

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-28-30L840-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-28-30L840-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

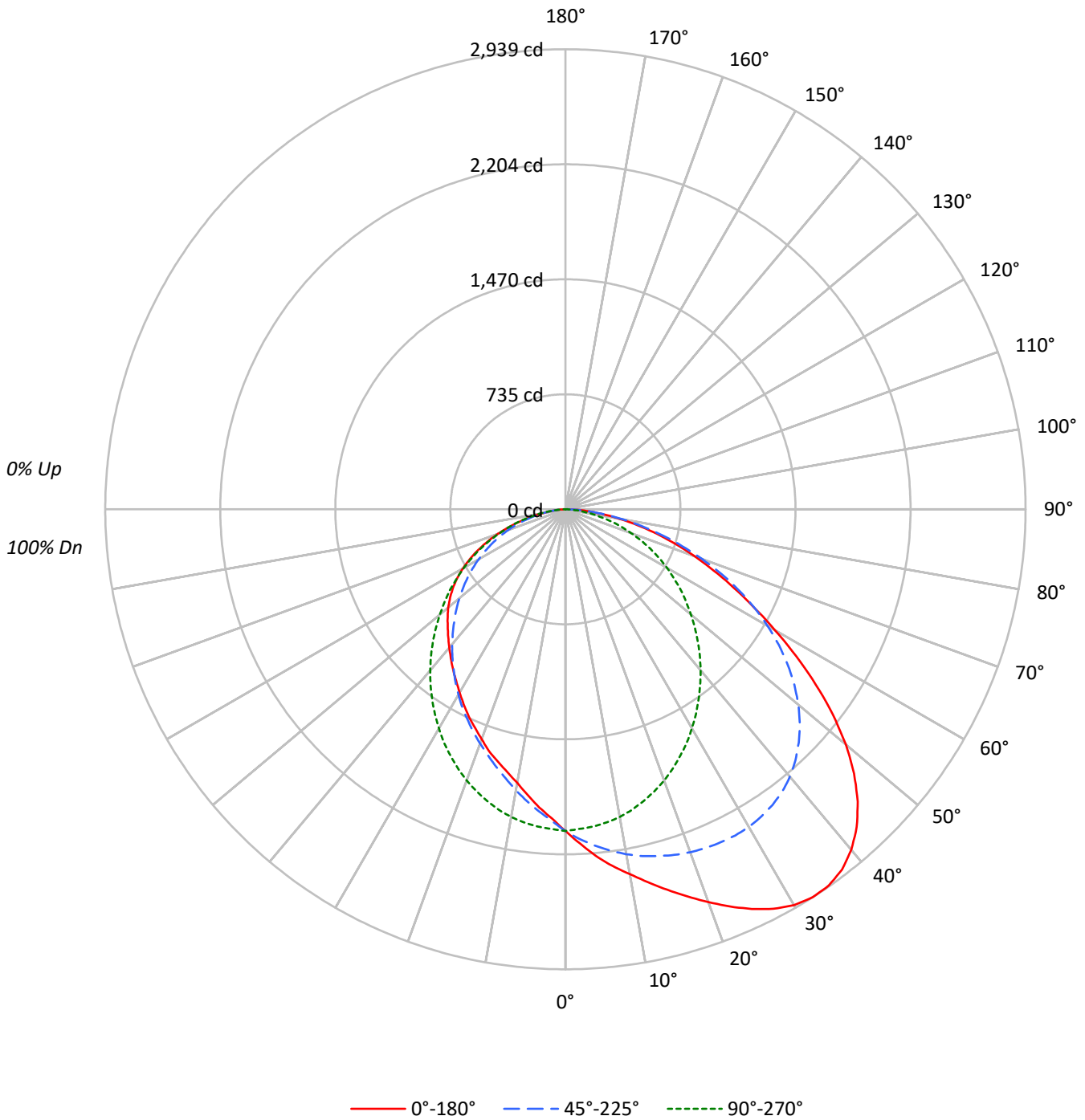
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6365.7 lumens  
Efficiency: N/A  
Efficacy: 97.9 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): 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°	19786	19786	19786
5°	21470	19666	18482
10°	23130	19513	17341
15°	25089	19229	16628
20°	27356	18892	16010
25°	29925	18448	15514
30°	32462	17963	15015
35°	34478	17433	14693
40°	35701	16880	14502
45°	35951	16296	14467
50°	35007	15675	14626
55°	32779	15115	14717
60°	29797	14426	14574
65°	27017	13643	14008
70°	24728	12650	12864
75°	22434	11375	11059
80°	19621	9508	8521
85°	16514	6904	6340



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.2	3.1
10°-20°	567.7	8.9
20°-30°	889.3	14.0
30°-40°	1114.9	17.5
40°-50°	1186.9	18.6
50°-60°	1071.5	16.8
60°-70°	793.2	12.5
70°-80°	435.2	6.8
80°-90°	111.7	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°	1652.2	26.0
0°-40°	2767.1	43.5
0°-60°	5025.5	78.9
0°-90°	6365.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6365.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2055	2055	2055	2055	2055	
5°	2222	2156	2035	1937	1912	216
15°	2517	2293	1929	1704	1668	718
25°	2817	2347	1737	1481	1460	1304
35°	2934	2306	1483	1246	1250	1829
45°	2640	2108	1197	1003	1063	2024
55°	1953	1734	900	763	877	1742
65°	1186	1221	599	516	615	1183
75°	603	639	306	264	297	641
85°	150	147	62	58	57	177
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°	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2
2.5°	2137.9	2133.7	2128.6	2127.0	2119.4	2109.2	2099.9	2099.9	2088.9	2062.8	2044.2
5°	2221.6	2214.8	2202.1	2192.0	2175.9	2156.5	2137.1	2125.3	2099.1	2059.4	2034.9
7.5°	2298.4	2290.0	2273.9	2254.5	2228.3	2199.6	2167.5	2142.2	2102.5	2049.2	2018.0
10°	2366.0	2358.4	2339.0	2315.3	2278.2	2237.6	2190.3	2152.3	2098.2	2032.3	1996.0
12.5°	2440.3	2432.7	2405.7	2373.6	2322.9	2268.9	2206.4	2154.0	2087.3	2007.9	1966.5
15°	2517.2	2507.1	2476.7	2433.6	2366.0	2293.4	2216.5	2148.9	2069.5	1978.3	1929.3
17.5°	2593.2	2583.1	2545.1	2490.2	2405.7	2315.3	2220.7	2137.1	2044.2	1942.0	1888.8
20°	2670.1	2660.0	2611.8	2542.5	2440.3	2331.4	2219.9	2119.4	2013.8	1900.6	1844.0
