

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-X-42L840-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-X-42L840-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light w/  
ASYMMETRIC Lens  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

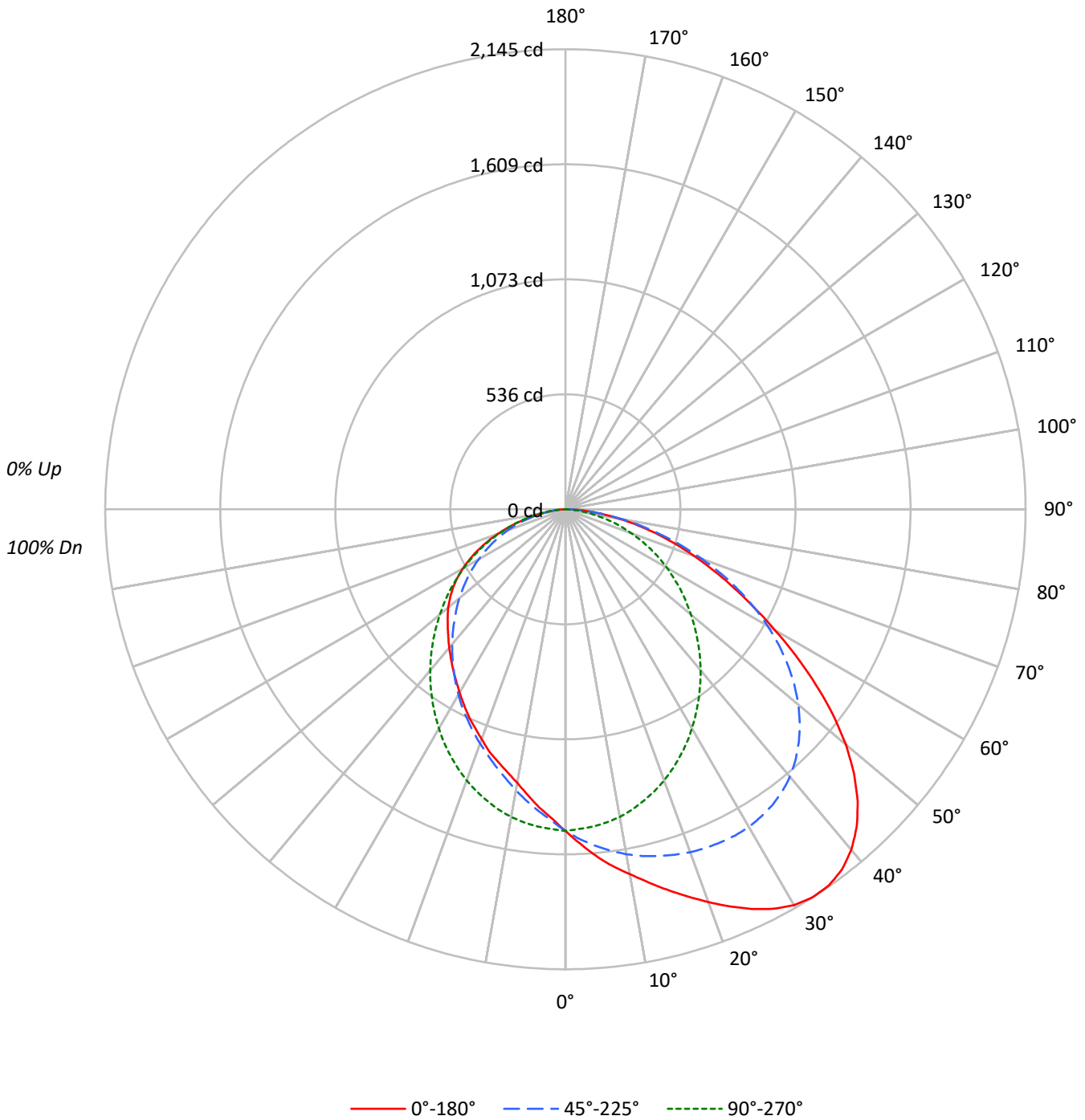
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4645.6 lumens  
Efficiency: N/A  
Efficacy: 100.6 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): 46.2  
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°	14439	14439	14439
5°	15668	14351	13488
10°	16880	14240	12656
15°	18309	14033	12135
20°	19964	13787	11684
25°	21839	13463	11323
30°	23691	13110	10958
35°	25163	12722	10723
40°	26055	12319	10583
45°	26236	11893	10559
50°	25547	11440	10673
55°	23923	11029	10741
60°	21746	10528	10634
65°	19716	9957	10224
70°	18046	9233	9388
75°	16374	8302	8072
80°	14321	6936	6221
85°	12051	5037	4628



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	142.4	3.1
10°-20°	414.3	8.9
20°-30°	649.0	14.0
30°-40°	813.7	17.5
40°-50°	866.2	18.6
50°-60°	782.0	16.8
60°-70°	578.9	12.5
70°-80°	317.6	6.8
80°-90°	81.5	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°	1205.7	26.0
0°-40°	2019.4	43.5
0°-60°	3667.6	78.9
0°-90°	4645.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4645.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1500	1500	1500	1500	1500	
5°	1621	1574	1485	1414	1396	158
15°	1837	1674	1408	1243	1218	524
25°	2056	1713	1267	1081	1066	951
35°	2141	1683	1082	909	912	1335
45°	1927	1538	874	732	776	1477
55°	1425	1266	657	557	640	1271
65°	866	891	437	377	449	864
75°	440	467	223	193	217	468
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°	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8
2.5°	1560.3	1557.2	1553.5	1552.2	1546.7	1539.3	1532.5	1532.5	1524.5	1505.4	1491.8
5°	1621.3	1616.4	1607.1	1599.7	1588.0	1573.8	1559.6	1551.0	1531.9	1502.9	1485.0
7.5°	1677.4	1671.2	1659.5	1645.3	1626.2	1605.3	1581.8	1563.3	1534.4	1495.5	1472.7
10°	1726.7	1721.2	1707.0	1689.7	1662.6	1633.0	1598.5	1570.7	1531.3	1483.2	1456.7
12.5°	1780.9	1775.4	1755.7	1732.2	1695.3	1655.8	1610.2	1572.0	1523.3	1465.3	1435.1
15°	1837.0	1829.6	1807.5	1776.0	1726.7	1673.7	1617.6	1568.3	1510.3	1443.7	1408.0
17.5°	1892.5	1885.1	1857.4	1817.3	1755.7	1689.7	1620.7	1559.6	1491.8	1417.2	1378.4
