.3	836.6	785.6	666.3	550.8	459.2	406.9	381.1
70°	639.3	638.7	653.4	679.9	716.1	674.9	577.8	475.8	395.9	349.8	327.0
72.5°	536.6	540.9	546.5	566.8	604.9	569.2	489.9	402.0	333.8	293.2	274.2
75°	438.9	438.3	446.3	464.1	491.8	465.3	402.0	330.1	272.3	239.1	222.5
77.5°	345.5	344.8	351.6	362.1	385.4	364.5	317.2	263.7	212.1	184.4	172.7
80°	257.6	257.6	263.7	269.2	286.5	269.9	236.7	197.3	155.5	134.0	124.8
82.5°	178.9	182.6	180.1	187.5	197.3	183.2	162.3	135.2	103.3	88.5	82.4
85°	108.8	111.9	108.8	114.9	119.3	107.0	96.5	80.5	59.6	49.8	45.5
87.5°	55.9	55.3	54.7	57.8	59.0	51.6	45.5	38.7	26.4	20.3	17.2
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°	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6	1495.6
2.5°	1479.6	1483.3	1477.7	1457.5	1449.5	1440.9	1437.2	1433.5	1440.2	1438.4
5°	1467.3	1463.0	1448.8	1423.0	1409.5	1395.4	1388.6	1384.3	1393.5	1391.7
7.5°	1450.7	1438.4	1417.5	1386.1	1368.9	1349.9	1340.7	1335.1	1341.3	1340.0
10°	1429.8	1409.5	1383.7	1346.2	1325.9	1305.0	1294.6	1286.6	1291.5	1290.9
12.5°	1403.4	1376.9	1345.6	1303.2	1282.3	1260.8	1251.5	1246.0	1252.1	1250.3
15°	1373.9	1341.9	1305.6	1262.6	1239.9	1220.2	1213.4	1209.1	1214.0	1214.0
17.5°	1341.3	1303.8	1263.8	1220.2	1198.7	1183.3	1176.5	1173.5	1175.9	1179.6
20°	1305.0	1263.2	1220.2	1177.8	1159.3	1143.3	1137.2	1134.1	1139.7	1137.2
22.5°	1265.1	1220.8	1175.9	1136.0	1119.4	1103.4	1097.2	1095.4	1101.5	1099.1
25°	1222.6	1174.7	1130.4	1094.2	1077.6	1064.0	1058.5	1056.7	1059.7	1062.8
27.5°	1182.7	1128.6	1084.9	1052.4	1037.6	1024.7	1019.8	1016.7	1019.2	1022.9
30°	1134.1	1081.9	1038.8	1008.7	994.6	982.3	978.6	976.1	979.8	982.9
32.5°	1088.6	1035.8	992.7	963.2	950.9	939.3	938.6	937.4	941.7	945.4
35°	1039.5	987.8	946.0	918.4	906.7	896.8	898.7	900.5	905.5	909.8
37.5°	989.7	939.3	899.3	874.1	863.0	855.0	860.6	863.0	869.8	874.1
40°	939.3	888.9	852.0	829.2	818.2	814.5	822.5	828.0	836.0	839.7
42.5°	887.6	840.9	804.0	783.1	773.9	773.9	784.4	793.0	802.2	805.9
45°	836.0	790.5	755.5	736.4	729.6	734.6	746.9	757.9	769.6	773.3
47.5°	783.7	739.5	707.5	690.3	686.6	694.0	709.4	724.1	737.6	742.6
50°	731.5	691.5	659.6	643.6	643.6	652.8	672.5	690.9	705.7	710.6
52.5°	679.2	641.1	608.6	596.9	599.3	612.2	635.0	654.0	670.6	675.6
55°	626.4	588.9	560.6	550.8	555.1	571.1	594.4	616.5	632.5	638.1
57.5°	574.1	538.5	512.7	504.7	510.8	528.6	555.7	574.7	591.3	596.3
60°	521.3	485.0	464.7	458.6	466.6	485.0	512.7	530.5	545.9	550.8
62.5°	469.0	435.2	417.4	411.8	421.1	440.7	467.8	483.8	495.4	500.4
65°	416.2	386.0	369.4	365.7	375.6	394.6	420.5	434.0	442.6	447.5
67.5°	363.9	338.1	322.7	319.6	330.1	347.3	371.3	378.7	386.6	391.6
70°	312.3	288.9	276.0	274.2	283.4	300.0	320.3	323.9	328.3	332.6
72.5°	261.2	242.8	229.9	229.3	237.9	251.4	268.0	268.6	269.9	274.2
75°	212.1	195.5	185.6	187.5	192.4	203.5	216.4	212.7	213.3	216.4
77.5°	164.7	151.2	144.5	145.7	149.4	157.4	166.0	161.7	159.2	162.3
80°	118.6	107.0	104.5	105.1	107.6	113.1	118.0	114.3	109.4	111.9
82.5°	78.1	70.7	69.5	70.1	71.9	75.0	76.2	70.7	69.5	71.3
85°	43.0	40.0	40.0	41.8	42.4	43.0	43.0	40.0	40.6	41.8
87.5°	17.2	17.2	19.1	20.9	19.7	17.2	14.8	9.8	9.8	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)