

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-20-22L835-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-20-22L835-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ ASYMMETRIC Lens  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

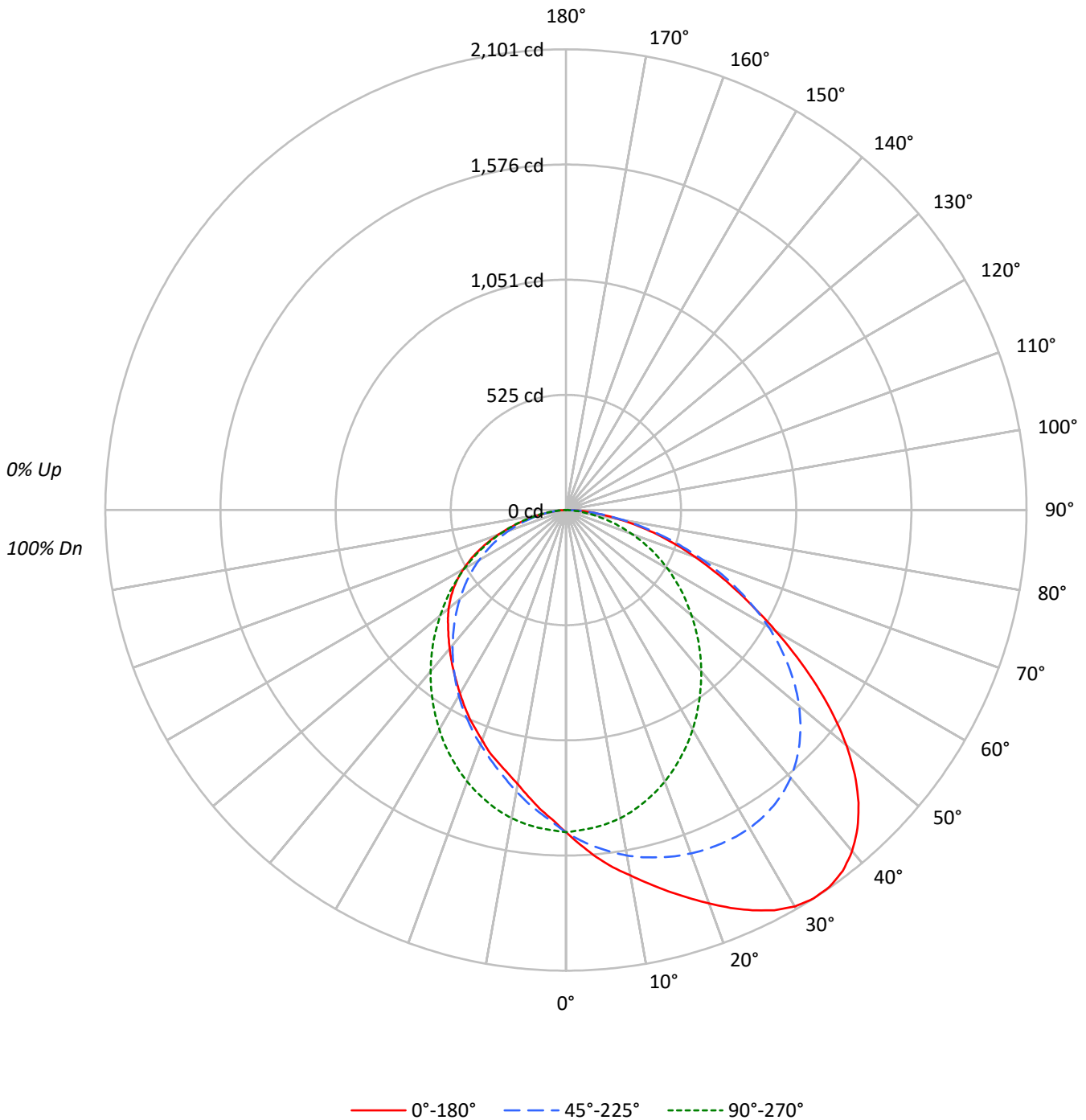
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4551.4 lumens  
Efficiency: N/A  
Efficacy: 94.8 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

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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°	14146	14146	14146
5°	15350	14060	13214
10°	16538	13951	12399
15°	17939	13748	11889
20°	19559	13507	11447
25°	21396	13190	11092
30°	23209	12844	10735
35°	24652	12464	10505
40°	25526	12069	10368
45°	25704	11652	10345
50°	25029	11208	10457
55°	23437	10806	10522
60°	21303	10315	10419
65°	19315	9754	10016
70°	17680	9044	9196
75°	16039	8131	7908
80°	14032	6797	6093
85°	11808	4938	4540



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	139.6	3.1
10°-20°	405.9	8.9
20°-30°	635.9	14.0
30°-40°	797.2	17.5
40°-50°	848.6	18.6
50°-60°	766.1	16.8
60°-70°	567.1	12.5
70°-80°	311.2	6.8
80°-90°	79.9	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°	1181.3	26.0
0°-40°	1978.4	43.5
0°-60°	3593.2	78.9
0°-90°	4551.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4551.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1469	1469	1469	1469	1469	
5°	1588	1542	1455	1385	1367	155
15°	1800	1640	1379	1218	1193	513
25°	2014	1678	1242	1059	1044	932
35°	2098	1649	1060	891	894	1308
45°	1888	1507	856	717	760	1447
55°	1396	1240	644	545	627	1245
65°	848	873	428	369	440	846
75°	431	457	219	189	213	458
85°	107	105	45	42	41	126
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°	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4
2.5°	1528.6	1525.6	1521.9	1520.7	1515.3	1508.1	1501.4	1501.4	1493.6	1474.8	1461.6
5°	1588.4	1583.6	1574.5	1567.2	1555.8	1541.9	1528.0	1519.5	1500.8	1472.4	1454.9
7.5°	1643.3	1637.3	1625.8	1611.9	1593.2	1572.7	1549.7	1531.6	1503.2	1465.2	1442.8
10°	1691.7	1686.2	1672.3	1655.4	1628.8	1599.9	1566.0	1538.9	1500.2	1453.1	1427.1
12.5°	1744.8	1739.4	1720.0	1697.1	1660.9	1622.2	1577.5	1540.1	1492.4	1435.6	1406.0
15°	1799.8	1792.5	1770.8	1740.0	1691.7	1639.7	1584.8	1536.4	1479.7	1414.4	1379.4
17.5°	1854.1	1846.9	1819.7	1780.4	1720.0	1655.4	1587.8	1528.0	1461.6	1388.5	1350.4
