

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-28-30L830-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-28-30L830-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ ASYMMETRIC Lens  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

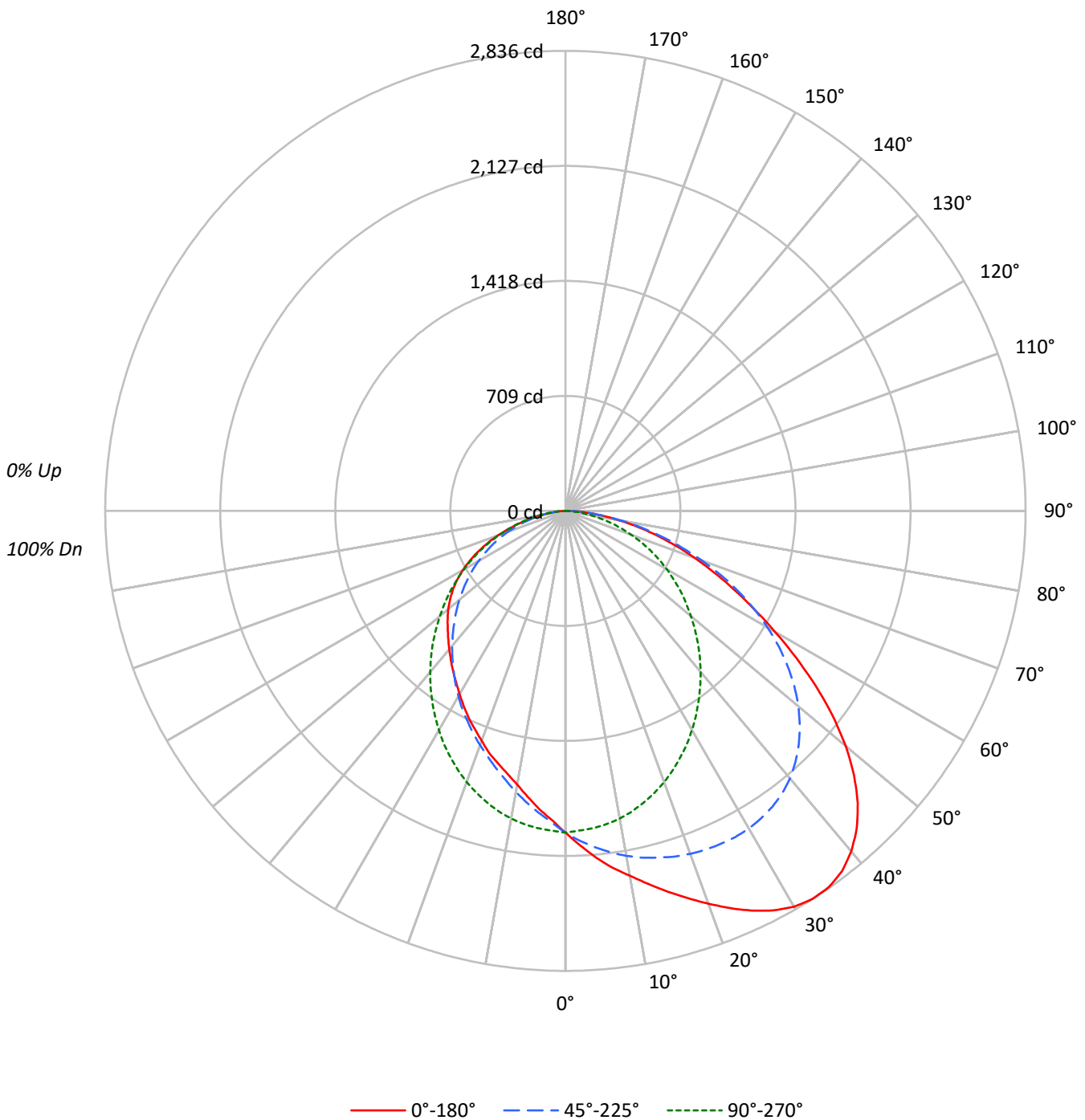
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6142.9 lumens  
Efficiency: N/A  
Efficacy: 94.5 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): 65  
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°	19093	19093	19093
5°	20718	18977	17835
10°	22320	18830	16734
15°	24211	18556	16046
20°	26398	18230	15450
25°	28878	17802	14971
30°	31326	17335	14490
35°	33272	16823	14179
40°	34452	16289	13994
45°	34693	15725	13961
50°	33782	15127	14113
55°	31633	14584	14202
60°	28753	13921	14064
65°	26072	13165	13518
70°	23861	12208	12413
75°	21649	10977	10672
80°	18933	9176	8228
85°	15940	6661	6120



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	188.4	3.1
10°-20°	547.8	8.9
20°-30°	858.2	14.0
30°-40°	1075.9	17.5
40°-50°	1145.4	18.6
50°-60°	1034.0	16.8
60°-70°	765.4	12.5
70°-80°	420.0	6.8
80°-90°	107.8	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°	1594.3	26.0
0°-40°	2670.2	43.5
0°-60°	4849.6	78.9
0°-90°	6142.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6142.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1983	1983	1983	1983	1983	
5°	2144	2081	1964	1869	1846	209
15°	2429	2213	1862	1644	1610	693
25°	2718	2265	1676	1429	1409	1258
35°	2831	2225	1431	1202	1206	1765
45°	2548	2034	1155	968	1025	1954
55°	1885	1674	869	736	846	1681
65°	1144	1179	578	498	593	1142
75°	582	617	295	255	287	619
85°	144	142	60	56	55	170
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°	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2
2.5°	2063.1	2059.0	2054.1	2052.5	2045.2	2035.4	2026.4	2026.4	2015.8	1990.6	1972.6
5°	2143.8	2137.3	2125.1	2115.3	2099.8	2081.0	2062.3	2050.9	2025.6	1987.3	1963.7
7.5°	2218.0	2209.8	2194.4	2175.6	2150.3	2122.6	2091.6	2067.2	2028.9	1977.5	1947.4
10°	2283.2	2275.9	2257.1	2234.3	2198.4	2159.3	2113.7	2077.0	2024.8	1961.2	1926.2
12.5°	2354.9	2347.6	2321.5	2290.5	2241.6	2189.5	2129.1	2078.6	2014.2	1937.6	1897.6
15°	2429.1	2419.3	2390.0	2348.4	2283.2	2213.1	2138.9	2073.7	1997.1	1909.1	1861.8
17.5°	2502.5	2492.7	2456.0	2403.0	2321.5	2234.3	2143.0	2062.3	1972.6	1874.0	1822.6
