

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: P709169

Luminaire Tested: **4APN-35-37L840-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709169
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-35-37L840-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

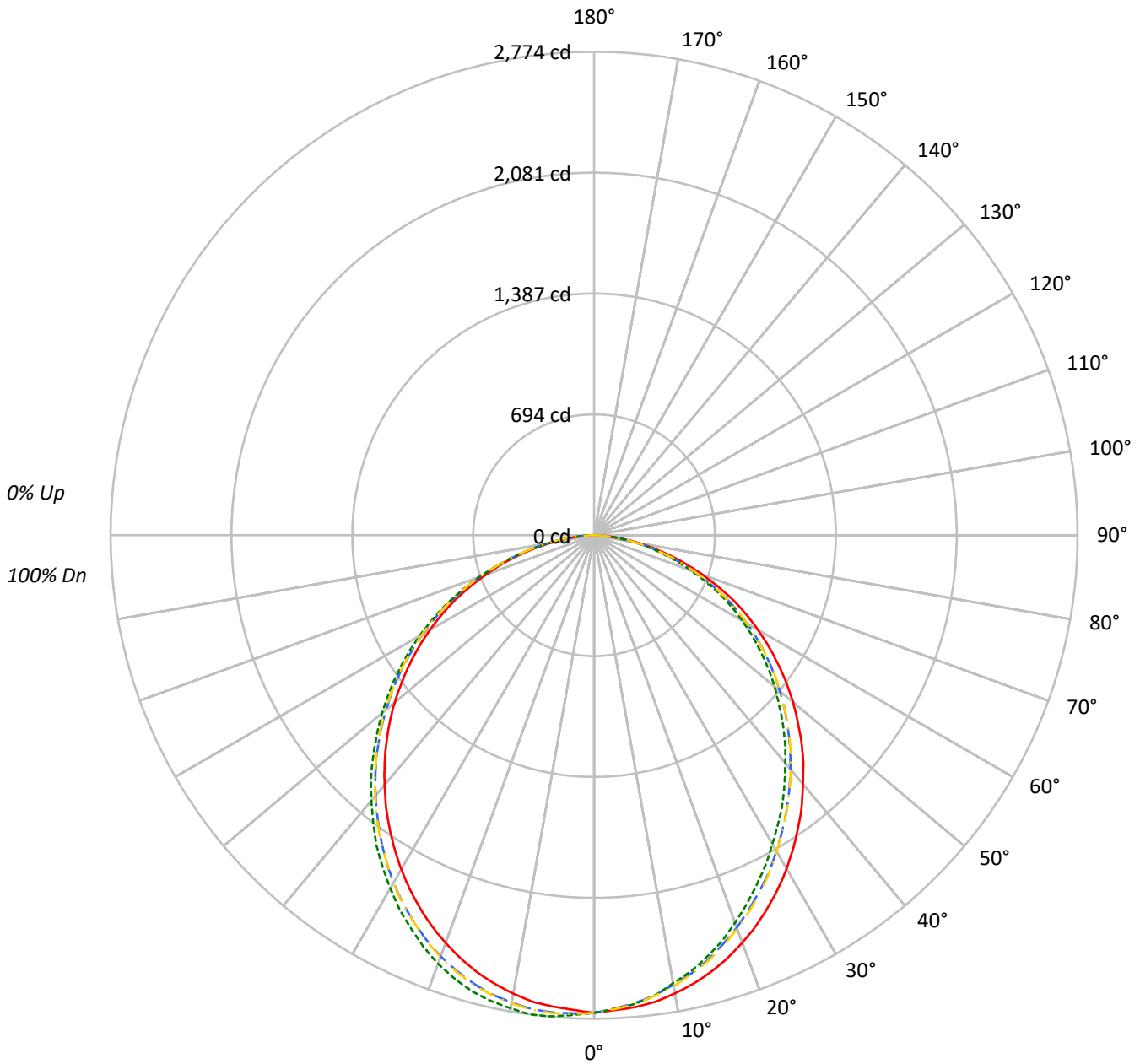
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7243.4 lumens
Efficiency: N/A
Efficacy: 89.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.19 / 1.32
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 81
Input Voltage (V): 120
Input Current (Ain): 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



— 0°-180° - - 45°-225° - - - 90°-270° - · - 135°-315°



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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	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	62	62	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	41	41	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	36	36	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	32	32	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	29	29	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	25282	25282	25282	25282
5°	25170	25006	25140	25662
10°	25008	24451	25023	25822
15°	24775	23915	24790	25867
20°	24424	23223	24440	25688
25°	23997	22490	24046	25324
30°	23536	21787	23571	24908
35°	22998	21222	23052	24503
40°	22441	20542	22519	23934
45°	21961	19987	21982	23388
50°	21387	19400	21433	22772
55°	20707	18765	20784	22129
60°	20041	18111	20071	21318
65°	19216	17319	19216	20375
70°	17839	16015	17796	18926
75°	16177	14512	16059	17036
80°	13936	12481	13681	14616
85°	10734	9538	10395	11750



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.8	3.6
10°-20°	732.7	10.1
20°-30°	1084.8	15.0
30°-40°	1272.7	17.6
40°-50°	1289.8	17.8
50°-60°	1144.8	15.8
60°-70°	859.4	11.9
70°-80°	477.2	6.6
80°-90°	123.2	1.7
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°	2076.2	28.7
0°-40°	3348.9	46.2
0°-60°	5783.5	79.8
0°-90°	7243.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7243.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2740	2740	2740	2740	2740	
5°	2718	2700	2714	2771	2718	258
15°	2594	2504	2595	2708	2594	731
25°	2357	2209	2362	2488	2357	1086
35°	2042	1884	2047	2176	2042	1278
45°	1683	1532	1685	1792	1683	1297
55°	1287	1167	1292	1376	1287	1152
65°	880	793	880	933	880	868
75°	454	407	450	478	454	482
85°	101	90	98	111	101	122