20°	1909.1	1901.8	1867.4	1817.9	1744.8	1666.9	1587.2	1515.3	1439.8	1358.9	1318.4
22.5°	1964.0	1955.6	1913.9	1853.5	1765.3	1674.7	1580.5	1497.8	1412.6	1325.1	1281.6
25°	2014.2	2005.7	1959.8	1888.5	1787.1	1678.4	1569.1	1473.6	1382.4	1287.6	1241.7
27.5°	2057.7	2047.4	1999.7	1921.2	1805.8	1679.6	1554.0	1446.5	1347.4	1247.2	1200.6
30°	2087.8	2078.8	2028.1	1944.1	1816.7	1675.4	1534.6	1414.4	1306.9	1203.7	1155.4
32.5°	2101.1	2093.3	2043.2	1955.0	1818.5	1664.5	1511.1	1378.8	1264.7	1157.8	1108.8
35°	2097.5	2089.7	2041.9	1953.2	1813.1	1648.8	1481.5	1338.3	1219.4	1110.1	1060.5
37.5°	2074.6	2065.5	2022.0	1936.9	1797.3	1625.8	1447.7	1294.3	1170.5	1061.1	1011.0
40°	2031.1	2022.0	1984.6	1906.1	1770.8	1595.0	1409.0	1247.2	1120.3	1009.8	960.3
42.5°	1968.9	1959.2	1929.6	1857.7	1732.7	1554.6	1364.9	1197.0	1067.2	960.3	908.3
45°	1887.9	1878.3	1858.3	1797.3	1683.2	1506.8	1314.8	1142.7	1011.6	904.1	855.8
47.5°	1787.7	1779.2	1769.6	1722.5	1622.2	1451.9	1258.6	1084.7	953.6	851.6	802.0
50°	1671.1	1662.7	1665.7	1633.7	1551.5	1388.5	1197.0	1023.7	893.8	793.0	748.3
52.5°	1538.9	1532.2	1546.7	1532.8	1469.4	1317.8	1131.2	960.9	832.8	737.4	694.5
55°	1396.3	1389.1	1416.9	1421.1	1377.6	1239.9	1056.3	895.7	771.2	683.1	643.8
57.5°	1249.6	1243.5	1279.2	1299.1	1277.3	1156.0	980.8	828.6	707.8	626.3	587.0
60°	1106.4	1101.6	1139.0	1171.7	1169.2	1067.2	902.3	756.1	644.4	568.9	535.7
62.5°	971.8	966.3	1003.8	1042.4	1056.3	972.4	824.4	684.9	581.0	511.5	482.0
65°	847.9	842.5	874.5	914.4	939.7	873.3	740.4	611.2	517.0	453.6	428.2
67.5°	734.4	734.4	754.3	791.2	822.0	771.8	654.7	541.1	451.1	399.8	374.4
70°	628.1	627.5	642.0	668.0	703.6	663.1	567.7	467.5	388.9	343.6	321.3
72.5°	527.2	531.5	536.9	556.8	594.3	559.3	481.3	395.0	327.9	288.1	269.4
75°	431.2	430.6	438.5	456.0	483.2	457.2	395.0	324.3	267.5	234.9	218.6
77.5°	339.4	338.8	345.5	355.7	378.7	358.1	311.6	259.1	208.4	181.2	169.7
80°	253.1	253.1	259.1	264.5	281.4	265.1	232.5	193.9	152.8	131.7	122.6
82.5°	175.7	179.4	177.0	184.2	193.9	180.0	159.4	132.9	101.5	87.0	80.9
85°	106.9	109.9	106.9	112.9	117.2	105.1	94.8	79.1	58.6	48.9	44.7
87.5°	55.0	54.4	53.8	56.8	58.0	50.7	44.7	38.0	26.0	19.9	16.9
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°	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4	1469.4
2.5°	1453.7	1457.3	1451.9	1432.0	1424.1	1415.7	1412.0	1408.4	1415.0	1413.2
