

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-28-30L850-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-28-30L850-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

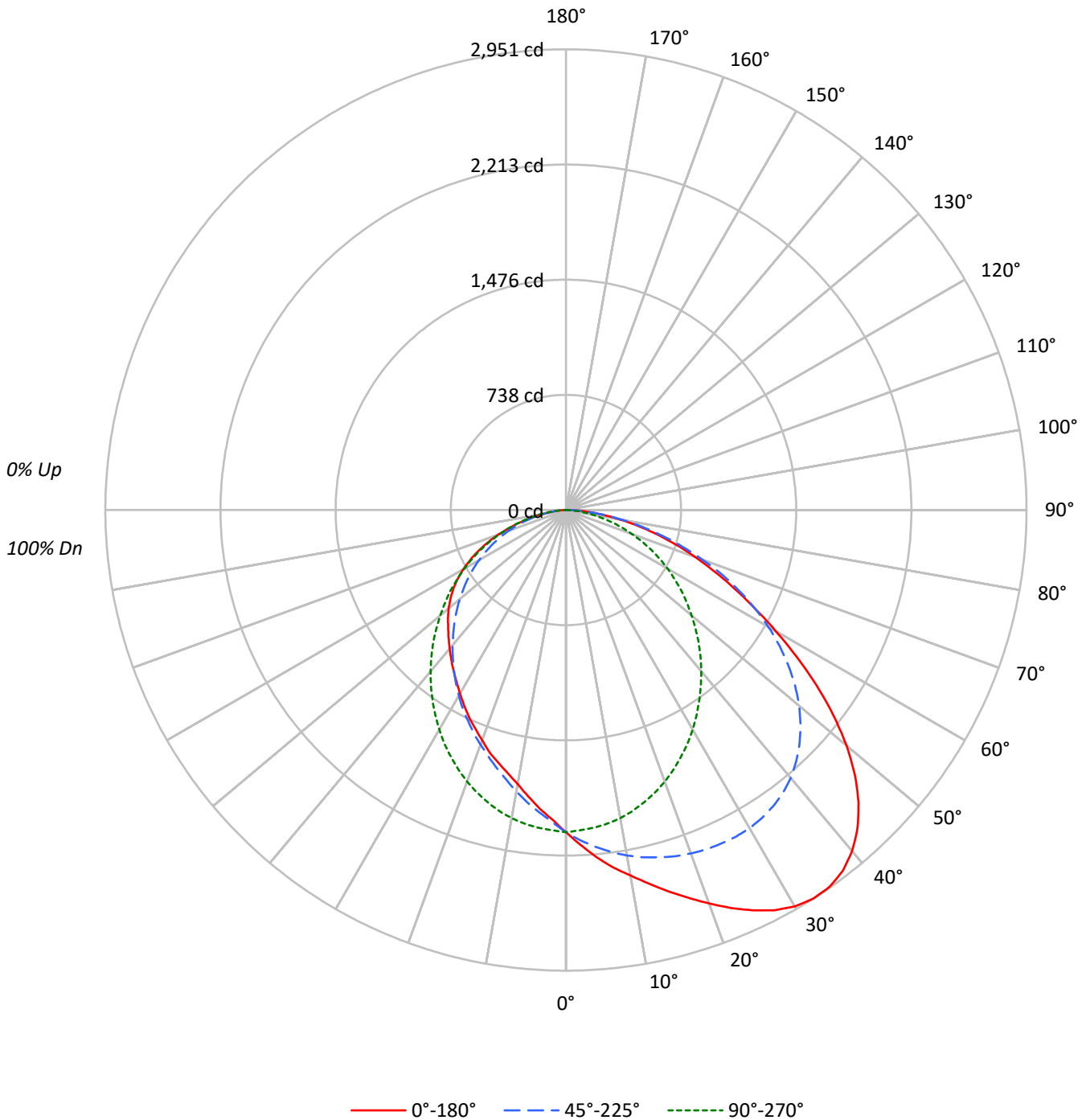
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6392.4 lumens
Efficiency: N/A
Efficacy: 98.3 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_{in}): 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

TEST NUMBER: P
CATALOG NUMBER: 4APN-28-30L850-UNV-ASY

Luminous Intensity Polar Plot





TEST NUMBER: P
 CATALOG NUMBER: 4APN-28-30L850-UNV-ASY

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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°	19869	19869	19869
5°	21560	19748	18559
10°	23226	19595	17414
15°	25194	19310	16698
20°	27470	18971	16078
25°	30050	18526	15579
30°	32599	18039	15078
35°	34624	17506	14754
40°	35852	16950	14562
45°	36102	16365	14529
50°	35154	15741	14687
55°	32917	15177	14779
60°	29922	14487	14634
65°	27129	13700	14067
70°	24833	12703	12917
75°	22527	11423	11107
80°	19704	9547	8560
85°	16580	6937	6374