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2
2.5°	2727.4	2733.8	2741.8	2733.8	2720.9	2714.5	2714.5	2712.9	2717.7	2719.3	2717.7
5°	2717.7	2720.9	2722.5	2712.9	2698.4	2690.4	2687.1	2685.5	2692.0	2700.0	2692.0
7.5°	2700.0	2698.4	2696.8	2683.9	2667.8	2656.6	2651.7	2650.1	2656.6	2664.6	2658.2
10°	2669.4	2667.8	2663.0	2646.9	2626.0	2611.5	2606.7	2601.9	2606.7	2609.9	2606.7
12.5°	2635.6	2629.2	2622.8	2605.1	2582.5	2566.5	2558.4	2552.0	2558.4	2563.2	2560.0
15°	2593.8	2584.2	2572.9	2553.6	2531.1	2513.4	2503.7	2497.3	2502.1	2503.7	2503.7
17.5°	2543.9	2532.7	2521.4	2497.3	2469.9	2450.6	2439.3	2431.3	2437.7	2440.9	2440.9
20°	2487.6	2474.7	2460.3	2434.5	2405.5	2384.6	2371.8	2362.1	2363.7	2365.3	2365.3
22.5°	2426.5	2410.4	2392.7	2365.3	2334.7	2312.2	2299.4	2288.1	2288.1	2289.7	2289.7
25°	2357.3	2339.6	2321.9	2294.5	2262.3	2238.2	2222.1	2210.9	2210.9	2209.2	2212.5
27.5°	2286.5	2267.2	2249.5	2220.5	2186.7	2162.6	2146.5	2135.2	2133.6	2132.0	2135.2
30°	2209.2	2186.7	2167.4	2136.8	2104.7	2080.5	2064.4	2051.6	2048.3	2045.1	2048.3
32.5°	2127.2	2106.3	2085.3	2053.2	2021.0	1996.8	1980.8	1967.9	1966.3	1964.7	1967.9
35°	2041.9	2019.4	2000.1	1969.5	1937.3	1913.2	1895.5	1884.2	1884.2	1884.2	1884.2
37.5°	1958.2	1935.7	1914.8	1884.2	1852.0	1827.9	1810.2	1798.9	1795.7	1794.1	1795.7
40°	1863.3	1844.0	1824.7	1795.7	1763.5	1739.4	1724.9	1712.0	1708.8	1705.6	1710.4
42.5°	1776.4	1757.1	1736.2	1708.8	1676.6	1652.5	1636.4	1625.2	1623.5	1621.9	1623.5
45°	1683.1	1660.6	1639.6	1613.9	1584.9	1562.4	1546.3	1535.0	1533.4	1531.8	1533.4
47.5°	1584.9	1567.2	1549.5	1523.8	1494.8	1472.3	1457.8	1444.9	1441.7	1438.5	1441.7
50°	1490.0	1470.7	1453.0	1428.8	1401.5	1380.6	1367.7	1356.4	1353.2	1351.6	1353.2
52.5°	1390.2	1372.5	1356.4	1332.3	1309.8	1288.9	1274.4	1264.7	1263.1	1261.5	1263.1
55°	1287.3	1271.2	1256.7	1237.4	1214.8	1195.5	1182.7	1171.4	1169.8	1166.6	1169.8
57.5°	1187.5	1174.6	1160.1	1139.2	1118.3	1100.6	1089.3	1079.7	1078.1	1076.5	1078.1
60°	1086.1	1073.2	1060.4	1042.7	1021.8	1004.1	994.4	986.4	983.1	981.5	983.1
62.5°	984.7	971.9	962.2	944.5	925.2	910.7	901.1	893.0	889.8	888.2	889.8
65°	880.2	868.9	857.6	841.5	827.1	815.8	806.1	798.1	794.9	793.3	793.3
67.5°	769.1	759.5	751.4	737.0	720.9	709.6	699.9	693.5	690.3	688.7	690.3
70°	661.3	653.3	645.2	634.0	621.1	611.4	605.0	598.6	595.4	593.7	593.7
72.5°	558.3	551.9	543.9	534.2	524.6	514.9	508.5	503.6	500.4	498.8	498.8
75°	453.8	447.3	444.1	436.1	426.4	420.0	413.5	410.3	407.1	407.1	407.1