20°	1948.6	1941.2	1906.1	1855.5	1780.9	1701.4	1620.1	1546.7	1469.6	1387.0	1345.7
22.5°	2004.7	1996.1	1953.6	1891.9	1801.9	1709.4	1613.3	1528.8	1441.9	1352.5	1308.1
25°	2055.9	2047.3	2000.4	1927.7	1824.1	1713.1	1601.6	1504.2	1411.1	1314.3	1267.4
27.5°	2100.3	2089.8	2041.1	1961.0	1843.2	1714.4	1586.1	1476.4	1375.3	1273.0	1225.5
30°	2131.1	2121.9	2070.1	1984.4	1854.3	1710.1	1566.4	1443.7	1334.0	1228.6	1179.3
32.5°	2144.7	2136.6	2085.5	1995.5	1856.2	1699.0	1542.4	1407.4	1290.9	1181.8	1131.8
35°	2141.0	2132.9	2084.2	1993.6	1850.6	1682.9	1512.2	1366.1	1244.6	1133.1	1082.5
37.5°	2117.5	2108.3	2063.9	1977.0	1834.6	1659.5	1477.7	1321.1	1194.7	1083.1	1032.0
40°	2073.2	2063.9	2025.7	1945.5	1807.5	1628.1	1438.2	1273.0	1143.5	1030.7	980.2
42.5°	2009.7	1999.8	1969.6	1896.2	1768.6	1586.8	1393.2	1221.8	1089.3	980.2	927.2
45°	1927.0	1917.2	1896.8	1834.6	1718.1	1538.1	1342.0	1166.3	1032.6	922.8	873.5
47.5°	1824.7	1816.1	1806.2	1758.1	1655.8	1482.0	1284.7	1107.2	973.4	869.2	818.7
50°	1705.7	1697.1	1700.2	1667.5	1583.7	1417.2	1221.8	1044.9	912.4	809.4	763.8
52.5°	1570.7	1564.0	1578.8	1564.6	1499.8	1345.1	1154.6	980.8	850.1	752.7	708.9
55°	1425.3	1417.9	1446.2	1450.5	1406.1	1265.6	1078.2	914.2	787.2	697.2	657.1
57.5°	1275.5	1269.3	1305.7	1326.0	1303.8	1179.9	1001.1	845.8	722.5	639.3	599.2
60°	1129.4	1124.4	1162.6	1195.9	1193.5	1089.3	921.0	771.8	657.8	580.7	546.8
62.5°	991.9	986.3	1024.6	1064.0	1078.2	992.5	841.5	699.1	593.0	522.1	491.9
65°	865.5	860.0	892.6	933.3	959.2	891.4	755.8	623.9	527.7	463.0	437.1
67.5°	749.6	749.6	770.0	807.6	839.0	787.8	668.2	552.3	460.5	408.1	382.2
70°	641.1	640.5	655.3	681.8	718.2	676.9	579.5	477.1	397.0	350.8	328.0
72.5°	538.2	542.5	548.0	568.4	606.6	570.8	491.3	403.2	334.7	294.1	274.9
75°	440.2	439.5	447.5	465.4	493.2	466.7	403.2	331.0	273.1	239.8	223.2
77.5°	346.4	345.8	352.6	363.1	386.5	365.6	318.1	264.5	212.7	184.9	173.2
80°	258.3	258.3	264.5	270.0	287.3	270.6	237.3	197.9	156.0	134.4	125.1
82.5°	179.4	183.1	180.6	188.0	197.9	183.7	162.7	135.6	103.6	88.8	82.6
85°	109.1	112.2	109.1	115.3	119.6	107.3	96.8	80.8	59.8	49.9	45.6
87.5°	56.1	55.5	54.9	57.9	59.2	51.8	45.6	38.8	26.5	20.3	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



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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8	1499.8
2.5°	1483.8	1487.5	1482.0	1461.6	1453.6	1445.0	1441.3	1437.6	1444.4	1442.5