TEST NUMBER: P
 CATALOG NUMBER: 4APN-28-30L850-UNV-ASY

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.0	3.1
10°-20°	570.1	8.9
20°-30°	893.1	14.0
30°-40°	1119.6	17.5
40°-50°	1191.9	18.6
50°-60°	1076.0	16.8
60°-70°	796.5	12.5
70°-80°	437.1	6.8
80°-90°	112.2	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°	1659.1	26.0
0°-40°	2778.7	43.5
0°-60°	5046.6	78.9
0°-90°	6392.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6392.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2064	2064	2064	2064	2064	
5°	2231	2166	2043	1945	1920	217
15°	2528	2303	1937	1711	1675	721
25°	2829	2357	1744	1487	1467	1309
35°	2946	2316	1490	1251	1255	1837
45°	2652	2116	1202	1007	1067	2033
55°	1961	1741	904	766	880	1749
65°	1191	1227	601	518	618	1188
75°	606	642	307	266	299	644
85°	150	148	63	58	58	177
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-28-30L850-UNV-ASY

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8
2.5°	2146.9	2142.7	2137.6	2135.9	2128.2	2118.1	2108.7	2108.7	2097.7	2071.4	2052.8
5°	2230.9	2224.1	2211.4	2201.2	2185.1	2165.6	2146.1	2134.2	2107.9	2068.0	2043.4
7.5°	2308.1	2299.6	2283.5	2264.0	2237.7	2208.8	2176.6	2151.2	2111.3	2057.8	2026.5
10°	2375.9	2368.3	2348.8	2325.0	2287.7	2247.0	2199.5	2161.3	2107.0	2040.9	2004.4
12.5°	2450.6	2442.9	2415.8	2383.6	2332.7	2278.4	2215.6	2163.0	2096.0	2016.3	1974.7
15°	2527.8	2517.6	2487.1	2443.8	2375.9	2303.0	2225.8	2157.9	2078.2	1986.6	1937.4
17.5°	2604.1	2593.9	2555.8	2500.6	2415.8	2325.0	2230.0	2146.1	2052.8	1950.1	1896.7
20°	2681.3	2671.1	2622.8	2553.2	2450.6	2341.2	2229.2	2128.2	2022.2	1908.6	1851.7
22.5°	2758.5	2746.6	2688.1	2603.3	2479.4	2352.2	2219.9	2103.6	1984.0	1861.1	1800.0
25°	2828.9	2817.0	2752.6	2652.5	2510.0	2357.3	2203.7	2069.7	1941.6	1808.5	1744.0
27.5°	2890.0	2875.6	2808.5	2698.3	2536.3	2359.0	2182.5	2031.5	1892.4	1751.6	1686.3
30°	2932.4	2919.7	2848.4	2730.5	2551.5	2353.0	2155.4	1986.6	1835.6	1690.6	1622.7
32.5°	2951.0	2940.0	2869.6	2745.8	2554.1	2337.8	2122.3	1936.5	1776.2	1626.1	1557.4
35°	2946.0	2934.9	2867.9	2743.2	2546.4	2315.7	2080.7	1879.7	1712.6	1559.1	1489.5
37.5°	2913.7	2901.0	2839.9	2720.3	2524.4	2283.5	2033.2	1817.8	1643.9	1490.4	1420.0
40°	2852.7	2839.9	2787.3	2677.1	2487.1	2240.2	1979.0	1751.6	1573.5	1418.3	1348.7
42.5°	2765.3	2751.7	2710.1	2609.2	2433.6	2183.4	1917.0	1681.2	1498.9	1348.7	1275.8
45°	2651.6	2638.0	2610.1	2524.4	2364.1	2116.4	1846.6	1604.9	1420.8	1269.8	1202.0
47.5°	2510.8	2498.9	2485.4	2419.2	2278.4	2039.2	1767.7	1523.4	1339.4	1196.0	1126.5
50°	2347.1	2335.2	2339.5	2294.5	2179.1	1950.1	1681.2	1437.8	1255.4	1113.7	1051.0
52.5°	2161.3	2152.0	2172.4	2152.8	2063.8	1850.9	1588.8	1349.6	1169.7	1035.7	975.5
55°	1961.1	1951.0	1990.0	1995.9	1934.8	1741.4	1483.6	1257.9	1083.2	959.4	904.2
57.5°	1755.0	1746.5	1796.6	1824.6	1794.0	1623.5	1377.6	1163.8	994.1	879.6	824.5
60°	1554.0	1547.2	1599.8	1645.6	1642.2	1498.9	1267.3	1062.0	905.1	799.0	752.4
62.5°	1364.8	1357.2	1409.8	1464.1	1483.6	1365.7	1157.9	961.9	816.0	718.5	676.9
65°	1190.9	1183.3	1228.3	1284.2	1319.9	1226.6	1039.9	858.4	726.1	637.0	601.4
67.5°	1031.5	1031.5	1059.5	1111.2	1154.5	1084.1	919.5	760.0	633.6	561.5	525.9
70°	882.2	881.3	901.7	938.2	988.2	931.4	797.4	656.5	546.3	482.7	451.3
72.5°	740.5	746.5	754.1	782.1	834.7	785.5	676.1	554.8	460.6	404.6	378.3
75°	605.6	604.8	615.8	640.4	678.6	642.1	554.8	455.5	375.8	330.0	307.1
77.5°	476.7	475.9	485.2	499.6	531.9	503.0	437.7	363.9	292.6	254.5	238.4
80°	355.4	355.4	363.9	371.5	395.3	372.4	326.6	272.3	214.6	184.9	172.2
82.5°	246.8	251.9	248.5	258.7	272.3	252.8	223.9	186.6	142.5	122.1	113.7
85°	150.1	154.4	150.1	158.6	164.6	147.6	133.2	111.1	82.3	68.7	62.8
87.5°	77.2	76.3	75.5	79.7	81.4	71.3	62.8	53.4	36.5	28.0	23.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P