5°	1441.6	1437.4	1423.5	1398.1	1384.9	1371.0	1364.3	1360.1	1369.1	1367.3
7.5°	1425.3	1413.2	1392.7	1361.9	1345.0	1326.3	1317.2	1311.8	1317.8	1316.6
10°	1404.8	1384.9	1359.5	1322.6	1302.7	1282.2	1271.9	1264.1	1268.9	1268.3
12.5°	1378.8	1352.8	1322.0	1280.4	1259.8	1238.7	1229.6	1224.2	1230.2	1228.4
15°	1349.8	1318.4	1282.8	1240.5	1218.2	1198.8	1192.2	1188.0	1192.8	1192.8
17.5°	1317.8	1281.0	1241.7	1198.8	1177.7	1162.6	1156.0	1152.9	1155.4	1159.0
20°	1282.2	1241.1	1198.8	1157.2	1139.0	1123.3	1117.3	1114.3	1119.7	1117.3
22.5°	1242.9	1199.4	1155.4	1116.1	1099.8	1084.1	1078.0	1076.2	1082.3	1079.9
25°	1201.3	1154.1	1110.7	1075.0	1058.7	1045.4	1040.0	1038.2	1041.2	1044.2
27.5°	1162.0	1108.8	1066.0	1034.0	1019.5	1006.8	1001.9	998.9	1001.3	1005.0
30°	1114.3	1062.9	1020.7	991.1	977.2	965.1	961.5	959.1	962.7	965.7
32.5°	1069.6	1017.7	975.4	946.4	934.3	922.8	922.2	921.0	925.2	928.9
35°	1021.3	970.5	929.5	902.3	890.8	881.2	883.0	884.8	889.6	893.8
37.5°	972.4	922.8	883.6	858.8	847.9	840.1	845.5	847.9	854.6	858.8
40°	922.8	873.3	837.1	814.7	803.9	800.2	808.1	813.5	821.4	825.0
42.5°	872.1	826.2	790.0	769.4	760.4	760.4	770.6	779.1	788.2	791.8
45°	821.4	776.7	742.3	723.5	716.9	721.7	733.8	744.7	756.1	759.8
47.5°	770.0	726.5	695.1	678.2	674.6	681.9	697.0	711.5	724.7	729.6
50°	718.7	679.4	648.0	632.3	632.3	641.4	660.7	678.8	693.3	698.2
52.5°	667.4	629.9	597.9	586.4	588.8	601.5	623.9	642.6	658.9	663.7
55°	615.4	578.6	550.8	541.1	545.4	561.1	584.0	605.8	621.5	626.9
57.5°	564.1	529.1	503.7	495.8	501.9	519.4	546.0	564.7	581.0	585.8
60°	512.1	476.5	456.6	450.5	458.4	476.5	503.7	521.2	536.3	541.1
62.5°	460.8	427.6	410.1	404.6	413.7	433.0	459.6	475.3	486.8	491.6
65°	408.9	379.3	363.0	359.3	369.0	387.7	413.1	426.4	434.8	439.7
67.5°	357.5	332.2	317.1	314.1	324.3	341.2	364.8	372.0	379.9	384.7
70°	306.8	283.9	271.2	269.4	278.4	294.7	314.7	318.3	322.5	326.7
72.5°	256.7	238.6	225.9	225.3	233.7	247.0	263.3	263.9	265.1	269.4
75°	208.4	192.1	182.4	184.2	189.0	199.9	212.6	209.0	209.6	212.6
77.5°	161.9	148.6	141.9	143.1	146.8	154.6	163.1	158.8	156.4	159.4
80°	116.6	105.1	102.7	103.3	105.7	111.1	116.0	112.3	107.5	109.9
82.5°	76.7	69.5	68.2	68.9	70.7	73.7	74.9	69.5	68.2	70.1
85°	42.3	39.3	39.3	41.1	41.7	42.3	42.3	39.3	39.9	41.1
87.5°	16.9	16.9	18.7	20.5	19.3	16.9	14.5	9.7	9.7	11.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)