20°	2576.6	2566.9	2520.4	2453.6	2354.9	2249.8	2142.2	2045.2	1943.3	1834.1	1779.4
22.5°	2650.8	2639.4	2583.2	2501.7	2382.6	2260.4	2133.2	2021.5	1906.6	1788.4	1729.7
25°	2718.5	2707.1	2645.1	2548.9	2412.0	2265.3	2117.7	1988.9	1865.8	1737.9	1675.9
27.5°	2777.2	2763.3	2698.9	2593.0	2437.3	2266.9	2097.3	1952.3	1818.6	1683.3	1620.5
30°	2817.9	2805.7	2737.2	2623.9	2451.9	2261.2	2071.3	1909.1	1764.0	1624.6	1559.4
32.5°	2835.9	2825.3	2757.6	2638.6	2454.4	2246.5	2039.5	1861.0	1706.9	1562.6	1496.6
35°	2831.0	2820.4	2756.0	2636.2	2447.0	2225.3	1999.5	1806.3	1645.8	1498.2	1431.4
37.5°	2800.0	2787.8	2729.1	2614.1	2425.8	2194.4	1953.9	1746.8	1579.7	1432.2	1364.5
40°	2741.3	2729.1	2678.5	2572.6	2390.0	2152.8	1901.7	1683.3	1512.1	1362.9	1296.1
42.5°	2657.3	2644.3	2604.4	2507.4	2338.6	2098.2	1842.2	1615.6	1440.3	1296.1	1226.0
45°	2548.1	2535.1	2508.2	2425.8	2271.8	2033.8	1774.6	1542.2	1365.4	1220.3	1155.0
47.5°	2412.8	2401.4	2388.4	2324.8	2189.5	1959.6	1698.7	1464.0	1287.1	1149.3	1082.5
50°	2255.5	2244.1	2248.1	2204.9	2094.1	1874.0	1615.6	1381.7	1206.4	1070.3	1010.0
52.5°	2077.0	2068.0	2087.6	2068.8	1983.2	1778.6	1526.8	1296.9	1124.1	995.3	937.4
55°	1884.6	1874.8	1912.3	1918.0	1859.3	1673.5	1425.7	1208.8	1040.9	921.9	868.9
57.5°	1686.5	1678.4	1726.5	1753.4	1724.0	1560.2	1323.8	1118.4	955.3	845.3	792.3
60°	1493.3	1486.8	1537.3	1581.4	1578.1	1440.3	1217.8	1020.6	869.8	767.9	723.0
62.5°	1311.6	1304.2	1354.8	1406.9	1425.7	1312.4	1112.7	924.4	784.2	690.4	650.5
65°	1144.5	1137.1	1180.3	1234.1	1268.4	1178.7	999.4	824.9	697.8	612.2	577.9
67.5°	991.2	991.2	1018.1	1067.8	1109.4	1041.7	883.6	730.4	608.9	539.6	505.4
70°	847.7	846.9	866.5	901.5	949.6	895.0	766.2	630.9	524.9	463.8	433.7
72.5°	711.6	717.3	724.7	751.6	802.1	754.8	649.7	533.1	442.6	388.8	363.6
75°	582.0	581.2	591.8	615.4	652.1	617.1	533.1	437.7	361.1	317.1	295.1
77.5°	458.1	457.3	466.3	480.1	511.1	483.4	420.6	349.7	281.2	244.5	229.1
80°	341.5	341.5	349.7	357.0	379.9	357.8	313.8	261.7	206.2	177.7	165.5
82.5°	237.2	242.1	238.8	248.6	261.7	242.9	215.2	179.3	136.9	117.4	109.2
85°	144.3	148.4	144.3	152.4	158.1	141.8	128.0	106.8	79.1	66.0	60.3
87.5°	74.2	73.4	72.5	76.6	78.3	68.5	60.3	51.4	35.1	26.9	22.8
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°	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2	1983.2
2.5°	1962.0	1966.9	1959.6	1932.7	1922.1	1910.7	1905.8	1900.9	1909.9	1907.4