22.5°	2747.0	2735.1	2676.9	2592.4	2469.1	2342.4	2210.6	2094.9	1975.8	1853.3	1792.5
25°	2817.1	2805.3	2741.1	2641.4	2499.5	2347.4	2194.5	2061.1	1933.5	1800.9	1736.7
27.5°	2877.9	2863.5	2796.8	2687.0	2525.7	2349.1	2173.4	2023.1	1884.5	1744.3	1679.3
30°	2920.1	2907.5	2836.5	2719.1	2540.9	2343.2	2146.4	1978.3	1827.9	1683.5	1615.9
32.5°	2938.7	2927.7	2857.6	2734.3	2543.4	2328.0	2113.4	1928.5	1768.8	1619.3	1550.9
35°	2933.6	2922.7	2855.9	2731.8	2535.8	2306.0	2072.1	1871.9	1705.5	1552.6	1483.3
37.5°	2901.5	2888.9	2828.1	2709.0	2513.8	2273.9	2024.7	1810.2	1637.0	1484.1	1414.0
40°	2840.7	2828.1	2775.7	2665.9	2476.7	2230.9	1970.7	1744.3	1566.9	1412.3	1343.1
42.5°	2753.7	2740.2	2698.8	2598.3	2423.4	2174.3	1909.0	1674.2	1492.6	1343.1	1270.4
45°	2640.5	2627.0	2599.1	2513.8	2354.2	2107.5	1838.9	1598.2	1414.9	1264.5	1196.9
47.5°	2500.3	2488.5	2475.0	2409.1	2268.9	2030.7	1760.4	1517.1	1333.8	1191.0	1121.8
50°	2337.3	2325.5	2329.7	2284.9	2170.0	1942.0	1674.2	1431.8	1250.2	1109.1	1046.6
52.5°	2152.3	2143.0	2163.3	2143.9	2055.2	1843.1	1582.1	1343.9	1164.8	1031.4	971.4
55°	1952.9	1942.8	1981.7	1987.6	1926.8	1734.2	1477.4	1252.7	1078.7	955.4	900.5
57.5°	1747.7	1739.2	1789.1	1817.0	1786.5	1616.8	1371.8	1158.9	990.0	876.0	821.0
60°	1547.5	1540.7	1593.1	1638.7	1635.3	1492.6	1262.0	1057.6	901.3	795.7	749.2
62.5°	1359.1	1351.5	1403.9	1458.0	1477.4	1360.0	1153.0	957.9	812.6	715.5	674.1
65°	1186.0	1178.4	1223.1	1278.9	1314.4	1221.4	1035.6	854.8	723.1	634.4	598.9
67.5°	1027.2	1027.2	1055.0	1106.6	1149.6	1079.5	915.7	756.9	631.0	559.2	523.7
70°	878.5	877.6	897.9	934.2	984.1	927.5	794.0	653.8	544.0	480.6	449.4
72.5°	737.4	743.3	750.9	778.8	831.2	782.2	673.2	552.4	458.7	402.9	376.7
75°	603.1	602.3	613.3	637.7	675.8	639.4	552.4	453.6	374.2	328.6	305.8
77.5°	474.7	473.9	483.2	497.5	529.6	500.9	435.9	362.4	291.4	253.4	237.4
80°	353.9	353.9	362.4	370.0	393.6	370.8	325.2	271.1	213.7	184.1	171.5
82.5°	245.8	250.9	247.5	257.6	271.1	251.7	223.0	185.8	141.9	121.6	113.2
85°	149.5	153.7	149.5	158.0	163.9	147.0	132.6	110.7	81.9	68.4	62.5
87.5°	76.9	76.0	75.2	79.4	81.1	71.0	62.5	53.2	36.3	27.9	23.7
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°	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2	2055.2
2.5°	2033.2	2038.3	2030.7	2002.8	1991.8	1980.0	1974.9	1969.8	1979.1	1976.6
5°	2016.3	2010.4	1991.0	1955.5	1936.9	1917.5	1908.2	1902.3	1914.9	1912.4