77.5°	355.6	352.4	349.2	341.1	334.7	328.2	323.4	321.8	318.6	318.6	318.6
80°	262.3	260.7	259.1	254.2	247.8	241.4	238.1	236.5	234.9	234.9	234.9
82.5°	177.0	177.0	175.4	170.6	165.7	164.1	160.9	159.3	159.3	159.3	159.3
85°	101.4	101.4	101.4	99.8	96.5	96.5	93.3	91.7	90.1	90.1	90.1
87.5°	40.2	41.8	43.4	41.8	38.6	38.6	38.6	38.6	38.6	38.6	38.6
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2
2.5°	2712.9	2716.1	2717.7	2725.8	2735.4	2741.8	2733.8	2725.8	2738.6	2753.1	2753.1
5°	2685.5	2688.7	2693.6	2703.2	2716.1	2724.1	2720.9	2714.5	2733.8	2749.9	2751.5
7.5°	2651.7	2655.0	2661.4	2671.0	2687.1	2698.4	2698.4	2700.0	2717.7	2737.0	2741.8
10°	2601.9	2609.9	2619.6	2634.0	2650.1	2664.6	2669.4	2671.0	2693.6	2714.5	2720.9
12.5°	2555.2	2563.2	2572.9	2589.0	2608.3	2624.4	2629.2	2635.6	2659.8	2683.9	2693.6
15°	2502.1	2510.1	2521.4	2537.5	2558.4	2576.1	2585.8	2595.4	2619.6	2645.3	2656.6
17.5°	2439.3	2447.4	2458.6	2478.0	2502.1	2523.0	2534.3	2545.5	2572.9	2600.2	2611.5
20°	2365.3	2376.6	2392.7	2412.0	2439.3	2463.5	2476.3	2489.2	2518.2	2545.5	2558.4
22.5°	2289.7	2302.6	2320.3	2342.8	2371.8	2397.5	2413.6	2429.7	2458.6	2486.0	2500.5
25°	2214.1	2228.6	2246.3	2270.4	2297.7	2323.5	2342.8	2362.1	2391.1	2420.0	2434.5
27.5°	2136.8	2149.7	2167.4	2191.5	2222.1	2249.5	2268.8	2289.7	2318.7	2349.2	2363.7
30°	2051.6	2066.0	2082.1	2106.3	2140.1	2170.6	2189.9	2212.5	2241.4	2272.0	2286.5
32.5°	1969.5	1982.4	1998.5	2022.6	2056.4	2088.6	2109.5	2132.0	2161.0	2191.5	2204.4
35°	1884.2	1897.1	1914.8	1938.9	1972.7	2003.3	2024.2	2046.7	2074.1	2103.0	2117.5
37.5°	1800.5	1813.4	1831.1	1855.2	1887.4	1918.0	1938.9	1961.4	1988.8	2016.2	2029.0
40°	1713.7	1726.5	1741.0	1765.1	1797.3	1827.9	1847.2	1869.7	1897.1	1926.0	1938.9
42.5°	1625.2	1638.0	1655.7	1679.9	1710.4	1737.8	1758.7	1779.6	1805.4	1831.1	1844.0
45°	1536.7	1547.9	1565.6	1588.1	1617.1	1642.9	1663.8	1684.7	1708.8	1733.0	1745.8
47.5°	1444.9	1457.8	1472.3	1494.8	1523.8	1551.1	1572.1	1591.4	1613.9	1638.0	1649.3
50°	1356.4	1367.7	1382.2	1403.1	1430.5	1456.2	1473.9	1493.2	1514.1	1536.7	1546.3
52.5°	1264.7	1276.0	1290.5	1311.4	1333.9	1358.0	1374.1	1391.8	1412.8	1433.7	1443.3
55°	1171.4	1179.4	1192.3	1211.6	1235.8	1258.3	1274.4	1292.1	1309.8	1327.5	1338.7
57.5°	1079.7	1089.3	1102.2	1119.9	1140.8	1161.7	1176.2	1190.7	1208.4	1226.1	1234.2
60°	986.4	994.4	1004.1	1020.1	1041.1	1058.8	1073.2	1087.7	1102.2	1118.3	1126.3
62.5°	891.4	899.5	909.1	925.2	942.9	959.0	971.9	984.7	997.6	1012.1	1020.1