5°	1471.5	1467.2	1453.0	1427.1	1413.5	1399.4	1392.6	1388.3	1397.5	1395.7
7.5°	1454.8	1442.5	1421.6	1390.1	1372.9	1353.7	1344.5	1338.9	1345.1	1343.9
10°	1433.9	1413.5	1387.6	1350.0	1329.7	1308.7	1298.3	1290.2	1295.2	1294.6
12.5°	1407.4	1380.9	1349.4	1306.9	1285.9	1264.4	1255.1	1249.6	1255.7	1253.9
15°	1377.8	1345.7	1309.4	1266.2	1243.4	1223.7	1216.9	1212.6	1217.5	1217.5
17.5°	1345.1	1307.5	1267.4	1223.7	1202.1	1186.7	1179.9	1176.8	1179.3	1183.0
20°	1308.7	1266.8	1223.7	1181.1	1162.6	1146.6	1140.4	1137.4	1142.9	1140.4
22.5°	1268.7	1224.3	1179.3	1139.2	1122.6	1106.5	1100.4	1098.5	1104.7	1102.2
25°	1226.1	1178.1	1133.7	1097.3	1080.7	1067.1	1061.5	1059.7	1062.8	1065.9
27.5°	1186.1	1131.8	1088.0	1055.4	1040.6	1027.6	1022.7	1019.6	1022.1	1025.8
30°	1137.4	1085.0	1041.8	1011.6	997.4	985.1	981.4	978.9	982.6	985.7
32.5°	1091.7	1038.7	995.6	966.0	953.7	941.9	941.3	940.1	944.4	948.1
35°	1042.4	990.6	948.7	921.0	909.3	899.4	901.3	903.1	908.0	912.4
37.5°	992.5	941.9	901.9	876.6	865.5	857.5	863.0	865.5	872.3	876.6
40°	941.9	891.4	854.4	831.6	820.5	816.8	824.8	830.4	838.4	842.1
42.5°	890.2	843.3	806.3	785.4	776.1	776.1	786.6	795.2	804.5	808.2
45°	838.4	792.8	757.6	738.5	731.7	736.7	749.0	760.1	771.8	775.5
47.5°	786.0	741.6	709.5	692.3	688.6	696.0	711.4	726.2	739.8	744.7
50°	733.6	693.5	661.5	645.4	645.4	654.7	674.4	692.9	707.7	712.6
52.5°	681.2	643.0	610.3	598.6	601.0	614.0	636.8	655.9	672.6	677.5
55°	628.2	590.6	562.2	552.3	556.7	572.7	596.1	618.3	634.3	639.9
57.5°	575.8	540.0	514.1	506.1	512.3	530.2	557.3	576.4	593.0	598.0
60°	522.8	486.4	466.0	459.9	467.9	486.4	514.1	532.0	547.4	552.3
62.5°	470.4	436.5	418.6	413.0	422.3	442.0	469.1	485.2	496.9	501.8
65°	417.3	387.1	370.5	366.8	376.7	395.8	421.7	435.2	443.9	448.8
67.5°	364.9	339.1	323.6	320.6	331.0	348.3	372.3	379.7	387.8	392.7
70°	313.2	289.7	276.8	274.9	284.2	300.8	321.2	324.9	329.2	333.5
72.5°	262.0	243.5	230.6	229.9	238.6	252.1	268.8	269.4	270.6	274.9
75°	212.7	196.0	186.2	188.0	193.0	204.0	217.0	213.3	213.9	217.0
77.5°	165.2	151.6	144.9	146.1	149.8	157.8	166.4	162.1	159.7	162.7
80°	119.0	107.3	104.8	105.4	107.9	113.4	118.4	114.7	109.7	112.2
82.5°	78.3	70.9	69.7	70.3	72.1	75.2	76.4	70.9	69.7	71.5
85°	43.2	40.1	40.1	41.9	42.5	43.2	43.2	40.1	40.7	41.9
87.5°	17.3	17.3	19.1	21.0	19.7	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)