5°	1945.7	1940.0	1921.3	1887.0	1869.1	1850.4	1841.4	1835.7	1847.9	1845.5
7.5°	1923.7	1907.4	1879.7	1838.1	1815.3	1790.0	1777.8	1770.5	1778.6	1777.0
10°	1896.0	1869.1	1834.9	1785.2	1758.3	1730.5	1716.7	1706.1	1712.6	1711.8
12.5°	1861.0	1825.9	1784.3	1728.1	1700.4	1671.8	1659.6	1652.3	1660.4	1658.0
15°	1821.8	1779.4	1731.4	1674.3	1644.1	1618.0	1609.1	1603.4	1609.9	1609.9
17.5°	1778.6	1728.9	1675.9	1618.0	1589.5	1569.1	1560.2	1556.1	1559.4	1564.2
20°	1730.5	1675.1	1618.0	1561.8	1537.3	1516.2	1508.0	1503.9	1511.3	1508.0
22.5°	1677.6	1618.9	1559.4	1506.4	1484.4	1463.2	1455.0	1452.6	1460.7	1457.5
25°	1621.3	1557.7	1499.0	1450.9	1428.9	1411.0	1403.7	1401.2	1405.3	1409.4
27.5°	1568.3	1496.6	1438.7	1395.5	1376.0	1358.8	1352.3	1348.2	1351.5	1356.4
30°	1503.9	1434.6	1377.6	1337.6	1318.9	1302.6	1297.7	1294.4	1299.3	1303.4
32.5°	1443.6	1373.5	1316.4	1277.3	1261.0	1245.5	1244.7	1243.1	1248.8	1253.7
35°	1378.4	1309.9	1254.5	1217.8	1202.3	1189.3	1191.7	1194.2	1200.7	1206.4
37.5°	1312.4	1245.5	1192.5	1159.1	1144.5	1133.9	1141.2	1144.5	1153.4	1159.1
40°	1245.5	1178.7	1129.8	1099.6	1084.9	1080.1	1090.7	1098.0	1108.6	1113.5
42.5°	1177.1	1115.1	1066.2	1038.5	1026.3	1026.3	1040.1	1051.5	1063.8	1068.6
45°	1108.6	1048.3	1001.8	976.5	967.6	974.1	990.4	1005.1	1020.6	1025.4
47.5°	1039.3	980.6	938.2	915.4	910.5	920.3	940.7	960.2	978.2	984.7
50°	970.0	917.0	874.6	853.4	853.4	865.7	891.8	916.2	935.8	942.3
52.5°	900.7	850.2	807.0	791.5	794.8	811.9	842.0	867.3	889.3	895.8
55°	830.6	780.9	743.4	730.4	736.1	757.3	788.2	817.6	838.8	846.1
57.5°	761.3	714.1	679.8	669.2	677.4	701.0	736.9	762.2	784.2	790.7
60°	691.2	643.1	616.2	608.1	618.7	643.1	679.8	703.5	723.8	730.4
62.5°	621.9	577.1	553.5	546.1	558.4	584.5	620.3	641.5	657.0	663.5
65°	551.8	511.9	489.9	485.0	498.0	523.3	557.6	575.5	586.9	593.4
67.5°	482.6	448.3	427.9	423.9	437.7	460.6	492.3	502.1	512.7	519.2
70°	414.1	383.1	366.0	363.6	375.8	397.8	424.7	429.6	435.3	441.0
72.5°	346.4	322.0	304.9	304.0	315.5	333.4	355.4	356.2	357.8	363.6
75°	281.2	259.2	246.2	248.6	255.1	269.8	286.9	282.0	282.9	286.9
77.5°	218.5	200.5	191.6	193.2	198.1	208.7	220.1	214.4	211.1	215.2
80°	157.3	141.8	138.6	139.4	142.6	150.0	156.5	151.6	145.1	148.4
82.5°	103.5	93.7	92.1	92.9	95.4	99.4	101.1	93.7	92.1	94.6
85°	57.1	53.0	53.0	55.4	56.2	57.1	57.1	53.0	53.8	55.4
87.5°	22.8	22.8	25.3	27.7	26.1	22.8	19.6	13.0	13.0	15.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)