7.5°	1993.5	1976.6	1947.9	1904.8	1881.1	1855.0	1842.3	1834.7	1843.1	1841.4
10°	1964.8	1936.9	1901.4	1849.9	1822.0	1793.3	1778.9	1768.0	1774.7	1773.9
12.5°	1928.5	1892.1	1849.0	1790.8	1762.0	1732.5	1719.8	1712.2	1720.7	1718.1
15°	1887.9	1844.0	1794.1	1735.0	1703.8	1676.7	1667.4	1661.5	1668.3	1668.3
17.5°	1843.1	1791.6	1736.7	1676.7	1647.2	1626.0	1616.8	1612.5	1615.9	1621.0
20°	1793.3	1735.9	1676.7	1618.4	1593.1	1571.1	1562.7	1558.5	1566.1	1562.7
22.5°	1738.4	1677.6	1615.9	1561.0	1538.2	1516.2	1507.8	1505.3	1513.7	1510.3
25°	1680.1	1614.2	1553.4	1503.6	1480.8	1462.2	1454.6	1452.0	1456.3	1460.5
27.5°	1625.2	1550.9	1490.9	1446.1	1425.9	1408.1	1401.4	1397.1	1400.5	1405.6
30°	1558.5	1486.7	1427.5	1386.2	1366.7	1349.8	1344.8	1341.4	1346.5	1350.7
32.5°	1496.0	1423.3	1364.2	1323.6	1306.8	1290.7	1289.9	1288.2	1294.1	1299.1
35°	1428.4	1357.4	1300.0	1262.0	1245.9	1232.4	1235.0	1237.5	1244.2	1250.2
37.5°	1360.0	1290.7	1235.8	1201.2	1186.0	1175.0	1182.6	1186.0	1195.3	1201.2
40°	1290.7	1221.4	1170.8	1139.5	1124.3	1119.2	1130.2	1137.8	1148.8	1153.9
42.5°	1219.7	1155.6	1104.9	1076.1	1063.5	1063.5	1077.8	1089.7	1102.3	1107.4
45°	1148.8	1086.3	1038.1	1012.0	1002.7	1009.4	1026.3	1041.5	1057.6	1062.6
47.5°	1077.0	1016.2	972.3	948.6	943.5	953.7	974.8	995.1	1013.6	1020.4
50°	1005.2	950.3	906.4	884.4	884.4	897.1	924.1	949.4	969.7	976.5
52.5°	933.4	881.0	836.3	820.2	823.6	841.3	872.6	898.8	921.6	928.3
55°	860.7	809.2	770.4	756.9	762.8	784.7	816.8	847.2	869.2	876.8
57.5°	789.0	740.0	704.5	693.5	701.9	726.4	763.6	789.8	812.6	819.4
60°	716.3	666.5	638.6	630.1	641.1	666.5	704.5	729.0	750.1	756.9
62.5°	644.5	598.0	573.6	565.9	578.6	605.7	642.8	664.8	680.8	687.6
65°	571.9	530.5	507.7	502.6	516.1	542.3	577.8	596.4	608.2	614.9
67.5°	500.1	464.6	443.5	439.2	453.6	477.3	510.2	520.3	531.3	538.1
70°	429.1	397.0	379.3	376.7	389.4	412.2	440.1	445.2	451.1	457.0
72.5°	359.0	333.7	315.9	315.1	326.9	345.5	368.3	369.1	370.8	376.7
75°	291.4	268.6	255.1	257.6	264.4	279.6	297.3	292.3	293.1	297.3
77.5°	226.4	207.8	198.5	200.2	205.3	216.2	228.1	222.2	218.8	223.0
80°	163.0	147.0	143.6	144.4	147.8	155.4	162.2	157.1	150.4	153.7
82.5°	107.3	97.1	95.5	96.3	98.8	103.1	104.7	97.1	95.5	98.0
85°	59.1	54.9	54.9	57.4	58.3	59.1	59.1	54.9	55.8	57.4
87.5°	23.7	23.7	26.2	28.7	27.0	23.7	20.3	13.5	13.5	16.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)