65°	796.5	804.5	814.2	825.4	839.9	854.4	867.3	880.2	889.8	899.5	907.5
67.5°	693.5	701.6	711.2	720.9	733.7	748.2	757.9	769.1	778.8	790.0	794.9
70°	597.0	603.4	613.1	621.1	632.4	642.0	650.1	659.7	666.2	675.8	683.9
72.5°	502.0	508.5	516.5	524.6	531.0	539.0	548.7	556.7	564.8	574.4	577.7
75°	410.3	413.5	420.0	426.4	432.8	439.3	444.1	450.5	457.0	463.4	468.2
77.5°	320.2	323.4	329.9	334.7	339.5	344.3	347.6	350.8	357.2	362.0	366.9
80°	234.9	238.1	243.0	247.8	252.6	257.5	257.5	257.5	265.5	271.9	273.5
82.5°	159.3	160.9	164.1	167.3	170.6	173.8	173.8	172.2	177.0	181.8	185.0
85°	91.7	93.3	96.5	96.5	98.2	98.2	98.2	98.2	101.4	106.2	109.4
87.5°	37.0	37.0	38.6	38.6	40.2	40.2	38.6	37.0	40.2	45.1	46.7
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2	2740.2
2.5°	2746.7	2745.1	2749.9	2751.5	2754.7	2754.7	2756.3	2756.3	2753.1	2748.3	2749.9
5°	2748.3	2748.3	2753.1	2757.9	2764.4	2770.8	2766.0	2761.2	2757.9	2753.1	2751.5
7.5°	2740.2	2743.5	2748.3	2756.3	2764.4	2774.0	2767.6	2761.2	2753.1	2746.7	2743.5
10°	2720.9	2724.1	2732.2	2740.2	2748.3	2756.3	2749.9	2743.5	2737.0	2729.0	2725.8
12.5°	2696.8	2701.6	2711.3	2719.3	2727.4	2737.0	2729.0	2720.9	2712.9	2704.8	2700.0
15°	2661.4	2667.8	2679.1	2688.7	2700.0	2708.1	2701.6	2695.2	2685.5	2674.3	2666.2
17.5°	2616.3	2626.0	2637.3	2648.5	2658.2	2666.2	2661.4	2655.0	2643.7	2630.8	2621.2
20°	2566.5	2576.1	2585.8	2597.0	2608.3	2616.3	2609.9	2601.9	2590.6	2580.9	2571.3
22.5°	2508.5	2518.2	2529.4	2539.1	2548.8	2556.8	2548.8	2539.1	2529.4	2519.8	2510.1
25°	2442.6	2452.2	2465.1	2474.7	2481.2	2487.6	2481.2	2473.1	2463.5	2453.8	2444.2
27.5°	2373.4	2383.0	2395.9	2405.5	2412.0	2418.4	2412.0	2403.9	2394.3	2384.6	2375.0
30°	2296.1	2305.8	2318.7	2328.3	2333.1	2338.0	2331.5	2325.1	2317.1	2307.4	2297.7
32.5°	2214.1	2223.7	2233.4	2243.0	2251.1	2257.5	2251.1	2244.6	2235.0	2222.1	2212.5
35°	2127.2	2136.8	2148.1	2157.8	2167.4	2175.5	2165.8	2154.5	2146.5	2138.4	2130.4
37.5°	2035.5	2046.7	2059.6	2070.9	2074.1	2080.5	2074.1	2067.6	2059.6	2051.6	2041.9
40°	1945.4	1955.0	1966.3	1977.5	1982.4	1987.2	1980.8	1974.3	1964.7	1956.6	1947.0
42.5°	1852.0	1861.7	1871.3	1881.0	1887.4	1893.9	1887.4	1877.8	1871.3	1864.9	1856.9
45°	1755.5	1765.1	1773.2	1782.8	1787.7	1792.5	1786.1	1778.0	1771.6	1766.8	1758.7
47.5°	1657.3	1665.4	1673.4	1681.5	1684.7	1689.5	1683.1	1678.3	1673.4	1668.6	1662.2
50°	1554.4	1562.4	1572.1	1580.1	1581.7	1586.5	1580.1	1575.3	1570.4	1565.6	1560.8