CATALOG NUMBER: 4APN-28-30L850-UNV-ASY

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8	2063.8
2.5°	2041.7	2046.8	2039.2	2011.2	2000.2	1988.3	1983.2	1978.1	1987.4	1984.9
5°	2024.8	2018.8	1999.3	1963.7	1945.0	1925.5	1916.2	1910.2	1923.0	1920.4
7.5°	2001.9	1984.9	1956.1	1912.8	1889.0	1862.7	1850.0	1842.4	1850.9	1849.2
10°	1973.0	1945.0	1909.4	1857.7	1829.7	1800.8	1786.4	1775.4	1782.2	1781.3
12.5°	1936.5	1900.1	1856.8	1798.3	1769.4	1739.8	1727.0	1719.4	1727.9	1725.3
15°	1895.8	1851.7	1801.7	1742.3	1710.9	1683.8	1674.4	1668.5	1675.3	1675.3
17.5°	1850.9	1799.1	1744.0	1683.8	1654.1	1632.9	1623.5	1619.3	1622.7	1627.8
20°	1800.8	1743.1	1683.8	1625.2	1599.8	1577.7	1569.3	1565.0	1572.6	1569.3
22.5°	1745.7	1684.6	1622.7	1567.6	1544.7	1522.6	1514.1	1511.6	1520.1	1516.7
25°	1687.2	1621.0	1559.9	1509.9	1487.0	1468.3	1460.7	1458.1	1462.4	1466.6
27.5°	1632.0	1557.4	1497.2	1452.2	1431.8	1414.0	1407.2	1403.0	1406.4	1411.5
30°	1565.0	1492.9	1433.5	1392.0	1372.5	1355.5	1350.4	1347.0	1352.1	1356.3
32.5°	1502.2	1429.3	1369.9	1329.2	1312.2	1296.1	1295.3	1293.6	1299.5	1304.6
35°	1434.4	1363.1	1305.5	1267.3	1251.2	1237.6	1240.1	1242.7	1249.5	1255.4
37.5°	1365.7	1296.1	1241.0	1206.2	1190.9	1179.9	1187.5	1190.9	1200.3	1206.2
40°	1296.1	1226.6	1175.7	1144.3	1129.0	1123.9	1135.0	1142.6	1153.6	1158.7
42.5°	1224.9	1160.4	1109.5	1080.7	1067.9	1067.9	1082.4	1094.2	1107.0	1112.1
45°	1153.6	1090.8	1042.5	1016.2	1006.9	1013.7	1030.6	1045.9	1062.0	1067.1
47.5°	1081.5	1020.4	976.3	952.6	947.5	957.7	978.9	999.2	1017.9	1024.7
50°	1009.4	954.3	910.2	888.1	888.1	900.8	928.0	953.4	973.8	980.6
52.5°	937.3	884.7	839.8	823.6	827.0	844.9	876.2	902.5	925.4	932.2
55°	864.4	812.6	773.6	760.0	766.0	788.0	820.3	850.8	872.8	880.5
57.5°	792.3	743.1	707.4	696.4	704.9	729.5	766.8	793.1	816.0	822.8
60°	719.3	669.3	641.3	632.8	643.8	669.3	707.4	732.0	753.2	760.0
62.5°	647.2	600.6	576.0	568.3	581.0	608.2	645.5	667.6	683.7	690.5
65°	574.3	532.7	509.8	504.7	518.3	544.6	580.2	598.9	610.7	617.5
67.5°	502.2	466.5	445.3	441.1	455.5	479.3	512.3	522.5	533.5	540.3
70°	430.9	398.7	380.9	378.3	391.0	413.9	441.9	447.0	453.0	458.9
72.5°	360.5	335.1	317.2	316.4	328.3	346.9	369.8	370.7	372.4	378.3
75°	292.6	269.7	256.2	258.7	265.5	280.8	298.6	293.5	294.3	298.6
77.5°	227.3	208.7	199.3	201.0	206.1	217.2	229.0	223.1	219.7	223.9
80°	163.7	147.6	144.2	145.1	148.4	156.1	162.9	157.8	151.0	154.4
82.5°	107.7	97.5	95.9	96.7	99.2	103.5	105.2	97.5	95.9	98.4
85°	59.4	55.1	55.1	57.7	58.5	59.4	59.4	55.1	56.0	57.7
87.5°	23.8	23.8	26.3	28.8	27.1	23.8	20.4	13.6	13.6	16.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)