52.5°	1453.0	1459.4	1467.5	1475.5	1478.7	1481.9	1475.5	1469.1	1464.2	1461.0	1456.2
55°	1346.8	1353.2	1361.3	1367.7	1372.5	1375.7	1369.3	1362.9	1358.0	1356.4	1351.6
57.5°	1240.6	1247.0	1255.1	1261.5	1264.7	1267.9	1261.5	1255.1	1251.9	1248.6	1245.4
60°	1132.8	1139.2	1145.7	1150.5	1153.7	1155.3	1148.9	1144.0	1142.4	1140.8	1137.6
62.5°	1026.6	1029.8	1036.2	1039.5	1042.7	1044.3	1039.5	1036.2	1034.6	1033.0	1031.4
65°	915.6	923.6	928.4	931.6	931.6	933.3	928.4	926.8	925.2	923.6	920.4
67.5°	801.3	807.7	811.0	814.2	814.2	814.2	814.2	814.2	812.6	809.4	806.1
70°	691.9	696.7	699.9	701.6	701.6	701.6	698.3	696.7	698.3	698.3	696.7
72.5°	580.9	584.1	585.7	587.3	585.7	585.7	585.7	588.9	588.9	587.3	584.1
75°	473.1	476.3	477.9	479.5	477.9	477.9	477.9	481.1	479.5	479.5	477.9
77.5°	371.7	373.3	373.3	374.9	373.3	373.3	374.9	378.1	376.5	376.5	376.5
80°	275.1	275.1	275.1	276.8	275.1	275.1	276.8	280.0	278.4	278.4	278.4
82.5°	186.7	188.3	188.3	188.3	189.9	191.5	191.5	191.5	191.5	191.5	189.9
85°	111.0	112.6	111.0	111.0	111.0	111.0	112.6	114.2	114.2	114.2	114.2
87.5°	48.3	49.9	48.3	46.7	45.1	45.1	48.3	51.5	51.5	49.9	49.9
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: P709169

CATALOG NUMBER: 4APN-35-37L840-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	2740.2	2740.2	2740.2	2740.2
2.5°	2756.3	2756.3	2741.8	2727.4
5°	2754.7	2751.5	2735.4	2717.7
7.5°	2745.1	2740.2	2719.3	2700.0
10°	2722.5	2716.1	2693.6	2669.4
12.5°	2695.2	2685.5	2659.8	2635.6
15°	2659.8	2648.5	2621.2	2593.8
17.5°	2613.1	2600.2	2572.9	2543.9
20°	2563.2	2548.8	2518.2	2487.6
22.5°	2502.1	2489.2	2457.0	2426.5
25°	2436.1	2421.6	2389.5	2357.3
27.5°	2365.3	2349.2	2317.1	2286.5
30°	2288.1	2272.0	2239.8	2209.2
32.5°	2206.0	2193.2	2161.0	2127.2
35°	2122.4	2106.3	2074.1	2041.9
37.5°	2033.9	2019.4	1988.8	1958.2
40°	1940.5	1926.0	1893.9	1863.3
42.5°	1848.8	1835.9	1805.4	1776.4
45°	1750.7	1737.8	1708.8	1683.1
47.5°	1652.5	1639.6	1612.3	1584.9
50°	1552.7	1539.9	1514.1	1490.0
52.5°	1448.2	1438.5	1414.4	1390.2
55°	1343.6	1332.3	1308.2	1287.3
57.5°	1239.0	1230.9	1208.4	1187.5
60°	1131.2	1121.5	1103.8	1086.1
62.5°	1026.6	1018.5	1000.8	984.7
65°	915.6	909.1	894.6	880.2
67.5°	801.3	796.5	782.0	769.1
70°	691.9	683.9	672.6	661.3
72.5°	580.9	577.7	568.0	558.3
75°	474.7	471.5	461.8	453.8
77.5°	374.9	371.7	363.6	355.6
80°	276.8	275.1	268.7	262.3
82.5°	189.9	188.3	183.4	177.0
85°	114.2	111.0	106.2	101.4
87.5°	49.9	48.3	43.4	40.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)